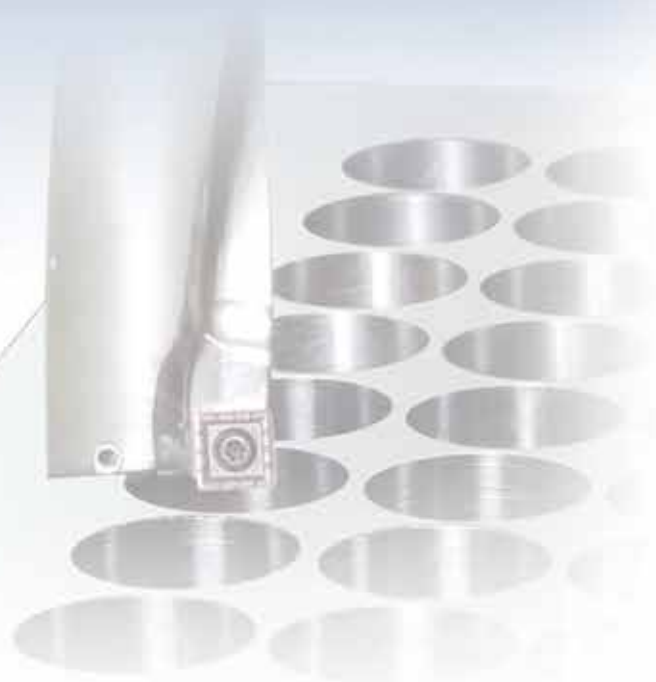
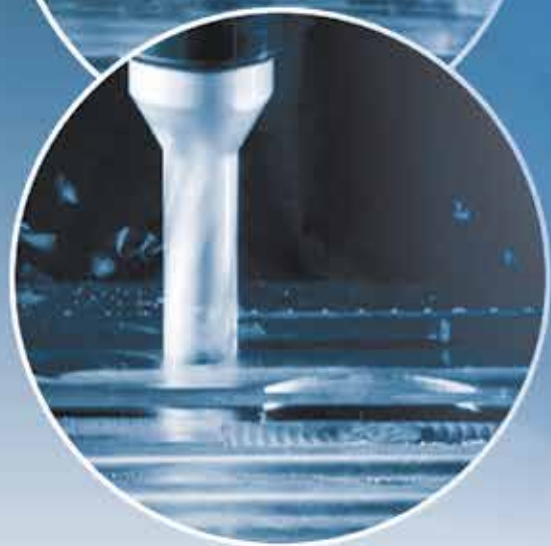






# Drilling tools Bohrwerkzeuge

## Drills

Solid carbide drills  
Indexable drills

## C5-C140

C6-C121  
C123-C140

## Bohrer

VHM Bohrer  
Wendeschneidplattenbohrer

## Reamers

Solid carbide reamers

## C141-C152

C142-C152

## Reibahlen

VHM Reibahlen

## Threading tools

Solid carbide thread forming  
Solid carbide threading tools  
Solid carbide threading mills

## C153-C174

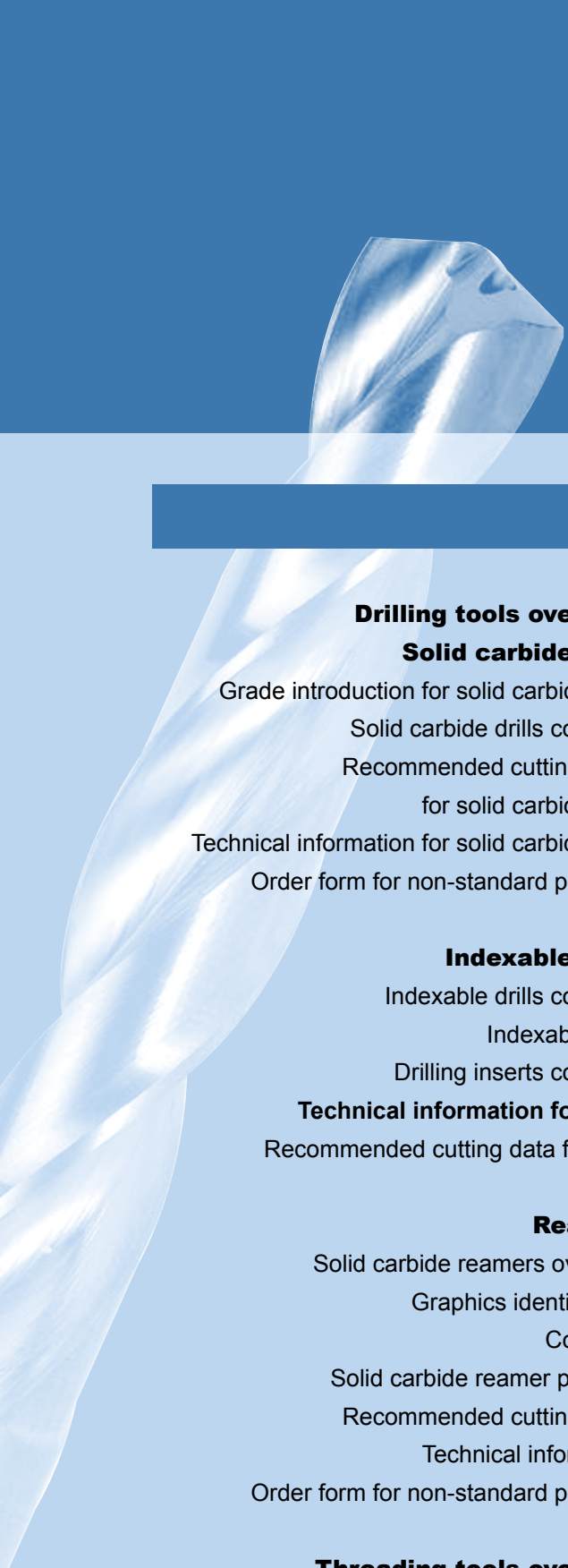
C155-C159  
C160-C167  
C169-C170

## Gewindewerkzeuge

VHM Gewindeformer  
VHM Gewindebohrer  
VHM Gewindefräser







# Drilling · Bohren

## Drilling tools · Bohrwerkzeuge

### Drilling tools overview

#### Solid carbide drills

- Grade introduction for solid carbide drills
- Solid carbide drills code key
- Recommended cutting datas for solid carbide drills
- Technical information for solid carbide drills
- Order form for non-standard products

#### Indexable drills

- Indexable drills code key
- Indexable drills
- Drilling inserts code key

#### Technical information for drills

- Recommended cutting data for drills

### Reaming

- Solid carbide reamers overview
- Graphics identification
- Code key
- Solid carbide reamer program
- Recommended cutting datas
- Technical information
- Order form for non-standard products

### Threading tools overview

#### Graphics identification

#### Threading tools code key

### Detail information

- Solid carbide thread forming
- Solid carbide threading tools
- Solid carbide threading end mills
- Recommended cutting data
- Technical information
- Order form for non-standard products

### C6

#### C7-C121

- C7
- C8
- C96-C109
- C110-C116
- C117-C121

#### C123-C140

- C123
- C124-C131
- C132-C133
- C138-C139
- C140

#### C141-C152

- C142
- C142
- C143
- C144-C147
- C148
- C149-C151
- C152

#### C154

#### C154

#### C155

#### C154-C173

- C155-C159
- C160-C167
- C169-C170
- C171
- C172
- C173

### Übersicht Bohrwerkzeuge

#### VHM Bohrer

- Sortenbeschreibung für VHM Bohrer
- ISO Kennzeichnung für VHM Bohrer
- Empfohlene Schnittdaten für VHM Bohrer
- Technische Informationen für VHM Bohrer
- Bestellformular für Sonderwerkzeuge

#### Wendeschneidplattenbohrer

- ISO Kennzeich. von Wendeplattenbohrern
- Wendeplattenbohrer
- ISO Kennzeichnung für Bohrwendepplatten

#### Technische Informationen für WSP-Bohrer

- Empfohlene Schnittdaten für WSP-Bohrer

### Reiben

- VHM Reibahlen Übersicht
- Graphische Werkzeugbeschreibung
- ISO Kennzeichnung
- Programm VHM Reibahlen
- Empfohlene Schnittdaten
- Technische Informationen
- Bestellformular für Sonderwerkzeuge

### Gewindewerkzeuge Übersicht

#### Graphische Werkzeugbeschreibung

#### ISO Kennzeichnung

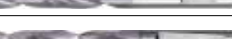
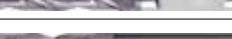
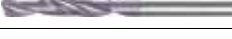
### Detaillierte Informationen

- VHM Gewindeformer
- VHM Gewindebohrer
- VHM Gewindefräser
- Empfohlene Schnittdaten
- Technische Information
- Bestellformular für Sonderwerkzeuge

# Drilling · Bohren

Solid Carbide drills, Indexable drill · Vollhartmetallbohrer, WSP-Bohrer

## Drilling tools overview · Bohrer Übersicht

| Machining<br>Bearbeitung                            | Typ of drill<br>Bohrertyp                                             | Type<br>Typ                 | L/D         | Shape of drills<br>Bohrerausführung                                                 | Cooling mode<br>Kühlmittel                                                          | Ø                  | material · Material                 |                                |                                     |                       |                                 |                                        |                                |                              | Page<br>Seite                      |      |
|-----------------------------------------------------|-----------------------------------------------------------------------|-----------------------------|-------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------|-------------------------------------|--------------------------------|-------------------------------------|-----------------------|---------------------------------|----------------------------------------|--------------------------------|------------------------------|------------------------------------|------|
|                                                     |                                                                       |                             |             |                                                                                     |                                                                                     |                    | P                                   | M                              | K                                   | N                     | S                               | H                                      | Specification<br>Spezifikation | Cutting data<br>Schnittdaten |                                    |      |
|                                                     |                                                                       |                             |             |                                                                                     |                                                                                     |                    | Carbon steel<br>Kohlenstoff - Stahl | Alloy steel<br>Legierter Stahl | Stainless steel<br>Rostfreier Stahl | Cast iron<br>Grauguss | Non-ferrous metal<br>NE-Metalle | Heat resistant alloy<br>Warmfeste Leg. |                                |                              | Hardened steel<br>Gehärteter Stahl |      |
| General machining<br>Allgemeine Bearbeitung         | Twist drill<br>Spiralbohrer                                           | 1534SU03                    | 3xD         |    | External<br>Extern                                                                  | Ø0.9-Ø20           | ✓                                   | ✓                              | ✓                                   | ✓                     |                                 |                                        |                                | C10-<br>C50                  | C96-<br>C98                        |      |
|                                                     |                                                                       | 1534SU03C                   | 3xD         |    | Internal<br>Intern                                                                  | Ø3-Ø20             | ✓                                   | ✓                              | ✓                                   | ✓                     |                                 |                                        |                                |                              |                                    |      |
|                                                     |                                                                       | 1634SU03C                   | 3xD         |    | Internal<br>Intern                                                                  | Ø3-Ø20             | ✓                                   | ✓                              | ✓                                   | ✓                     |                                 |                                        |                                |                              |                                    |      |
|                                                     |                                                                       | 1734SU03C                   | 3xD         |    | Internal<br>Intern                                                                  | Ø3-Ø20             | ✓                                   | ✓                              | ✓                                   | ✓                     |                                 |                                        |                                |                              |                                    |      |
|                                                     |                                                                       | 1536SU05                    | 5xD         |    | External<br>Extern                                                                  | Ø2-Ø20             | ✓                                   | ✓                              | ✓                                   | ✓                     |                                 |                                        |                                |                              |                                    |      |
|                                                     |                                                                       | 1536SU05C                   | 5xD         |    | Internal<br>Intern                                                                  | Ø3-Ø20             | ✓                                   | ✓                              | ✓                                   | ✓                     |                                 |                                        |                                |                              |                                    |      |
|                                                     |                                                                       | 1636SU05C                   | 5xD         |    | Internal<br>Intern                                                                  | Ø3-Ø20             | ✓                                   | ✓                              | ✓                                   | ✓                     |                                 |                                        |                                |                              |                                    |      |
|                                                     |                                                                       | 1736SU05C                   | 5xD         |    | Internal<br>Intern                                                                  | Ø3-Ø20             | ✓                                   | ✓                              | ✓                                   | ✓                     |                                 |                                        |                                |                              |                                    |      |
|                                                     |                                                                       | 1538SU08C                   | 8xD         |    | Internal<br>Intern                                                                  | Ø3-Ø18             | ✓                                   | ✓                              | ✓                                   | ✓                     |                                 |                                        |                                |                              |                                    |      |
|                                                     | Deep drill<br>Tieflochbohrer                                          | 1588SL10C                   | 10xD        |    | Internal<br>Intern                                                                  | Ø3-Ø14             | ✓                                   | ✓                              | ✓                                   | ✓                     |                                 | ✓                                      |                                | C52-<br>C62                  | C100                               |      |
|                                                     |                                                                       | 1588SL12C                   | 12xD        |  | Internal<br>Intern                                                                  | Ø3-Ø21             | ✓                                   | ✓                              | ✓                                   | ✓                     |                                 | ✓                                      |                                |                              |                                    |      |
|                                                     |                                                                       | 1588SL15C                   | 15xD        |  | Internal<br>Intern                                                                  | Ø3-Ø14             | ✓                                   | ✓                              | ✓                                   | ✓                     |                                 | ✓                                      |                                |                              |                                    |      |
|                                                     |                                                                       | 1588SL20C                   | 20xD        |  | Internal<br>Intern                                                                  | Ø3-Ø14             | ✓                                   | ✓                              | ✓                                   | ✓                     |                                 | ✓                                      |                                |                              |                                    |      |
|                                                     |                                                                       | 1588SL30C                   | 30xD        |  | Internal<br>Intern                                                                  | Ø3-Ø10             | ✓                                   | ✓                              | ✓                                   | ✓                     |                                 | ✓                                      |                                |                              |                                    |      |
|                                                     | Pilot drills<br>Pilotbohrer                                           | 1534SP03C                   | 3xD         |  | Internal<br>Intern                                                                  | Ø3.03-<br>Ø20.03   | ✓                                   | ✓                              | ✓                                   | ✓                     |                                 | ✓                                      |                                | C63-<br>C66                  | C101                               |      |
|                                                     | Step drill<br>Stufenbohrer                                            | 1557SU03                    | 3xD         |  | External<br>Extern                                                                  | M4-M16             | ✓                                   | ✓                              | ✓                                   | ✓                     |                                 | ✓                                      |                                | C51                          |                                    | C99  |
|                                                     | Carbon steel<br>alloy steel<br>Kohlenstoff - Stahl<br>Legierter Stahl | Twist drill<br>Spiralbohrer | 1534ST03C   | 3xD                                                                                 |  | Internal<br>Intern | Ø3-Ø20                              | ✓                              | ✓                                   | ✓                     |                                 |                                        | ✓                              |                              | C69-<br>C81                        | C103 |
|                                                     |                                                                       |                             | 1536ST05C   | 5xD                                                                                 |  | Internal<br>Intern | Ø3-Ø20                              | ✓                              | ✓                                   | ✓                     |                                 |                                        | ✓                              |                              |                                    |      |
|                                                     |                                                                       |                             | 1636ST05C   | 5xD                                                                                 |  | Internal<br>Intern | Ø3-Ø20                              | ✓                              | ✓                                   | ✓                     |                                 |                                        | ✓                              |                              |                                    |      |
| high<br>hardness<br>steel<br>Gehärteter<br>Stahl    | Twist drill<br>Spiralbohrer                                           | 1534SH03                    | 3xD         |  | External<br>Extern                                                                  | Ø3-Ø16             |                                     |                                |                                     |                       |                                 |                                        | ✓                              | C82-<br>C83                  | C104                               |      |
| For aluminum, cast iron<br>Für Aluminium, Gusseisen | Twist drill<br>Spiralbohrer                                           | 1105SC03                    | 3xD         |  | External<br>Extern                                                                  | Ø2-Ø16             |                                     |                                |                                     | ✓                     | ✓                               |                                        |                                | C84-<br>C87                  | C105                               |      |
|                                                     |                                                                       | 1101SC05                    | 5xD         |  | External<br>Extern                                                                  | Ø2-Ø16             |                                     |                                |                                     | ✓                     | ✓                               |                                        |                                |                              |                                    |      |
|                                                     | Three-lips drill<br>Dreilippenbohrer                                  | 1165PA03                    | 3xD         |  | External<br>Extern                                                                  | Ø3-Ø20             |                                     |                                |                                     |                       | ✓                               | ✓                                      |                                | C88-<br>C90                  | C106                               |      |
|                                                     | Straight flute drill<br>Gerade<br>genuteter<br>Bohrer                 | 1576PC05                    | 5xD         |  | External<br>Extern                                                                  | Ø4-Ø20             |                                     |                                |                                     | ✓                     | ✓                               |                                        |                                | C91-<br>C93                  | C107-<br>C108                      |      |
|                                                     |                                                                       | 1576PC05C                   | 5xD         |  | Internal<br>Intern                                                                  | Ø4-Ø20             |                                     |                                |                                     | ✓                     | ✓                               |                                        |                                |                              |                                    |      |
|                                                     |                                                                       | 1579PC15C                   | 15xD        |  | Internal<br>Intern                                                                  | Ø5-Ø14             |                                     |                                |                                     | ✓                     | ✓                               |                                        |                                |                              |                                    |      |
|                                                     | Centering drill<br>Zentrierbohrer                                     | 1143SC90                    |             |  | External<br>Extern                                                                  | Ø5-Ø20             |                                     |                                |                                     | ✓                     | ✓                               |                                        |                                | C94                          | C109                               |      |
|                                                     |                                                                       | 1143SC120                   |             |  | External<br>Extern                                                                  | Ø5-Ø20             |                                     |                                |                                     | ✓                     | ✓                               |                                        |                                |                              |                                    |      |
| Indexable drills<br>series<br>WSP-Bohrer            | Indexable drills<br>WSP-Bohrer                                        | ZTD02/03<br>ZTD04/05        | 2xD-<br>5xD |  | Internal<br>Intern                                                                  | Ø13-Ø50            | ✓                                   | ✓                              | ✓                                   | ✓                     |                                 |                                        |                                | C124-<br>C129                | C136<br>C140                       |      |
|                                                     |                                                                       | ZD03                        | 3xD         |  | Internal<br>Intern                                                                  | Ø16-Ø58            | ✓                                   | ✓                              | ✓                                   | ✓                     |                                 |                                        |                                | C130-<br>C131                |                                    |      |

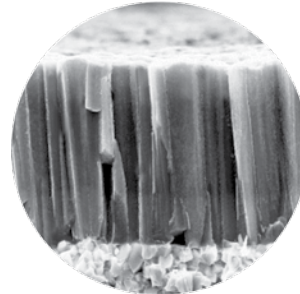
✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

### Grade introduction for solid carbide drills Hartmetallsorten für VHM-Bohrer

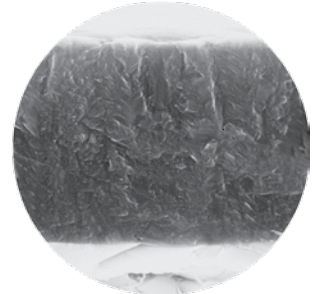
#### Coated Grade **KDG303** Beschichtete Sorte

It is a combination of ultra-fine carbide substrate and Nano nc-ALTIN coating. It is a universal grade for machining of carbon steel, alloy steel (HRC≤48), cast iron and stainless steel. Suitable for the machining of Ni based high-temperature alloys at normal cutting speed.

Eine Kombination von Ultrafeinkorn-Hartmetall und Nano nc-TiAlN PVD-Beschichtung. Universelle Anwendung zur Bearbeitung von unlegiertem Stahl, legiertem Stahl (HRC≤48), Guss, rostfreiem Stahl und Ni-basierten, warmfesten Superlegierungen bei normaler Schnittgeschwindigkeit.

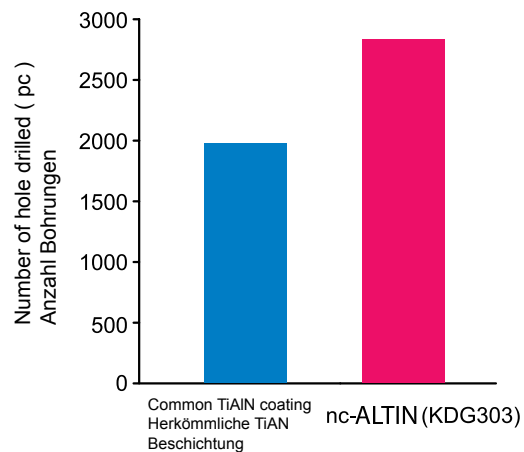


Common TiAlN coating  
normale TiAlN Beschichtung



nc-ALTIN coating  
nc-ALTIN Beschichtung

| Application of nc-ALTIN coating in drilling<br>Anwendungsbeispiel von nc-ALTIN |                                                                 |
|--------------------------------------------------------------------------------|-----------------------------------------------------------------|
| Tool Type · Typ                                                                | 1534SU03C-1200                                                  |
| Size · Durchmesser                                                             | Ø12mm                                                           |
| Workpiece material<br>Werkstückstoff                                           | 42CrMo (32HRC)                                                  |
| Cutting speed<br>Schnittgeschw.                                                | 100m/min                                                        |
| Rotating speed<br>Umdreh. pro min                                              | 2652r/min                                                       |
| Feed rate per revolution<br>Vorschub pro Umdrehung                             | 0.25mm/r                                                        |
| Feed speed · Vorschub                                                          | 663mm/min                                                       |
| Drilling depth · Bohrtiefe                                                     | 36mm                                                            |
| Cooling system<br>Kühlungssystem                                               | Water-soluble liquid (Internal)<br>Emulsion (Interne Zuführung) |
| Machine · Maschine                                                             | Mikron UCP 1000                                                 |



#### Uncoated grades Unbeschichtete Sorten

##### **YK20F**

It is an ultra-fine carbide grade with good wear resistance suitable for drilling and reaming of cast iron and nonferrous metals.

Ultrafeinkorn-Hartmetall mit guter Verschleißfestigkeit.

Geeignet zum Bohren und Reiben von Guss und NE-Metallen.

##### **YK30F**

It is an ultra-fine carbide grade with good wear-resistance. A universal grade for drilling.

Ultrafeinkorn-Hartmetall mit guter Verschleißfestigkeit.

Universelle Sorte zum Bohren.

# Drilling · Bohren

Solid carbide drills · Vollhartmetallbohrer

## Solid carbide drills Code Key · ISO Kennzeichnung für VHM-Bohrer

| Description<br>Bezeichnung |                               |
|----------------------------|-------------------------------|
| Code                       | Description · Beschreibung    |
| 1                          | DIN338                        |
| 2                          | DIN1897                       |
| 3                          | QJ/ZZQ(TO)01.001.002          |
| 4                          | DIN6537K                      |
| 5                          | DIN6537K                      |
| 6                          | DIN6537K                      |
| 7                          | ZZC-C in QJ/ZZQ(TO)01.001.002 |
| 8                          | ZZC-D in QJ/ZZQ(TO)01.001.002 |
| 9                          | ZZC-E in QJ/ZZQ(TO)01.001.002 |

| Application<br>Anwendung |                                                                                                 |
|--------------------------|-------------------------------------------------------------------------------------------------|
| Code                     | Description · Beschreibung                                                                      |
| SU                       | Twist drill for general universal machining<br>Spiralbohrer für die allg. Bearbeitung           |
| SUK                      | Twist drill for grey cast iron<br>Spiralbohrer für Graugussmaterial                             |
| SL                       | Twist drill for deep drilling<br>Spiralbohrer zum Tieflochbohren                                |
| SLK                      | Deep drills for grey cast iron<br>Tieflochbohrer für Graugussmaterialien                        |
| SP                       | Pilot drills<br>Pilotbohrer                                                                     |
| ST                       | Twist drill for soft steel, stainless steel<br>Spiralbohrer für weiche Stähle und rostfr. Stahl |
| SH                       | Twist drill for high hardness steel<br>Spiralbohrer für gehärteten Stahl                        |
| SC                       | Twist drill for aluminum, cast iron<br>Spiralbohrer für Alu und Grauguss                        |
| PA                       | Three-lips drill for aluminum, cast iron<br>3-Lippenbohrer für Alu-Leg., Grauguss               |
| PC                       | Straight flute drill for aluminum, cast iron<br>gerade genuteter Bohrer für Alu, Grauguss       |

| Type of tools<br>Werkzeugtyp |                            |
|------------------------------|----------------------------|
| Code                         | Description · Beschreibung |
| 1                            | Drills · Bohrer            |

| Mode of cooling<br>Art der Kühlung |                                             |
|------------------------------------|---------------------------------------------|
| Code                               | Description · Beschreibung                  |
| C                                  | Internal Coolant<br>Innere Kühlmittelzufuhr |

**1 5 3 6 SU 05 C -0850**

| Type of shank · Schaftausführung |                                                                             |
|----------------------------------|-----------------------------------------------------------------------------|
| Code                             | Description · Beschreibung                                                  |
| 1                                | Straight shank<br>Zylinderschaftausführung                                  |
| 2                                | Square head Straight shank DIN 10<br>4-Kant-Schaft DIN 10                   |
| 3                                | Double flattened Straight shank DIN1809<br>2-Flächen-Zylinderschaft DIN1809 |
| 5                                | Straight shank DIN6535HA<br>Zylinderschaft DIN6535HA                        |
| 6                                | Weldon shank DIN6535HB<br>Weldon Schaft DIN6535HB                           |
| 7                                | Whistle notch shank DIN6535HE<br>Whistle-Notch-Schaft DIN6535HE             |
| 9                                | Tapered shank<br>MK-Schaft                                                  |

| Type of drill · Bohrertyp |                                                         |
|---------------------------|---------------------------------------------------------|
| Code                      | Description · Beschreibung                              |
| 0                         | Twist drill<br>Spiralbohrer                             |
| 3                         | Multiple functions twist drill<br>Universalspiralbohrer |
| 4                         | Centering drill<br>Zentrierbohrer                       |
| 5                         | Step drill<br>Stufenbohrer                              |
| 6                         | Three-lips drill<br>3-Schneidenbohrer                   |
| 7                         | Straight flute drill<br>Bohrer mit geraden Nuten        |

| Specification · Bezeichnung |                                                                        |
|-----------------------------|------------------------------------------------------------------------|
| Code                        | Description · Beschreibung                                             |
| 0850                        | Nominal cutting diameter of stepless drill<br>Bohrerdurchmesser: 8,5mm |
| M6                          | Step drill for standard pitch<br>Gewindebohrer Standardsteigungen      |
| M8x1                        | Step drill for fine pitch<br>Gewindebohrer mit Feingewinde             |

### Identification of drilling depth and point angle · max. Bohrtiefe

| If the tool is not a centering drill, it indicate the drilling depth<br>Ist das Werkzeug kein Zentrierbohrer wird die Bohrtiefe angegeben. |                            | If the tool is a centering drill, it indicate the point angle<br>Ist das Werkzeug kein Zentrierbohrer wird der Spitzenwinkel angegeben. |                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| Code                                                                                                                                       | Description · Beschreibung | Code                                                                                                                                    | Description · Beschreibung                                           |
| 03                                                                                                                                         | (2~3) d                    | 90                                                                                                                                      | Centering drill with 90° point angle<br>NC-Anbohrer mit 90° Winkel   |
| 05                                                                                                                                         | (4~5) d                    | 120                                                                                                                                     | Centering drill with 120° point angle<br>NC-Anbohrer mit 120° Winkel |
| 08                                                                                                                                         | (7~8) d                    |                                                                                                                                         |                                                                      |
| 15                                                                                                                                         | (15) d                     |                                                                                                                                         |                                                                      |

C

Solid carbide drills  
Vollhartmetallbohrer



# SU Series twist drill Spiralbohrer Serie

## SU Universal series · Universalausführung

The optimized chip-breaker, shape of the cutting edge and a proper change of the rake angle combined with a TiAlN nano coating for a wider application field. It is for the drilling of work piece materials of P(steel), M(stainless steel) and K(cast iron) with high performance.

*Eine optimierte Schneidengeometrie in Verbindung mit einer Nano TiAlN-Beschichtung ermöglicht eine Hochleistungsbearbeitung beim Bohren in allgemeinen Stahlwerkstoffen, rostfreien Werkstoffen und Guss.*



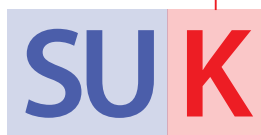
**Specially designed drill point makes cutting smooth.**

**Spezielle Geometrie für weichen Schnitt**

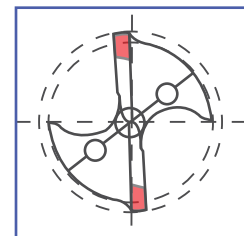
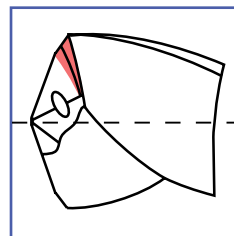
## SUK **NEW** DIN 1412 D

### Twist drills for grey cast iron Spiralbohrer für die Bearbeitung von Graugussmaterialien

For grey cast iron  
Für Graugussmaterialien



Twist drill for deep drilling  
Spiralbohrer zum Tieflochbohren



Form D - Double Angle for Cast Iron  
Form D - Anschliff für Grauguss

- Applications / Anwendung:**  
 For drilling grey cast iron, malleable cast iron and forgings.  
*Für Bohrungen in Grauguss, Temperguss und Schmiedestücke.*
- Advantages / Vorteile:**  
 Wear on cutting corners is reduced by extended major cutting edges, resistant to impact, good heat conductivity, all giving improved tool life.  
*Schonung der Schneidenecken durch verlängerte Hauptschneiden, unempfindlich gegen Stoß, gute Wärmeableitung – dadurch verbesserte Standzeit.*

**All articles SUK on demand, please add **K** when ordering.**  
**Alle Artikel SUK auf Anfrage, bitte bei der Bestellung **K** ergänzen.**

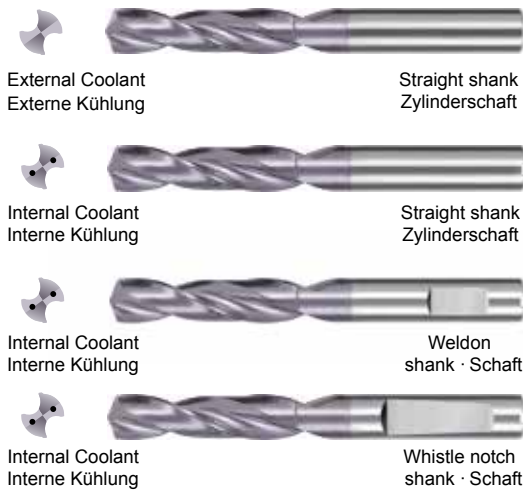
**1534SUK03-0100**

# Drilling · Bohren

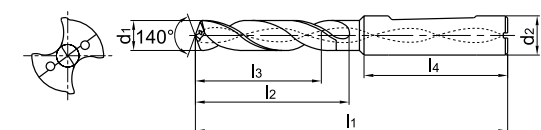
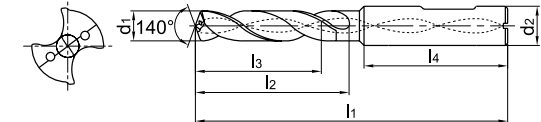
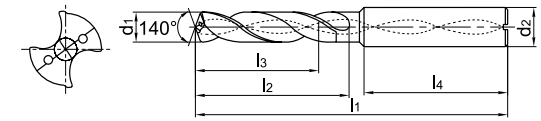
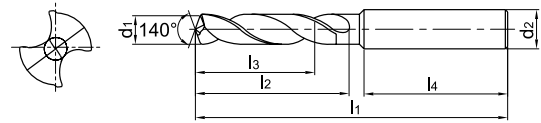
Solid carbide drills · Vollhartmetallbohrer

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Please add K when ordering / Bitte bei der Bestellung K ergänzen



## General machining · Allgemeine Bearbeitung



- For high efficient drilling of P (steel), M (stainless steel) and K (cast iron) with high performance.
- Waveform cutting edges achieve outstanding sharpness and strength, promoting chip removal.
- Hocheffizientes Bohren von allgemeinen Stahlwerkstoffen, rostfreien Werkstoffen und Guss.
- Wellenförmige Schneidkante mit hoher Schneidschärfe, Stabilität und guter Spanabfuhr.

| Drill diameter<br>Bohrer Ø<br>d1(m7) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                          | Type<br>Typ   | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|--------------------------------------|---------------------------------------|-----------------------------|------------------------------------------|---------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                      |                                       |                             |                                          |               | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                      |                                       |                             |                                          |               | d2(h6)                                  | l1                            | l2                         | l3                                             | l4                          |                |
| 0.90                                 | 3                                     | External<br>Extern          | Straight<br>shank<br>Zylinder-<br>schaft | 1534SU03-0090 | 4                                       | 47                            | 3.4                        | 4.2                                            | 37.9                        | ●              |
| 1.00                                 | 3                                     |                             |                                          | 1534SU03-0100 | 4                                       | 47                            | 3.8                        | 4.7                                            | 37.6                        | ●              |
| 1.05                                 | 3                                     |                             |                                          | 1534SU03-0105 | 4                                       | 47                            | 3.9                        | 4.9                                            | 37.5                        | ○              |
| 1.10                                 | 3                                     |                             |                                          | 1534SU03-0110 | 4                                       | 47                            | 4.1                        | 5.2                                            | 37.2                        | ●              |
| 1.15                                 | 3                                     |                             |                                          | 1534SU03-0115 | 4                                       | 47                            | 4.3                        | 5.4                                            | 37.1                        | ○              |
| 1.20                                 | 3                                     |                             |                                          | 1534SU03-0120 | 4                                       | 47                            | 4.5                        | 5.6                                            | 37                          | ●              |
| 1.25                                 | 3                                     |                             |                                          | 1534SU03-0125 | 4                                       | 47                            | 4.7                        | 5.9                                            | 36.8                        | ○              |
| 1.30                                 | 3                                     |                             |                                          | 1534SU03-0130 | 4                                       | 47                            | 4.9                        | 6.1                                            | 36.6                        | ●              |
| 1.35                                 | 3                                     |                             |                                          | 1534SU03-0135 | 4                                       | 47                            | 5.1                        | 6.3                                            | 36.5                        | ○              |
| 1.40                                 | 3                                     |                             |                                          | 1534SU03-0140 | 4                                       | 47                            | 5.3                        | 6.6                                            | 36.3                        | ●              |
| 1.45                                 | 3                                     |                             |                                          | 1534SU03-0145 | 4                                       | 47                            | 5.4                        | 6.8                                            | 36.2                        | ○              |
| 1.47                                 | 3                                     |                             |                                          | 1534SU03-0147 | 4                                       | 47                            | 5.5                        | 6.9                                            | 36.1                        | ●              |
| 1.50                                 | 3                                     |                             |                                          | 1534SU03-0150 | 4                                       | 47                            | 5.6                        | 7.1                                            | 36                          | ●              |
| 1.55                                 | 3                                     |                             |                                          | 1534SU03-0155 | 4                                       | 47                            | 5.8                        | 7.3                                            | 35.8                        | ○              |
| 1.60                                 | 3                                     |                             |                                          | 1534SU03-0160 | 4                                       | 47                            | 6.0                        | 7.5                                            | 35.7                        | ●              |
| 1.65                                 | 3                                     |                             |                                          | 1534SU03-0165 | 4                                       | 47                            | 6.2                        | 7.8                                            | 35.5                        | ○              |
| 1.70                                 | 3                                     |                             |                                          | 1534SU03-0170 | 4                                       | 47                            | 6.4                        | 8                                              | 35.4                        | ●              |
| 1.75                                 | 3                                     |                             |                                          | 1534SU03-0175 | 4                                       | 47                            | 6.6                        | 8.2                                            | 35.2                        | ●              |
| 1.80                                 | 3                                     |                             |                                          | 1534SU03-0180 | 4                                       | 47                            | 6.8                        | 8.5                                            | 35                          | ●              |
| 1.85                                 | 3                                     |                             |                                          | 1534SU03-0185 | 4                                       | 47                            | 6.9                        | 8.7                                            | 34.9                        | ○              |
| 1.90                                 | 3                                     |                             |                                          | 1534SU03-0190 | 4                                       | 47                            | 7.1                        | 8.9                                            | 34.8                        | ●              |
| 1.95                                 | 3                                     |                             |                                          | 1534SU03-0195 | 4                                       | 47                            | 7.3                        | 9.2                                            | 34.5                        | ○              |
| 2.0                                  | 3                                     |                             |                                          | 1534SU03-0200 | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●              |
|                                      | 5                                     |                             |                                          | 1536SU05-0200 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ●              |
| 2.1                                  | 3                                     |                             |                                          | 1534SU03-0210 | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●              |
|                                      | 5                                     |                             |                                          | 1536SU05-0210 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ●              |
| 2.2                                  | 3                                     |                             |                                          | 1534SU03-0220 | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●              |
|                                      | 5                                     |                             |                                          | 1536SU05-0220 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ●              |
| 2.3                                  | 3                                     |                             |                                          | 1534SU03-0230 | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●              |
|                                      | 5                                     |                             |                                          | 1536SU05-0230 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ●              |
| 2.33                                 | 3                                     |                             |                                          | 1534SU03-0230 | 3                                       | 59                            | 13.8                       | 14                                             | 36                          | ●              |

| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (mm) | Drilling depth<br>Bohrtiefe<br>(L/d <sub>1</sub> ) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                                                                                       | Type<br>Typ        | Basic dimension(mm) · Basis Abmessungen                                                               |                               |                            |                                                |                             | Grade<br>Sorte |    |    |
|---------------------------------------------------|----------------------------------------------------|-----------------------------|-------------------------------------------------------------------------------------------------------|--------------------|-------------------------------------------------------------------------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|----|----|
|                                                   |                                                    |                             |                                                                                                       |                    | Shank diameter Ø<br>Schaftdurchmesser                                                                 | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |    |    |
|                                                   |                                                    |                             |                                                                                                       |                    | d <sub>2</sub> (h <sub>6</sub> )                                                                      | l <sub>1</sub>                | l <sub>2</sub>             | l <sub>3</sub>                                 | l <sub>4</sub>              | KDG303         |    |    |
| 2.4                                               | 3                                                  | External<br>Extern          | Straight<br>shank<br><br>Zylinder-<br>schaft                                                          | 1534SU03-0240      | 6                                                                                                     | 62                            | 20                         | 14                                             | 36                          | ●              |    |    |
|                                                   | 5                                                  |                             |                                                                                                       | 1536SU05-0240      | 6                                                                                                     | 66                            | 28                         | 23                                             | 36                          | ●              |    |    |
| 2.5                                               | 3                                                  |                             |                                                                                                       | 1534SU03-0250      | 6                                                                                                     | 62                            | 20                         | 14                                             | 36                          | ●              |    |    |
|                                                   | 5                                                  |                             |                                                                                                       | 1536SU05-0250      | 6                                                                                                     | 66                            | 28                         | 23                                             | 36                          | ●              |    |    |
| 2.6                                               | 3                                                  |                             |                                                                                                       | 1534SU03-0260      | 6                                                                                                     | 62                            | 20                         | 14                                             | 36                          | ●              |    |    |
|                                                   | 5                                                  |                             |                                                                                                       | 1536SU05-0260      | 6                                                                                                     | 66                            | 28                         | 23                                             | 36                          | ●              |    |    |
| 2.7                                               | 3                                                  |                             |                                                                                                       | 1534SU03-0270      | 6                                                                                                     | 62                            | 20                         | 14                                             | 36                          | ●              |    |    |
|                                                   | 5                                                  |                             |                                                                                                       | 1536SU05-0270      | 6                                                                                                     | 66                            | 28                         | 23                                             | 36                          | ●              |    |    |
| 2.8                                               | 3                                                  |                             |                                                                                                       | 1534SU03-0280      | 6                                                                                                     | 62                            | 20                         | 14                                             | 36                          | ●              |    |    |
|                                                   | 5                                                  |                             |                                                                                                       | 1536SU05-0280      | 6                                                                                                     | 66                            | 28                         | 23                                             | 36                          | ●              |    |    |
| 2.9                                               | 3                                                  |                             |                                                                                                       | 1534SU03-0290      | 6                                                                                                     | 62                            | 20                         | 14                                             | 36                          | ●              |    |    |
|                                                   | 5                                                  |                             |                                                                                                       | 1536SU05-0290      | 6                                                                                                     | 66                            | 28                         | 23                                             | 36                          | ●              |    |    |
| 3.0                                               | 3                                                  |                             |                                                                                                       | Internal<br>Intern | Weldon<br>shank/ Schaft<br><br>Whistle notch<br>shank/ Schaft<br><br>straight shank<br>Zylinderschaft | 1534SU03-0300                 | 6                          | 62                                             | 20                          | 14             | 36 | ●  |
|                                                   | 5                                                  |                             |                                                                                                       |                    |                                                                                                       | 1536SU05-0300                 | 6                          | 66                                             | 28                          | 23             | 36 | ●  |
|                                                   | 3                                                  |                             |                                                                                                       |                    |                                                                                                       | 1534SU03C-0300                | 6                          | 62                                             | 20                          | 14             | 36 | ●  |
|                                                   | 5                                                  |                             |                                                                                                       |                    |                                                                                                       | 1536SU05C-0300                | 6                          | 66                                             | 28                          | 23             | 36 | ●  |
|                                                   | 3                                                  |                             |                                                                                                       |                    |                                                                                                       | 1634SU03C-0300                | 6                          | 62                                             | 20                          | 14             | 36 | ●  |
|                                                   | 5                                                  |                             |                                                                                                       |                    |                                                                                                       | 1636SU05C-0300                | 6                          | 62                                             | 20                          | 14             | 36 | ●  |
|                                                   | 3                                                  |                             |                                                                                                       |                    |                                                                                                       | 1734SU03C-0300                | 6                          | 66                                             | 28                          | 23             | 36 | ●  |
|                                                   | 5                                                  |                             |                                                                                                       |                    |                                                                                                       | 1736SU05C-0300                | 6                          | 66                                             | 28                          | 23             | 36 | ●  |
|                                                   | 8                                                  |                             |                                                                                                       |                    |                                                                                                       | 1538SU08C-0300                | 6                          | 72                                             | 34                          | 29             | 36 | ●  |
|                                                   | 3.1                                                |                             |                                                                                                       |                    |                                                                                                       | 3                             | External<br>Extern         | Straight<br>shank<br><br>Zylinder-<br>schaft   | 1534SU03-0310               | 6              | 62 | 20 |
| 5                                                 |                                                    |                             |                                                                                                       | 1536SU05-0310      | 6                                                                                                     | 66                            |                            |                                                | 28                          | 23             | 36 | ●  |
| 3                                                 |                                                    |                             |                                                                                                       | Internal<br>Intern | Weldon<br>shank/ Schaft<br><br>Whistle notch<br>shank/ Schaft<br><br>straight shank<br>Zylinderschaft | 1534SU03C-0310                | 6                          | 62                                             | 20                          | 14             | 36 | ●  |
| 5                                                 |                                                    | 1536SU05C-0310              | 6                                                                                                     |                    |                                                                                                       | 66                            | 28                         | 23                                             | 36                          | ●              |    |    |
| 3                                                 |                                                    | 1634SU05C-0310              | 6                                                                                                     |                    |                                                                                                       | 66                            | 28                         | 23                                             | 36                          | ●              |    |    |
| 5                                                 |                                                    | 1636SU05C-0310              | 6                                                                                                     |                    |                                                                                                       | 66                            | 28                         | 23                                             | 36                          | ●              |    |    |
| 3                                                 |                                                    | 1734SU03C-0310              | 6                                                                                                     |                    |                                                                                                       | 62                            | 20                         | 14                                             | 36                          | ●              |    |    |
| 5                                                 |                                                    | 1736SU05C-0310              | 6                                                                                                     |                    |                                                                                                       | 66                            | 28                         | 23                                             | 36                          | ●              |    |    |
| 8                                                 |                                                    | 1538SU08C-0310              | 6                                                                                                     |                    |                                                                                                       | 72                            | 34                         | 29                                             | 36                          | ●              |    |    |
| 3                                                 |                                                    | External<br>Extern          | Straight<br>shank<br><br>Zylinder-<br>schaft                                                          |                    |                                                                                                       | 1534SU03-0320                 | 6                          | 62                                             | 20                          | 14             | 36 | ●  |
| 5                                                 | 1536SU05-0320                                      |                             |                                                                                                       | 6                  | 66                                                                                                    | 28                            | 23                         | 36                                             | ●                           |                |    |    |
| 3.2                                               | 3                                                  | Internal<br>Intern          | Weldon<br>shank/ Schaft<br><br>Whistle notch<br>shank/ Schaft<br><br>straight shank<br>Zylinderschaft | 1534SU03C-0320     | 6                                                                                                     | 62                            | 20                         | 14                                             | 36                          | ●              |    |    |
|                                                   | 5                                                  |                             |                                                                                                       | 1636SU05C-0320     | 6                                                                                                     | 66                            | 28                         | 23                                             | 36                          | ●              |    |    |
|                                                   | 3                                                  |                             |                                                                                                       | 1734SU03C-0320     | 6                                                                                                     | 62                            | 20                         | 14                                             | 36                          | ●              |    |    |
|                                                   | 5                                                  |                             |                                                                                                       | 1736SU05C-0320     | 6                                                                                                     | 66                            | 28                         | 23                                             | 36                          | ●              |    |    |
|                                                   | 8                                                  |                             |                                                                                                       | 1538SU08C-0320     | 6                                                                                                     | 72                            | 34                         | 29                                             | 36                          | ●              |    |    |
|                                                   | 3                                                  |                             |                                                                                                       | External<br>Extern | Straight<br>shank<br><br>Zylinder-<br>schaft                                                          | 1534SU03-0325                 | 6                          | 62                                             | 20                          | 14             | 36 | ●  |
|                                                   | 5                                                  |                             |                                                                                                       |                    |                                                                                                       | 1536SU05-0325                 | 6                          | 66                                             | 28                          | 23             | 36 | ●  |
|                                                   | 3                                                  |                             |                                                                                                       | Internal<br>Intern | Weldon<br>shank/Schaft<br><br>Whistle notch<br>shank/Schaft                                           | 1534SU03C-0325                | 6                          | 62                                             | 20                          | 14             | 36 | ○  |
|                                                   | 5                                                  |                             |                                                                                                       |                    |                                                                                                       | 1636SU05C-0325                | 6                          | 66                                             | 28                          | 23             | 36 | ○  |
|                                                   | 3                                                  |                             |                                                                                                       |                    |                                                                                                       | 1734SU03C-0325                | 6                          | 62                                             | 20                          | 14             | 36 | ○  |
| 5                                                 | 1736SU05C-0325                                     | 6                           | 66                                                                                                    |                    |                                                                                                       | 28                            | 23                         | 36                                             | ○                           |                |    |    |

### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Type<br>Typ | Grade<br>Sorte | Workpiece material · Werkstückstoff              |                                   |                                 |        |        |                                           |                        |                                                      |                              |                               |                                             |
|-------------|----------------|--------------------------------------------------|-----------------------------------|---------------------------------|--------|--------|-------------------------------------------|------------------------|------------------------------------------------------|------------------------------|-------------------------------|---------------------------------------------|
|             |                | Carbon steel<br>Kohlenstoff<br>- Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron,<br>Grauguss | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Wärmefeste<br>Leg. |
|             |                |                                                  |                                   | ~40HRC                          | ~50HRC | ~60HRC |                                           |                        |                                                      |                              |                               |                                             |
| SU*         | KDG303         | ✓                                                | ✓                                 | ✓                               |        |        | ✓                                         | ✓                      | ✓                                                    |                              |                               |                                             |
| SUK*        | KDG303         |                                                  |                                   |                                 |        |        |                                           | ✓                      | ✓                                                    |                              |                               |                                             |

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Code key C 8  
ISO Kennzeichen

Cutting data 96-109  
Schnittdaten

Technical Information C110-116  
Technische Information

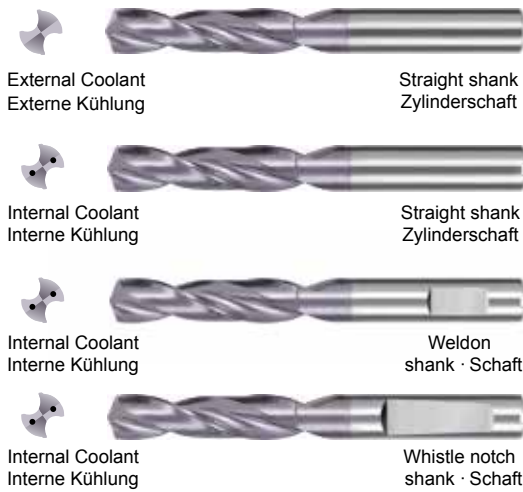
Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge

# Drilling · Bohren

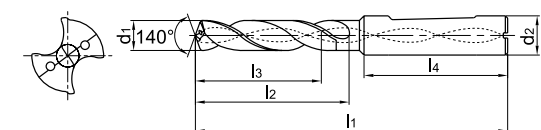
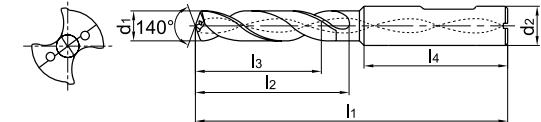
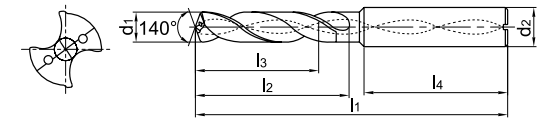
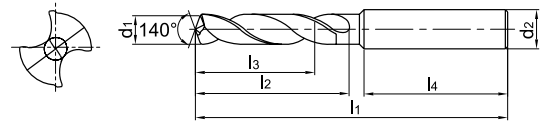
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Please add K when ordering / Bitte bei der Bestellung K ergänzen



## General machining · Allgemeine Bearbeitung



- For high efficient drilling of P (steel), M (stainless steel) and K (cast iron) with high performance.
- Waveform cutting edges achieve outstanding sharpness and strength, promoting chip removal.
- Hocheffizientes Bohren von allgemeinen Stahlwerkstoffen, rostfreien Werkstoffen und Guss.
- Wellenförmige Schneidkante mit hoher Schneidenschärfe, Stabilität und guter Spanabfuhr.

| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (m7) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                          | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|---------------------------------------------------|---------------------------------------|-----------------------------|------------------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                                   |                                       |                             |                                          |                | Shankdiameter Ø<br>Schaftdurchmesser    | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                                   |                                       |                             |                                          |                | d <sub>2</sub> (h6)                     | l <sub>1</sub>                | l <sub>2</sub>             | l <sub>3</sub>                                 | l <sub>4</sub>              | KDG303         |
| 3.3                                               | 3                                     | External<br>Extern          | Straight<br>shank                        | 1534SU03-0330  | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●              |
|                                                   | 5                                     |                             |                                          | 1536SU05-0330  | 6                                       | 66                            | 28                         | 23                                             | 36                          | ●              |
|                                                   | 3                                     | Internal<br>Intern          | Zylinder-<br>schaft                      | 1534SU03C-0330 | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●              |
|                                                   | 5                                     |                             |                                          | 1536SU05C-0330 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ●              |
|                                                   | 3                                     |                             | Weldon<br>shank/ Schaft                  | 1634SU03C-0330 | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●              |
|                                                   | 5                                     |                             |                                          | 1636SU05C-0330 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ●              |
|                                                   | 3                                     |                             | Whistle notch<br>shank/ Schaft           | 1734SU03C-0330 | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●              |
|                                                   | 5                                     |                             |                                          | 1736SU05C-0330 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ●              |
| 8                                                 |                                       | 1538SU08C-0330              | 6                                        | 72             | 34                                      | 29                            | 36                         | ●                                              |                             |                |
| 3.4                                               | 3                                     | External<br>Extern          | Straight<br>shank<br>Zylinder-<br>schaft | 1534SU03-0340  | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●              |
|                                                   | 5                                     |                             |                                          | 1536SU05-0340  | 6                                       | 66                            | 28                         | 23                                             | 36                          | ●              |
|                                                   | 3                                     | Internal<br>Intern          |                                          | 1534SU03C-0340 | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●              |
|                                                   | 5                                     |                             |                                          | 1536SU05C-0340 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ●              |
|                                                   | 3                                     |                             | Weldon<br>shank/ Schaft                  | 1634SU03C-0340 | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●              |
|                                                   | 5                                     |                             |                                          | 1636SU05C-0340 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ●              |
|                                                   | 3                                     |                             | Whistle notch<br>shank/ Schaft           | 1734SU03C-0340 | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●              |
|                                                   | 5                                     |                             |                                          | 1736SU05C-0340 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ●              |
| 8                                                 |                                       | 1538SU08C-0340              | 6                                        | 72             | 34                                      | 29                            | 36                         | ●                                              |                             |                |
| 3.5                                               | 3                                     | External<br>Extern          | Straight<br>shank                        | 1534SU03-0350  | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●              |
|                                                   | 5                                     |                             |                                          | 1536SU05-0350  | 6                                       | 66                            | 28                         | 23                                             | 36                          | ●              |
|                                                   | 3                                     | Internal<br>Intern          | Zylinder-<br>schaft                      | 1534SU03C-0350 | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●              |
|                                                   | 5                                     |                             |                                          | 1536SU05C-0350 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ●              |
|                                                   | 3                                     |                             | Weldon<br>shank/ Schaft                  | 1634SU03C-0350 | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●              |
|                                                   | 5                                     |                             |                                          | 1636SU05C-0350 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ●              |
|                                                   | 3                                     |                             | Whistle notch<br>shank/ Schaft           | 1734SU03C-0350 | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●              |
|                                                   | 5                                     |                             |                                          | 1736SU05C-0350 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ●              |
|                                                   | 8                                     |                             | straight shank<br>Zylinderschaft         | 1538SU08C-0350 | 6                                       | 72                            | 34                         | 29                                             | 36                          | ●              |



| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (mm) | Drilling depth<br>Bohrtiefe<br>(L/d <sub>1</sub> ) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft               | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|---------------------------------------------------|----------------------------------------------------|-----------------------------|-------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                                   |                                                    |                             |                               |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                                   |                                                    |                             |                               |                | d <sub>2</sub> (h <sub>6</sub> )        | l <sub>1</sub>                | l <sub>2</sub>             | l <sub>3</sub>                                 | l <sub>4</sub>              |                |
| 3.6                                               | 3                                                  | External<br>Extern          | Straight<br>shank             | 1534SU03-0360  | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                               | 1536SU05-0360  | 6                                       | 66                            | 28                         | 23                                             | 36                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft           | 1534SU03C-0360 | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                               | 1536SU05C-0360 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/Schaft        | 1634SU03C-0360 | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                               | 1636SU05C-0360 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/Schaft | 1734SU03C-0360 | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                               | 1736SU05C-0360 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ●              |
|                                                   | 8                                                  |                             |                               | 1538SU08C-0360 | 6                                       | 72                            | 34                         | 29                                             | 36                          | ●              |
| 3.7                                               | 3                                                  | External<br>Extern          | Straight<br>shank             | 1534SU03-0370  | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                               | 1536SU05-0370  | 6                                       | 66                            | 28                         | 23                                             | 36                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft           | 1534SU03C-0370 | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                               | 1536SU05C-0370 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/Schaft        | 1634SU03C-0370 | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                               | 1636SU05C-0370 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/Schaft | 1734SU03C-0370 | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                               | 1736SU05C-0370 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ●              |
|                                                   | 8                                                  |                             |                               | 1538SU08C-0370 | 6                                       | 72                            | 34                         | 29                                             | 36                          | ●              |
| 3.8                                               | 3                                                  | External<br>Extern          | Straight<br>shank             | 1534SU03-0380  | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                               | 1536SU05-0380  | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft           | 1534SU03C-0380 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                               | 1536SU05C-0380 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/Schaft        | 1634SU03C-0380 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                               | 1636SU05C-0380 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/Schaft | 1734SU03C-0380 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                               | 1736SU05C-0380 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●              |
|                                                   | 8                                                  |                             |                               | 1538SU08C-0380 | 6                                       | 81                            | 43                         | 36                                             | 36                          | ●              |
| 3.9                                               | 3                                                  | External<br>Extern          | Straight<br>shank             | 1534SU03-0390  | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                               | 1536SU05-0390  | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft           | 1534SU03C-0390 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                               | 1536SU05C-0390 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/Schaft        | 1634SU03C-0390 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                               | 1636SU05C-0390 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/Schaft | 1734SU03C-0390 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                               | 1736SU05C-0390 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●              |
|                                                   | 8                                                  |                             |                               | 1538SU08C-0390 | 6                                       | 81                            | 43                         | 36                                             | 36                          | ●              |
| 4.0                                               | 3                                                  | External<br>Extern          | Straight<br>shank             | 1534SU03-0400  | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                               | 1536SU05-0400  | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft           | 1534SU03C-0400 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                               | 1536SU05C-0400 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●              |

### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Type<br>Typ | Grade<br>Sorte | Workpiece material · Werkstückstoff              |                                   |                                 |        |        |                                           |                        |                                                      |                              |                               |                                             |
|-------------|----------------|--------------------------------------------------|-----------------------------------|---------------------------------|--------|--------|-------------------------------------------|------------------------|------------------------------------------------------|------------------------------|-------------------------------|---------------------------------------------|
|             |                | Carbon steel<br>Kohlenstoff<br>- Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron,<br>Grauguss | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Wärmefeste<br>Leg. |
|             |                |                                                  |                                   | ~40HRC                          | ~50HRC | ~60HRC |                                           |                        |                                                      |                              |                               |                                             |
| SU*         | KDG303         | ✓                                                | ✓                                 | ✓                               |        |        | ✓                                         | ✓                      | ✓                                                    |                              |                               |                                             |
| SUK*        | KDG303         |                                                  |                                   |                                 |        |        |                                           | ✓                      | ✓                                                    |                              |                               |                                             |

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ISO Kennzeichen

Cutting data 96-109  
Schnittdaten

Technical Information C110-116  
Technische Information

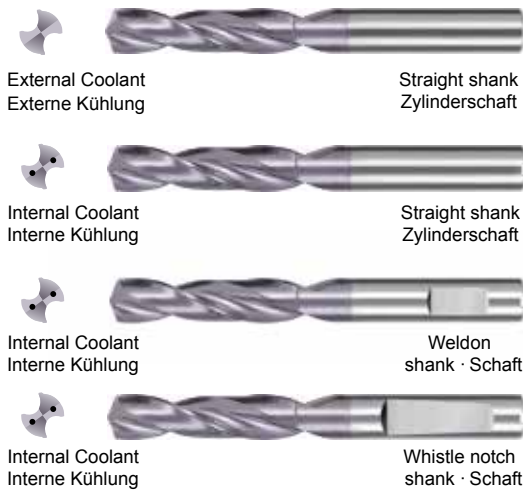
Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge

# Drilling · Bohren

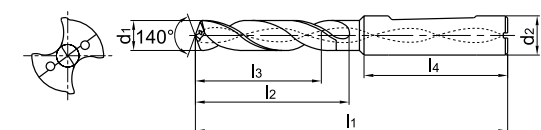
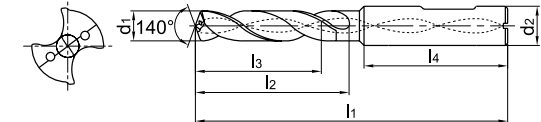
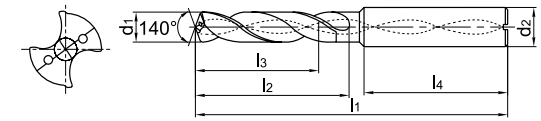
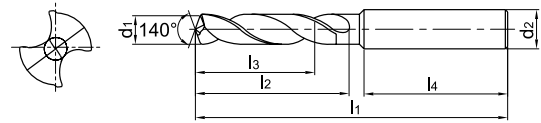
Solid carbide drills · Vollhartmetallbohrer

**SU&SUK**

Please add K when ordering / Bitte bei der Bestellung K ergänzen



## General machining · Allgemeine Bearbeitung



- For high efficient drilling of P (steel), M (stainless steel) and K (cast iron) with high performance.
- Waveform cutting edges achieve outstanding sharpness and strength, promoting chip removal.
- Hocheffizientes Bohren von allgemeinen Stahlwerkstoffen, rostfreien Werkstoffen und Guss.
- Wellenförmige Schneidkante mit hoher Schneidenschärfe, Stabilität und guter Spanabfuhr.

| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (m7) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel.    | Shank<br>Schaft                | Type<br>Typ       | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|---------------------------------------------------|---------------------------------------|--------------------------------|--------------------------------|-------------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                                   |                                       |                                |                                |                   | Shankdiameter Ø<br>Schaftdurchmesser    | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                                   |                                       |                                |                                |                   | d <sub>2</sub> (h <sub>6</sub> )        | l <sub>1</sub>                | l <sub>2</sub>             | l <sub>3</sub>                                 | l <sub>4</sub>              | KDG303         |
| 4.0                                               | 3                                     | Internal<br>Intern             | Weldon<br>shank/ Schaft        | 1634SU03C-0400    | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                                   | 5                                     |                                | 1636SU05C-0400                 | 6                 | 74                                      | 36                            | 29                         | 36                                             | ●                           |                |
|                                                   | 3                                     |                                | Whistle notch<br>shank/ Schaft | 1734SU03C-0400    | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                                   | 5                                     |                                | 1736SU05C-0400                 | 6                 | 74                                      | 36                            | 29                         | 36                                             | ●                           |                |
|                                                   | 8                                     |                                | 1538SU08C-0400                 | 6                 | 81                                      | 43                            | 36                         | 36                                             | ●                           |                |
| 4.1                                               | 3                                     | External<br>Extern             | Straight<br>shank              | 1534SU03-0410     | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                                   | 5                                     |                                | 1536SU05-0410                  | 6                 | 74                                      | 36                            | 29                         | 36                                             | ●                           |                |
|                                                   | 3                                     | Zylinder-<br>schaft            | 1534SU03C-0410                 | 6                 | 66                                      | 24                            | 17                         | 36                                             | ●                           |                |
|                                                   | 5                                     |                                | 1536SU05C-0410                 | 6                 | 74                                      | 36                            | 29                         | 36                                             | ●                           |                |
|                                                   | 3                                     | Internal<br>Intern             | Weldon<br>shank/ Schaft        | 1634SU03C-0410    | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                                   | 5                                     |                                | 1636SU05C-0410                 | 6                 | 74                                      | 36                            | 29                         | 36                                             | ●                           |                |
|                                                   | 3                                     | Whistle notch<br>shank/ Schaft | 1734SU03C-0410                 | 6                 | 66                                      | 24                            | 17                         | 36                                             | ●                           |                |
|                                                   | 5                                     | 1736SU05C-0410                 | 6                              | 74                | 36                                      | 29                            | 36                         | ●                                              |                             |                |
|                                                   | 8                                     | 1538SU08C-0410                 | 6                              | 81                | 43                                      | 36                            | 36                         | ●                                              |                             |                |
|                                                   | 4.2                                   | 3                              | External<br>Extern             | Straight<br>shank | 1534SU03-0420                           | 6                             | 66                         | 24                                             | 17                          | 36             |
| 5                                                 |                                       | 1536SU05-0420                  |                                | 6                 | 74                                      | 36                            | 29                         | 36                                             | ●                           |                |
| 3                                                 |                                       | Zylinder-<br>schaft            | 1534SU03C-0420                 | 6                 | 66                                      | 24                            | 17                         | 36                                             | ●                           |                |
| 5                                                 |                                       |                                | 1536SU05C-0420                 | 6                 | 74                                      | 36                            | 29                         | 36                                             | ●                           |                |
| 3                                                 |                                       | Internal<br>Intern             | Weldon<br>shank/ Schaft        | 1634SU03C-0420    | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
| 5                                                 |                                       |                                | 1636SU05C-0420                 | 6                 | 74                                      | 36                            | 29                         | 36                                             | ●                           |                |
| 3                                                 |                                       | Whistle notch<br>shank/ Schaft | 1734SU03C-0420                 | 6                 | 66                                      | 24                            | 17                         | 36                                             | ●                           |                |
| 5                                                 |                                       | 1736SU05C-0420                 | 6                              | 74                | 36                                      | 29                            | 36                         | ●                                              |                             |                |
| 8                                                 |                                       | 1538SU08C-0420                 | 6                              | 81                | 43                                      | 36                            | 36                         | ●                                              |                             |                |
| 4.3                                               |                                       | 3                              | External<br>Extern             | Straight<br>shank | 1534SU03-0430                           | 6                             | 66                         | 24                                             | 17                          | 36             |
|                                                   | 5                                     | 1536SU05-0430                  |                                | 6                 | 74                                      | 36                            | 29                         | 36                                             | ●                           |                |
|                                                   | 3                                     | Internal<br>Intern             | Zylinder-<br>schaft            | 1534SU03C-0430    | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                                   | 5                                     |                                | 1536SU05C-0430                 | 6                 | 74                                      | 36                            | 29                         | 36                                             | ●                           |                |

| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (m7) | Drilling depth<br>Bohrtiefe<br>(L/d <sub>1</sub> ) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                          | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|---------------------------------------------------|----------------------------------------------------|-----------------------------|------------------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                                   |                                                    |                             |                                          |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                                   |                                                    |                             |                                          |                | d <sub>2</sub> (h <sub>6</sub> )        | l <sub>1</sub>                | l <sub>2</sub>             | l <sub>3</sub>                                 | l <sub>4</sub>              |                |
| 4.3                                               | 3                                                  | Internal<br>Intern          | Weldon<br>shank/Schaft                   | 1634SU03C-0430 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1636SU05C-0430 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/Schaft            | 1734SU03C-0430 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1736SU05C-0430 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●              |
|                                                   | 8                                                  |                             | Zylinderschaft                           | 1538SU08C-0430 | 6                                       | 81                            | 43                         | 36                                             | 36                          | ●              |
| 4.4                                               | 3                                                  | External<br>Extern          | Straight shank                           | 1534SU03-0440  | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1536SU05-0440  | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Zylinder-<br>schaft                      | 1534SU03C-0440 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1536SU05C-0440 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Weldon<br>shank/Schaft                   | 1634SU03C-0440 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1636SU05C-0440 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/Schaft            | 1734SU03C-0440 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1736SU05C-0440 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●              |
|                                                   | 8                                                  |                             |                                          | 1538SU08C-0440 | 6                                       | 81                            | 43                         | 36                                             | 36                          | ●              |
| 4.5                                               | 3                                                  | External<br>Extern          | Straight<br>shank<br>Zylinder-<br>schaft | 1534SU03-0450  | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1536SU05-0450  | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●              |
|                                                   | 3                                                  |                             |                                          | 1534SU03C-0450 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                                   | 5                                                  | Internal<br>Intern          |                                          | 1536SU05C-0450 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/Schaft                   | 1634SU03C-0450 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1636SU05C-0450 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/Schaft            | 1734SU03C-0450 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1736SU05C-0450 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●              |
|                                                   | 8                                                  |                             |                                          | 1538SU08C-0450 | 6                                       | 81                            | 43                         | 36                                             | 36                          | ●              |
| 4.6                                               | 3                                                  | External<br>Extern          | Straight<br>shank<br>Zylinder-<br>schaft | 1534SU03-0460  | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1536SU05-0460  | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●              |
|                                                   | 3                                                  |                             |                                          | 1534SU03C-0460 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                                   | 5                                                  | Internal<br>Intern          |                                          | 1536SU05C-0460 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/Schaft                   | 1634SU03C-0460 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1636SU05C-0460 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/Schaft            | 1734SU03C-0460 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1736SU05C-0460 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●              |
|                                                   | 8                                                  |                             |                                          | 1538SU08C-0460 | 6                                       | 81                            | 43                         | 36                                             | 36                          | ●              |
| 4.65                                              | 3                                                  | External<br>Extern          | Straight<br>shank<br>Zylinder-<br>schaft | 1534SU03-0465  | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1536SU05-0465  | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●              |
|                                                   | 3                                                  |                             |                                          | 1534SU03C-0465 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                                   | 5                                                  | Internal<br>Intern          |                                          | 1536SU05C-0465 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/Schaft                   | 1634SU03C-0465 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ○              |
|                                                   | 5                                                  |                             |                                          | 1636SU05C-0465 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/Schaft            | 1734SU03C-0465 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1736SU05C-0465 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●              |

### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Type<br>Typ | Grade<br>Sorte | Workpiece material · Werkstückstoff              |                                   |                                 |        |        |                                           |                        |                                                     |                              |                               |                                             |
|-------------|----------------|--------------------------------------------------|-----------------------------------|---------------------------------|--------|--------|-------------------------------------------|------------------------|-----------------------------------------------------|------------------------------|-------------------------------|---------------------------------------------|
|             |                | Carbon steel<br>Kohlenstoff<br>- Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron,<br>Grauguss | Nodular<br>cast iron<br>GGG<br>Kugelgr-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Wärmefeste<br>Leg. |
|             |                |                                                  |                                   | ~40HRC                          | ~50HRC | ~60HRC |                                           |                        |                                                     |                              |                               |                                             |
| SU*         | KDG303         | ✓                                                | ✓                                 | ✓                               |        |        | ✓                                         | ✓                      | ✓                                                   |                              |                               |                                             |
| SUK*        | KDG303         |                                                  |                                   |                                 |        |        |                                           | ✓                      | ✓                                                   |                              |                               |                                             |

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Code key C 8  
ISO Kennzeichen

Cutting data 96-109  
Schnittdaten

Technical Information C110-116  
Technische Information

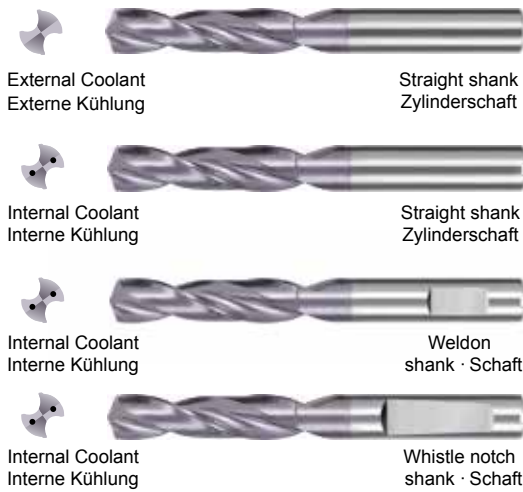
Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge

# Drilling · Bohren

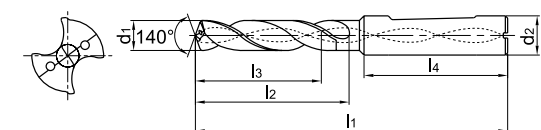
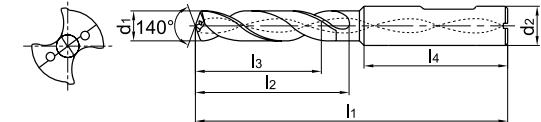
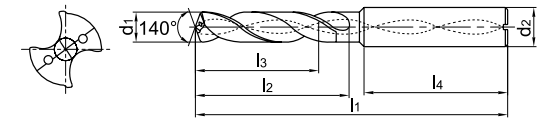
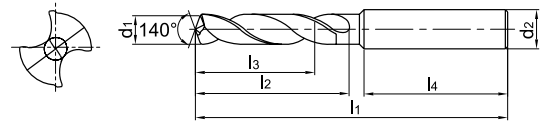
Solid carbide drills · Vollhartmetallbohrer

**SU&SUK**

Please add K when ordering / Bitte bei der Bestellung K ergänzen



## General machining · Allgemeine Bearbeitung



- For high efficient drilling of P (steel), M (stainless steel) and K (cast iron) with high performance.
- Waveform cutting edges achieve outstanding sharpness and strength, promoting chip removal.
- Hocheffizientes Bohren von allgemeinen Stahlwerkstoffen, rostfreien Werkstoffen und Guss.
- Wellenförmige Schneidkante mit hoher Schneidenschärfe, Stabilität und guter Spanabfuhr.

| Drill diameter<br>Bohrer Ø<br>d1(m7) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                  | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|--------------------------------------|---------------------------------------|-----------------------------|----------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                      |                                       |                             |                                  |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                      |                                       |                             |                                  |                | d2(h6)                                  | l1                            | l2                         | l3                                             | l4                          |                |
| 4.7                                  | 3                                     | External<br>Extern          | Straight shank<br>Zylinderschaft | 1534SU03-0470  | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                      | 5                                     |                             |                                  | 1536SU05-0470  | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●              |
|                                      | 3                                     | Internal<br>Intern          | Zylinderschaft                   | 1534SU03C-0470 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                      | 5                                     |                             |                                  | 1536SU05C-0470 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●              |
|                                      | 3                                     |                             | Weldon shank/Schaft              | 1634SU03C-0470 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                      | 5                                     |                             |                                  | 1636SU05C-0470 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●              |
|                                      | 3                                     |                             | Whistle notch shank/Schaft       | 1734SU03C-0470 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
|                                      | 5                                     |                             |                                  | 1736SU05C-0470 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●              |
| 4.8                                  | 8                                     | External<br>Extern          | Straight shank<br>Zylinderschaft | 1538SU08C-0470 | 6                                       | 81                            | 43                         | 36                                             | 36                          | ●              |
|                                      | 3                                     |                             |                                  | 1534SU03-0480  | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                      | 5                                     | Internal<br>Intern          | Zylinderschaft                   | 1536SU05-0480  | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                      | 3                                     |                             |                                  | 1534SU03C-0480 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                      | 5                                     |                             | Weldon shank/Schaft              | 1536SU05C-0480 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                      | 3                                     |                             |                                  | 1634SU03C-0480 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                      | 5                                     |                             | Whistle notch shank/Schaft       | 1636SU05C-0480 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                      | 3                                     |                             |                                  | 1734SU03C-0480 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
| 4.9                                  | 5                                     | External<br>Extern          | Zylinderschaft                   | 1736SU05C-0480 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                      | 8                                     |                             |                                  | 1538SU08C-0480 | 6                                       | 95                            | 57                         | 48                                             | 36                          | ●              |
|                                      | 3                                     | Internal<br>Intern          | Straight shank<br>Zylinderschaft | 1534SU03-0490  | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                      | 5                                     |                             |                                  | 1536SU05-0490  | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                      | 3                                     |                             | Zylinderschaft                   | 1534SU03C-0490 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                      | 5                                     |                             |                                  | 1536SU05C-0490 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                      | 3                                     |                             | Weldon shank/Schaft              | 1634SU03C-0490 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                      | 5                                     |                             |                                  | 1636SU05C-0490 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                      | 3                                     |                             | Whistle notch shank/Schaft       | 1734SU03C-0490 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                      | 5                                     |                             |                                  | 1736SU05C-0490 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
| 4.9                                  | 8                                     |                             | straight shank<br>Zylinderschaft | 1538SU08C-0490 | 6                                       | 95                            | 57                         | 48                                             | 36                          | ●              |



| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (mm) | Drilling depth<br>Bohrtiefe<br>(L/d <sub>1</sub> ) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|---------------------------------------------------|----------------------------------------------------|-----------------------------|--------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                                   |                                                    |                             |                                |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                                   |                                                    |                             |                                |                | d <sub>2</sub> (h <sub>6</sub> )        | l <sub>1</sub>                | l <sub>2</sub>             | l <sub>3</sub>                                 | l <sub>4</sub>              |                |
| 5.0                                               | 3                                                  | External<br>Extern          | Straight<br>shank              | 1534SU03-0500  | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05-0500  | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03C-0500 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-0500 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft        | 1634SU03C-0500 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-0500 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-0500 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-0500 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
| 5.1                                               | 3                                                  | External<br>Extern          | Straight<br>shank              | 1534SU03-0510  | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05-0510  | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03C-0510 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-0510 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft        | 1634SU03C-0510 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-0510 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-0510 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-0510 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
| 5.2                                               | 3                                                  | External<br>Extern          | Straight<br>shank              | 1534SU03-0520  | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05-0520  | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03C-0520 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-0520 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft        | 1634SU03C-0520 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-0520 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-0520 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-0520 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
| 5.3                                               | 3                                                  | External<br>Extern          | Straight<br>shank              | 1534SU03-0530  | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05-0530  | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03C-0530 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-0530 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft        | 1634SU03C-0530 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-0530 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-0530 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-0530 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
| 5.4                                               | 3                                                  | External<br>Extern          | Straight<br>shank              | 1534SU03-0540  | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05-0540  | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03C-0540 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-0540 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft        | 1634SU03C-0540 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-0540 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-0540 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-0540 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |

### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Type<br>Typ | Grade<br>Sorte | Workpiece material · Werkstückstoff              |                                   |                                 |        |        |                                           |                        |                                                      |                              |                               |                                             |
|-------------|----------------|--------------------------------------------------|-----------------------------------|---------------------------------|--------|--------|-------------------------------------------|------------------------|------------------------------------------------------|------------------------------|-------------------------------|---------------------------------------------|
|             |                | Carbon steel<br>Kohlenstoff<br>- Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron,<br>Grauguss | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Wärmefeste<br>Leg. |
|             |                |                                                  |                                   | ~40HRC                          | ~50HRC | ~60HRC |                                           |                        |                                                      |                              |                               |                                             |
| SU*         | KDG303         | ✓                                                | ✓                                 | ✓                               |        |        | ✓                                         | ✓                      | ✓                                                    |                              |                               |                                             |
| SUK*        | KDG303         |                                                  |                                   |                                 |        |        |                                           | ✓                      | ✓                                                    |                              |                               |                                             |

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Cutting data 96-109  
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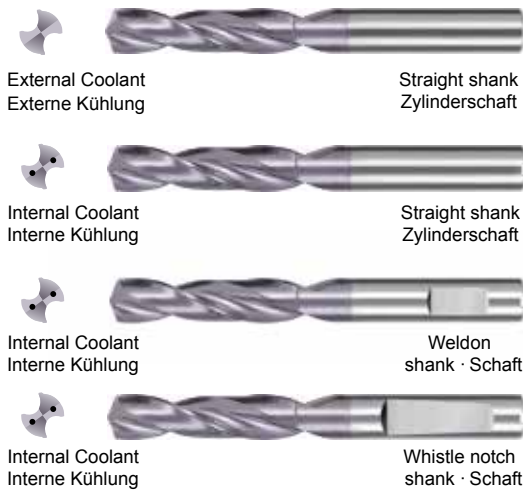
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Bestellformular für Sonderwerkzeuge

# Drilling · Bohren

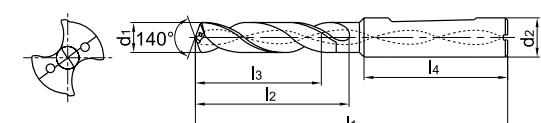
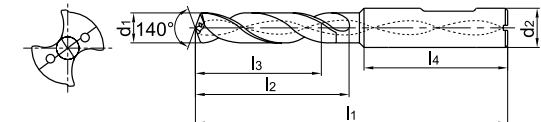
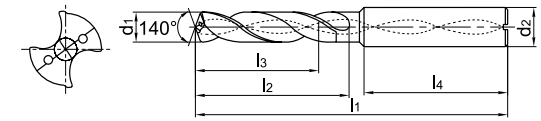
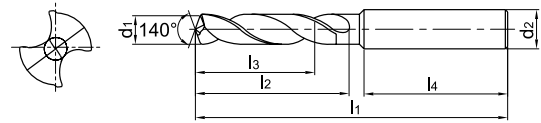
Solid carbide drills · Vollhartmetallbohrer

**SU&SUK**

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## General machining · Allgemeine Bearbeitung



- For high efficient drilling of P (steel), M (stainless steel) and K (cast iron) with high performance.
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- Wellenförmige Schneidkante mit hoher Schneidenschärfe, Stabilität und guter Spanabfuhr.

| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (m7) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft               | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|---------------------------------------------------|---------------------------------------|-----------------------------|-------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                                   |                                       |                             |                               |                | Shankdiameter Ø<br>Schaftdurchmesser    | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                                   |                                       |                             |                               |                | d <sub>2</sub> (h6)                     | l <sub>1</sub>                | l <sub>2</sub>             | l <sub>3</sub>                                 | l <sub>4</sub>              | KDG303         |
| 5.4                                               | 3                                     | External<br>Extern          | Straight<br>shank             | 1534SU03-0540  | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                     |                             |                               | 1536SU05-0540  | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                     | Internal<br>Intern          | Zylinder-<br>schaft           | 1534SU03C-0540 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                     |                             |                               | 1536SU05C-0540 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                     |                             | Weldon<br>shank/Schaft        | 1634SU03C-0540 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                     |                             |                               | 1636SU05C-0540 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                     |                             | Whistle notch<br>shank/Schaft | 1734SU03C-0540 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                     |                             |                               | 1736SU05C-0540 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
| 8                                                 |                                       | 1538SU08C-0540              | 6                             | 95             | 57                                      | 48                            | 36                         | ●                                              |                             |                |
| 5.5                                               | 3                                     | External<br>Extern          | Straight<br>shank             | 1534SU03-0550  | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                     |                             |                               | 1536SU05-0550  | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                     | Internal<br>Intern          | Zylinder-<br>schaft           | 1534SU03C-0550 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                     |                             |                               | 1536SU05C-0550 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                     |                             | Weldon<br>shank/Schaft        | 1634SU03C-0550 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                     |                             |                               | 1636SU05C-0550 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                     |                             | Whistle notch<br>shank/Schaft | 1734SU03C-0550 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                     |                             |                               | 1736SU05C-0550 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
| 8                                                 |                                       | 1538SU08C-0550              | 6                             | 95             | 57                                      | 48                            | 36                         | ●                                              |                             |                |
| 5.55                                              | 3                                     | External<br>Extern          | Straight<br>shank             | 1534SU03-0555  | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                     |                             |                               | 1536SU05-0555  | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                     | Internal<br>Intern          | Zylinder-<br>schaft           | 1534SU03C-0555 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                     |                             |                               | 1536SU05C-0555 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                     |                             | Weldon<br>shank/Schaft        | 1634SU03C-0555 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                     |                             |                               | 1636SU05C-0555 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                     |                             | Whistle notch<br>shank/Schaft | 1734SU03C-0555 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                     |                             |                               | 1736SU05C-0555 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |

| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (mm) | Drilling depth<br>Bohrtiefe<br>(L/d <sub>1</sub> ) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                  | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|---------------------------------------------------|----------------------------------------------------|-----------------------------|----------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                                   |                                                    |                             |                                  |                | Shankdiameter Ø<br>Schaftdurchmesser    | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                                   |                                                    |                             |                                  |                | d <sub>2</sub> (h <sub>6</sub> )        | l <sub>1</sub>                | l <sub>2</sub>             | l <sub>3</sub>                                 | l <sub>4</sub>              | KDG303         |
| 5.6                                               | 3                                                  | External<br>Extern          | Straight<br>shank                | 1534SU03-0560  | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1536SU05-0560  | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft              | 1534SU03C-0560 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1536SU05C-0560 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/Schaft           | 1634SU03C-0560 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1636SU05C-0560 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/Schaft    | 1734SU03C-0560 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1736SU05C-0560 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 8                                                  |                             | 1538SU08C-0560                   | 6              | 95                                      | 57                            | 48                         | 36                                             | ●                           |                |
| 5.7                                               | 3                                                  | External<br>Extern          | Straight<br>shank                | 1534SU03-0570  | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1536SU05-0570  | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft              | 1534SU03C-0570 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1536SU05C-0570 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/Schaft           | 1634SU03C-0570 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1636SU05C-0570 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/Schaft    | 1734SU03C-0570 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1736SU05C-0570 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 8                                                  |                             | 1538SU08C-0570                   | 6              | 95                                      | 57                            | 48                         | 36                                             | ●                           |                |
| 5.8                                               | 3                                                  | External<br>Extern          | Straight<br>shank                | 1534SU03-0580  | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1536SU05-0580  | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft              | 1534SU03C-0580 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1536SU05C-0580 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/Schaft           | 1634SU03C-0580 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1636SU05C-0580 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/Schaft    | 1734SU03C-0580 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1736SU05C-0580 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 8                                                  |                             | 1538SU08C-0580                   | 6              | 95                                      | 57                            | 48                         | 36                                             | ●                           |                |
| 5.9                                               | 3                                                  | External<br>Extern          | Straight<br>shank                | 1534SU03-0590  | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1536SU05-0590  | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft              | 1534SU03C-0590 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1536SU05C-0590 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/Schaft           | 1634SU03C-0590 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1636SU05C-0590 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/Schaft    | 1734SU03C-0590 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1736SU05C-0590 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                                   | 8                                                  |                             | straight shank<br>Zylinderschaft | 1538SU08C-0590 | 6                                       | 95                            | 57                         | 48                                             | 36                          | ●              |

### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Type<br>Typ | Grade<br>Sorte | Workpiece material · Werkstückstoff              |                                   |                                 |        |        |                                           |                        |                                                      |                              |                               |                                             |
|-------------|----------------|--------------------------------------------------|-----------------------------------|---------------------------------|--------|--------|-------------------------------------------|------------------------|------------------------------------------------------|------------------------------|-------------------------------|---------------------------------------------|
|             |                | Carbon steel<br>Kohlenstoff<br>- Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron,<br>Grauguss | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Wärmefeste<br>Leg. |
|             |                |                                                  |                                   | ~40HRC                          | ~50HRC | ~60HRC |                                           |                        |                                                      |                              |                               |                                             |
| SU*         | KDG303         | ✓                                                | ✓                                 | ✓                               |        |        | ✓                                         | ✓                      | ✓                                                    |                              |                               |                                             |
| SUK*        | KDG303         |                                                  |                                   |                                 |        |        |                                           | ✓                      | ✓                                                    |                              |                               |                                             |

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Code key C 8  
ISO Kennzeichen

Cutting data 96-109  
Schnittdaten

Technical Information C110-116  
Technische Information

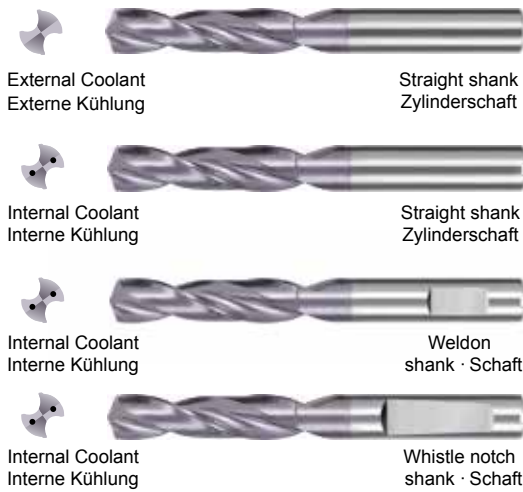
Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge

# Drilling · Bohren

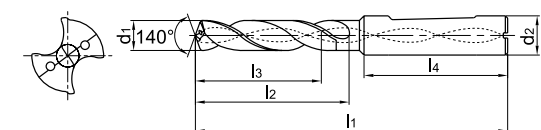
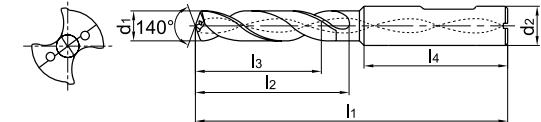
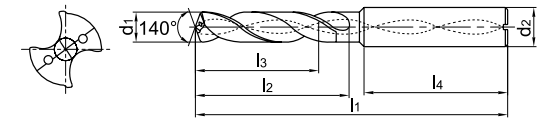
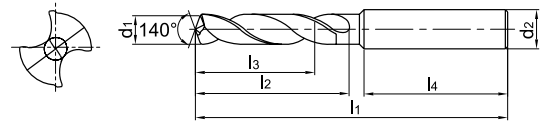
Solid carbide drills · Vollhartmetallbohrer

**SU&SUK**

Please add K when ordering / Bitte bei der Bestellung K ergänzen



## General machining · Allgemeine Bearbeitung



- For high efficient drilling of P (steel), M (stainless steel) and K (cast iron) with high performance.
- Waveform cutting edges achieve outstanding sharpness and strength, promoting chip removal.
- Hocheffizientes Bohren von allgemeinen Stahlwerkstoffen, rostfreien Werkstoffen und Guss.
- Wellenförmige Schneidkante mit hoher Schneidenschärfe, Stabilität und guter Spanabfuhr.

| Drill diameter<br>Bohrer Ø<br>d1 (mm) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                  | Type<br>Typ    | Basic dimension (mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|---------------------------------------|---------------------------------------|-----------------------------|----------------------------------|----------------|------------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                       |                                       |                             |                                  |                | Shank diameter Ø<br>Schaftdurchmesser    | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                       |                                       |                             |                                  |                | d2 (h6)                                  | l1                            | l2                         | l3                                             | l4                          |                |
| 6.0                                   | 3                                     | External<br>Extern          | Straight shank<br>Zylinderschaft | 1534SU03-0600  | 6                                        | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                       | 5                                     |                             |                                  | 1536SU05-0600  | 6                                        | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                       | 3                                     | Internal<br>Intern          | Zylinderschaft                   | 1534SU03C-0600 | 6                                        | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                       | 5                                     |                             |                                  | 1536SU05C-0600 | 6                                        | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                       | 3                                     |                             | Weldon shank/Schaft              | 1634SU03C-0600 | 6                                        | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                       | 5                                     |                             |                                  | 1636SU05C-0600 | 6                                        | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                       | 3                                     |                             | Whistle notch shank/Schaft       | 1734SU03C-0600 | 6                                        | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                       | 5                                     |                             |                                  | 1736SU05C-0600 | 6                                        | 82                            | 44                         | 35                                             | 36                          | ●              |
| 6.1                                   | 8                                     | External<br>Extern          | Straight shank<br>Zylinderschaft | 1538SU08C-0600 | 6                                        | 95                            | 57                         | 48                                             | 36                          | ●              |
|                                       | 3                                     |                             |                                  | 1534SU03-0610  | 8                                        | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                       | 5                                     | Internal<br>Intern          | Zylinderschaft                   | 1536SU05-0610  | 8                                        | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                       | 3                                     |                             |                                  | 1534SU03C-0610 | 8                                        | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                       | 5                                     |                             | Weldon shank/Schaft              | 1536SU05C-0610 | 8                                        | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                       | 3                                     |                             |                                  | 1634SU03C-0610 | 8                                        | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                       | 5                                     |                             | Whistle notch shank/Schaft       | 1636SU05C-0610 | 8                                        | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                       | 3                                     |                             |                                  | 1734SU03C-0610 | 8                                        | 79                            | 34                         | 24                                             | 36                          | ●              |
| 6.2                                   | 5                                     | External<br>Extern          | Zylinderschaft                   | 1736SU05C-0610 | 8                                        | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                       | 8                                     |                             |                                  | 1538SU08C-0610 | 8                                        | 114                           | 76                         | 66                                             | 36                          | ●              |
|                                       | 3                                     | Internal<br>Intern          | Straight shank<br>Zylinderschaft | 1534SU03-0620  | 8                                        | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                       | 5                                     |                             |                                  | 1536SU05-0620  | 8                                        | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                       | 3                                     |                             | Zylinderschaft                   | 1534SU03C-0620 | 8                                        | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                       | 5                                     |                             |                                  | 1536SU05C-0620 | 8                                        | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                       | 3                                     |                             | Weldon shank/Schaft              | 1634SU03C-0620 | 8                                        | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                       | 5                                     |                             |                                  | 1636SU05C-0620 | 8                                        | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                       | 3                                     |                             | Whistle notch shank/Schaft       | 1734SU03C-0620 | 8                                        | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                       | 5                                     |                             |                                  | 1736SU05C-0620 | 8                                        | 91                            | 53                         | 43                                             | 36                          | ●              |
| 6.2                                   | 8                                     |                             | straight shank<br>Zylinderschaft | 1538SU08C-0620 | 8                                        | 114                           | 76                         | 66                                             | 36                          | ●              |

# Drilling · Bohren

Solid carbide drills · Vollhartmetallbohrer

| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (mm) | Drilling depth<br>Bohrtiefe<br>(L/d <sub>1</sub> ) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                  | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|---------------------------------------------------|----------------------------------------------------|-----------------------------|----------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                                   |                                                    |                             |                                  |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                                   |                                                    |                             |                                  |                | d <sub>2</sub> (h <sub>6</sub> )        | l <sub>1</sub>                | l <sub>2</sub>             | l <sub>3</sub>                                 | l <sub>4</sub>              |                |
| 6.3                                               | 3                                                  | External<br>Extern          | Straight<br>shank                | 1534SU03-0630  | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1536SU05-0630  | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft              | 1534SU03C-0630 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1536SU05C-0630 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft          | 1634SU03C-0630 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1636SU05C-0630 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft   | 1734SU03C-0630 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1736SU05C-0630 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 8                                                  |                             |                                  | 1538SU08C-0630 | 8                                       | 114                           | 76                         | 66                                             | 36                          | ●              |
| 6.4                                               | 3                                                  | External<br>Extern          | Straight<br>shank                | 1534SU03-0640  | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1536SU05-0640  | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft              | 1534SU03C-0640 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1536SU05C-0640 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft          | 1634SU03C-0640 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1636SU05C-0640 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft   | 1734SU03C-0640 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1736SU05C-0640 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 8                                                  |                             |                                  | 1538SU08C-0640 | 8                                       | 114                           | 76                         | 66                                             | 36                          | ●              |
| 6.5                                               | 3                                                  | External<br>Extern          | Straight<br>shank                | 1534SU03-0650  | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1536SU05-0650  | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft              | 1534SU03C-0650 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1536SU05C-0650 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft          | 1634SU03C-0650 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1636SU05C-0650 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft   | 1734SU03C-0650 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1736SU05C-0650 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 8                                                  |                             |                                  | 1538SU08C-0650 | 8                                       | 114                           | 76                         | 66                                             | 36                          | ●              |
| 6.6                                               | 3                                                  | External<br>Extern          | Straight<br>shank                | 1534SU03-0660  | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1536SU05-0660  | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft              | 1534SU03C-0660 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1536SU05C-0660 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft          | 1634SU03C-0660 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1636SU05C-0660 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft   | 1734SU03C-0660 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1736SU05C-0660 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 8                                                  |                             | straight shank<br>Zylinderschaft | 1538SU08C-0660 | 8                                       | 114                           | 76                         | 66                                             | 36                          | ●              |

C

Solid carbide drills  
Vollhartmetallbohrer

## Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Type<br>Typ | Grade<br>Sorte | Workpiece material · Werkstückstoff              |                                   |                                 |        |        |                                           |                        |                                                      |                              |                               |                                             |
|-------------|----------------|--------------------------------------------------|-----------------------------------|---------------------------------|--------|--------|-------------------------------------------|------------------------|------------------------------------------------------|------------------------------|-------------------------------|---------------------------------------------|
|             |                | Carbon steel<br>Kohlenstoff<br>- Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron,<br>Grauguss | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Wärmefeste<br>Leg. |
|             |                |                                                  |                                   | ~40HRC                          | ~50HRC | ~60HRC |                                           |                        |                                                      |                              |                               |                                             |
| SU*         | KDG303         | ✓                                                | ✓                                 | ✓                               |        |        | ✓                                         | ✓                      | ✓                                                    |                              |                               |                                             |
| SUK*        | KDG303         |                                                  |                                   |                                 |        |        |                                           | ✓                      | ✓                                                    |                              |                               |                                             |

All articles SUK on demand / Alle Artikel SUK auf Anfrage

Code key C 8  
ISO Kennzeichen

Cutting data 96-109  
Schnittdaten

Technical Information C110-116  
Technische Information

Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge

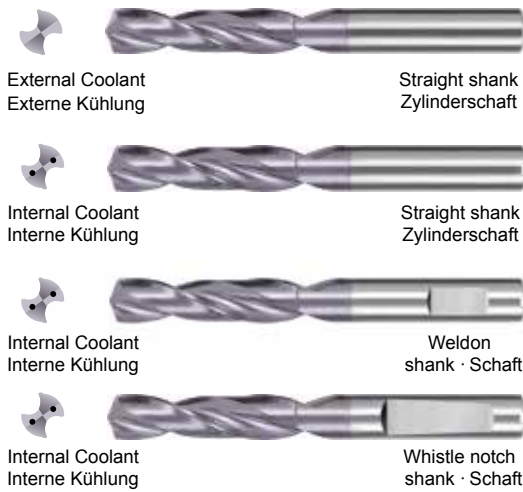


# Drilling · Bohren

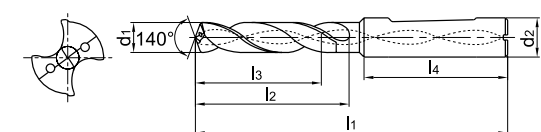
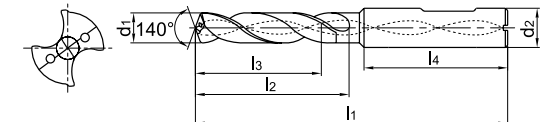
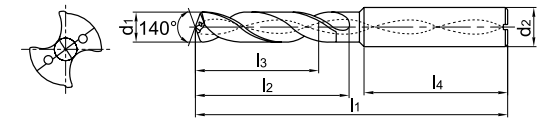
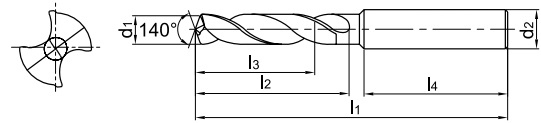
Solid carbide drills · Vollhartmetallbohrer

**SU&SUK**

Please add K when ordering / Bitte bei der Bestellung K ergänzen



## General machining · Allgemeine Bearbeitung



- For high efficient drilling of P (steel), M (stainless steel) and K (cast iron) with high performance.
- Waveform cutting edges achieve outstanding sharpness and strength, promoting chip removal.
- Hocheffizientes Bohren von allgemeinen Stahlwerkstoffen, rostfreien Werkstoffen und Guss.
- Wellenförmige Schneidkante mit hoher Schneidenschärfe, Stabilität und guter Spanabfuhr.

| Drill diameter<br>Bohrer Ø<br>d1(m7) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                       | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|--------------------------------------|---------------------------------------|-----------------------------|---------------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                      |                                       |                             |                                       |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                      |                                       |                             |                                       |                | d2(h6)                                  | l1                            | l2                         | l3                                             | l4                          |                |
| 6.7                                  | 3                                     | External<br>Extern          | Straight shank<br>Zylinder-<br>schaft | 1534SU03-0670  | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                      | 5                                     |                             |                                       | 1536SU05-0670  | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      | 3                                     | Internal<br>Intern          | Straight shank<br>Zylinder-<br>schaft | 1534SU03C-0670 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                      | 5                                     |                             |                                       | 1536SU05C-0670 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      | 3                                     |                             | Weldon shank/Schaft                   | 1634SU03C-0670 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                      | 5                                     |                             |                                       | 1636SU05C-0670 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      | 3                                     |                             | Whistle notch shank/Schaft            | 1734SU03C-0670 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                      | 5                                     |                             |                                       | 1736SU05C-0670 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
| 6.75                                 | 8                                     |                             |                                       | 1538SU08C-0670 | 8                                       | 114                           | 76                         | 66                                             | 36                          | ●              |
|                                      | 3                                     | External<br>Extern          | Straight shank<br>Zylinder-<br>schaft | 1534SU03-0675  | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                      | 5                                     |                             |                                       | 1536SU05-0675  | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      | 3                                     | Internal<br>Intern          | Straight shank<br>Zylinder-<br>schaft | 1534SU03C-0675 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                      | 5                                     |                             |                                       | 1536SU05C-0675 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      | 3                                     |                             | Weldon shank/Schaft                   | 1634SU03C-0675 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ○              |
|                                      | 5                                     |                             |                                       | 1636SU05C-0675 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      | 3                                     |                             | Whistle notch shank/Schaft            | 1734SU03C-0675 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                      | 5                                     |                             |                                       | 1736SU05C-0675 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ○              |
| 6.8                                  | 3                                     | External<br>Extern          | Straight shank<br>Zylinder-<br>schaft | 1534SU03-0680  | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                      | 5                                     |                             |                                       | 1536SU05-0680  | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      | 3                                     | Internal<br>Intern          | Straight shank<br>Zylinder-<br>schaft | 1534SU03C-0680 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                      | 5                                     |                             |                                       | 1536SU05C-0680 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      | 3                                     |                             | Weldon shank/Schaft                   | 1634SU03C-0680 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                      | 5                                     |                             |                                       | 1636SU05C-0680 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      | 3                                     |                             | Whistle notch shank/Schaft            | 1734SU03C-0680 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                      | 5                                     |                             |                                       | 1736SU05C-0680 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
| 6.8                                  | 8                                     |                             | straight shank<br>Zylinderschaft      | 1538SU08C-0680 | 8                                       | 114                           | 76                         | 66                                             | 36                          | ●              |

| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (mm) | Drilling depth<br>Bohrtiefe<br>(L/d <sub>1</sub> ) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|---------------------------------------------------|----------------------------------------------------|-----------------------------|--------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                                   |                                                    |                             |                                |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                                   |                                                    |                             |                                |                | d <sub>2</sub> (h <sub>6</sub> )        | l <sub>1</sub>                | l <sub>2</sub>             | l <sub>3</sub>                                 | l <sub>4</sub>              |                |
| 6.9                                               | 3                                                  | External<br>Extern          | Straight<br>shank              | 1534SU03-0690  | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05-0690  | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03C-0690 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-0690 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft        | 1634SU03C-0690 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-0690 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-0690 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-0690 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
| 7.0                                               | 8                                                  | External<br>Extern          | Straight<br>shank              | 1538SU08C-0690 | 8                                       | 114                           | 76                         | 66                                             | 36                          | ●              |
|                                                   | 3                                                  |                             |                                | 1534SU03-0700  | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                                   | 5                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1536SU05-0700  | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  |                             |                                | 1534SU03C-0700 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-0700 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft        | 1634SU03C-0700 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-0700 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-0700 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
| 7.1                                               | 5                                                  |                             |                                | 1736SU05C-0700 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 8                                                  | External<br>Extern          | Straight<br>shank              | 1538SU08C-0700 | 8                                       | 116                           | 76                         | 66                                             | 36                          | ●              |
|                                                   | 3                                                  |                             |                                | 1534SU03-0710  | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                                   | 5                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1536SU05-0710  | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  |                             |                                | 1534SU03C-0710 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-0710 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft        | 1634SU03C-0710 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-0710 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
| 7.2                                               | 3                                                  | External<br>Extern          | Zylinder-<br>schaft            | 1734SU03C-0710 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-0710 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 8                                                  | Internal<br>Intern          | Weldon<br>shank/ Schaft        | 1538SU08C-0710 | 8                                       | 116                           | 76                         | 66                                             | 36                          | ●              |
|                                                   | 3                                                  |                             |                                | 1534SU03-0720  | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05-0720  | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft        | 1534SU03C-0720 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-0720 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1634SU03C-0720 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-0720 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
| 7.2                                               | 8                                                  | External<br>Extern          | Zylinder-<br>schaft            | 1734SU03C-0720 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-0720 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Weldon<br>shank/ Schaft        | 1538SU08C-0720 | 8                                       | 116                           | 76                         | 66                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1534SU03-0720  | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft        | 1536SU05-0720  | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1534SU03C-0720 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1536SU05C-0720 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1634SU03C-0720 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
| 7.2                                               | 8                                                  | External<br>Extern          | Zylinder-<br>schaft            | 1636SU05C-0720 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  |                             |                                | 1734SU03C-0720 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                                   | 5                                                  | Internal<br>Intern          | Weldon<br>shank/ Schaft        | 1736SU05C-0720 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  |                             |                                | 1538SU08C-0720 | 8                                       | 116                           | 76                         | 66                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1534SU03-0720  | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft        | 1536SU05-0720  | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1534SU03C-0720 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1536SU05C-0720 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                | 1634SU03C-0720 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |

### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Type<br>Typ | Grade<br>Sorte | Workpiece material · Werkstückstoff              |                                   |                                 |        |        |                                           |                        |                                                      |                              |                               |                                             |
|-------------|----------------|--------------------------------------------------|-----------------------------------|---------------------------------|--------|--------|-------------------------------------------|------------------------|------------------------------------------------------|------------------------------|-------------------------------|---------------------------------------------|
|             |                | Carbon steel<br>Kohlenstoff<br>- Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron,<br>Grauguss | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Wärmefeste<br>Leg. |
|             |                |                                                  |                                   | ~40HRC                          | ~50HRC | ~60HRC |                                           |                        |                                                      |                              |                               |                                             |
| SU*         | KDG303         | ✓                                                | ✓                                 | ✓                               |        |        | ✓                                         | ✓                      | ✓                                                    |                              |                               |                                             |
| SUK*        | KDG303         |                                                  |                                   |                                 |        |        |                                           | ✓                      | ✓                                                    |                              |                               |                                             |

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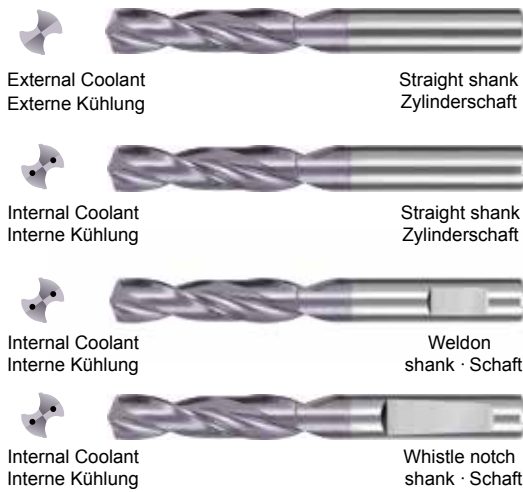
Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge

# Drilling · Bohren

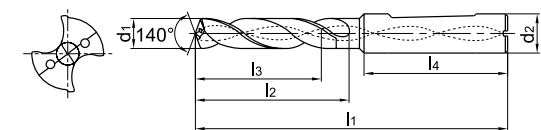
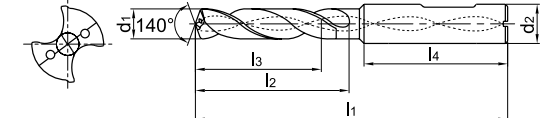
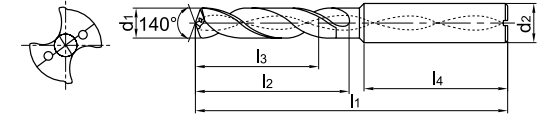
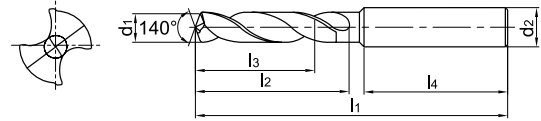
Solid carbide drills · Vollhartmetallbohrer

**SU&SUK**

Please add K when ordering / Bitte bei der Bestellung K ergänzen



## General machining · Allgemeine Bearbeitung



- For high efficient drilling of P (steel), M (stainless steel) and K (cast iron) with high performance.
- Waveform cutting edges achieve outstanding sharpness and strength, promoting chip removal.
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- Wellenförmige Schneidkante mit hoher Schneidschärfe, Stabilität und guter Spanabfuhr.

| Drill diameter<br>Bohrer Ø<br>d1 (mm) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel | Shank<br>Schaft                  | Type<br>Typ    | Basic dimension (mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|---------------------------------------|---------------------------------------|----------------------------|----------------------------------|----------------|------------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                       |                                       |                            |                                  |                | Shank diameter Ø<br>Schaftdurchmesser    | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                       |                                       |                            |                                  |                | d2 (h6)                                  | l1                            | l2                         | l3                                             | l4                          |                |
| 7.3                                   | 3                                     | External<br>Extern         | Straight shank<br>Zylinderschaft | 1534SU03-0730  | 8                                        | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                       | 5                                     |                            |                                  | 1536SU05-0730  | 8                                        | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                       | 3                                     | Internal<br>Intern         | Zylinderschaft                   | 1534SU03C-0730 | 8                                        | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                       | 5                                     |                            |                                  | 1536SU05C-0730 | 8                                        | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                       | 3                                     |                            | Weld on shank/Schaft             | 1634SU03C-0730 | 8                                        | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                       | 5                                     |                            |                                  | 1636SU05C-0730 | 8                                        | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                       | 3                                     |                            | Whistle notch shank/Schaft       | 1734SU03C-0730 | 8                                        | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                       | 5                                     |                            |                                  | 1736SU05C-0730 | 8                                        | 91                            | 53                         | 43                                             | 36                          | ●              |
| 7.4                                   | 8                                     | External<br>Extern         | Straight shank<br>Zylinderschaft | 1538SU08C-0730 | 8                                        | 116                           | 76                         | 66                                             | 36                          | ●              |
|                                       | 3                                     |                            |                                  | 1534SU03-0740  | 8                                        | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                       | 5                                     | Internal<br>Intern         | Zylinderschaft                   | 1536SU05-0740  | 8                                        | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                       | 3                                     |                            |                                  | 1534SU03C-0740 | 8                                        | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                       | 5                                     |                            |                                  | 1536SU05C-0740 | 8                                        | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                       | 3                                     |                            | Weld on shank/Schaft             | 1634SU03C-0740 | 8                                        | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                       | 5                                     |                            |                                  | 1636SU05C-0740 | 8                                        | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                       | 3                                     |                            | Whistle notch shank/Schaft       | 1734SU03C-0740 | 8                                        | 79                            | 41                         | 29                                             | 36                          | ●              |
| 7.45                                  | 5                                     |                            |                                  | 1736SU05C-0740 | 8                                        | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                       | 8                                     | External<br>Extern         | Straight shank<br>Zylinderschaft | 1538SU08C-0740 | 8                                        | 116                           | 76                         | 66                                             | 36                          | ●              |
|                                       | 3                                     |                            |                                  | 1534SU03-0745  | 8                                        | 79                            | 41                         | 29                                             | 36                          | ○              |
|                                       | 5                                     | Internal<br>Intern         | Zylinderschaft                   | 1536SU05-0745  | 8                                        | 91                            | 53                         | 43                                             | 36                          | ○              |
|                                       | 3                                     |                            |                                  | 1534SU03C-0745 | 8                                        | 79                            | 41                         | 29                                             | 36                          | ○              |
|                                       | 5                                     |                            |                                  | 1536SU05C-0745 | 8                                        | 91                            | 53                         | 43                                             | 36                          | ○              |
|                                       | 3                                     |                            | Weld on shank/Schaft             | 1634SU03C-0745 | 8                                        | 79                            | 41                         | 29                                             | 36                          | ○              |
|                                       | 5                                     |                            |                                  | 1636SU05C-0745 | 8                                        | 91                            | 53                         | 43                                             | 36                          | ○              |
| 7.5                                   | 3                                     | External<br>Extern         | Straight shank<br>Zylinderschaft | 1734SU03C-0745 | 8                                        | 79                            | 41                         | 29                                             | 36                          | ○              |
|                                       | 5                                     |                            |                                  | 1736SU05C-0745 | 8                                        | 91                            | 53                         | 43                                             | 36                          | ○              |
| 7.5                                   | 3                                     | External<br>Extern         | Straight shank<br>Zylinderschaft | 1534SU03-0750  | 8                                        | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                       | 5                                     |                            |                                  | 1536SU05-0750  | 8                                        | 91                            | 53                         | 43                                             | 36                          | ●              |

| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (m7) | Drilling depth<br>Bohrtiefe<br>(L/d <sub>1</sub> ) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                  | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|---------------------------------------------------|----------------------------------------------------|-----------------------------|----------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                                   |                                                    |                             |                                  |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                                   |                                                    |                             |                                  |                | d <sub>2</sub> (h6)                     | l <sub>1</sub>                | l <sub>2</sub>             | l <sub>3</sub>                                 | l <sub>4</sub>              |                |
| 7.5                                               | 3                                                  | Internal<br>Intern          | Straight shank<br>Zylinderschaft | 1534SU03C-0750 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1536SU05C-0750 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  |                             |                                  | 1634SU03C-0750 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1636SU05C-0750 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch shank/Schaft       | 1734SU03C-0750 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1736SU05C-0750 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 8                                                  |                             |                                  | 1538SU08C-0750 | 8                                       | 116                           | 76                         | 66                                             | 36                          | ●              |
|                                                   | 8                                                  |                             |                                  | 1538SU08C-0750 | 8                                       | 116                           | 76                         | 66                                             | 36                          | ●              |
| 7.6                                               | 3                                                  | External<br>Extern          | Straight shank                   | 1534SU03-0760  | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1536SU05-0760  | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Zylinder-schaft                  | 1534SU03C-0760 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1536SU05C-0760 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Weldon shank/Schaft              | 1634SU03C-0760 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1636SU05C-0760 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch shank/Schaft       | 1734SU03C-0760 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1736SU05C-0760 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 8                                                  |                             | 1538SU08C-0760                   | 1538SU08C-0760 | 8                                       | 116                           | 76                         | 66                                             | 36                          | ●              |
|                                                   | 8                                                  |                             |                                  | 1538SU08C-0760 | 8                                       | 116                           | 76                         | 66                                             | 36                          | ●              |
| 7.7                                               | 3                                                  | External<br>Extern          | Straight shank                   | 1534SU03-0770  | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1536SU05-0770  | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Zylinder-schaft                  | 1534SU03C-0770 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1536SU05C-0770 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Weldon shank/Schaft              | 1634SU03C-0770 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1636SU05C-0770 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch shank/Schaft       | 1734SU03C-0770 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1736SU05C-0770 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 8                                                  |                             | 1538SU08C-0770                   | 1538SU08C-0770 | 8                                       | 116                           | 76                         | 66                                             | 36                          | ●              |
|                                                   | 8                                                  |                             |                                  | 1538SU08C-0770 | 8                                       | 116                           | 76                         | 66                                             | 36                          | ●              |
| 7.8                                               | 3                                                  | External<br>Extern          | Straight shank                   | 1534SU03-0780  | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1536SU05-0780  | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Zylinder-schaft                  | 1534SU03C-0780 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1536SU05C-0780 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Weldon shank/Schaft              | 1634SU03C-0780 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1636SU05C-0780 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch shank/Schaft       | 1734SU03C-0780 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1736SU05C-0780 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 8                                                  |                             | 1538SU08C-0780                   | 1538SU08C-0780 | 8                                       | 116                           | 76                         | 66                                             | 36                          | ●              |
|                                                   | 8                                                  |                             |                                  | 1538SU08C-0780 | 8                                       | 116                           | 76                         | 66                                             | 36                          | ●              |
| 7.9                                               | 3                                                  | External<br>Extern          | Straight shank                   | 1534SU03-0790  | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1536SU05-0790  | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-schaft                  | 1534SU03C-0790 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1536SU05C-0790 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                                   | 3                                                  |                             | Weldon shank/Schaft              | 1634SU03C-0790 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1636SU05C-0790 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |

### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Type<br>Typ | Grade<br>Sorte | Workpiece material · Werkstückstoff              |                                   |                                 |        |        |                                           |                        |                                                 |                              |                               |                                             |
|-------------|----------------|--------------------------------------------------|-----------------------------------|---------------------------------|--------|--------|-------------------------------------------|------------------------|-------------------------------------------------|------------------------------|-------------------------------|---------------------------------------------|
|             |                | Carbon steel<br>Kohlenstoff<br>- Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron,<br>Grauguss | Nodular<br>cast iron<br>GGG<br>Kugelgraphitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Wärmefeste<br>Leg. |
|             |                |                                                  |                                   | ~40HRC                          | ~50HRC | ~60HRC |                                           |                        |                                                 |                              |                               |                                             |
| SU*         | KDG303         | ✓                                                | ✓                                 | ✓                               |        |        | ✓                                         | ✓                      | ✓                                               |                              |                               |                                             |
| SUK*        | KDG303         |                                                  |                                   |                                 |        |        |                                           | ✓                      | ✓                                               |                              |                               |                                             |

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Code key C 8  
ISO Kennzeichen

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Schnittdaten

Technical Information C110-116  
Technische Information

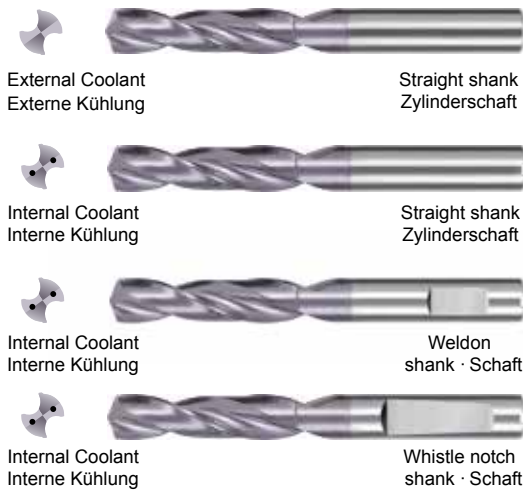
Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge

# Drilling · Bohren

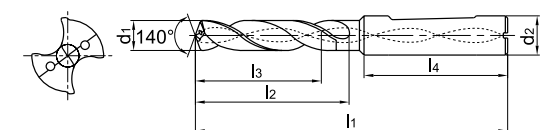
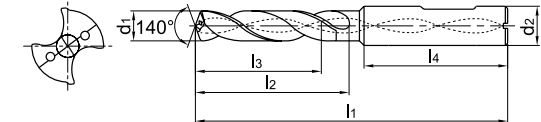
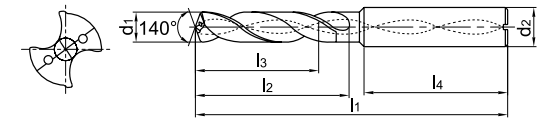
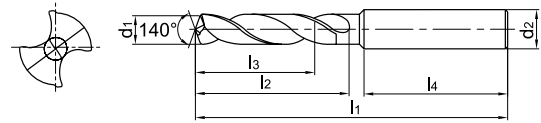
Solid carbide drills · Vollhartmetallbohrer

**SU&SUK**

Please add K when ordering / Bitte bei der Bestellung K ergänzen



## General machining · Allgemeine Bearbeitung



- For high efficient drilling of P (steel), M (stainless steel) and K (cast iron) with high performance.
- Waveform cutting edges achieve outstanding sharpness and strength, promoting chip removal.
- Hocheffizientes Bohren von allgemeinen Stahlwerkstoffen, rostfreien Werkstoffen und Guss.
- Wellenförmige Schneidkante mit hoher Schneidenschärfe, Stabilität und guter Spanabfuhr.

| Drill diameter<br>Bohrer Ø<br>d1(m7) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                  | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|--------------------------------------|---------------------------------------|-----------------------------|----------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                      |                                       |                             |                                  |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                      |                                       |                             |                                  |                | d2(h6)                                  | l1                            | l2                         | l3                                             | l4                          |                |
| 7.9                                  | 3                                     | Internal<br>Intern          | Whistle notch<br>shank/ Schaft   | 1734SU03C-0790 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                      | 5                                     |                             |                                  | 1736SU05C-0790 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      | 8                                     |                             |                                  | 1538SU08C-0790 | 8                                       | 116                           | 76                         | 66                                             | 36                          | ●              |
| 8.0                                  | 3                                     | External<br>Extern          | Straight shank<br>Zylinderschaft | 1534SU03-0800  | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                      | 5                                     |                             |                                  | 1536SU05-0800  | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      | 3                                     |                             |                                  | 1534SU03C-0800 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                      | 5                                     | Internal<br>Intern          | Weldon shank/ Schaft             | 1536SU05C-0800 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      | 3                                     |                             |                                  | 1634SU03C-0800 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                      | 5                                     |                             |                                  | 1636SU05C-0800 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      | 3                                     |                             | Whistle notch<br>shank/ Schaft   | 1734SU03C-0800 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                      | 5                                     |                             |                                  | 1736SU05C-0800 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      | 8                                     |                             |                                  | 1538SU08C-0800 | 8                                       | 116                           | 76                         | 66                                             | 36                          | ●              |
| 8.1                                  | 3                                     | External<br>Extern          | Straight shank<br>Zylinderschaft | 1534SU03-0810  | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                      | 5                                     |                             |                                  | 1536SU05-0810  | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                      | 3                                     |                             |                                  | 1534SU03C-0810 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                      | 5                                     | Internal<br>Intern          | Weldon shank/ Schaft             | 1536SU05C-0810 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                      | 3                                     |                             |                                  | 1634SU03C-0810 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                      | 5                                     |                             |                                  | 1636SU05C-0810 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                      | 3                                     |                             | Whistle notch<br>shank/ Schaft   | 1734SU03C-0810 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                      | 5                                     |                             |                                  | 1736SU05C-0810 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                      | 8                                     |                             |                                  | 1538SU08C-0810 | 10                                      | 142                           | 95                         | 83                                             | 40                          | ●              |
| 8.2                                  | 3                                     | External<br>Extern          | Straight shank<br>Zylinderschaft | 1534SU03-0820  | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                      | 5                                     |                             |                                  | 1536SU05-0820  | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                      | 3                                     |                             |                                  | 1534SU03C-0820 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                      | 5                                     | Internal<br>Intern          | Weldon shank/ Schaft             | 1536SU05C-0820 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                      | 3                                     |                             |                                  | 1634SU03C-0820 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                      | 5                                     |                             |                                  | 1636SU05C-0820 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |



| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (m7) | Drilling depth<br>Bohrtiefe<br>(L/d <sub>1</sub> ) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                          | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|---------------------------------------------------|----------------------------------------------------|-----------------------------|------------------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                                   |                                                    |                             |                                          |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                                   |                                                    |                             |                                          |                | d <sub>2</sub> (h <sub>6</sub> )        | l <sub>1</sub>                | l <sub>2</sub>             | l <sub>3</sub>                                 | l <sub>4</sub>              |                |
| 8.2                                               | 3                                                  | Internal<br>Intern          | Whistle notch<br>shank/ Schaft           | 1734SU03C-0820 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1736SU05C-0820 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 8                                                  |                             |                                          | 1538SU08C-0820 | 10                                      | 142                           | 95                         | 83                                             | 40                          | ●              |
| 8.3                                               | 3                                                  | External<br>Extern          | Straight<br>shank<br>Zylinder-<br>schaft | 1534SU03-0830  | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1536SU05-0830  | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  |                             |                                          | 1534SU03C-0830 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1536SU05C-0830 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Weldon<br>shank/ Schaft                  | 1634SU03C-0830 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1636SU05C-0830 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft           | 1734SU03C-0830 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1736SU05C-0830 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 8                                                  |                             | Straight<br>shank<br>Zylinder-<br>schaft | 1538SU08C-0830 | 10                                      | 142                           | 95                         | 83                                             | 40                          | ●              |
|                                                   | 3                                                  |                             |                                          | 1534SU03-0840  | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1536SU05-0840  | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft                  | 1634SU03C-0840 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1636SU05C-0840 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
| 8.4                                               | 3                                                  | External<br>Extern          | Straight<br>shank<br>Zylinder-<br>schaft | 1534SU03-0840  | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1536SU05-0840  | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  |                             |                                          | 1534SU03C-0840 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1536SU05C-0840 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Weldon<br>shank/ Schaft                  | 1634SU03C-0840 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1636SU05C-0840 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft           | 1734SU03C-0840 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1736SU05C-0840 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 8                                                  |                             | Straight<br>shank<br>Zylinder-<br>schaft | 1538SU08C-0840 | 10                                      | 142                           | 95                         | 83                                             | 40                          | ●              |
|                                                   | 3                                                  |                             |                                          | 1534SU03-0850  | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1536SU05-0850  | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft                  | 1634SU03C-0850 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1636SU05C-0850 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
| 8.5                                               | 3                                                  | External<br>Extern          | Straight<br>shank<br>Zylinder-<br>schaft | 1534SU03-0850  | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1536SU05-0850  | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  |                             |                                          | 1534SU03C-0850 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1536SU05C-0850 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Weldon<br>shank/ Schaft                  | 1634SU03C-0850 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1636SU05C-0850 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft           | 1734SU03C-0850 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1736SU05C-0850 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 8                                                  |                             | Straight<br>shank<br>Zylinder-<br>schaft | 1538SU08C-0850 | 10                                      | 142                           | 95                         | 83                                             | 40                          | ●              |
|                                                   | 3                                                  |                             |                                          | 1534SU03-0860  | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1536SU05-0860  | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft                  | 1634SU03C-0860 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1636SU05C-0860 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
| 8.6                                               | 3                                                  | External<br>Extern          | Straight<br>shank<br>Zylinder-<br>schaft | 1534SU03-0860  | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1536SU05-0860  | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  |                             |                                          | 1534SU03C-0860 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1536SU05C-0860 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Weldon<br>shank/ Schaft                  | 1634SU03C-0860 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1636SU05C-0860 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft           | 1734SU03C-0860 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1736SU05C-0860 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 8                                                  |                             | straight shank<br>Zylinderschaft         | 1538SU08C-0860 | 10                                      | 142                           | 95                         | 83                                             | 40                          | ●              |

### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Type<br>Typ | Grade<br>Sorte | Workpiece material · Werkstückstoff              |                                   |                                 |        |        |                                           |                        |                                                      |                              |                               |                                             |
|-------------|----------------|--------------------------------------------------|-----------------------------------|---------------------------------|--------|--------|-------------------------------------------|------------------------|------------------------------------------------------|------------------------------|-------------------------------|---------------------------------------------|
|             |                | Carbon steel<br>Kohlenstoff<br>- Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron,<br>Grauguss | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Wärmefeste<br>Leg. |
|             |                |                                                  |                                   | ~40HRC                          | ~50HRC | ~60HRC |                                           |                        |                                                      |                              |                               |                                             |
| SU*         | KDG303         | ✓                                                | ✓                                 | ✓                               |        |        | ✓                                         | ✓                      | ✓                                                    |                              |                               |                                             |
| SUK*        | KDG303         |                                                  |                                   |                                 |        |        |                                           | ✓                      | ✓                                                    |                              |                               |                                             |

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Code key C 8  
ISO Kennzeichen

Cutting data 96-109  
Schnittdaten

Technical Information C110-116  
Technische Information

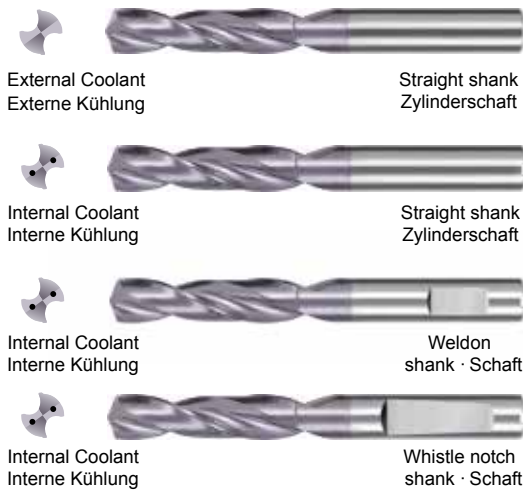
Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge

# Drilling · Bohren

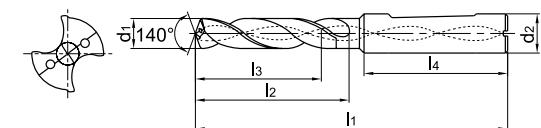
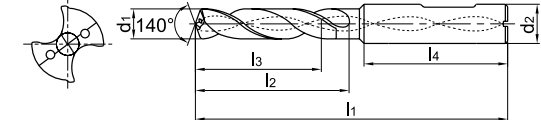
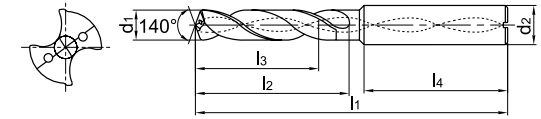
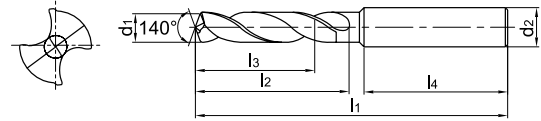
Solid carbide drills · Vollhartmetallbohrer

**SU&SUK**

Please add K when ordering / Bitte bei der Bestellung K ergänzen



## General machining · Allgemeine Bearbeitung



- For high efficient drilling of P (steel), M (stainless steel) and K (cast iron) with high performance.
- Waveform cutting edges achieve outstanding sharpness and strength, promoting chip removal.
- Hocheffizientes Bohren von allgemeinen Stahlwerkstoffen, rostfreien Werkstoffen und Guss.
- Wellenförmige Schneidkante mit hoher Schneidenschärfe, Stabilität und guter Spanabfuhr.

| Drill diameter<br>Bohrer Ø<br>d1 (mm) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel | Shank<br>Schaft                  | Type<br>Typ    | Basic dimension (mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|---------------------------------------|---------------------------------------|----------------------------|----------------------------------|----------------|------------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                       |                                       |                            |                                  |                | Shank diameter Ø<br>Schaftdurchmesser    | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                       |                                       |                            |                                  |                | d2 (h6)                                  | l1                            | l2                         | l3                                             | l4                          |                |
| 8.7                                   | 3                                     | External<br>Extern         | Straight<br>shank                | 1534SU03-0870  | 10                                       | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                       | 5                                     |                            |                                  | 1536SU05-0870  | 10                                       | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                       | 3                                     | Internal<br>Intern         | Zylinder-<br>schaft              | 1534SU03C-0870 | 10                                       | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                       | 5                                     |                            |                                  | 1536SU05C-0870 | 10                                       | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                       | 3                                     |                            | Weldon<br>shank / Schaft         | 1634SU03C-0870 | 10                                       | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                       | 5                                     |                            |                                  | 1636SU05C-0870 | 10                                       | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                       | 3                                     |                            | Whistle notch<br>shank / Schaft  | 1734SU03C-0870 | 10                                       | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                       | 5                                     |                            |                                  | 1736SU05C-0870 | 10                                       | 103                           | 61                         | 49                                             | 40                          | ●              |
| 8.8                                   | 8                                     | External<br>Extern         | Straight<br>shank                | 1538SU08C-0870 | 10                                       | 142                           | 95                         | 83                                             | 40                          | ●              |
|                                       | 3                                     |                            |                                  | 1534SU03-0880  | 10                                       | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                       | 5                                     | Internal<br>Intern         | Zylinder-<br>schaft              | 1536SU05-0880  | 10                                       | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                       | 3                                     |                            |                                  | 1534SU03C-0880 | 10                                       | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                       | 5                                     |                            | Weldon<br>shank / Schaft         | 1536SU05C-0880 | 10                                       | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                       | 3                                     |                            |                                  | 1634SU03C-0880 | 10                                       | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                       | 5                                     |                            | Whistle notch<br>shank / Schaft  | 1636SU05C-0880 | 10                                       | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                       | 3                                     |                            |                                  | 1734SU03C-0880 | 10                                       | 89                            | 47                         | 35                                             | 40                          | ●              |
| 8.9                                   | 5                                     | External<br>Extern         | Zylinder-<br>schaft              | 1736SU05C-0880 | 10                                       | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                       | 8                                     |                            |                                  | 1538SU08C-0880 | 10                                       | 142                           | 95                         | 83                                             | 40                          | ●              |
|                                       | 3                                     | Internal<br>Intern         | Straight<br>shank                | 1534SU03-0890  | 10                                       | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                       | 5                                     |                            |                                  | 1536SU05-0890  | 10                                       | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                       | 3                                     |                            | Zylinder-<br>schaft              | 1534SU03C-0890 | 10                                       | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                       | 5                                     |                            |                                  | 1536SU05C-0890 | 10                                       | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                       | 3                                     |                            | Weldon<br>shank / Schaft         | 1634SU03C-0890 | 10                                       | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                       | 5                                     |                            |                                  | 1636SU05C-0890 | 10                                       | 103                           | 61                         | 49                                             | 40                          | ●              |
| 8.9                                   | 3                                     | Internal<br>Intern         | Whistle notch<br>shank / Schaft  | 1734SU03C-0890 | 10                                       | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                       | 5                                     |                            |                                  | 1736SU05C-0890 | 10                                       | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                       | 3                                     |                            | straight shank<br>Zylinderschaft | 1538SU08C-0890 | 10                                       | 142                           | 95                         | 83                                             | 40                          | ●              |
|                                       | 8                                     |                            |                                  |                |                                          |                               |                            |                                                |                             | ●              |

| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (mm) | Drilling depth<br>Bohrtiefe<br>(L/d <sub>1</sub> ) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|---------------------------------------------------|----------------------------------------------------|-----------------------------|--------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                                   |                                                    |                             |                                |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                                   |                                                    |                             |                                |                | d <sub>2</sub> (h <sub>6</sub> )        | l <sub>1</sub>                | l <sub>2</sub>             | l <sub>3</sub>                                 | l <sub>4</sub>              |                |
| 9.0                                               | 3                                                  | External<br>Extern          | Straight<br>shank              | 1534SU03-0900  | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05-0900  | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03C-0900 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-0900 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft        | 1634SU03C-0900 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-0900 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-0900 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-0900 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 8                                                  |                             |                                | 1538SU08C-0900 | 10                                      | 142                           | 95                         | 83                                             | 40                          | ●              |
| 9.1                                               | 3                                                  | External<br>Extern          | Straight<br>shank              | 1534SU03-0910  | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05-0910  | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03C-0910 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-0910 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft        | 1634SU03C-0910 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-0910 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-0910 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-0910 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 8                                                  |                             |                                | 1538SU08C-0910 | 10                                      | 142                           | 95                         | 83                                             | 40                          | ●              |
| 9.2                                               | 3                                                  | External<br>Extern          | Straight<br>shank              | 1534SU03-0920  | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05-0920  | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03C-0920 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-0920 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft        | 1634SU03C-0920 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-0920 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-0920 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-0920 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 8                                                  |                             |                                | 1538SU08C-0920 | 10                                      | 142                           | 95                         | 83                                             | 40                          | ●              |
| 9.3                                               | 3                                                  | External<br>Extern          | Straight<br>shank              | 1534SU03-0930  | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05-0930  | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03C-0930 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-0930 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft        | 1634SU03C-0930 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-0930 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-0930 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-0930 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 8                                                  |                             |                                | 1538SU08C-0930 | 10                                      | 142                           | 95                         | 83                                             | 40                          | ●              |
| 9.35                                              | 3                                                  | External<br>Extern          | Straight<br>shank              | 1534SU03-0935  | 10                                      | 89                            | 47                         | 35                                             | 40                          | ○              |
|                                                   | 5                                                  |                             |                                | 1536SU05-0935  | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03C-0935 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ○              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-0935 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ○              |

### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Type<br>Typ | Grade<br>Sorte | Workpiece material · Werkstückstoff              |                                   |                                 |        |        |                                           |                        |                                                      |                              |                               |                                             |
|-------------|----------------|--------------------------------------------------|-----------------------------------|---------------------------------|--------|--------|-------------------------------------------|------------------------|------------------------------------------------------|------------------------------|-------------------------------|---------------------------------------------|
|             |                | Carbon steel<br>Kohlenstoff<br>- Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron,<br>Grauguss | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Wärmefeste<br>Leg. |
|             |                |                                                  |                                   | ~40HRC                          | ~50HRC | ~60HRC |                                           |                        |                                                      |                              |                               |                                             |
| SU*         | KDG303         | ✓                                                | ✓                                 | ✓                               |        |        | ✓                                         | ✓                      | ✓                                                    |                              |                               |                                             |
| SUK*        | KDG303         |                                                  |                                   |                                 |        |        |                                           | ✓                      | ✓                                                    |                              |                               |                                             |

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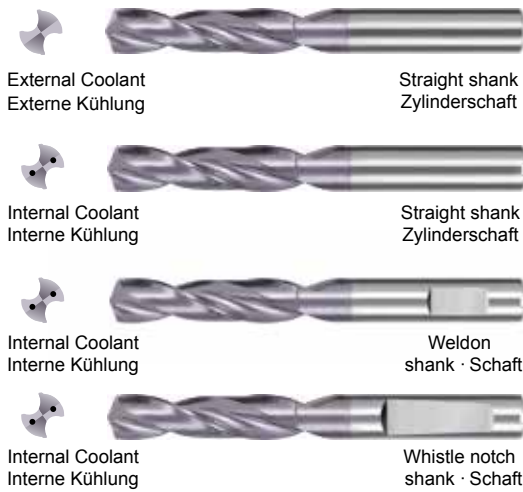
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# Drilling · Bohren

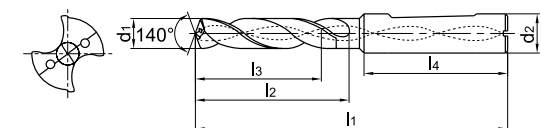
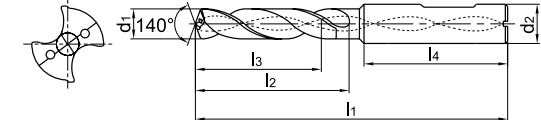
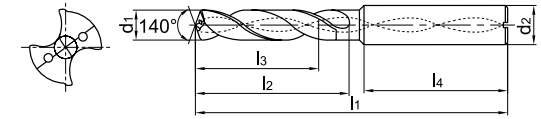
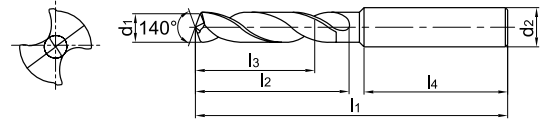
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**SU&SUK**

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- Wellenförmige Schneidkante mit hoher Schneidenschärfe, Stabilität und guter Spanabfuhr.

| Drill diameter<br>Bohrer Ø<br>d1(m7) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|--------------------------------------|---------------------------------------|-----------------------------|--------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                      |                                       |                             |                                |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                      |                                       |                             |                                |                | d2(h6)                                  | l1                            | l2                         | l3                                             | l4                          |                |
| 9.35                                 | 3                                     | Internal<br>Intern          | Weldon<br>shank/ Schaft        | 1634SU03C-0935 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ○              |
|                                      | 5                                     |                             |                                | 1636SU05C-0935 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ○              |
|                                      | 3                                     |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-0935 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ○              |
|                                      | 5                                     |                             |                                | 1736SU05C-0935 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ○              |
| 9.4                                  | 3                                     | External<br>Extern          | Straight<br>shank              | 1534SU03-0940  | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                      | 5                                     |                             |                                | 1536SU05-0940  | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                      | 3                                     |                             | Zylinder-<br>schaft            | 1534SU03C-0940 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                      | 5                                     |                             |                                | 1536SU05C-0940 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                      | 3                                     | Internal<br>Intern          | Weldon<br>shank/ Schaft        | 1634SU03C-0940 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                      | 5                                     |                             |                                | 1636SU05C-0940 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                      | 3                                     |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-0940 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                      | 5                                     |                             |                                | 1736SU05C-0940 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                      | 8                                     |                             | Straight<br>shank              | 1538SU08C-0940 | 10                                      | 142                           | 95                         | 83                                             | 40                          | ●              |
|                                      | 3                                     |                             |                                | 1534SU03-0945  | 10                                      | 89                            | 47                         | 35                                             | 40                          | ○              |
|                                      | 5                                     |                             | Zylinder-<br>schaft            | 1536SU05-0945  | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                      | 3                                     |                             |                                | 1534SU03C-0945 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ○              |
| 9.45                                 | 5                                     | Internal<br>Intern          | Weldon<br>shank/ Schaft        | 1536SU05C-0945 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ○              |
|                                      | 3                                     |                             |                                | 1634SU03C-0945 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ○              |
|                                      | 5                                     |                             | Whistle notch<br>shank/ Schaft | 1636SU05C-0945 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ○              |
|                                      | 3                                     |                             |                                | 1734SU03C-0945 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ○              |
|                                      | 5                                     |                             | Whistle notch<br>shank/ Schaft | 1736SU05C-0945 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ○              |
|                                      | 3                                     |                             |                                | 1534SU03-0950  | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                      | 5                                     |                             | Straight<br>shank              | 1536SU05-0950  | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                      | 3                                     |                             |                                | 1534SU03C-0950 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
| 9.5                                  | 5                                     | Internal<br>Intern          | Zylinder-<br>schaft            | 1536SU05C-0950 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                      | 3                                     |                             |                                | 1534SU03C-0950 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                      | 5                                     |                             | Weldon<br>shank/ Schaft        | 1634SU03C-0950 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                      | 3                                     |                             |                                | 1636SU05C-0950 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |

| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (mm) | Drilling depth<br>Bohrtiefe<br>(L/d <sub>1</sub> ) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                          | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|---------------------------------------------------|----------------------------------------------------|-----------------------------|------------------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                                   |                                                    |                             |                                          |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                                   |                                                    |                             |                                          |                | d <sub>2</sub> (h <sub>6</sub> )        | l <sub>1</sub>                | l <sub>2</sub>             | l <sub>3</sub>                                 | l <sub>4</sub>              |                |
| 9.5                                               | 3                                                  | Internal<br>Intern          | Whistle notch<br>shank/ Schaft           | 1734SU03C-0950 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1736SU05C-0950 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 8                                                  |                             |                                          | 1538SU08C-0950 | 10                                      | 142                           | 95                         | 83                                             | 40                          | ●              |
| 9.6                                               | 3                                                  | External<br>Extern          | Straight<br>shank<br>Zylinder-<br>schaft | 1534SU03-0960  | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1536SU05-0960  | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  |                             |                                          | 1534SU03C-0960 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  | Internal<br>Intern          | Weldon<br>shank/ Schaft                  | 1536SU05C-0960 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  |                             |                                          | 1634SU03C-0960 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1636SU05C-0960 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft           | 1734SU03C-0960 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1736SU05C-0960 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 8                                                  |                             |                                          | 1538SU08C-0960 | 10                                      | 142                           | 95                         | 83                                             | 40                          | ●              |
| 9.7                                               | 3                                                  | External<br>Extern          | Straight<br>shank<br>Zylinder-<br>schaft | 1534SU03-0970  | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1536SU05-0970  | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  |                             |                                          | 1534SU03C-0970 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  | Internal<br>Intern          | Weldon<br>shank/ Schaft                  | 1536SU05C-0970 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  |                             |                                          | 1634SU03C-0970 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1636SU05C-0970 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft           | 1734SU03C-0970 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1736SU05C-0970 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 8                                                  |                             |                                          | 1538SU08C-0970 | 10                                      | 142                           | 95                         | 83                                             | 40                          | ●              |
| 9.8                                               | 3                                                  | External<br>Extern          | Straight<br>shank<br>Zylinder-<br>schaft | 1534SU03-0980  | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1536SU05-0980  | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  |                             |                                          | 1534SU03C-0980 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  | Internal<br>Intern          | Weldon<br>shank/ Schaft                  | 1536SU05C-0980 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  |                             |                                          | 1634SU03C-0980 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1636SU05C-0980 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft           | 1734SU03C-0980 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1736SU05C-0980 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 8                                                  |                             |                                          | 1538SU08C-0980 | 10                                      | 142                           | 95                         | 83                                             | 40                          | ●              |
| 9.9                                               | 3                                                  | External<br>Extern          | Straight<br>shank<br>Zylinder-<br>schaft | 1534SU03-0990  | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1536SU05-0990  | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  |                             |                                          | 1534SU03C-0990 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  | Internal<br>Intern          | Weldon<br>shank/ Schaft                  | 1536SU05C-0990 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  |                             |                                          | 1634SU03C-0990 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1636SU05C-0990 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft           | 1734SU03C-0990 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1736SU05C-0990 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   | 8                                                  |                             |                                          | 1538SU08C-0990 | 10                                      | 142                           | 95                         | 83                                             | 40                          | ●              |

### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Type<br>Typ | Grade<br>Sorte | Workpiece material · Werkstückstoff              |                                   |                                 |        |        |                                           |                        |                                                      |                              |                               |                                             |
|-------------|----------------|--------------------------------------------------|-----------------------------------|---------------------------------|--------|--------|-------------------------------------------|------------------------|------------------------------------------------------|------------------------------|-------------------------------|---------------------------------------------|
|             |                | Carbon steel<br>Kohlenstoff<br>- Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron,<br>Grauguss | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Wärmefeste<br>Leg. |
|             |                |                                                  |                                   | ~40HRC                          | ~50HRC | ~60HRC |                                           |                        |                                                      |                              |                               |                                             |
| SU*         | KDG303         | ✓                                                | ✓                                 | ✓                               |        |        | ✓                                         | ✓                      | ✓                                                    |                              |                               |                                             |
| SUK*        | KDG303         |                                                  |                                   |                                 |        |        |                                           | ✓                      | ✓                                                    |                              |                               |                                             |

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Code key C 8  
ISO Kennzeichen

Cutting data 96-109  
Schnittdaten

Technical Information C110-116  
Technische Information

Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge

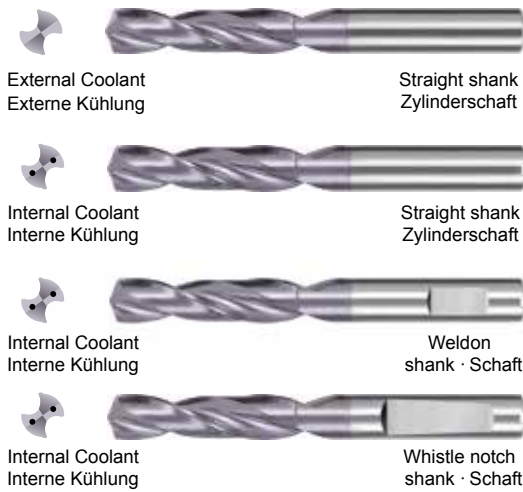


# Drilling · Bohren

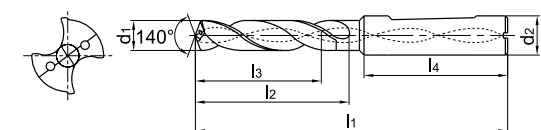
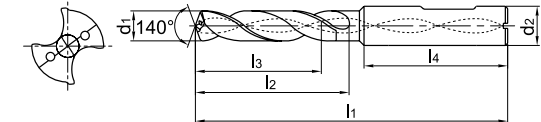
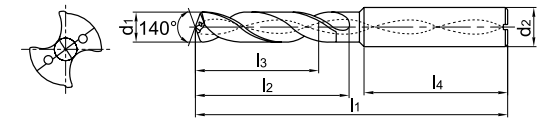
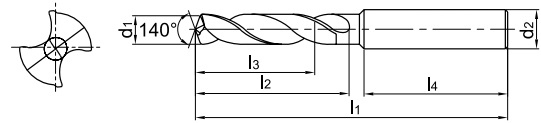
Solid carbide drills · Vollhartmetallbohrer

**SU&SUK**

Please add K when ordering / Bitte bei der Bestellung K ergänzen



## General machining · Allgemeine Bearbeitung



- For high efficient drilling of P (steel), M (stainless steel) and K (cast iron) with high performance.
- Waveform cutting edges achieve outstanding sharpness and strength, promoting chip removal.
- Hocheffizientes Bohren von allgemeinen Stahlwerkstoffen, rostfreien Werkstoffen und Guss.
- Wellenförmige Schneidkante mit hoher Schneidschärfe, Stabilität und guter Spanabfuhr.

| Drill diameter<br>Bohrer Ø<br>d1(m7) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                   | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|--------------------------------------|---------------------------------------|-----------------------------|-----------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                      |                                       |                             |                                   |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                      |                                       |                             |                                   |                | d2(h6)                                  | l1                            | l2                         | l3                                             | l4                          |                |
| 10.0                                 | 3                                     | External<br>Extern          | Straight shank<br>Zylinder-schaft | 1534SU03-1000  | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                      | 5                                     |                             |                                   | 1536SU05-1000  | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                      | 3                                     | Internal<br>Intern          | Straight shank<br>Zylinder-schaft | 1534SU03C-1000 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                      | 5                                     |                             |                                   | 1536SU05C-1000 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                      | 3                                     |                             | Weldon shank/Schaft               | 1634SU03C-1000 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                      | 5                                     |                             |                                   | 1636SU05C-1000 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                      | 3                                     |                             | Whistle notch shank/Schaft        | 1734SU03C-1000 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                      | 5                                     |                             |                                   | 1736SU05C-1000 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
| 10.1                                 | 8                                     | External<br>Extern          | Straight shank<br>Zylinder-schaft | 1538SU08C-1000 | 10                                      | 142                           | 95                         | 83                                             | 40                          | ●              |
|                                      | 3                                     |                             |                                   | 1534SU03-1010  | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     | Internal<br>Intern          | Straight shank<br>Zylinder-schaft | 1536SU05-1010  | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 3                                     |                             |                                   | 1534SU03C-1010 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                             | Weldon shank/Schaft               | 1536SU05C-1010 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 3                                     |                             |                                   | 1634SU03C-1010 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                             | Whistle notch shank/Schaft        | 1636SU05C-1010 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 3                                     |                             |                                   | 1734SU03C-1010 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
| 10.2                                 | 5                                     | External<br>Extern          | Straight shank<br>Zylinder-schaft | 1736SU05C-1010 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 8                                     |                             |                                   | 1538SU08C-1010 | 12                                      | 162                           | 114                        | 99                                             | 45                          | ●              |
|                                      | 3                                     | Internal<br>Intern          | Straight shank<br>Zylinder-schaft | 1534SU03-1020  | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                   | 1536SU05-1020  | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 3                                     |                             | Weldon shank/Schaft               | 1534SU03C-1020 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                   | 1536SU05C-1020 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 3                                     |                             | Whistle notch shank/Schaft        | 1634SU03C-1020 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                   | 1636SU05C-1020 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 3                                     | Internal<br>Intern          | straight shank<br>Zylinderschaft  | 1734SU03C-1020 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 8                                     |                             |                                   | 1736SU05C-1020 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |

| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (m7) | Drilling depth<br>Bohrtiefe<br>(L/d <sub>1</sub> ) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|---------------------------------------------------|----------------------------------------------------|-----------------------------|--------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                                   |                                                    |                             |                                |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                                   |                                                    |                             |                                |                | d <sub>2</sub> (h <sub>6</sub> )        | l <sub>1</sub>                | l <sub>2</sub>             | l <sub>3</sub>                                 | l <sub>4</sub>              |                |
| 10.25                                             | 3                                                  | External<br>Extern          | Straight<br>shank              | 1534SU03-1025  | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05-1025  | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03C-1025 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-1025 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft        | 1634SU03C-1025 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-1025 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-1025 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-1025 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
| 10.3                                              | 3                                                  | External<br>Extern          | Straight<br>shank              | 1534SU03-1030  | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05-1030  | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03C-1030 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-1030 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft        | 1634SU03C-1030 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-1030 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-1030 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-1030 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
| 10.4                                              | 3                                                  | External<br>Extern          | Straight<br>shank              | 1534SU03-1040  | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05-1040  | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03C-1040 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-1040 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft        | 1634SU03C-1040 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-1040 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-1040 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-1040 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
| 10.5                                              | 3                                                  | External<br>Extern          | Straight<br>shank              | 1534SU03-1050  | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05-1050  | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03C-1050 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-1050 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft        | 1634SU03C-1050 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-1050 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-1050 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-1050 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
| 10.6                                              | 3                                                  | External<br>Extern          | Straight<br>shank              | 1534SU03-1060  | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05-1060  | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03C-1060 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-1060 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |

### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Type<br>Typ | Grade<br>Sorte | Workpiece material · Werkstückstoff              |                                   |                                 |        |        |                                           |                        |                                                      |                              |                               |                                             |
|-------------|----------------|--------------------------------------------------|-----------------------------------|---------------------------------|--------|--------|-------------------------------------------|------------------------|------------------------------------------------------|------------------------------|-------------------------------|---------------------------------------------|
|             |                | Carbon steel<br>Kohlenstoff<br>- Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron,<br>Grauguss | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Wärmefeste<br>Leg. |
|             |                |                                                  |                                   | ~40HRC                          | ~50HRC | ~60HRC |                                           |                        |                                                      |                              |                               |                                             |
| SU*         | KDG303         | ✓                                                | ✓                                 | ✓                               |        |        | ✓                                         | ✓                      | ✓                                                    |                              |                               |                                             |
| SUK*        | KDG303         |                                                  |                                   |                                 |        |        |                                           | ✓                      | ✓                                                    |                              |                               |                                             |

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Code key C 8  
ISO Kennzeichen

Cutting data 96-109  
Schnittdaten

Technical Information C110-116  
Technische Information

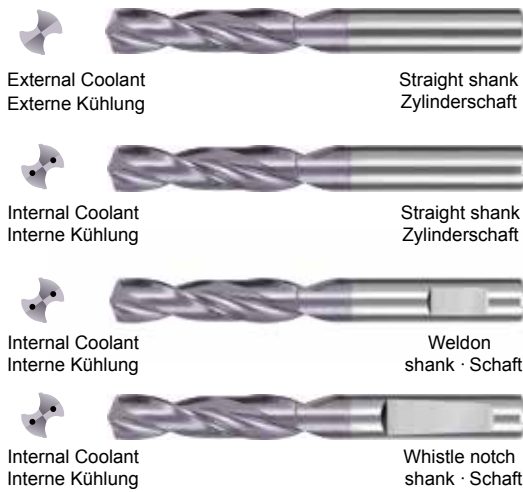
Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge

# Drilling · Bohren

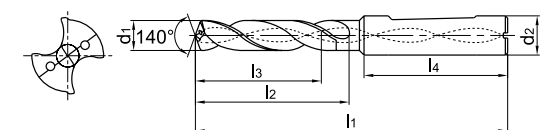
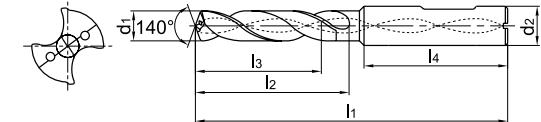
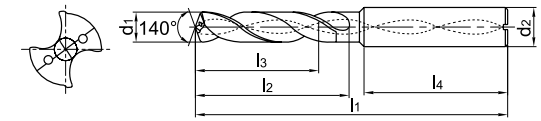
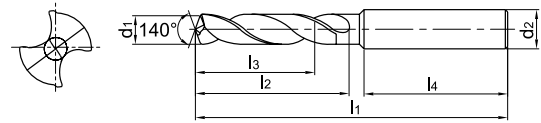
Solid carbide drills · Vollhartmetallbohrer

**SU&SUK**

Please add K when ordering / Bitte bei der Bestellung K ergänzen



## General machining · Allgemeine Bearbeitung



- For high efficient drilling of P (steel), M (stainless steel) and K (cast iron) with high performance.
- Waveform cutting edges achieve outstanding sharpness and strength, promoting chip removal.
- Hocheffizientes Bohren von allgemeinen Stahlwerkstoffen, rostfreien Werkstoffen und Guss.
- Wellenförmige Schneidkante mit hoher Schneidenschärfe, Stabilität und guter Spanabfuhr.

| Drill diameter<br>Bohrer Ø<br>d1(m7) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                       | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|--------------------------------------|---------------------------------------|-----------------------------|---------------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                      |                                       |                             |                                       |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                      |                                       |                             |                                       |                | d2(h6)                                  | l1                            | l2                         | l3                                             | l4                          |                |
| 10.6                                 | 3                                     | Internal<br>Intern          | Weldon<br>shank/ Schaft               | 1634SU03C-1060 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                       | 1636SU05C-1060 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 3                                     |                             | Whistle notch<br>shank/ Schaft        | 1734SU03C-1060 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                       | 1736SU05C-1060 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 8                                     |                             | Straight shank<br>Zylinder-<br>schaft | 1538SU08C-1060 | 12                                      | 162                           | 114                        | 99                                             | 45                          | ●              |
| 10.7                                 | 3                                     | External<br>Extern          | Straight shank<br>Zylinder-<br>schaft | 1534SU03-1070  | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                       | 1536SU05-1070  | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 3                                     |                             | Straight shank<br>Zylinder-<br>schaft | 1534SU03C-1070 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                       | 1536SU05C-1070 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 3                                     | Internal<br>Intern          | Weldon<br>shank/ Schaft               | 1634SU03C-1070 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                       | 1636SU05C-1070 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 3                                     |                             | Whistle notch<br>shank/ Schaft        | 1734SU03C-1070 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                       | 1736SU05C-1070 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 8                                     |                             | Straight shank<br>Zylinder-<br>schaft | 1538SU08C-1070 | 12                                      | 162                           | 114                        | 99                                             | 45                          | ●              |
| 10.8                                 | 3                                     | External<br>Extern          | Straight shank<br>Zylinder-<br>schaft | 1534SU03-1080  | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                       | 1536SU05-1080  | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 3                                     |                             | Straight shank<br>Zylinder-<br>schaft | 1534SU03C-1080 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                       | 1536SU05C-1080 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 3                                     | Internal<br>Intern          | Weldon<br>shank/ Schaft               | 1634SU03C-1080 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                       | 1636SU05C-1080 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 3                                     |                             | Whistle notch<br>shank/ Schaft        | 1734SU03C-1080 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                       | 1736SU05C-1080 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 8                                     |                             | Straight shank<br>Zylinder-<br>schaft | 1538SU08C-1080 | 12                                      | 162                           | 114                        | 99                                             | 45                          | ●              |
| 10.9                                 | 3                                     | External<br>Extern          | Straight shank<br>Zylinder-<br>schaft | 1534SU03-1090  | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                       | 1536SU05-1090  | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 3                                     | Internal<br>Intern          | Straight shank<br>Zylinder-<br>schaft | 1534SU03C-1090 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                       | 1536SU05C-1090 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |

| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (m7) | Drilling depth<br>Bohrtiefe<br>(L/d <sub>1</sub> ) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|---------------------------------------------------|----------------------------------------------------|-----------------------------|--------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                                   |                                                    |                             |                                |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                                   |                                                    |                             |                                |                | d <sub>2</sub> (h <sub>6</sub> )        | l <sub>1</sub>                | l <sub>2</sub>             | l <sub>3</sub>                                 | l <sub>4</sub>              |                |
| 10.9                                              | 3                                                  | Internal<br>Intern          | Weldon<br>shank/ Schaft        | 1634SU03C-1090 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-1090 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-1090 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-1090 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 8                                                  |                             |                                | 1538SU08C-1090 | 12                                      | 162                           | 114                        | 99                                             | 45                          | ●              |
| 11.0                                              | 3                                                  | External<br>Extern          | Straight<br>shank              | 1534SU03-1100  | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05-1100  | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  |                             | Zylinder-<br>schaft            | 1534SU03C-1100 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-1100 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Weldon<br>shank/ Schaft        | 1634SU03C-1100 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-1100 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-1100 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-1100 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 8                                                  |                             | Straight<br>shank              | 1538SU08C-1100 | 12                                      | 162                           | 114                        | 99                                             | 45                          | ●              |
|                                                   | 3                                                  | External<br>Extern          | Straight<br>shank              | 1534SU03-1110  | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05-1110  | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
| 11.1                                              | 3                                                  |                             | Zylinder-<br>schaft            | 1534SU03C-1110 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-1110 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Weldon<br>shank/ Schaft        | 1634SU03C-1110 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-1110 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-1110 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-1110 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 8                                                  |                             | Straight<br>shank              | 1538SU08C-1110 | 12                                      | 162                           | 114                        | 99                                             | 45                          | ●              |
|                                                   | 3                                                  | External<br>Extern          | Straight<br>shank              | 1534SU03-1120  | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05-1120  | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  |                             | Zylinder-<br>schaft            | 1534SU03C-1120 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-1120 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
| 11.2                                              | 3                                                  | Internal<br>Intern          | Weldon<br>shank/ Schaft        | 1634SU03C-1120 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-1120 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-1120 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-1120 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 8                                                  |                             | Straight<br>shank              | 1538SU08C-1120 | 12                                      | 162                           | 114                        | 99                                             | 45                          | ●              |
|                                                   | 3                                                  | External<br>Extern          | Straight<br>shank              | 1534SU03-1125  | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05-1125  | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  |                             | Zylinder-<br>schaft            | 1534SU03C-1125 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ○              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-1125 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○              |
|                                                   | 3                                                  | Internal<br>Intern          | Weldon<br>shank/ Schaft        | 1634SU03C-1125 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ○              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-1125 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-1125 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ○              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-1125 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○              |
| 11.25                                             | 3                                                  | External<br>Extern          | Straight<br>shank              | 1534SU03-1125  | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05-1125  | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  |                             | Zylinder-<br>schaft            | 1534SU03C-1125 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ○              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-1125 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○              |
|                                                   | 3                                                  | Internal<br>Intern          | Weldon<br>shank/ Schaft        | 1634SU03C-1125 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ○              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-1125 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-1125 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ○              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-1125 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○              |

### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Type<br>Typ | Grade<br>Sorte | Workpiece material · Werkstückstoff              |                                   |                                 |        |        |                                           |                        |                                                      |                              |                               |                                             |
|-------------|----------------|--------------------------------------------------|-----------------------------------|---------------------------------|--------|--------|-------------------------------------------|------------------------|------------------------------------------------------|------------------------------|-------------------------------|---------------------------------------------|
|             |                | Carbon steel<br>Kohlenstoff<br>- Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron,<br>Grauguss | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Wärmefeste<br>Leg. |
|             |                |                                                  |                                   | ~40HRC                          | ~50HRC | ~60HRC |                                           |                        |                                                      |                              |                               |                                             |
| SU*         | KDG303         | ✓                                                | ✓                                 | ✓                               |        |        | ✓                                         | ✓                      | ✓                                                    |                              |                               |                                             |
| SUK*        | KDG303         |                                                  |                                   |                                 |        |        |                                           | ✓                      | ✓                                                    |                              |                               |                                             |

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Code key C 8  
ISO Kennzeichen

Cutting data 96-109  
Schnittdaten

Technical Information C110-116  
Technische Information

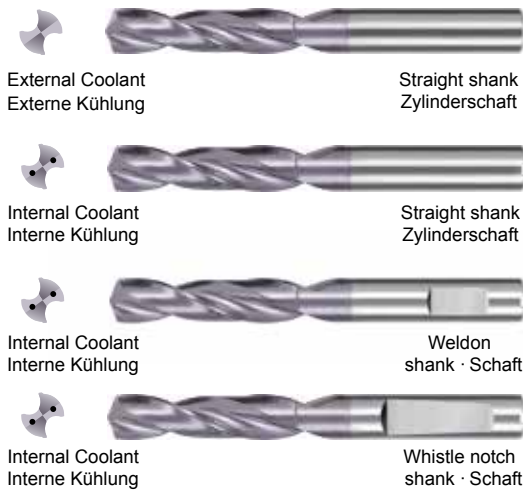
Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge

# Drilling · Bohren

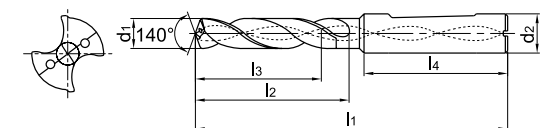
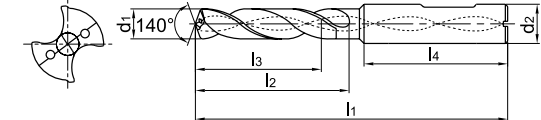
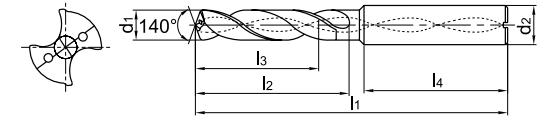
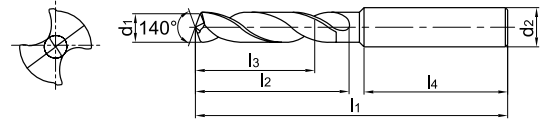
Solid carbide drills · Vollhartmetallbohrer

SU&SUK

Please add K when ordering / Bitte bei der Bestellung K ergänzen



## General machining · Allgemeine Bearbeitung



- For high efficient drilling of P (steel), M (stainless steel) and K (cast iron) with high performance.
- Waveform cutting edges achieve outstanding sharpness and strength, promoting chip removal.
- Hocheffizientes Bohren von allgemeinen Stahlwerkstoffen, rostfreien Werkstoffen und Guss.
- Wellenförmige Schneidkante mit hoher Schneidenschärfe, Stabilität und guter Spanabfuhr.

| Drill diameter<br>Bohrer Ø<br>d1(m7) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                   | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|--------------------------------------|---------------------------------------|-----------------------------|-----------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                      |                                       |                             |                                   |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                      |                                       |                             |                                   |                | d2(h6)                                  | l1                            | l2                         | l3                                             | l4                          |                |
| 11.3                                 | 3                                     | External<br>Extern          | Straight shank<br>Zylinder-schaft | 1534SU03-1130  | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                   | 1536SU05-1130  | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 3                                     | Internal<br>Intern          | Zylinder-schaft                   | 1534SU03C-1130 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                   | 1536SU05C-1130 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 3                                     |                             | Weldon shank/Schaft               | 1634SU03C-1130 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                   | 1636SU05C-1130 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 3                                     |                             | Whistle notch shank/Schaft        | 1734SU03C-1130 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                   | 1736SU05C-1130 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
| 11.35                                | 8                                     |                             |                                   | 1538SU08C-1130 | 12                                      | 162                           | 114                        | 99                                             | 45                          | ●              |
|                                      | 3                                     | External<br>Extern          | Straight shank<br>Zylinder-schaft | 1534SU03-1135  | 12                                      | 102                           | 55                         | 40                                             | 45                          | ○              |
|                                      | 5                                     |                             |                                   | 1536SU05-1135  | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 3                                     | Internal<br>Intern          | Zylinder-schaft                   | 1534SU03C-1135 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ○              |
|                                      | 5                                     |                             |                                   | 1536SU05C-1135 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○              |
|                                      | 3                                     |                             | Weldon shank/Schaft               | 1634SU03C-1135 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ○              |
|                                      | 5                                     |                             |                                   | 1636SU05C-1135 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○              |
|                                      | 3                                     |                             | Whistle notch shank/Schaft        | 1734SU03C-1135 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ○              |
|                                      | 5                                     |                             |                                   | 1736SU05C-1135 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○              |
| 11.4                                 | 3                                     | External<br>Extern          | Straight shank<br>Zylinder-schaft | 1534SU03-1140  | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                   | 1536SU05-1140  | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 3                                     | Internal<br>Intern          | Zylinder-schaft                   | 1534SU03C-1140 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                   | 1536SU05C-1140 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 3                                     |                             | Weldon shank/Schaft               | 1634SU03C-1140 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                   | 1636SU05C-1140 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 3                                     |                             | Whistle notch shank/Schaft        | 1734SU03C-1140 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                   | 1736SU05C-1140 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
| 11.45                                | 8                                     |                             |                                   | 1538SU08C-1140 | 12                                      | 162                           | 114                        | 99                                             | 45                          | ●              |
|                                      | 3                                     | External<br>Extern          | Straight shank<br>Zylinder-schaft | 1534SU03-1145  | 12                                      | 102                           | 55                         | 40                                             | 45                          | ○              |
|                                      | 5                                     |                             |                                   | 1536SU05-1145  | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○              |



| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (m7) | Drilling depth<br>Bohrtiefe<br>(L/d <sub>1</sub> ) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                          | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|---------------------------------------------------|----------------------------------------------------|-----------------------------|------------------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                                   |                                                    |                             |                                          |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                                   |                                                    |                             |                                          |                | d <sub>2</sub> (h <sub>6</sub> )        | l <sub>1</sub>                | l <sub>2</sub>             | l <sub>3</sub>                                 | l <sub>4</sub>              |                |
| 11.45                                             | 3                                                  | Internal<br>Intern          | straight shank<br>Zylinderschaft         | 1534SU03C-1145 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ○              |
|                                                   | 5                                                  |                             |                                          | 1536SU05C-1145 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft                  | 1634SU03C-1145 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ○              |
|                                                   | 5                                                  |                             |                                          | 1636SU05C-1145 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft           | 1734SU03C-1145 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ○              |
|                                                   | 5                                                  |                             |                                          | 1736SU05C-1145 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○              |
| 11.5                                              | 3                                                  | External<br>Extern          | Straight<br>shank<br>Zylinder-<br>schaft | 1534SU03-1150  | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1536SU05-1150  | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  |                             |                                          | 1534SU03C-1150 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1536SU05C-1150 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Weldon<br>shank/ Schaft                  | 1634SU03C-1150 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1636SU05C-1150 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft           | 1734SU03C-1150 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1736SU05C-1150 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 8                                                  |                             |                                          | 1538SU08C-1150 | 12                                      | 162                           | 114                        | 99                                             | 45                          | ●              |
|                                                   |                                                    |                             |                                          |                |                                         |                               |                            |                                                |                             |                |
| 11.6                                              | 3                                                  | External<br>Extern          | Straight<br>shank<br>Zylinder-<br>schaft | 1534SU03-1160  | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1536SU05-1160  | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  |                             |                                          | 1534SU03C-1160 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1536SU05C-1160 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Weldon<br>shank/ Schaft                  | 1634SU03C-1160 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1636SU05C-1160 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft           | 1734SU03C-1160 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1736SU05C-1160 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 8                                                  |                             |                                          | 1538SU08C-1160 | 12                                      | 162                           | 114                        | 99                                             | 45                          | ●              |
|                                                   |                                                    |                             |                                          |                |                                         |                               |                            |                                                |                             |                |
| 11.7                                              | 3                                                  | External<br>Extern          | Straight<br>shank<br>Zylinder-<br>schaft | 1534SU03-1170  | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1536SU05-1170  | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  |                             |                                          | 1534SU03C-1170 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1536SU05C-1170 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Weldon<br>shank/ Schaft                  | 1634SU03C-1170 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1636SU05C-1170 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft           | 1734SU03C-1170 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1736SU05C-1170 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 8                                                  |                             |                                          | 1538SU08C-1170 | 12                                      | 162                           | 114                        | 99                                             | 45                          | ●              |
|                                                   |                                                    |                             |                                          |                |                                         |                               |                            |                                                |                             |                |
| 11.8                                              | 3                                                  | External<br>Extern          | Straight<br>shank<br>Zylinder-<br>schaft | 1534SU03-1180  | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1536SU05-1180  | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  |                             |                                          | 1534SU03C-1180 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  | Internal<br>Intern          | Weldon<br>shank/ Schaft                  | 1536SU05C-1180 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   | 3                                                  |                             |                                          | 1634SU03C-1180 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                          | 1636SU05C-1180 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |

### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Type<br>Typ | Grade<br>Sorte | Workpiece material · Werkstückstoff              |                                   |                                 |        |        |                                           |                        |                                                      |                              |                               |                                             |
|-------------|----------------|--------------------------------------------------|-----------------------------------|---------------------------------|--------|--------|-------------------------------------------|------------------------|------------------------------------------------------|------------------------------|-------------------------------|---------------------------------------------|
|             |                | Carbon steel<br>Kohlenstoff<br>- Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron,<br>Grauguss | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Wärmefeste<br>Leg. |
|             |                |                                                  |                                   | ~40HRC                          | ~50HRC | ~60HRC |                                           |                        |                                                      |                              |                               |                                             |
| SU*         | KDG303         | ✓                                                | ✓                                 | ✓                               |        |        | ✓                                         | ✓                      | ✓                                                    |                              |                               |                                             |
| SUK*        | KDG303         |                                                  |                                   |                                 |        |        |                                           | ✓                      | ✓                                                    |                              |                               |                                             |

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Code key C 8  
ISO Kennzeichen

Cutting data 96-109  
Schnittdaten

Technical Information C110-116  
Technische Information

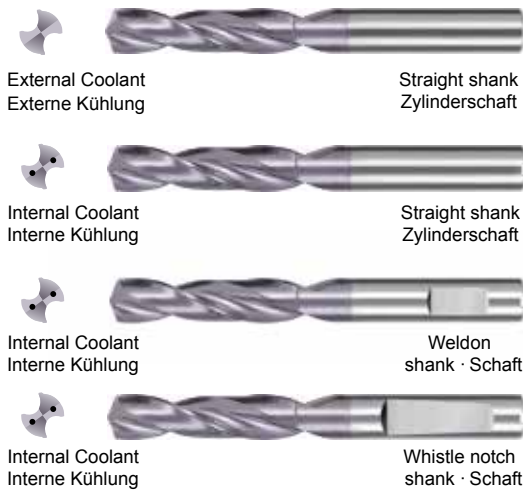
Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge

# Drilling · Bohren

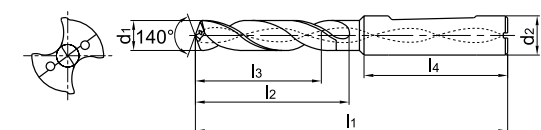
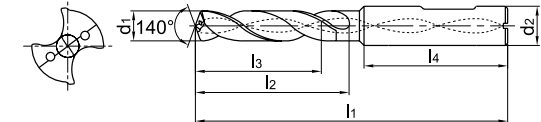
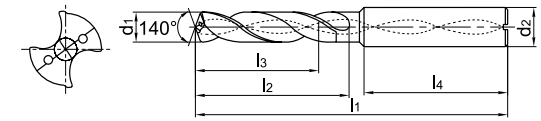
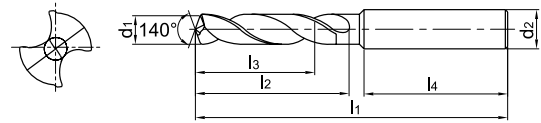
Solid carbide drills · Vollhartmetallbohrer

**SU&SUK**

Please add K when ordering / Bitte bei der Bestellung K ergänzen



## General machining · Allgemeine Bearbeitung



- For high efficient drilling of P (steel), M (stainless steel) and K (cast iron) with high performance.
- Waveform cutting edges achieve outstanding sharpness and strength, promoting chip removal.
- Hocheffizientes Bohren von allgemeinen Stahlwerkstoffen, rostfreien Werkstoffen und Guss.
- Wellenförmige Schneidkante mit hoher Schneidenschärfe, Stabilität und guter Spanabfuhr.

| Drill diameter<br>Bohrer Ø<br>d1(m7) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                       | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|--------------------------------------|---------------------------------------|-----------------------------|---------------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                      |                                       |                             |                                       |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                      |                                       |                             |                                       |                | d2(h6)                                  | l1                            | l2                         | l3                                             | l4                          |                |
| 11.8                                 | 3                                     | Internal<br>Intern          | Whistle notch<br>shank/ Schaft        | 1734SU03C-1180 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                       | 1736SU05C-1180 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 8                                     |                             |                                       | 1538SU08C-1180 | 12                                      | 162                           | 114                        | 99                                             | 45                          | ●              |
| 11.9                                 | 3                                     | External<br>Extern          | Straight shank<br>Zylinder-<br>schaft | 1534SU03-1190  | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                       | 1536SU05-1190  | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 3                                     |                             |                                       | 1534SU03C-1190 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     | Internal<br>Intern          | Weldon<br>shank/ Schaft               | 1536SU05C-1190 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 3                                     |                             |                                       | 1634SU03C-1190 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                       | 1636SU05C-1190 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 3                                     |                             | Whistle notch<br>shank/ Schaft        | 1734SU03C-1190 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                       | 1736SU05C-1190 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 8                                     |                             |                                       | 1538SU08C-1190 | 12                                      | 162                           | 114                        | 99                                             | 45                          | ●              |
| 12.0                                 | 3                                     | External<br>Extern          | Straight shank<br>Zylinder-<br>schaft | 1534SU03-1200  | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                       | 1536SU05-1200  | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 3                                     |                             |                                       | 1534SU03C-1200 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     | Internal<br>Intern          | Weldon<br>shank/ Schaft               | 1536SU05C-1200 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 3                                     |                             |                                       | 1634SU03C-1200 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                       | 1636SU05C-1200 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 3                                     |                             | Whistle notch<br>shank/ Schaft        | 1734SU03C-1200 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                       | 1736SU05C-1200 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 8                                     |                             |                                       | 1538SU08C-1200 | 12                                      | 162                           | 114                        | 99                                             | 45                          | ●              |
| 12.1                                 | 3                                     | External<br>Extern          | Straight shank<br>Zylinder-<br>schaft | 1534SU03-1210  | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                       | 1536SU05-1210  | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                      | 3                                     |                             |                                       | 1534SU03C-1210 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                      | 5                                     | Internal<br>Intern          | Weldon<br>shank/ Schaft               | 1536SU05C-1210 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                      | 3                                     |                             |                                       | 1634SU03C-1210 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                       | 1636SU05C-1210 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                      | 3                                     |                             | Whistle notch<br>shank/ Schaft        | 1734SU03C-1210 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                       | 1736SU05C-1210 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |

| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (mm) | Drilling depth<br>Bohrtiefe<br>(L/d <sub>1</sub> ) | Cooling mode<br>Kühlmittel | Shank<br>Schaft                | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|---------------------------------------------------|----------------------------------------------------|----------------------------|--------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                                   |                                                    |                            |                                |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                                   |                                                    |                            |                                |                | d <sub>2</sub> (h <sub>6</sub> )        | l <sub>1</sub>                | l <sub>2</sub>             | l <sub>3</sub>                                 | l <sub>4</sub>              |                |
| 12.2                                              | 3                                                  | External<br>Extern         | Straight<br>shank              | 1534SU03-1220  | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                                   | 5                                                  |                            |                                | 1536SU05-1220  | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern         | Zylinder-<br>schaft            | 1534SU03C-1220 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                                   | 5                                                  |                            |                                | 1536SU05C-1220 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                                   | 3                                                  |                            | Weldon<br>shank/ Schaft        | 1634SU03C-1220 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                                   | 5                                                  |                            |                                | 1636SU05C-1220 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                                   | 3                                                  |                            | Whistle notch<br>shank/ Schaft | 1734SU03C-1220 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                                   | 5                                                  |                            |                                | 1736SU05C-1220 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
| 12.25                                             | 3                                                  | External<br>Extern         | Straight<br>shank              | 1534SU03-1225  | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                                   | 5                                                  |                            |                                | 1536SU05-1225  | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern         | Zylinder-<br>schaft            | 1534SU03C-1225 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                                   | 5                                                  |                            |                                | 1536SU05C-1225 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                                   | 3                                                  |                            | Weldon<br>shank/ Schaft        | 1634SU03C-1225 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ○              |
|                                                   | 5                                                  |                            |                                | 1636SU05C-1225 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                                   | 3                                                  |                            | Whistle notch<br>shank/ Schaft | 1734SU03C-1225 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                                   | 5                                                  |                            |                                | 1736SU05C-1225 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ○              |
| 12.3                                              | 3                                                  | External<br>Extern         | Straight<br>shank              | 1534SU03-1230  | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                                   | 5                                                  |                            |                                | 1536SU05-1230  | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern         | Zylinder-<br>schaft            | 1534SU03C-1230 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                                   | 5                                                  |                            |                                | 1536SU05C-1230 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                                   | 3                                                  |                            | Weldon<br>shank/ Schaft        | 1634SU03C-1230 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                                   | 5                                                  |                            |                                | 1636SU05C-1230 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                                   | 3                                                  |                            | Whistle notch<br>shank/ Schaft | 1734SU03C-1230 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                                   | 5                                                  |                            |                                | 1736SU05C-1230 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |

### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Type<br>Typ | Grade<br>Sorte | Workpiece material · Werkstückstoff              |                                   |                                 |        |        |                                           |                        |                                                      |                              |                               |                                            |
|-------------|----------------|--------------------------------------------------|-----------------------------------|---------------------------------|--------|--------|-------------------------------------------|------------------------|------------------------------------------------------|------------------------------|-------------------------------|--------------------------------------------|
|             |                | Carbon steel<br>Kohlenstoff<br>- Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron,<br>Grauguss | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Warmfeste<br>Leg. |
|             |                |                                                  |                                   | ~40HRC                          | ~50HRC | ~60HRC |                                           |                        |                                                      |                              |                               |                                            |
| SU*         | KDG303         | ✓                                                | ✓                                 | ✓                               |        |        | ✓                                         | ✓                      | ✓                                                    |                              |                               |                                            |
| SUK*        | KDG303         |                                                  |                                   |                                 |        |        |                                           | ✓                      | ✓                                                    |                              |                               |                                            |

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ISO Kennzeichen

Cutting data 96-109  
Schnittdaten

Technical Information C110-116  
Technische Information

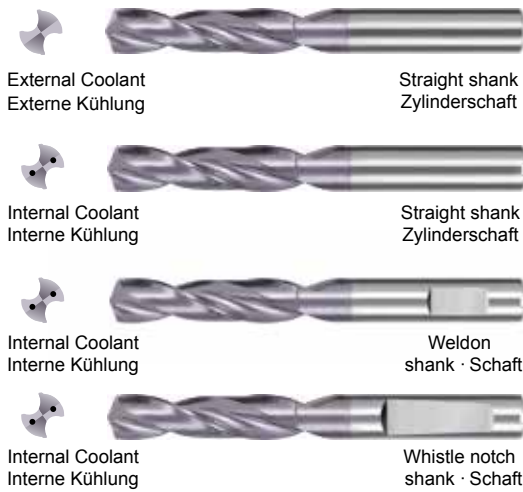
Non-standard tailor made C 117-121  
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# Drilling · Bohren

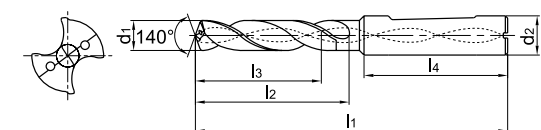
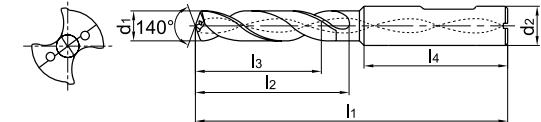
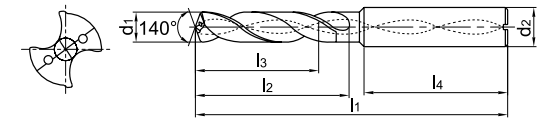
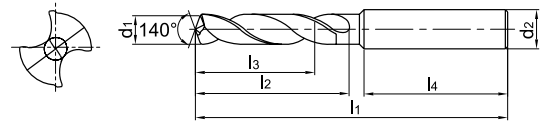
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Please add K when ordering / Bitte bei der Bestellung K ergänzen



## General machining · Allgemeine Bearbeitung



- For high efficient drilling of P (steel), M (stainless steel) and K (cast iron) with high performance.
- Waveform cutting edges achieve outstanding sharpness and strength, promoting chip removal.
- Hocheffizientes Bohren von allgemeinen Stahlwerkstoffen, rostfreien Werkstoffen und Guss.
- Wellenförmige Schneidkante mit hoher Schneidenschärfe, Stabilität und guter Spanabfuhr.

| Drill diameter<br>Bohrer Ø<br>d1(m7) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft               | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|--------------------------------------|---------------------------------------|-----------------------------|-------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                      |                                       |                             |                               |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                      |                                       |                             |                               |                | d2(h6)                                  | l1                            | l2                         | l3                                             | l4                          |                |
| 12.5                                 | 3                                     | External<br>Extern          | Straight<br>shank             | 1534SU03-1250  | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                      | 5                                     |                             |                               | 1536SU05-1250  | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                      | 3                                     | Internal<br>Intern          | Zylinder-<br>schaft           | 1534SU03C-1250 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                      | 5                                     |                             |                               | 1536SU05C-1250 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                      | 3                                     |                             | Weldon<br>shank/Schaft        | 1634SU03C-1250 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                      | 5                                     |                             |                               | 1636SU05C-1250 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                      | 3                                     |                             | Whistle notch<br>shank/Schaft | 1734SU03C-1250 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                      | 5                                     |                             |                               | 1736SU05C-1250 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                      | 8                                     |                             |                               | 1538SU08C-1250 | 14                                      | 178                           | 133                        | 116                                            | 45                          | ●              |
| 12.7                                 | 3                                     | External<br>Extern          | Straight<br>shank             | 1534SU03-1270  | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                      | 5                                     |                             |                               | 1536SU05-1270  | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                      | 3                                     | Internal<br>Intern          | Zylinder-<br>schaft           | 1534SU03C-1270 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                      | 5                                     |                             |                               | 1536SU05C-1270 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                      | 3                                     |                             | Weldon<br>shank/Schaft        | 1634SU03C-1270 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                      | 5                                     |                             |                               | 1636SU05C-1270 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                      | 3                                     |                             | Whistle notch<br>shank/Schaft | 1734SU03C-1270 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                      | 5                                     |                             |                               | 1736SU05C-1270 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                      | 8                                     |                             |                               | 1538SU08C-1270 | 14                                      | 178                           | 133                        | 116                                            | 45                          | ●              |
| 12.75                                | 3                                     | External<br>Extern          | Straight<br>shank             | 1534SU03-1275  | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                      | 5                                     |                             |                               | 1536SU05-1275  | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                      | 3                                     | Internal<br>Intern          | Zylinder-<br>schaft           | 1534SU03C-1275 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                      | 5                                     |                             |                               | 1536SU05C-1275 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                      | 3                                     |                             | Weldon<br>shank/Schaft        | 1634SU03C-1275 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ○              |
|                                      | 5                                     |                             |                               | 1636SU05C-1275 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ○              |
|                                      | 3                                     |                             | Weldon<br>shank/Schaft        | 1734SU03C-1275 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                      | 5                                     |                             |                               | 1736SU05C-1275 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |

| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (mm) | Drilling depth<br>Bohrtiefe<br>(L/d <sub>1</sub> ) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                | Type<br>Typ        | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|---------------------------------------------------|----------------------------------------------------|-----------------------------|--------------------------------|--------------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                                   |                                                    |                             |                                |                    | Shankdiameter Ø<br>Schaftdurchmesser    | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                                   |                                                    |                             |                                |                    | d <sub>2</sub> (h <sub>6</sub> )        | l <sub>1</sub>                | l <sub>2</sub>             | l <sub>3</sub>                                 | l <sub>4</sub>              | KDG303         |
| 12.8                                              | 3                                                  | External<br>Extern          | Straight<br>shank              | 1534SU03-1280      | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05-1280      | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03C-1280     | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-1280     | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft        | 1634SU03C-1280     | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-1280     | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-1280     | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-1280     | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                                   | 8                                                  |                             |                                | 1538SU08C-1280     | 14                                      | 178                           | 133                        | 116                                            | 45                          | ●              |
| 13.0                                              | 3                                                  | External<br>Extern          | Straight<br>shank              | 1534SU03-1300      | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05-1300      | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03C-1300     | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-1300     | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft        | 1634SU03C-1300     | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-1300     | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-1300     | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-1300     | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                                   | 8                                                  |                             |                                | 1538SU08C-1300     | 14                                      | 178                           | 133                        | 116                                            | 45                          | ●              |
| 13.1                                              | 3                                                  | External<br>Intern          | Straight<br>shank              | 1534SU03-1310      | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05-1310      | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03C-1310     | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-1310     | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft        | 1634SU03C-1310     | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-1310     | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-1310     | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-1310     | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                                   | 13.35                                              |                             | 3                              | External<br>Extern | Straight<br>shank                       | 1534SU03-1335                 | 14                         | 107                                            | 60                          | 43             |
| 5                                                 |                                                    | 1536SU05-1335               | 14                             |                    |                                         | 124                           | 77                         | 60                                             | 56                          | ○              |
| 3                                                 |                                                    | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03C-1335     | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
| 5                                                 |                                                    |                             |                                | 1536SU05C-1335     | 14                                      | 124                           | 77                         | 60                                             | 56                          | ○              |
| 3                                                 |                                                    |                             | Weldon<br>shank/ Schaft        | 1634SU03C-1335     | 14                                      | 107                           | 60                         | 43                                             | 45                          | ○              |
| 5                                                 |                                                    |                             |                                | 1636SU05C-1335     | 14                                      | 124                           | 77                         | 60                                             | 56                          | ○              |
| 3                                                 |                                                    |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-1335     | 14                                      | 107                           | 60                         | 43                                             | 45                          | ○              |
| 5                                                 |                                                    |                             |                                | 1736SU05C-1335     | 14                                      | 124                           | 77                         | 60                                             | 56                          | ○              |

### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Type<br>Typ | Grade<br>Sorte | Workpiece material · Werkstückstoff              |                                   |                                 |        |        |                                           |                        |                                                      |                              |                               |                                             |
|-------------|----------------|--------------------------------------------------|-----------------------------------|---------------------------------|--------|--------|-------------------------------------------|------------------------|------------------------------------------------------|------------------------------|-------------------------------|---------------------------------------------|
|             |                | Carbon steel<br>Kohlenstoff<br>- Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron,<br>Grauguss | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Wärmefeste<br>Leg. |
|             |                |                                                  |                                   | ~40HRC                          | ~50HRC | ~60HRC |                                           |                        |                                                      |                              |                               |                                             |
| SU*         | KDG303         | ✓                                                | ✓                                 | ✓                               |        |        | ✓                                         | ✓                      | ✓                                                    |                              |                               |                                             |
| SUK*        | KDG303         |                                                  |                                   |                                 |        |        |                                           | ✓                      | ✓                                                    |                              |                               |                                             |

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ISO Kennzeichen

Cutting data 96-109  
Schnittdaten

Technical Information C110-116  
Technische Information

Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge

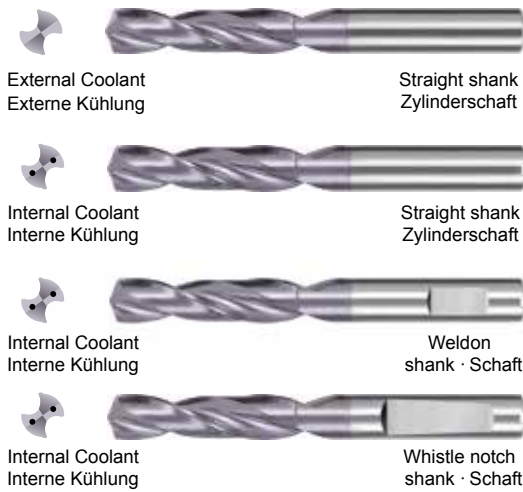


# Drilling · Bohren

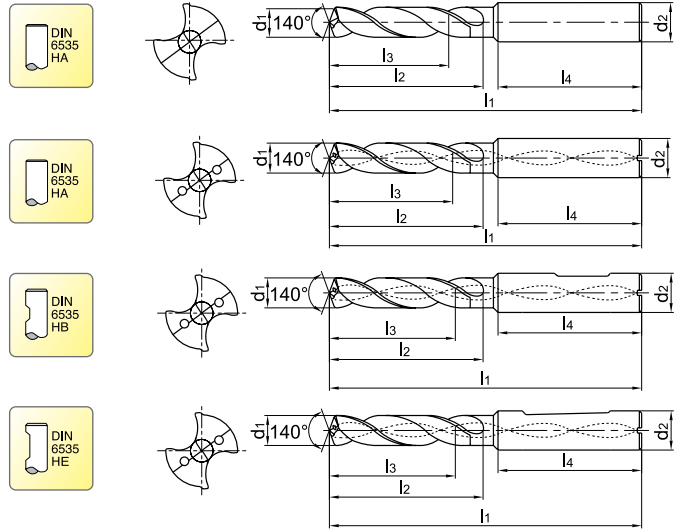
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Please add K when ordering / Bitte bei der Bestellung K ergänzen



## General machining · Allgemeine Bearbeitung



- For high efficient drilling of P (steel), M (stainless steel) and K (cast iron) with high performance.
- Waveform cutting edges achieve outstanding sharpness and strength, promoting chip removal.
- Hocheffizientes Bohren von allgemeinen Stahlwerkstoffen, rostfreien Werkstoffen und Guss.
- Wellenförmige Schneidkante mit hoher Schneidschärfe, Stabilität und guter Spanabfuhr.

| Drill diameter<br>Bohrer Ø<br>d1(m7) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|--------------------------------------|---------------------------------------|-----------------------------|--------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                      |                                       |                             |                                |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                      |                                       |                             |                                |                | d2(h6)                                  | l1                            | l2                         | l3                                             | l4                          |                |
| 13.5                                 | 3                                     | External<br>Extern          | Straight<br>shank              | 1534SU03-1350  | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                | 1536SU05-1350  | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                      | 3                                     | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03C-1350 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                | 1536SU05C-1350 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                      | 3                                     |                             | Weldon<br>shank/ Schaft        | 1634SU03C-1350 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                | 1636SU05C-1350 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                      | 3                                     |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-1350 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                | 1736SU05C-1350 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
| 13.8                                 | 8                                     |                             |                                | 1538SU08C-1350 | 14                                      | 178                           | 133                        | 116                                            | 45                          | ●              |
|                                      | 3                                     | External<br>Extern          | Straight<br>shank              | 1534SU03-1380  | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                | 1536SU05-1380  | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                      | 3                                     | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03C-1380 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                | 1536SU05C-1380 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                      | 3                                     |                             | Weldon<br>shank/ Schaft        | 1634SU03C-1380 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                | 1636SU05C-1380 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                      | 3                                     |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-1380 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                      | 5                                     |                             |                                | 1736SU05C-1380 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |

| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (mm) | Drilling depth<br>Bohrtiefe<br>(L/d <sub>1</sub> ) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|---------------------------------------------------|----------------------------------------------------|-----------------------------|--------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                                   |                                                    |                             |                                |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                                   |                                                    |                             |                                |                | d <sub>2</sub> (h <sub>6</sub> )        | l <sub>1</sub>                | l <sub>2</sub>             | l <sub>3</sub>                                 | l <sub>4</sub>              |                |
| 14.0                                              | 3                                                  | External<br>Extern          | Straight<br>shank              | 1534SU03-1400  | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05-1400  | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03C-1400 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-1400 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft        | 1634SU03C-1400 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-1400 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-1400 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-1400 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
| 14.2                                              | 8                                                  | External<br>Extern          | Straight<br>shank              | 1538SU08C-1400 | 14                                      | 178                           | 133                        | 116                                            | 45                          | ●              |
|                                                   | 3                                                  |                             |                                | 1534SU03-1420  | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                                   | 5                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1536SU05-1420  | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                                   | 3                                                  |                             |                                | 1534SU03C-1420 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                                   | 5                                                  |                             | Weldon<br>shank/ Schaft        | 1536SU05C-1420 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                                   | 3                                                  |                             |                                | 1634SU03C-1420 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ○              |
|                                                   | 5                                                  |                             | Whistle notch<br>shank/ Schaft | 1636SU05C-1420 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                                   | 3                                                  |                             |                                | 1734SU03C-1420 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
| 14.25                                             | 5                                                  | External<br>Extern          | Straight<br>shank              | 1736SU05C-1420 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                                   | 3                                                  |                             |                                | 1534SU03-1425  | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                                   | 5                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1536SU05-1425  | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                                   | 3                                                  |                             |                                | 1534SU03C-1425 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                                   | 5                                                  |                             | Weldon<br>shank/ Schaft        | 1536SU05C-1425 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                                   | 3                                                  |                             |                                | 1634SU03C-1425 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ○              |
|                                                   | 5                                                  |                             | Whistle notch<br>shank/ Schaft | 1636SU05C-1425 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                                   | 3                                                  |                             |                                | 1734SU03C-1425 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
| 14.3                                              | 5                                                  | External<br>Extern          | Straight<br>shank              | 1736SU05C-1425 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                                   | 3                                                  |                             |                                | 1534SU03-1430  | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                                   | 5                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1536SU05-1430  | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                                   | 3                                                  |                             |                                | 1534SU03C-1430 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                                   | 5                                                  |                             | Weldon<br>shank/ Schaft        | 1536SU05C-1430 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                                   | 3                                                  |                             |                                | 1634SU03C-1430 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ○              |
|                                                   | 5                                                  |                             | Whistle notch<br>shank/ Schaft | 1636SU05C-1430 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                                   | 3                                                  |                             |                                | 1734SU03C-1430 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |

### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Type<br>Typ | Grade<br>Sorte | Workpiece material · Werkstückstoff              |                                   |                                 |        |        |                                           |                        |                                                      |                              |                               |                                            |
|-------------|----------------|--------------------------------------------------|-----------------------------------|---------------------------------|--------|--------|-------------------------------------------|------------------------|------------------------------------------------------|------------------------------|-------------------------------|--------------------------------------------|
|             |                | Carbon steel<br>Kohlenstoff<br>- Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron,<br>Grauguss | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Warmfeste<br>Leg. |
|             |                |                                                  |                                   | ~40HRC                          | ~50HRC | ~60HRC |                                           |                        |                                                      |                              |                               |                                            |
| SU*         | KDG303         | ✓                                                | ✓                                 | ✓                               |        |        | ✓                                         | ✓                      | ✓                                                    |                              |                               |                                            |
| SUK*        | KDG303         |                                                  |                                   |                                 |        |        |                                           | ✓                      | ✓                                                    |                              |                               |                                            |

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Code key C 8  
ISO Kennzeichen

Cutting data 96-109  
Schnittdaten

Technical Information C110-116  
Technische Information

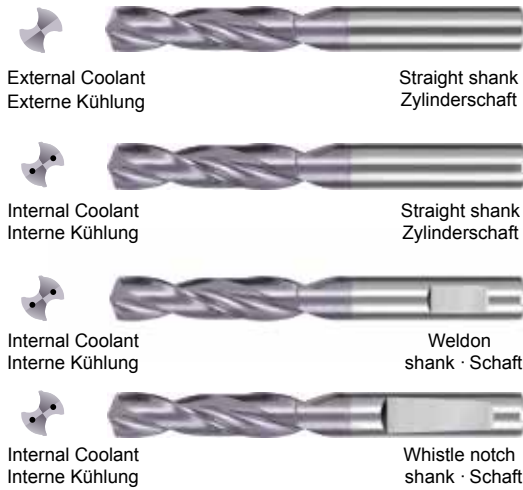
Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge

# Drilling · Bohren

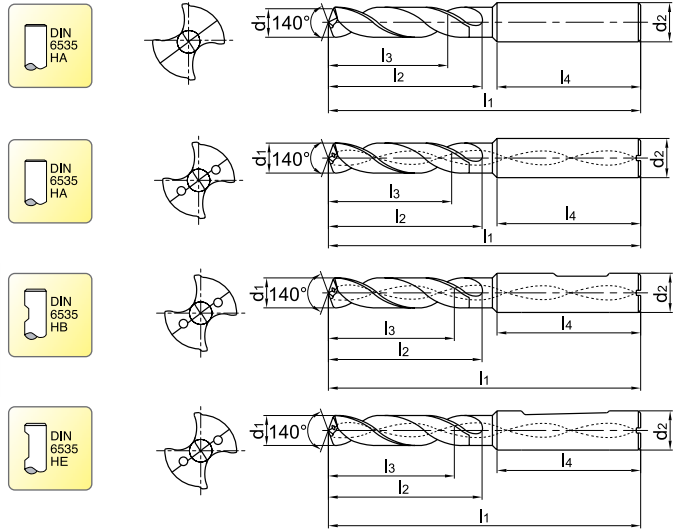
Solid carbide drills · Vollhartmetallbohrer

**SU&SUK**

Please add K when ordering / Bitte bei der Bestellung K ergänzen



## General machining · Allgemeine Bearbeitung



- For high efficient drilling of P (steel), M (stainless steel) and K (cast iron) with high performance.
- Waveform cutting edges achieve outstanding sharpness and strength, promoting chip removal.
- Hocheffizientes Bohren von allgemeinen Stahlwerkstoffen, rostfreien Werkstoffen und Guss.
- Wellenförmige Schneidkante mit hoher Schneidschärfe, Stabilität und guter Spanabfuhr.

| Drill diameter<br>Bohrer Ø<br>d1(m7) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                       | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|--------------------------------------|---------------------------------------|-----------------------------|---------------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                      |                                       |                             |                                       |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                      |                                       |                             |                                       |                | d2(h6)                                  | l1                            | l2                         | l3                                             | l4                          |                |
| 14.5                                 | 3                                     | External<br>Extern          | Straight shank<br>Zylinder-<br>schaft | 1534SU03-1450  | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                      | 5                                     |                             |                                       | 1536SU05-1450  | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                      | 3                                     | Internal<br>Intern          | Straight shank<br>Zylinder-<br>schaft | 1534SU03C-1450 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                      | 5                                     |                             |                                       | 1536SU05C-1450 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                      | 3                                     |                             | Weldon shank/Schaft                   | 1634SU03C-1450 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                      | 5                                     |                             |                                       | 1636SU05C-1450 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                      | 3                                     |                             | Whistle notch shank/Schaft            | 1734SU03C-1450 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                      | 5                                     |                             |                                       | 1736SU05C-1450 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                      | 8                                     |                             |                                       | 1538SU08C-1450 | 16                                      | 204                           | 152                        | 132                                            | 48                          | ●              |
| 14.75                                | 3                                     | External<br>Extern          | Straight shank<br>Zylinder-<br>schaft | 1534SU03-1475  | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                      | 5                                     |                             |                                       | 1536SU05-1475  | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                      | 3                                     | Internal<br>Intern          | Straight shank<br>Zylinder-<br>schaft | 1534SU03C-1475 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                      | 5                                     |                             |                                       | 1536SU05C-1475 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                      | 3                                     |                             | Weldon shank/Schaft                   | 1634SU03C-1475 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ○              |
|                                      | 5                                     |                             |                                       | 1636SU05C-1475 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ○              |
|                                      | 3                                     |                             | Whistle notch shank/Schaft            | 1734SU03C-1475 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                      | 5                                     |                             |                                       | 1736SU05C-1475 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |

| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (mm) | Drilling depth<br>Bohrtiefe<br>(L/d <sub>1</sub> ) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|---------------------------------------------------|----------------------------------------------------|-----------------------------|--------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                                   |                                                    |                             |                                |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                                   |                                                    |                             |                                |                | d <sub>2</sub> (h <sub>e</sub> )        | l <sub>1</sub>                | l <sub>2</sub>             | l <sub>3</sub>                                 | l <sub>4</sub>              |                |
| 14.8                                              | 3                                                  | External<br>Extern          | Straight<br>shank              | 1534SU03-1480  | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05-1480  | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03C-1480 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-1480 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft        | 1634SU03C-1480 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-1480 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-1480 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-1480 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                                   | 8                                                  |                             |                                | 1538SU08C-1480 | 16                                      | 204                           | 152                        | 132                                            | 48                          | ●              |
| 15.0                                              | 3                                                  | External<br>Extern          | Straight<br>shank              | 1534SU03-1500  | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05-1500  | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03C-1500 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-1500 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft        | 1634SU03C-1500 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-1500 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-1500 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-1500 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                                   | 8                                                  |                             |                                | 1538SU08C-1500 | 16                                      | 204                           | 152                        | 132                                            | 48                          | ●              |
| 15.1                                              | 3                                                  | External<br>Extern          | Straight<br>shank              | 1534SU03-1510  | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05-1510  | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03C-1510 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-1510 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft        | 1634SU03C-1510 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-1510 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-1510 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-1510 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                                   | 8                                                  |                             |                                | 1538SU08C-1510 | 16                                      | 204                           | 152                        | 132                                            | 48                          | ●              |
| 15.3                                              | 3                                                  | External<br>Extern          | Straight<br>shank              | 1534SU03-1530  | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-1530 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03-1535  | 16                                      | 115                           | 65                         | 45                                             | 48                          | ○              |
|                                                   | 5                                                  |                             |                                | 1536SU05-1535  | 16                                      | 133                           | 83                         | 63                                             | 48                          | ○              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft        | 1534SU03C-1535 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ○              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-1535 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ○              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1634SU03C-1535 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ○              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-1535 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ○              |
|                                                   | 8                                                  |                             |                                | 1734SU03C-1535 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ○              |
| 15.35                                             | 3                                                  | External<br>Extern          | Straight<br>shank              | 1736SU05C-1535 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ○              |
|                                                   | 5                                                  |                             |                                |                |                                         |                               |                            |                                                |                             |                |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03-1535  | 16                                      | 115                           | 65                         | 45                                             | 48                          | ○              |
|                                                   | 5                                                  |                             |                                | 1536SU05-1535  | 16                                      | 133                           | 83                         | 63                                             | 48                          | ○              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft        | 1534SU03C-1535 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ○              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-1535 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ○              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1634SU03C-1535 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ○              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-1535 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ○              |
|                                                   | 8                                                  |                             |                                | 1734SU03C-1535 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ○              |

### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Type<br>Typ | Grade<br>Sorte | Workpiece material · Werkstückstoff              |                                   |                                 |        |        |                                           |                        |                                                      |                              |                               |                                             |
|-------------|----------------|--------------------------------------------------|-----------------------------------|---------------------------------|--------|--------|-------------------------------------------|------------------------|------------------------------------------------------|------------------------------|-------------------------------|---------------------------------------------|
|             |                | Carbon steel<br>Kohlenstoff<br>- Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron,<br>Grauguss | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Wärmefeste<br>Leg. |
|             |                |                                                  |                                   | ~40HRC                          | ~50HRC | ~60HRC |                                           |                        |                                                      |                              |                               |                                             |
| SU*         | KDG303         | ✓                                                | ✓                                 | ✓                               |        |        | ✓                                         | ✓                      | ✓                                                    |                              |                               |                                             |
| SUK*        | KDG303         |                                                  |                                   |                                 |        |        |                                           | ✓                      | ✓                                                    |                              |                               |                                             |

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Schnittdaten

Technical Information C110-116  
Technische Information

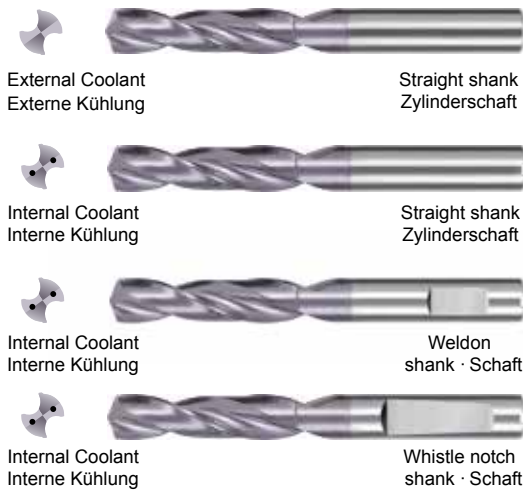
Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge

# Drilling · Bohren

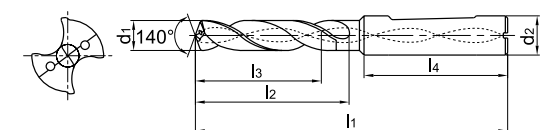
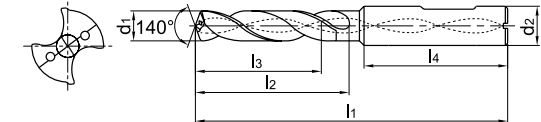
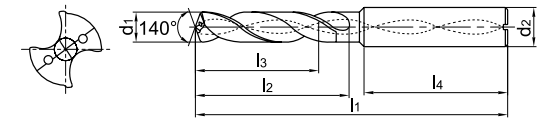
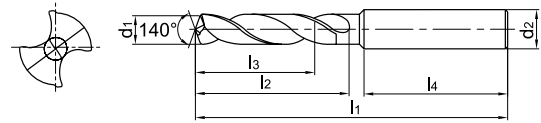
Solid carbide drills · Vollhartmetallbohrer

**SU&SUK**

Please add K when ordering / Bitte bei der Bestellung K ergänzen



## General machining · Allgemeine Bearbeitung



- For high efficient drilling of P (steel), M (stainless steel) and K (cast iron) with high performance.
- Waveform cutting edges achieve outstanding sharpness and strength, promoting chip removal.
- Hocheffizientes Bohren von allgemeinen Stahlwerkstoffen, rostfreien Werkstoffen und Guss.
- Wellenförmige Schneidkante mit hoher Schneidenschärfe, Stabilität und guter Spanabfuhr.

| Drill diameter<br>Bohrer Ø<br>d1(m7) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                       | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|--------------------------------------|---------------------------------------|-----------------------------|---------------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                      |                                       |                             |                                       |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                      |                                       |                             |                                       |                | d2(h6)                                  | l1                            | l2                         | l3                                             | l4                          |                |
| 15.5                                 | 3                                     | External<br>Extern          | Straight<br>shank                     | 1534SU03-1550  | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                      | 5                                     |                             |                                       | 1536SU05-1550  | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                      | 3                                     | Internal<br>Intern          | Zylinder-<br>schaft                   | 1534SU03C-1550 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                      | 5                                     |                             |                                       | 1536SU05C-1550 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                      | 3                                     |                             | Weldon<br>shank/ Schaft               | 1634SU03C-1550 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ○              |
|                                      | 5                                     |                             |                                       | 1636SU05C-1550 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                      | 3                                     |                             | Whistle notch<br>shank/ Schaft        | 1734SU03C-1550 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                      | 5                                     |                             |                                       | 1736SU05C-1550 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
| 15.8                                 | 3                                     | External<br>Extern          | Straight<br>shank                     | 1534SU03-1580  | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                      | 5                                     |                             |                                       | 1536SU05-1580  | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                      | 3                                     | Internal<br>Intern          | Zylinder-<br>schaft                   | 1534SU03C-1580 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                      | 5                                     |                             |                                       | 1536SU05C-1580 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                      | 3                                     |                             | Weldon<br>shank/ Schaft               | 1634SU03C-1580 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ○              |
|                                      | 5                                     |                             |                                       | 1636SU05C-1580 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                      | 3                                     |                             | Whistle notch<br>shank/ Schaft        | 1734SU03C-1580 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                      | 5                                     |                             |                                       | 1736SU05C-1580 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
| 16.0                                 | 3                                     | External<br>Extern          | Straight<br>shank                     | 1534SU03-1600  | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                      | 5                                     |                             |                                       | 1536SU05-1600  | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                      | 3                                     | Internal<br>Intern          | Zylinder-<br>schaft                   | 1534SU03C-1600 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                      | 5                                     |                             |                                       | 1536SU05C-1600 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                      | 3                                     |                             | Weldon<br>shank/ Schaft               | 1634SU03C-1600 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                      | 5                                     |                             |                                       | 1636SU05C-1600 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                      | 3                                     |                             | Whistle notch<br>shank/ Schaft        | 1734SU03C-1600 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                      | 5                                     |                             |                                       | 1736SU05C-1600 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
| 16.1                                 | 3                                     | External<br>Extern          | Straight shank<br>Zylinder-<br>schaft | 1538SU08C-1600 | 16                                      | 204                           | 152                        | 132                                            | 48                          | ●              |
|                                      | 3                                     |                             |                                       | 1534SU03-1610  | 18                                      | 123                           | 73                         | 51                                             | 48                          | ●              |



| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (mm) | Drilling depth<br>Bohrtiefe<br>(L/d <sub>1</sub> ) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                  | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|---------------------------------------------------|----------------------------------------------------|-----------------------------|----------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                                   |                                                    |                             |                                  |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                                   |                                                    |                             |                                  |                | d <sub>2</sub> (h <sub>6</sub> )        | l <sub>1</sub>                | l <sub>2</sub>             | l <sub>3</sub>                                 | l <sub>4</sub>              |                |
| 16.5                                              | 3                                                  | External<br>Extern          | Straight<br>shank                | 1534SU03-1650  | 18                                      | 123                           | 73                         | 51                                             | 48                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1536SU05-1650  | 18                                      | 143                           | 93                         | 71                                             | 48                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft              | 1534SU03C-1650 | 18                                      | 123                           | 73                         | 51                                             | 48                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1536SU05C-1650 | 18                                      | 143                           | 93                         | 71                                             | 48                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/Schaft           | 1634SU03C-1650 | 18                                      | 123                           | 73                         | 51                                             | 48                          | ○              |
|                                                   | 5                                                  |                             |                                  | 1636SU05C-1650 | 18                                      | 143                           | 93                         | 71                                             | 48                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/Schaft    | 1734SU03C-1650 | 18                                      | 123                           | 73                         | 51                                             | 48                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1736SU05C-1650 | 18                                      | 143                           | 93                         | 71                                             | 48                          | ●              |
|                                                   | 8                                                  |                             |                                  | 1538SU08C-1650 | 18                                      | 223                           | 171                        | 149                                            | 48                          | ●              |
| 16.75                                             | 3                                                  | External<br>Extern          | Straight<br>shank                | 1534SU03-1675  | 18                                      | 123                           | 73                         | 51                                             | 48                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1536SU05-1675  | 18                                      | 143                           | 93                         | 71                                             | 48                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft              | 1534SU03C-1675 | 18                                      | 123                           | 73                         | 51                                             | 48                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1536SU05C-1675 | 18                                      | 143                           | 93                         | 71                                             | 48                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/Schaft           | 1634SU03C-1675 | 18                                      | 123                           | 73                         | 51                                             | 48                          | ○              |
|                                                   | 5                                                  |                             |                                  | 1636SU05C-1675 | 18                                      | 143                           | 93                         | 71                                             | 48                          | ○              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/Schaft    | 1734SU03C-1675 | 18                                      | 123                           | 73                         | 51                                             | 48                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1736SU05C-1675 | 18                                      | 143                           | 93                         | 71                                             | 48                          | ●              |
| 16.8                                              | 3                                                  | External<br>Extern          | Straight<br>shank                | 1534SU03-1680  | 18                                      | 123                           | 73                         | 51                                             | 48                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1536SU05-1680  | 18                                      | 143                           | 93                         | 71                                             | 48                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft              | 1534SU03C-1680 | 18                                      | 123                           | 73                         | 51                                             | 48                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1536SU05C-1680 | 18                                      | 143                           | 93                         | 71                                             | 48                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/Schaft           | 1634SU03C-1680 | 18                                      | 123                           | 73                         | 51                                             | 48                          | ○              |
|                                                   | 5                                                  |                             |                                  | 1636SU05C-1680 | 18                                      | 143                           | 93                         | 71                                             | 48                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/Schaft    | 1734SU03C-1680 | 18                                      | 123                           | 73                         | 51                                             | 48                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1736SU05C-1680 | 18                                      | 143                           | 93                         | 71                                             | 48                          | ●              |
| 17.0                                              | 3                                                  | External<br>Extern          | Straight<br>shank                | 1534SU03-1700  | 18                                      | 123                           | 73                         | 51                                             | 48                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1536SU05-1700  | 18                                      | 143                           | 93                         | 71                                             | 48                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft              | 1534SU03C-1700 | 18                                      | 123                           | 73                         | 51                                             | 48                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1536SU05C-1700 | 18                                      | 143                           | 93                         | 71                                             | 48                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/Schaft           | 1634SU03C-1700 | 18                                      | 123                           | 73                         | 51                                             | 48                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1636SU05C-1700 | 18                                      | 143                           | 93                         | 71                                             | 48                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/Schaft    | 1734SU03C-1700 | 18                                      | 123                           | 73                         | 51                                             | 48                          | ●              |
|                                                   | 5                                                  |                             |                                  | 1736SU05C-1700 | 18                                      | 143                           | 93                         | 71                                             | 48                          | ●              |
|                                                   | 8                                                  |                             | straight shank<br>Zylinderschaft | 1538SU08C-1700 | 18                                      | 223                           | 171                        | 149                                            | 48                          | ●              |

C

Solid carbide drills  
Vollhartmetallbohrer

### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Type<br>Typ | Grade<br>Sorte | Workpiece material · Werkstückstoff              |                                   |                                 |        |        |                                           |                        |                                                      |                              |                               |                                            |
|-------------|----------------|--------------------------------------------------|-----------------------------------|---------------------------------|--------|--------|-------------------------------------------|------------------------|------------------------------------------------------|------------------------------|-------------------------------|--------------------------------------------|
|             |                | Carbon steel<br>Kohlenstoff<br>- Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron,<br>Grauguss | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Warmfeste<br>Leg. |
|             |                |                                                  |                                   | ~40HRC                          | ~50HRC | ~60HRC |                                           |                        |                                                      |                              |                               |                                            |
| SU*         | KDG303         | ✓                                                | ✓                                 | ✓                               |        |        | ✓                                         | ✓                      | ✓                                                    |                              |                               |                                            |
| SUK*        | KDG303         |                                                  |                                   |                                 |        |        |                                           | ✓                      | ✓                                                    |                              |                               |                                            |

All articles SUK on demand / Alle Artikel SUK auf Anfrage

Code key C 8  
ISO Kennzeichen

Cutting data 96-109  
Schnittdaten

Technical Information C110-116  
Technische Information

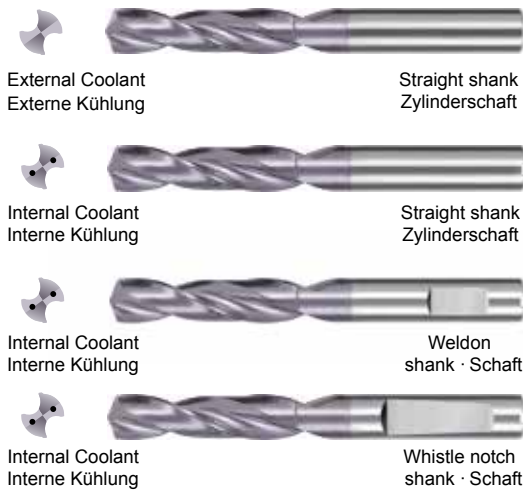
Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge

# Drilling · Bohren

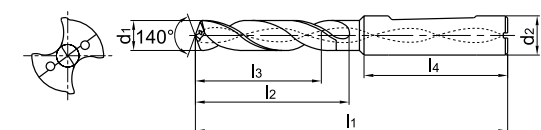
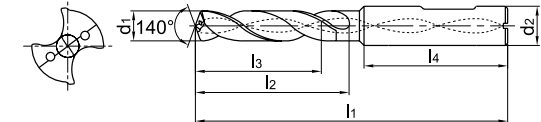
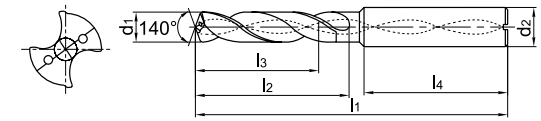
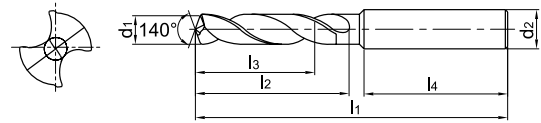
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Please add K when ordering / Bitte bei der Bestellung K ergänzen



## General machining · Allgemeine Bearbeitung



- For high efficient drilling of P (steel), M (stainless steel) and K (cast iron) with high performance.
- Waveform cutting edges achieve outstanding sharpness and strength, promoting chip removal.
- Hocheffizientes Bohren von allgemeinen Stahlwerkstoffen, rostfreien Werkstoffen und Guss.
- Wellenförmige Schneidkante mit hoher Schneidenschärfe, Stabilität und guter Spanabfuhr.

| Drill diameter<br>Bohrer Ø<br>d1(m7) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                  | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|--------------------------------------|---------------------------------------|-----------------------------|----------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                      |                                       |                             |                                  |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                      |                                       |                             |                                  |                | d2(h6)                                  | l1                            | l2                         | l3                                             | l4                          |                |
| 17.5                                 | 3                                     | External<br>Extern          | Straight<br>shank                | 1534SU03-1750  | 18                                      | 123                           | 73                         | 51                                             | 48                          | ●              |
|                                      | 5                                     |                             |                                  | 1536SU05-1750  | 18                                      | 143                           | 93                         | 71                                             | 48                          | ●              |
|                                      | 3                                     | Internal<br>Intern          | Zylinder-<br>schaft              | 1534SU03C-1750 | 18                                      | 123                           | 73                         | 51                                             | 48                          | ●              |
|                                      | 5                                     |                             |                                  | 1536SU05C-1750 | 18                                      | 143                           | 93                         | 71                                             | 48                          | ●              |
|                                      | 3                                     |                             | Weldon<br>shank/Schaft           | 1634SU03C-1750 | 18                                      | 123                           | 73                         | 51                                             | 48                          | ○              |
|                                      | 5                                     |                             |                                  | 1636SU05C-1750 | 18                                      | 143                           | 93                         | 71                                             | 48                          | ●              |
|                                      | 3                                     |                             | Whistle notch<br>shank/Schaft    | 1734SU03C-1750 | 18                                      | 123                           | 73                         | 51                                             | 48                          | ●              |
|                                      | 5                                     |                             |                                  | 1736SU05C-1750 | 18                                      | 143                           | 93                         | 71                                             | 48                          | ●              |
|                                      | 8                                     |                             |                                  | 1538SU08C-1750 | 18                                      | 223                           | 171                        | 149                                            | 48                          | ●              |
| 17.8                                 | 3                                     | External<br>Extern          | Straight<br>shank                | 1534SU03-1780  | 18                                      | 123                           | 73                         | 51                                             | 48                          | ●              |
|                                      | 5                                     |                             |                                  | 1536SU05-1780  | 18                                      | 143                           | 93                         | 71                                             | 48                          | ●              |
|                                      | 3                                     | Internal<br>Intern          | Zylinder-<br>schaft              | 1534SU03C-1780 | 18                                      | 123                           | 73                         | 51                                             | 48                          | ●              |
|                                      | 5                                     |                             |                                  | 1536SU05C-1780 | 18                                      | 143                           | 93                         | 71                                             | 48                          | ●              |
|                                      | 3                                     |                             | Weldon<br>shank/Schaft           | 1634SU03C-1780 | 18                                      | 123                           | 73                         | 51                                             | 48                          | ○              |
|                                      | 5                                     |                             |                                  | 1636SU05C-1780 | 18                                      | 143                           | 93                         | 71                                             | 48                          | ●              |
|                                      | 3                                     |                             | Whistle notch<br>shank/Schaft    | 1734SU03C-1780 | 18                                      | 123                           | 73                         | 51                                             | 48                          | ●              |
|                                      | 5                                     |                             |                                  | 1736SU05C-1780 | 18                                      | 143                           | 93                         | 71                                             | 48                          | ●              |
| 18.0                                 | 3                                     | External<br>Extern          | Straight<br>shank                | 1534SU03-1800  | 18                                      | 123                           | 73                         | 51                                             | 48                          | ●              |
|                                      | 5                                     |                             |                                  | 1536SU05-1800  | 18                                      | 143                           | 93                         | 71                                             | 48                          | ●              |
|                                      | 3                                     | Internal<br>Intern          | Zylinder-<br>schaft              | 1534SU03C-1800 | 18                                      | 123                           | 73                         | 51                                             | 48                          | ●              |
|                                      | 5                                     |                             |                                  | 1536SU05C-1800 | 18                                      | 143                           | 93                         | 71                                             | 48                          | ●              |
|                                      | 3                                     |                             | Weldon<br>shank/Schaft           | 1634SU03C-1800 | 18                                      | 123                           | 73                         | 51                                             | 48                          | ●              |
|                                      | 5                                     |                             |                                  | 1636SU05C-1800 | 18                                      | 143                           | 93                         | 71                                             | 48                          | ●              |
|                                      | 3                                     |                             | Whistle notch<br>shank/Schaft    | 1734SU03C-1800 | 18                                      | 123                           | 73                         | 51                                             | 48                          | ●              |
|                                      | 5                                     |                             |                                  | 1736SU05C-1800 | 18                                      | 143                           | 93                         | 71                                             | 48                          | ●              |
|                                      | 8                                     |                             | straight shank<br>Zylinderschaft | 1538SU08C-1800 | 18                                      | 223                           | 171                        | 149                                            | 48                          | ●              |

| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (m7) | Drilling depth<br>Bohrtiefe<br>(L/d <sub>1</sub> ) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|---------------------------------------------------|----------------------------------------------------|-----------------------------|--------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                                   |                                                    |                             |                                |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                                   |                                                    |                             |                                |                | d <sub>2</sub> (h <sub>6</sub> )        | l <sub>1</sub>                | l <sub>2</sub>             | l <sub>3</sub>                                 | l <sub>4</sub>              |                |
| 18.5                                              | 3                                                  | External<br>Extern          | Straight<br>shank              | 1534SU03-1850  | 20                                      | 131                           | 79                         | 55                                             | 50                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05-1850  | 20                                      | 153                           | 101                        | 77                                             | 50                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03C-1850 | 20                                      | 131                           | 79                         | 55                                             | 50                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-1850 | 20                                      | 153                           | 101                        | 77                                             | 50                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft        | 1634SU03C-1850 | 20                                      | 131                           | 79                         | 55                                             | 50                          | ○              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-1850 | 20                                      | 153                           | 101                        | 77                                             | 50                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-1850 | 20                                      | 131                           | 79                         | 55                                             | 50                          | ●              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-1850 | 20                                      | 153                           | 101                        | 77                                             | 50                          | ●              |
| 18.8                                              | 3                                                  | External<br>Extern          | Straight<br>shank              | 1534SU03-1880  | 20                                      | 131                           | 79                         | 55                                             | 50                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05-1880  | 20                                      | 153                           | 101                        | 77                                             | 50                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03C-1880 | 20                                      | 131                           | 79                         | 55                                             | 50                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-1880 | 20                                      | 153                           | 101                        | 77                                             | 50                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft        | 1634SU03C-1880 | 20                                      | 131                           | 79                         | 55                                             | 50                          | ○              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-1880 | 20                                      | 153                           | 101                        | 77                                             | 50                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-1880 | 20                                      | 131                           | 79                         | 55                                             | 50                          | ●              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-1880 | 20                                      | 153                           | 101                        | 77                                             | 50                          | ●              |
| 19.0                                              | 3                                                  | External<br>Extern          | Straight<br>shank              | 1534SU03-1900  | 20                                      | 131                           | 79                         | 55                                             | 50                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05-1900  | 20                                      | 153                           | 101                        | 77                                             | 50                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03C-1900 | 20                                      | 131                           | 79                         | 55                                             | 50                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-1900 | 20                                      | 153                           | 101                        | 77                                             | 50                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft        | 1634SU03C-1900 | 20                                      | 131                           | 79                         | 55                                             | 50                          | ○              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-1900 | 20                                      | 153                           | 101                        | 77                                             | 50                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-1900 | 20                                      | 131                           | 79                         | 55                                             | 50                          | ●              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-1900 | 20                                      | 153                           | 101                        | 77                                             | 50                          | ●              |
| 19.5                                              | 3                                                  | External<br>Extern          | Straight<br>shank              | 1534SU03-1950  | 20                                      | 131                           | 79                         | 55                                             | 50                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05-1950  | 20                                      | 153                           | 101                        | 77                                             | 50                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03C-1950 | 20                                      | 131                           | 79                         | 55                                             | 50                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-1950 | 20                                      | 153                           | 101                        | 77                                             | 50                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft        | 1634SU03C-1950 | 20                                      | 131                           | 79                         | 55                                             | 50                          | ●              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-1950 | 20                                      | 153                           | 101                        | 77                                             | 50                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-1950 | 20                                      | 131                           | 79                         | 55                                             | 50                          | ●              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-1950 | 20                                      | 153                           | 101                        | 77                                             | 50                          | ●              |
| 19.8                                              | 3                                                  | External<br>Extern          | Straight<br>shank              | 1534SU03-1980  | 20                                      | 131                           | 79                         | 55                                             | 50                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05-1980  | 20                                      | 153                           | 101                        | 77                                             | 50                          | ●              |
|                                                   | 3                                                  | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03C-1980 | 20                                      | 131                           | 79                         | 55                                             | 50                          | ●              |
|                                                   | 5                                                  |                             |                                | 1536SU05C-1980 | 20                                      | 153                           | 101                        | 77                                             | 50                          | ●              |
|                                                   | 3                                                  |                             | Weldon<br>shank/ Schaft        | 1634SU03C-1980 | 20                                      | 131                           | 79                         | 55                                             | 50                          | ○              |
|                                                   | 5                                                  |                             |                                | 1636SU05C-1980 | 20                                      | 153                           | 101                        | 77                                             | 50                          | ●              |
|                                                   | 3                                                  |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-1980 | 20                                      | 131                           | 79                         | 55                                             | 50                          | ●              |
|                                                   | 5                                                  |                             |                                | 1736SU05C-1980 | 20                                      | 153                           | 101                        | 77                                             | 50                          | ●              |

C

Solid carbide drills  
Vollhartmetallbohrer

### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Type<br>Typ | Grade<br>Sorte | Workpiece material · Werkstückstoff              |                                   |                                 |        |        |                                           |                        |                                                      |                              |                               |                                             |
|-------------|----------------|--------------------------------------------------|-----------------------------------|---------------------------------|--------|--------|-------------------------------------------|------------------------|------------------------------------------------------|------------------------------|-------------------------------|---------------------------------------------|
|             |                | Carbon steel<br>Kohlenstoff<br>- Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron,<br>Grauguss | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Wärmefeste<br>Leg. |
|             |                |                                                  |                                   | ~40HRC                          | ~50HRC | ~60HRC |                                           |                        |                                                      |                              |                               |                                             |
| SU*         | KDG303         | ✓                                                | ✓                                 | ✓                               |        |        | ✓                                         | ✓                      | ✓                                                    |                              |                               |                                             |
| SUK*        | KDG303         |                                                  |                                   |                                 |        |        |                                           | ✓                      | ✓                                                    |                              |                               |                                             |

All articles SUK on demand / Alle Artikel SUK auf Anfrage

Code key C 8  
ISO Kennzeichen

Cutting data 96-109  
Schnittdaten

Technical Information C110-116  
Technische Information

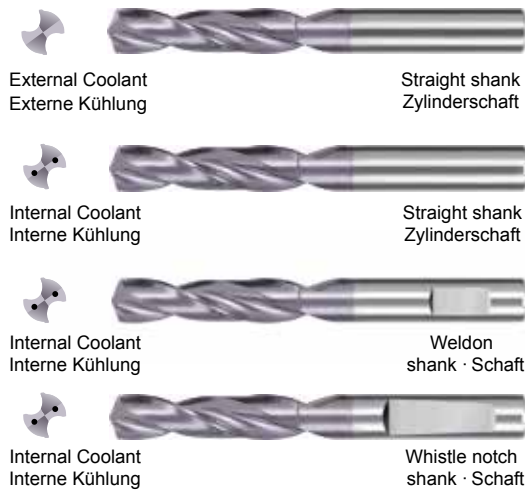
Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge

# Drilling · Bohren

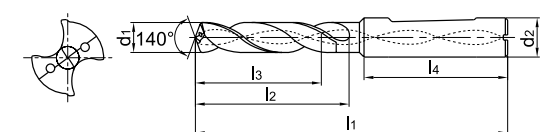
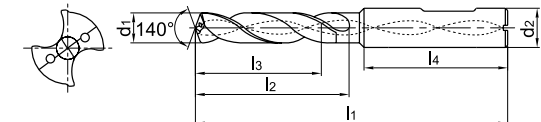
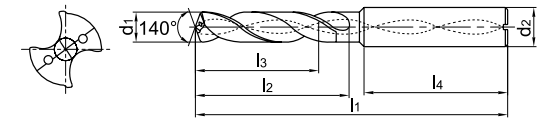
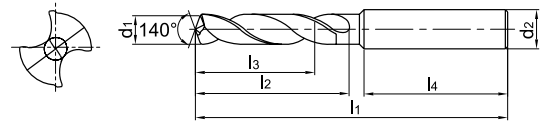
Solid carbide drills · Vollhartmetallbohrer

**SU&SUK**

Please add K when ordering / Bitte bei der Bestellung K ergänzen



## General machining · Allgemeine Bearbeitung



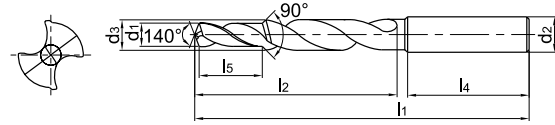
- For high efficient drilling of P (steel), M (stainless steel) and K (cast iron) with high performance.
- Waveform cutting edges achieve outstanding sharpness and strength, promoting chip removal.
- Hocheffizientes Bohren von allgemeinen Stahlwerkstoffen, rostfreien Werkstoffen und Guss.
- Wellenförmige Schneidkante mit hoher Schneidenschärfe, Stabilität und guter Spanabfuhr.

| Drill diameter<br>Bohrer Ø<br>d1(m7) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|--------------------------------------|---------------------------------------|-----------------------------|--------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                      |                                       |                             |                                |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                      |                                       |                             |                                |                | d2(h6)                                  | l1                            | l2                         | l3                                             | l4                          |                |
| 20.0                                 | 3                                     | External<br>Extern          | Straight<br>shank              | 1534SU03-2000  | 20                                      | 131                           | 79                         | 55                                             | 50                          | ●              |
|                                      | 5                                     |                             |                                | 1536SU05-2000  | 20                                      | 153                           | 101                        | 77                                             | 50                          | ●              |
|                                      | 3                                     | Internal<br>Intern          | Zylinder-<br>schaft            | 1534SU03C-2000 | 20                                      | 131                           | 79                         | 55                                             | 50                          | ●              |
|                                      | 5                                     |                             |                                | 1536SU05C-2000 | 20                                      | 153                           | 101                        | 77                                             | 50                          | ●              |
|                                      | 3                                     |                             | Weldon<br>shank/ Schaft        | 1634SU03C-2000 | 20                                      | 131                           | 79                         | 55                                             | 50                          | ●              |
|                                      | 5                                     |                             |                                | 1636SU05C-2000 | 20                                      | 153                           | 101                        | 77                                             | 50                          | ●              |
|                                      | 3                                     |                             | Whistle notch<br>shank/ Schaft | 1734SU03C-2000 | 20                                      | 131                           | 79                         | 55                                             | 50                          | ●              |
|                                      | 5                                     |                             |                                | 1736SU05C-2000 | 20                                      | 153                           | 101                        | 77                                             | 50                          | ●              |

**SU & SUK**

Please add K when ordering / Bitte bei der Bestellung K ergänzen

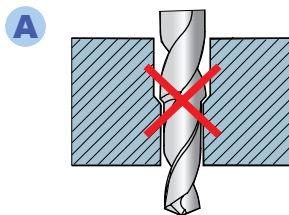
### General machining · Allgemeine Bearbeitung (Step drill · Stufenbohrer)



- For thread pre-hole, chamfering.
- Gewindebohrung mit Fase.

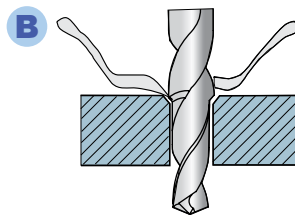
| Drill diameter<br>d1(m8) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                   | Type<br>Typ      | Basic dimension(mm) · Basis Abmessungen |            |      |     |    |    |      | Grade<br>Sorte |  |
|--------------------------|---------------------------------------|-----------------------------|-----------------------------------|------------------|-----------------------------------------|------------|------|-----|----|----|------|----------------|--|
|                          |                                       |                             |                                   |                  | Thread size<br>Gewinde                  | d2<br>(h6) | d3   | l1  | l2 | l4 | l5   | KDG303         |  |
|                          |                                       |                             |                                   |                  |                                         |            |      |     |    |    |      |                |  |
| 3.3                      | 3                                     | External<br>Extern          | Straight shank<br>Zylinder-schaft | 1557SU03-M4      | M4                                      | 6.0        | 4.5  | 66  | 28 | 36 | 11.4 | ●              |  |
| 4.2                      | 3                                     |                             |                                   | 1557SU03-M5      | M5                                      | 6.0        | 6.0  | 66  | 28 | 36 | 13.6 | ●              |  |
| 5.0                      | 3                                     |                             |                                   | 1557SU03-M6      | M6                                      | 8.0        | 7.0  | 79  | 41 | 36 | 16.5 | ●              |  |
| 6.75                     | 3                                     |                             |                                   | 1557SU03-M8      | M8                                      | 10.0       | 9.5  | 89  | 47 | 40 | 21.0 | ●              |  |
| 8.5                      | 3                                     |                             |                                   | 1557SU03-M10     | M10                                     | 12.0       | 12.0 | 102 | 55 | 45 | 25.5 | ●              |  |
| 10.25                    | 3                                     |                             |                                   | 1557SU03-M12     | M12                                     | 14.0       | 14.0 | 107 | 60 | 45 | 30.0 | ●              |  |
| 12.0                     | 3                                     |                             |                                   | 1557SU03-M14     | M14                                     | 16.0       | 16.0 | 115 | 65 | 48 | 34.5 | ●              |  |
| 14.0                     | 3                                     |                             |                                   | 1557SU03-M16     | M16                                     | 18.0       | 18.0 | 123 | 73 | 48 | 38.5 | ●              |  |
| 7.0                      | 3                                     |                             |                                   | 1557SU03-M8×1.0  | M8×1.0                                  | 10.0       | 9.8  | 89  | 47 | 40 | 21.0 | ○              |  |
| 9.0                      | 3                                     |                             |                                   | 1557SU03-M10×1.0 | M10×1.0                                 | 12.0       | 12.0 | 102 | 55 | 45 | 25.5 | ○              |  |
| 10.5                     | 3                                     |                             |                                   | 1557SU03-M12×1.5 | M12×1.5                                 | 14.0       | 14.0 | 107 | 60 | 45 | 30.0 | ●              |  |
| 12.5                     | 3                                     |                             |                                   | 1557SU03-M14×1.5 | M14×1.5                                 | 16.0       | 16.0 | 115 | 65 | 48 | 34.5 | ○              |  |
| 14.5                     | 3                                     |                             |                                   | 1557SU03-M16×1.5 | M16×1.5                                 | 18.0       | 18.0 | 123 | 73 | 48 | 38.5 | ○              |  |

### Attentions when using step drill · Einsatzempfehlung für Stufenbohrer



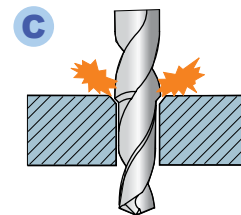
Because of no chamfer on the large diameter, countersink drill as shown above is not possible.

Aufgrund der fehlenden Fase bei großen Durchmessern ist das Aufbohren nicht zu empfehlen.



Long chips will roll around the drill and obstruct machining when countersink drill. It is recommended to select small feed drilling in order to cut chips.

Beim Ansenken können lange Späne entstehen. Vorschub reduzieren.



When countersink drill, cutting force increases at initial. Reduce the feedrate/ please.

Beim Aufbohren werden die Schnittkräfte höher. Bitte Vorschub reduzieren.

### Material Overview · Material Übersicht

- ✓ = Very suitable · Sehr empfohlen
- ✓ = Suitable · Empfohlen

| Type<br>Typ | Grade<br>Sorte | Workpiece material · Werkstückstoff              |                                   |                                 |        |        |                                           |                        |                                                 |                              |                               |                                            |
|-------------|----------------|--------------------------------------------------|-----------------------------------|---------------------------------|--------|--------|-------------------------------------------|------------------------|-------------------------------------------------|------------------------------|-------------------------------|--------------------------------------------|
|             |                | Carbon steel<br>Kohlenstoff<br>- Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron,<br>Grauguss | Nodular<br>cast iron<br>GGG<br>Kugelgraphitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Warmfeste<br>Leg. |
|             |                |                                                  |                                   | ~40HRC                          | ~50HRC | ~60HRC |                                           |                        |                                                 |                              |                               |                                            |
| SU*         | KDG303         | ✓                                                | ✓                                 | ✓                               |        |        | ✓                                         | ✓                      | ✓                                               |                              |                               |                                            |
| SUK*        | KDG303         |                                                  |                                   |                                 |        |        |                                           | ✓                      | ✓                                               |                              |                               |                                            |

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**C**

Solid carbide drills  
Vollhartmetallbohrer



# 1588SL *for deep drilling* *zum Tiefbohren*

## 10xD 12xD 15xD 20xD 30xD Drills/Bohrer

- Special flute design for optimal stability and good chip flow  
*Spezielles Spannutendesign für optimale Stabilität und guten Spanabfluß*
- Special margin for high accuracy and stable operation  
*Spezielle Führungsfase für hohe Genauigkeit und eine stabile Bearbeitung*
- Optimal cutting edge for good chip control in different materials  
*Optimierte Schneidkantenausführung für guten Spanbruch in vielen Anwendungsbereichen*
- New PVD-coating for smooth chip flow, less friction and good wear resistance  
*Neuartige PVD-Beschichtung für optimalen Spanabfluß, weniger Reibung und gute Verschleißfestigkeit*

# 1588SLK **NEW** DIN 1412 D

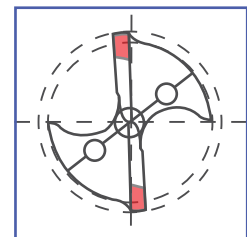
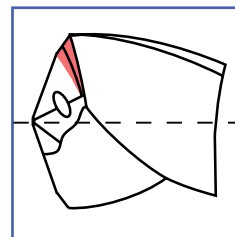
## Deep drills for grey cast iron

## *Tieflochbohrer für die Bearbeitung von Graugussmaterialien*

For grey cast iron  
*Für Graugussmaterialien*



Twist drill for deep drilling  
*Spiralbohrer zum Tieflochbohren*



Form D - Double Angle for Cast Iron  
*Form D - Anschliff für Grauguss*

- **Applications / Anwendung:**  
For drilling grey cast iron, malleable cast iron and forgings.  
*Für Bohrungen in Grauguss, Temperguss und Schmiedestücke.*
- **Advantages / Vorteile:**  
Wear on cutting corners is reduced by extended major cutting edges, resistant to impact, good heat conductivity, all giving improved tool life.  
*Schonung der Schneidenecken durch verlängerte Hauptschneiden, unempfindlich gegen Stoß, gute Wärmeableitung – dadurch verbesserte Standzeit.*

All articles 1588SLK on demand, please add **K** when ordering.

*Alle Artikel 1588SLK auf Anfrage, bitte bei der Bestellung **K** ergänzen.*

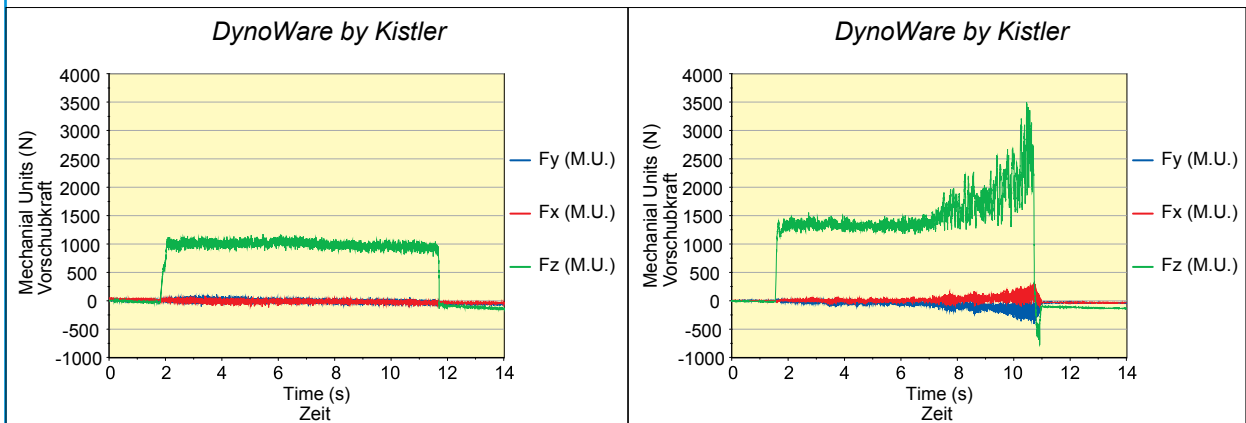
# 1588SLK10C-0300

## 1588SL Serie Vergleich der Schnittkraft

|                             |               |                       |                         |          |
|-----------------------------|---------------|-----------------------|-------------------------|----------|
| Type / Typ                  | 1588SL12C     | Competitor Wettbewerb | Feed Vorschub           | 0.2mm/r  |
| Diameter Durchmesser        | Ø6mm          | Ø6mm                  | Cutting Depth Bohrtiefe | 72mm     |
| Material                    | 42CrMo(HB250) |                       | cooling Kühlung         | Emulsion |
| Cutting speed Schnittgesch. | 80m/min       |                       | Machine Maschine        | CNC      |

1588SL

other manufacturer / Andere Hersteller

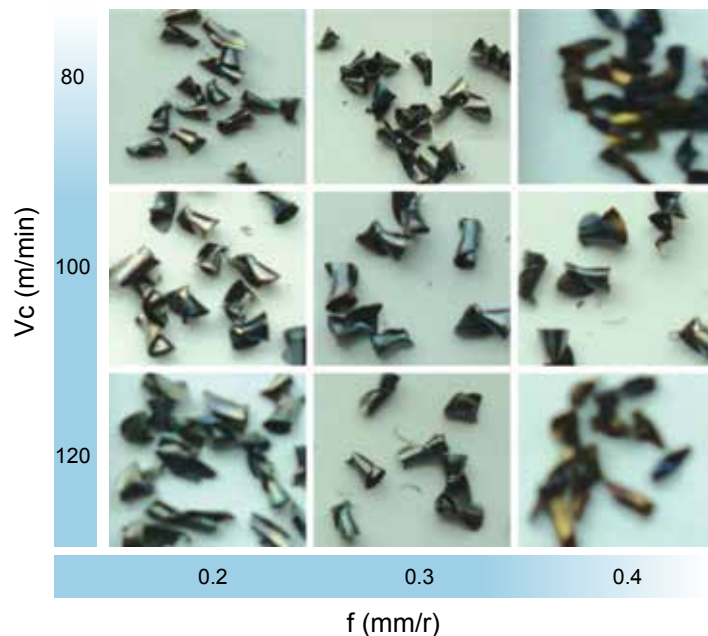


## 1588SL Serie Spanbruchverhalten

Type / Typ: 1588SL12C  
 Diameter / Durchmesser : Ø10mm  
 Material / Material: 45Stahl (HB200)  
 Vc: 80-120(m/min)  
 f<sub>n</sub>: 0.2-0.4(mm/r)  
 Drilling depth / Bohrtiefe : 120mm  
 Cooling / Kühlsystem: Emulsion  
 Machine / Maschine: CNC Machine

**Stable machining  
under different cutting  
speed and feed rate.**

**Stabile Bearbeitung  
bei verschiedenen  
Geschwindigkeiten  
und Vorschüben.**



# Drilling • Bohren

Solid carbide drills • Vollhartmetallbohrer

SL & SLK

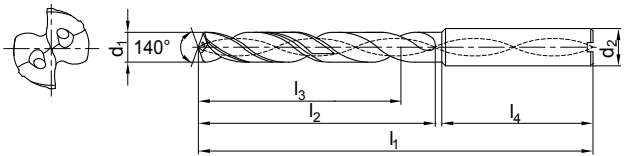
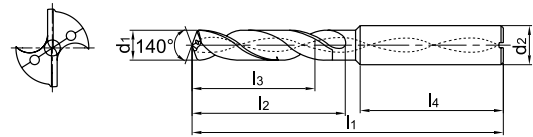
Please add K when ordering / Bitte bei der Bestellung K ergänzen

General machining • Allgemeine Bearbeitung  
( Deep drill • Tieflochbohrer)

1588SL10C / 1588SL12C / 1588SL15C



1588SL20C / 1588SL30C



| Drilling diameter<br>Bohrerdurchmesser<br>d1<br>12/15D(m7)<br>20/30D(h7) | Drilling<br>depth<br>Bohrtiefe<br>(l/d1) | Cooling<br>mode<br>Kühlmittel. | Shank<br>Schaft                              | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |     |     |     |    | Grade<br>Sorte |
|--------------------------------------------------------------------------|------------------------------------------|--------------------------------|----------------------------------------------|----------------|-----------------------------------------|-----|-----|-----|----|----------------|
|                                                                          |                                          |                                |                                              |                | d2(h5)                                  | l1  | l2  | l3  | l4 | KDG303         |
|                                                                          |                                          |                                |                                              |                |                                         |     |     |     |    |                |
| 3.0                                                                      | 10                                       | Internal<br>Intern             | Straight<br>shank<br><br>Zylinder-<br>schaft | 1588SL10C-0300 | 6                                       | 80  | 43  | 39  | 36 | ●              |
|                                                                          | 12                                       |                                |                                              | 1588SL12C-0300 | 6                                       | 90  | 50  | 40  | 36 | ●              |
|                                                                          | 15                                       |                                |                                              | 1588SL15C-0300 | 6                                       | 100 | 60  | 50  | 36 | ●              |
|                                                                          | 20                                       |                                |                                              | 1588SL20C-0300 | 6                                       | 110 | 70  | 62  | 36 | ●              |
|                                                                          | 30                                       |                                |                                              | 1588SL30C-0300 | 6                                       | 140 | 100 | 92  | 36 | ●              |
| 3.1                                                                      | 10                                       |                                |                                              | 1588SL10C-0310 | 6                                       | 80  | 43  | 39  | 36 | ○              |
|                                                                          | 12                                       |                                |                                              | 1588SL12C-0310 | 6                                       | 90  | 50  | 40  | 36 | ●              |
|                                                                          | 15                                       |                                |                                              | 1588SL15C-0310 | 6                                       | 105 | 65  | 55  | 36 | ○              |
|                                                                          | 20                                       |                                |                                              | 1588SL20C-0310 | 6                                       | 123 | 83  | 72  | 36 | ●              |
|                                                                          | 30                                       |                                |                                              | 1588SL30C-0310 | 6                                       | 160 | 120 | 108 | 36 | ●              |
| 3.2                                                                      | 10                                       |                                |                                              | 1588SL10C-0320 | 6                                       | 80  | 43  | 39  | 36 | ●              |
|                                                                          | 12                                       |                                |                                              | 1588SL12C-0320 | 6                                       | 90  | 50  | 40  | 36 | ●              |
|                                                                          | 15                                       |                                |                                              | 1588SL15C-0320 | 6                                       | 105 | 65  | 55  | 36 | ○              |
|                                                                          | 20                                       |                                |                                              | 1588SL20C-0320 | 6                                       | 123 | 83  | 72  | 36 | ●              |
|                                                                          | 30                                       |                                |                                              | 1588SL30C-0320 | 6                                       | 160 | 120 | 108 | 36 | ●              |
| 3.3                                                                      | 10                                       |                                |                                              | 1588SL10C-0330 | 6                                       | 80  | 43  | 39  | 36 | ●              |
|                                                                          | 12                                       |                                |                                              | 1588SL12C-0330 | 6                                       | 90  | 50  | 40  | 36 | ●              |
|                                                                          | 15                                       |                                |                                              | 1588SL15C-0330 | 6                                       | 105 | 65  | 55  | 36 | ●              |
|                                                                          | 20                                       |                                |                                              | 1588SL20C-0330 | 6                                       | 123 | 83  | 72  | 36 | ●              |
|                                                                          | 30                                       |                                |                                              | 1588SL30C-0330 | 6                                       | 160 | 120 | 108 | 36 | ○              |
| 3.4                                                                      | 10                                       |                                |                                              | 1588SL10C-0340 | 6                                       | 80  | 43  | 39  | 36 | ●              |
|                                                                          | 12                                       |                                |                                              | 1588SL12C-0340 | 6                                       | 90  | 50  | 40  | 36 | ●              |
|                                                                          | 15                                       |                                |                                              | 1588SL15C-0340 | 6                                       | 105 | 65  | 55  | 36 | ●              |
|                                                                          | 20                                       |                                |                                              | 1588SL20C-0340 | 6                                       | 123 | 83  | 72  | 36 | ●              |
|                                                                          | 30                                       |                                |                                              | 1588SL30C-0340 | 6                                       | 160 | 120 | 108 | 36 | ●              |
| 3.5                                                                      | 10                                       |                                |                                              | 1588SL10C-0350 | 6                                       | 80  | 43  | 39  | 36 | ●              |
|                                                                          | 12                                       |                                |                                              | 1588SL12C-0350 | 6                                       | 90  | 50  | 40  | 36 | ●              |
|                                                                          | 15                                       |                                |                                              | 1588SL15C-0350 | 6                                       | 105 | 65  | 55  | 36 | ●              |
|                                                                          | 20                                       |                                |                                              | 1588SL20C-0350 | 6                                       | 123 | 83  | 72  | 36 | ●              |
|                                                                          | 30                                       |                                |                                              | 1588SL30C-0350 | 6                                       | 160 | 120 | 108 | 36 | ●              |
| 3.6                                                                      | 10                                       |                                |                                              | 1588SL10C-0360 | 6                                       | 80  | 43  | 39  | 36 | ●              |
|                                                                          | 12                                       |                                |                                              | 1588SL12C-0360 | 6                                       | 90  | 50  | 40  | 36 | ●              |
|                                                                          | 15                                       |                                |                                              | 1588SL15C-0360 | 6                                       | 112 | 72  | 62  | 36 | ○              |
|                                                                          | 20                                       |                                |                                              | 1588SL20C-0360 | 6                                       | 136 | 96  | 84  | 36 | ●              |
|                                                                          | 30                                       |                                |                                              | 1588SL30C-0360 | 6                                       | 176 | 136 | 124 | 36 | ○              |
| 3.7                                                                      | 10                                       |                                |                                              | 1588SL10C-0370 | 6                                       | 80  | 43  | 39  | 36 | ●              |
|                                                                          | 12                                       |                                |                                              | 1588SL12C-0370 | 6                                       | 90  | 50  | 46  | 36 | ●              |
|                                                                          | 15                                       |                                |                                              | 1588SL15C-0370 | 6                                       | 112 | 72  | 68  | 36 | ●              |
|                                                                          | 20                                       |                                |                                              | 1588SL20C-0370 | 6                                       | 136 | 96  | 84  | 36 | ●              |
|                                                                          | 30                                       |                                |                                              | 1588SL30C-0370 | 6                                       | 176 | 136 | 124 | 36 | ○              |
| 3.8                                                                      | 10                                       |                                |                                              | 1588SL10C-0380 | 6                                       | 80  | 43  | 39  | 36 | ●              |
|                                                                          | 12                                       |                                |                                              | 1588SL12C-0380 | 6                                       | 90  | 50  | 46  | 36 | ●              |
|                                                                          | 15                                       |                                |                                              | 1588SL15C-0380 | 6                                       | 112 | 72  | 68  | 36 | ●              |
|                                                                          | 20                                       |                                |                                              | 1588SL20C-0380 | 6                                       | 136 | 96  | 84  | 36 | ●              |
|                                                                          | 30                                       |                                |                                              | 1588SL30C-0380 | 6                                       | 176 | 136 | 124 | 36 | ○              |
| 3.9                                                                      | 10                                       |                                |                                              | 1588SL10C-0390 | 6                                       | 80  | 43  | 39  | 36 | ●              |
|                                                                          | 12                                       |                                |                                              | 1588SL12C-0390 | 6                                       | 90  | 50  | 46  | 36 | ●              |
|                                                                          | 15                                       |                                |                                              | 1588SL15C-0390 | 6                                       | 112 | 72  | 68  | 36 | ●              |
|                                                                          | 20                                       |                                |                                              | 1588SL20C-0390 | 6                                       | 136 | 96  | 84  | 36 | ●              |
|                                                                          | 30                                       |                                |                                              | 1588SL30C-0390 | 6                                       | 176 | 136 | 124 | 36 | ○              |

| Drilling diameter<br>Bohrerdurchmesser<br>d1<br>12/15D(m7)<br>20/30D(h7) | Drilling depth<br>Bohrtiefe<br>(l/d1) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                          | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |     |     |     |    | Grade<br>Sorte |
|--------------------------------------------------------------------------|---------------------------------------|-----------------------------|------------------------------------------|----------------|-----------------------------------------|-----|-----|-----|----|----------------|
|                                                                          |                                       |                             |                                          |                | d2(h5)                                  | l1  | l2  | l3  | l4 | KDG303         |
|                                                                          |                                       |                             |                                          |                |                                         |     |     |     |    |                |
| 4.0                                                                      | 10                                    | Internal<br>Intern          | Straight<br>shank<br>Zylinder-<br>schaft | 1588SL10C-0400 | 6                                       | 92  | 55  | 50  | 36 | ●              |
|                                                                          | 12                                    |                             |                                          | 1588SL12C-0400 | 6                                       | 102 | 64  | 56  | 36 | ●              |
|                                                                          | 15                                    |                             |                                          | 1588SL15C-0400 | 6                                       | 112 | 72  | 64  | 36 | ●              |
|                                                                          | 20                                    |                             |                                          | 1588SL20C-0400 | 6                                       | 136 | 96  | 84  | 36 | ●              |
|                                                                          | 30                                    |                             |                                          | 1588SL30C-0400 | 6                                       | 176 | 136 | 124 | 36 | ●              |
| 4.1                                                                      | 10                                    |                             |                                          | 1588SL10C-0410 | 6                                       | 92  | 55  | 50  | 36 | ●              |
|                                                                          | 12                                    |                             |                                          | 1588SL12C-0410 | 6                                       | 102 | 64  | 56  | 36 | ●              |
|                                                                          | 15                                    |                             |                                          | 1588SL15C-0410 | 6                                       | 120 | 80  | 72  | 36 | ●              |
|                                                                          | 20                                    |                             |                                          | 1588SL20C-0410 | 6                                       | 148 | 108 | 96  | 36 | ●              |
|                                                                          | 30                                    |                             |                                          | 1588SL30C-0410 | 6                                       | 192 | 152 | 140 | 36 | ○              |
| 4.2                                                                      | 10                                    |                             |                                          | 1588SL10C-0420 | 6                                       | 92  | 55  | 50  | 36 | ●              |
|                                                                          | 12                                    |                             |                                          | 1588SL12C-0420 | 6                                       | 102 | 64  | 56  | 36 | ●              |
|                                                                          | 15                                    |                             |                                          | 1588SL15C-0420 | 6                                       | 120 | 80  | 72  | 36 | ●              |
|                                                                          | 20                                    |                             |                                          | 1588SL20C-0420 | 6                                       | 148 | 108 | 96  | 36 | ●              |
|                                                                          | 30                                    |                             |                                          | 1588SL30C-0420 | 6                                       | 192 | 152 | 140 | 36 | ○              |
| 4.3                                                                      | 10                                    |                             |                                          | 1588SL10C-0430 | 6                                       | 92  | 55  | 50  | 36 | ●              |
|                                                                          | 12                                    |                             |                                          | 1588SL12C-0430 | 6                                       | 102 | 64  | 56  | 36 | ●              |
|                                                                          | 15                                    |                             |                                          | 1588SL15C-0430 | 6                                       | 120 | 80  | 72  | 36 | ○              |
|                                                                          | 20                                    |                             |                                          | 1588SL20C-0430 | 6                                       | 148 | 108 | 96  | 36 | ●              |
|                                                                          | 30                                    |                             |                                          | 1588SL30C-0430 | 6                                       | 192 | 152 | 140 | 36 | ○              |
| 4.4                                                                      | 10                                    |                             |                                          | 1588SL10C-0440 | 6                                       | 92  | 55  | 50  | 36 | ●              |
|                                                                          | 12                                    |                             |                                          | 1588SL12C-0440 | 6                                       | 102 | 64  | 56  | 36 | ●              |
|                                                                          | 15                                    |                             |                                          | 1588SL15C-0440 | 6                                       | 120 | 80  | 72  | 36 | ○              |
|                                                                          | 20                                    |                             |                                          | 1588SL20C-0440 | 6                                       | 148 | 108 | 96  | 36 | ●              |
|                                                                          | 30                                    |                             |                                          | 1588SL30C-0440 | 6                                       | 192 | 152 | 140 | 36 | ○              |
| 4.5                                                                      | 10                                    |                             |                                          | 1588SL10C-0450 | 6                                       | 92  | 55  | 50  | 36 | ●              |
|                                                                          | 12                                    |                             |                                          | 1588SL12C-0450 | 6                                       | 102 | 64  | 56  | 36 | ●              |
|                                                                          | 15                                    |                             |                                          | 1588SL15C-0450 | 6                                       | 120 | 80  | 72  | 36 | ●              |
|                                                                          | 20                                    |                             |                                          | 1588SL20C-0450 | 6                                       | 148 | 108 | 96  | 36 | ●              |
|                                                                          | 30                                    |                             |                                          | 1588SL30C-0450 | 6                                       | 192 | 152 | 140 | 36 | ●              |
| 4.6                                                                      | 10                                    |                             |                                          | 1588SL10C-0460 | 6                                       | 92  | 55  | 50  | 36 | ●              |
|                                                                          | 12                                    |                             |                                          | 1588SL12C-0460 | 6                                       | 102 | 64  | 56  | 36 | ●              |
|                                                                          | 15                                    |                             |                                          | 1588SL15C-0460 | 6                                       | 128 | 88  | 80  | 36 | ●              |
|                                                                          | 20                                    |                             |                                          | 1588SL20C-0460 | 6                                       | 158 | 118 | 106 | 36 | ●              |
|                                                                          | 30                                    |                             |                                          | 1588SL30C-0460 | 6                                       | 208 | 168 | 156 | 36 | ○              |
| 4.7                                                                      | 10                                    |                             |                                          | 1588SL10C-0470 | 6                                       | 92  | 55  | 50  | 36 | ●              |
|                                                                          | 12                                    |                             |                                          | 1588SL12C-0470 | 6                                       | 102 | 64  | 56  | 36 | ●              |
|                                                                          | 15                                    |                             |                                          | 1588SL15C-0470 | 6                                       | 128 | 88  | 80  | 36 | ○              |
|                                                                          | 20                                    |                             |                                          | 1588SL20C-0470 | 6                                       | 158 | 118 | 106 | 36 | ●              |
|                                                                          | 30                                    |                             |                                          | 1588SL30C-0470 | 6                                       | 208 | 168 | 156 | 36 | ●              |
| 4.8                                                                      | 10                                    |                             |                                          | 1588SL10C-0480 | 6                                       | 92  | 55  | 50  | 36 | ●              |
|                                                                          | 12                                    |                             |                                          | 1588SL12C-0480 | 6                                       | 102 | 64  | 56  | 36 | ●              |
|                                                                          | 15                                    |                             |                                          | 1588SL15C-0480 | 6                                       | 128 | 88  | 80  | 36 | ●              |
|                                                                          | 20                                    |                             |                                          | 1588SL20C-0480 | 6                                       | 158 | 118 | 106 | 36 | ●              |
|                                                                          | 30                                    |                             |                                          | 1588SL30C-0480 | 6                                       | 208 | 168 | 156 | 36 | ●              |
| 4.9                                                                      | 10                                    |                             |                                          | 1588SL10C-0490 | 6                                       | 92  | 55  | 50  | 36 | ●              |
|                                                                          | 12                                    |                             |                                          | 1588SL12C-0490 | 6                                       | 102 | 64  | 56  | 36 | ●              |
|                                                                          | 15                                    |                             |                                          | 1588SL15C-0490 | 6                                       | 128 | 88  | 80  | 36 | ●              |
|                                                                          | 20                                    |                             |                                          | 1588SL20C-0490 | 6                                       | 158 | 118 | 106 | 36 | ○              |
|                                                                          | 30                                    |                             |                                          | 1588SL30C-0490 | 6                                       | 208 | 168 | 156 | 36 | ○              |
| 5.0                                                                      | 10                                    |                             |                                          | 1588SL10C-0500 | 6                                       | 104 | 68  | 61  | 36 | ●              |
|                                                                          | 12                                    |                             |                                          | 1588SL12C-0500 | 6                                       | 116 | 78  | 72  | 36 | ●              |
|                                                                          | 15                                    |                             |                                          | 1588SL15C-0500 | 6                                       | 128 | 88  | 82  | 36 | ●              |
|                                                                          | 20                                    |                             |                                          | 1588SL20C-0500 | 6                                       | 158 | 118 | 106 | 36 | ●              |
|                                                                          | 30                                    |                             |                                          | 1588SL30C-0500 | 6                                       | 208 | 168 | 156 | 36 | ●              |

### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Type<br>Typ | Grade<br>Sorte | Workpiece material · Werkstückstoff             |                                   |                                   |        |        |                                           |                                |                                                      |                              |                            |                                            |
|-------------|----------------|-------------------------------------------------|-----------------------------------|-----------------------------------|--------|--------|-------------------------------------------|--------------------------------|------------------------------------------------------|------------------------------|----------------------------|--------------------------------------------|
|             |                | Carbon steel<br>Kohlenstoff-<br>Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel · Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Grey cast<br>iron<br>Gusseisen | Nodular cast<br>iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Warmfeste<br>Leg. |
|             |                |                                                 |                                   | ~40HRC                            | ~50HRC | ~60HRC |                                           |                                |                                                      |                              |                            |                                            |
| 1588SL*     | KDG303         | ✓                                               | ✓                                 | ✓                                 |        |        | ✓                                         | ✓                              | ✓                                                    |                              |                            | ✓                                          |
| 1588SLK*    | KDG303         |                                                 |                                   |                                   |        |        |                                           | ✓                              |                                                      |                              |                            |                                            |

All articles 1588SLK on demand / Alle Artikel 1588SLK auf Anfrage

Code key C 8  
ISO Kennzeichen

Cutting data 96-109  
Schnittdaten

Technical Information C110-116  
Technische Information

Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge

# Drilling · Bohren

Solid carbide drills · Vollhartmetallbohrer

SL & SLK

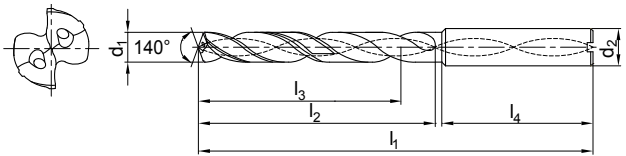
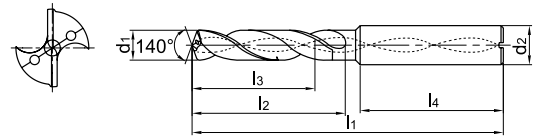
Please add K when ordering / Bitte bei der Bestellung K ergänzen

General machining · Allgemeine Bearbeitung  
( Deep drill · Tieflochbohrer)

1588SL10C / 1588SL12C / 1588SL15C



1588SL20C / 1588SL30C



| Drilling diameter<br>Bohrerdurchmesser<br>d1<br>12/15D(m7)<br>20/30D(h7) | Drilling<br>depth<br>Bohrtiefe<br>(l/d1) | Cooling<br>mode<br>Kühlmittel. | Shank<br>Schaft                          | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |     |     |     |    | Grade<br>Sorte |
|--------------------------------------------------------------------------|------------------------------------------|--------------------------------|------------------------------------------|----------------|-----------------------------------------|-----|-----|-----|----|----------------|
|                                                                          |                                          |                                |                                          |                | d2(h5)                                  | l1  | l2  | l3  | l4 | KDG303         |
|                                                                          |                                          |                                |                                          |                |                                         |     |     |     |    |                |
| 5.1                                                                      | 10                                       | Internal<br>Intern             | Straight<br>shank<br>Zylinder-<br>schaft | 1588SL10C-0510 | 6                                       | 104 | 68  | 61  | 36 | ●              |
|                                                                          | 12                                       |                                |                                          | 1588SL12C-0510 | 6                                       | 116 | 78  | 72  | 36 | ●              |
|                                                                          | 15                                       |                                |                                          | 1588SL15C-0510 | 6                                       | 136 | 96  | 90  | 36 | ●              |
|                                                                          | 20                                       |                                |                                          | 1588SL20C-0510 | 6                                       | 168 | 128 | 116 | 36 | ○              |
|                                                                          | 30                                       |                                |                                          | 1588SL30C-0510 | 6                                       | 228 | 188 | 170 | 36 | ○              |
| 5.2                                                                      | 10                                       |                                |                                          | 1588SL10C-0520 | 6                                       | 104 | 68  | 61  | 36 | ●              |
|                                                                          | 12                                       |                                |                                          | 1588SL12C-0520 | 6                                       | 116 | 78  | 72  | 36 | ●              |
|                                                                          | 15                                       |                                |                                          | 1588SL15C-0520 | 6                                       | 136 | 96  | 90  | 36 | ○              |
|                                                                          | 20                                       |                                |                                          | 1588SL20C-0520 | 6                                       | 168 | 128 | 116 | 36 | ●              |
|                                                                          | 30                                       |                                |                                          | 1588SL30C-0520 | 6                                       | 228 | 188 | 170 | 36 | ●              |
| 5.3                                                                      | 10                                       |                                |                                          | 1588SL10C-0530 | 6                                       | 104 | 68  | 61  | 36 | ●              |
|                                                                          | 12                                       |                                |                                          | 1588SL12C-0530 | 6                                       | 116 | 78  | 72  | 36 | ○              |
|                                                                          | 15                                       |                                |                                          | 1588SL15C-0530 | 6                                       | 136 | 96  | 90  | 36 | ●              |
|                                                                          | 20                                       |                                |                                          | 1588SL20C-0530 | 6                                       | 168 | 128 | 116 | 36 | ●              |
|                                                                          | 30                                       |                                |                                          | 1588SL30C-0530 | 6                                       | 228 | 188 | 170 | 36 | ●              |
| 5.4                                                                      | 10                                       |                                |                                          | 1588SL10C-0540 | 6                                       | 104 | 68  | 61  | 36 | ●              |
|                                                                          | 12                                       |                                |                                          | 1588SL12C-0540 | 6                                       | 116 | 78  | 72  | 36 | ○              |
|                                                                          | 15                                       |                                |                                          | 1588SL15C-0540 | 6                                       | 136 | 96  | 90  | 36 | ○              |
|                                                                          | 20                                       |                                |                                          | 1588SL20C-0540 | 6                                       | 168 | 128 | 116 | 36 | ●              |
|                                                                          | 30                                       |                                |                                          | 1588SL30C-0540 | 6                                       | 228 | 188 | 170 | 36 | ○              |
| 5.5                                                                      | 10                                       |                                |                                          | 1588SL10C-0550 | 6                                       | 104 | 68  | 61  | 36 | ●              |
|                                                                          | 12                                       |                                |                                          | 1588SL12C-0550 | 6                                       | 116 | 78  | 72  | 36 | ●              |
|                                                                          | 15                                       |                                |                                          | 1588SL15C-0550 | 6                                       | 136 | 96  | 90  | 36 | ●              |
|                                                                          | 20                                       |                                |                                          | 1588SL20C-0550 | 6                                       | 168 | 128 | 116 | 36 | ●              |
|                                                                          | 30                                       |                                |                                          | 1588SL30C-0550 | 6                                       | 228 | 188 | 170 | 36 | ●              |
| 5.6                                                                      | 10                                       |                                |                                          | 1588SL10C-0560 | 6                                       | 104 | 68  | 61  | 36 | ●              |
|                                                                          | 12                                       |                                |                                          | 1588SL12C-0560 | 6                                       | 116 | 78  | 72  | 36 | ●              |
|                                                                          | 15                                       |                                |                                          | 1588SL15C-0560 | 6                                       | 144 | 104 | 98  | 36 | ○              |
|                                                                          | 20                                       |                                |                                          | 1588SL20C-0560 | 6                                       | 180 | 140 | 126 | 36 | ○              |
|                                                                          | 30                                       |                                |                                          | 1588SL30C-0560 | 6                                       | 240 | 200 | 182 | 36 | ○              |
| 5.7                                                                      | 10                                       |                                |                                          | 1588SL10C-0570 | 6                                       | 104 | 68  | 61  | 36 | ●              |
|                                                                          | 12                                       |                                |                                          | 1588SL12C-0570 | 6                                       | 116 | 78  | 72  | 36 | ●              |
|                                                                          | 15                                       |                                |                                          | 1588SL15C-0570 | 6                                       | 144 | 104 | 98  | 36 | ○              |
|                                                                          | 20                                       |                                |                                          | 1588SL20C-0570 | 6                                       | 180 | 140 | 126 | 36 | ○              |
|                                                                          | 30                                       |                                |                                          | 1588SL30C-0570 | 6                                       | 240 | 200 | 182 | 36 | ○              |
| 5.8                                                                      | 10                                       |                                |                                          | 1588SL10C-0580 | 6                                       | 104 | 68  | 61  | 36 | ●              |
|                                                                          | 12                                       |                                |                                          | 1588SL12C-0580 | 6                                       | 116 | 78  | 72  | 36 | ●              |
|                                                                          | 15                                       |                                |                                          | 1588SL15C-0580 | 6                                       | 144 | 104 | 98  | 36 | ○              |
|                                                                          | 20                                       |                                |                                          | 1588SL20C-0580 | 6                                       | 180 | 140 | 126 | 36 | ●              |
|                                                                          | 30                                       |                                |                                          | 1588SL30C-0580 | 6                                       | 240 | 200 | 182 | 36 | ●              |
| 5.9                                                                      | 10                                       |                                |                                          | 1588SL10C-0590 | 6                                       | 104 | 68  | 61  | 36 | ●              |
|                                                                          | 12                                       |                                |                                          | 1588SL12C-0590 | 6                                       | 116 | 78  | 72  | 36 | ●              |
|                                                                          | 15                                       |                                |                                          | 1588SL15C-0590 | 6                                       | 144 | 104 | 98  | 36 | ○              |
|                                                                          | 20                                       |                                |                                          | 1588SL20C-0590 | 6                                       | 180 | 140 | 126 | 36 | ○              |
|                                                                          | 30                                       |                                |                                          | 1588SL30C-0590 | 6                                       | 240 | 200 | 182 | 36 | ○              |
| 6.0                                                                      | 10                                       |                                |                                          | 1588SL10C-0600 | 6                                       | 104 | 68  | 61  | 36 | ●              |
|                                                                          | 12                                       |                                |                                          | 1588SL12C-0600 | 6                                       | 116 | 78  | 72  | 36 | ●              |
|                                                                          | 15                                       |                                |                                          | 1588SL15C-0600 | 6                                       | 144 | 104 | 98  | 36 | ●              |
|                                                                          | 20                                       |                                |                                          | 1588SL20C-0600 | 6                                       | 180 | 140 | 126 | 36 | ●              |
|                                                                          | 30                                       |                                |                                          | 1588SL30C-0600 | 6                                       | 240 | 200 | 182 | 36 | ●              |



| Drilling diameter<br>Bohrerdurchmesser<br>d1<br>12/15D(m7)<br>20/30D(h7) | Drilling depth<br>Bohrtiefe<br>(l/d1) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                              | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |     |     |     |    | Grade<br>Sorte |
|--------------------------------------------------------------------------|---------------------------------------|-----------------------------|----------------------------------------------|----------------|-----------------------------------------|-----|-----|-----|----|----------------|
|                                                                          |                                       |                             |                                              |                | d2(h5)                                  | l1  | l2  | l3  | l4 | KDG303         |
|                                                                          |                                       |                             |                                              |                |                                         |     |     |     |    |                |
| 6.1                                                                      | 10                                    | Internal<br>Intern          | Straight<br>shank<br><br>Zylinder-<br>schaft | 1588SL10C-0610 | 8                                       | 117 | 80  | 71  | 36 | ●              |
|                                                                          | 12                                    |                             |                                              | 1588SL12C-0610 | 8                                       | 131 | 93  | 84  | 36 | ●              |
|                                                                          | 15                                    |                             |                                              | 1588SL15C-0610 | 8                                       | 152 | 112 | 103 | 36 | ○              |
|                                                                          | 20                                    |                             |                                              | 1588SL20C-0610 | 8                                       | 192 | 150 | 132 | 36 | ●              |
|                                                                          | 30                                    |                             |                                              | 1588SL30C-0610 | 8                                       | 260 | 220 | 202 | 36 | ○              |
| 6.2                                                                      | 10                                    |                             |                                              | 1588SL10C-0620 | 8                                       | 117 | 80  | 71  | 36 | ●              |
|                                                                          | 12                                    |                             |                                              | 1588SL12C-0620 | 8                                       | 131 | 93  | 84  | 36 | ●              |
|                                                                          | 15                                    |                             |                                              | 1588SL15C-0620 | 8                                       | 152 | 112 | 103 | 36 | ●              |
|                                                                          | 20                                    |                             |                                              | 1588SL20C-0620 | 8                                       | 192 | 150 | 132 | 36 | ○              |
|                                                                          | 30                                    |                             |                                              | 1588SL30C-0620 | 8                                       | 260 | 220 | 202 | 36 | ○              |
| 6.3                                                                      | 10                                    |                             |                                              | 1588SL10C-0630 | 8                                       | 117 | 80  | 71  | 36 | ●              |
|                                                                          | 12                                    |                             |                                              | 1588SL12C-0630 | 8                                       | 131 | 93  | 84  | 36 | ●              |
|                                                                          | 15                                    |                             |                                              | 1588SL15C-0630 | 8                                       | 152 | 112 | 103 | 36 | ○              |
|                                                                          | 20                                    |                             |                                              | 1588SL20C-0630 | 8                                       | 192 | 150 | 132 | 36 | ○              |
|                                                                          | 30                                    |                             |                                              | 1588SL30C-0630 | 8                                       | 260 | 220 | 202 | 36 | ●              |
| 6.4                                                                      | 10                                    |                             |                                              | 1588SL10C-0640 | 8                                       | 117 | 80  | 71  | 36 | ●              |
|                                                                          | 12                                    |                             |                                              | 1588SL12C-0640 | 8                                       | 131 | 93  | 84  | 36 | ●              |
|                                                                          | 15                                    |                             |                                              | 1588SL15C-0640 | 8                                       | 152 | 112 | 103 | 36 | ●              |
|                                                                          | 20                                    |                             |                                              | 1588SL20C-0640 | 8                                       | 192 | 150 | 132 | 36 | ○              |
|                                                                          | 30                                    |                             |                                              | 1588SL30C-0640 | 8                                       | 260 | 220 | 202 | 36 | ○              |
| 6.5                                                                      | 10                                    |                             |                                              | 1588SL10C-0650 | 8                                       | 117 | 80  | 71  | 36 | ●              |
|                                                                          | 12                                    |                             |                                              | 1588SL12C-0650 | 8                                       | 131 | 93  | 84  | 36 | ●              |
|                                                                          | 15                                    |                             |                                              | 1588SL15C-0650 | 8                                       | 152 | 112 | 103 | 36 | ●              |
|                                                                          | 20                                    |                             |                                              | 1588SL20C-0650 | 8                                       | 192 | 150 | 132 | 36 | ●              |
|                                                                          | 30                                    |                             |                                              | 1588SL30C-0650 | 8                                       | 260 | 220 | 202 | 36 | ●              |
| 6.6                                                                      | 10                                    |                             |                                              | 1588SL10C-0660 | 8                                       | 117 | 80  | 71  | 36 | ●              |
|                                                                          | 12                                    |                             |                                              | 1588SL12C-0660 | 8                                       | 131 | 93  | 84  | 36 | ●              |
|                                                                          | 15                                    |                             |                                              | 1588SL15C-0660 | 8                                       | 160 | 120 | 111 | 36 | ○              |
|                                                                          | 20                                    |                             |                                              | 1588SL20C-0660 | 8                                       | 202 | 162 | 144 | 36 | ○              |
|                                                                          | 30                                    |                             |                                              | 1588SL30C-0660 | 8                                       | 272 | 232 | 214 | 36 | ○              |
| 6.7                                                                      | 10                                    |                             |                                              | 1588SL10C-0670 | 8                                       | 117 | 80  | 71  | 36 | ●              |
|                                                                          | 12                                    |                             |                                              | 1588SL12C-0670 | 8                                       | 131 | 93  | 84  | 36 | ●              |
|                                                                          | 15                                    |                             |                                              | 1588SL15C-0670 | 8                                       | 160 | 120 | 111 | 36 | ●              |
|                                                                          | 20                                    |                             |                                              | 1588SL20C-0670 | 8                                       | 202 | 162 | 144 | 36 | ○              |
|                                                                          | 30                                    |                             |                                              | 1588SL30C-0670 | 8                                       | 272 | 232 | 214 | 36 | ○              |
| 6.8                                                                      | 10                                    |                             |                                              | 1588SL10C-0680 | 8                                       | 117 | 80  | 71  | 36 | ●              |
|                                                                          | 12                                    |                             |                                              | 1588SL12C-0680 | 8                                       | 131 | 93  | 84  | 36 | ●              |
|                                                                          | 15                                    |                             |                                              | 1588SL15C-0680 | 8                                       | 160 | 120 | 111 | 36 | ○              |
|                                                                          | 20                                    |                             |                                              | 1588SL20C-0680 | 8                                       | 202 | 162 | 144 | 36 | ●              |
|                                                                          | 30                                    |                             |                                              | 1588SL30C-0680 | 8                                       | 272 | 232 | 214 | 36 | ●              |
| 6.9                                                                      | 10                                    |                             |                                              | 1588SL10C-0690 | 8                                       | 117 | 80  | 71  | 36 | ●              |
|                                                                          | 12                                    |                             |                                              | 1588SL12C-0690 | 8                                       | 131 | 93  | 84  | 36 | ●              |
|                                                                          | 15                                    |                             |                                              | 1588SL15C-0690 | 8                                       | 160 | 120 | 111 | 36 | ○              |
|                                                                          | 20                                    |                             |                                              | 1588SL20C-0690 | 8                                       | 202 | 162 | 144 | 36 | ●              |
|                                                                          | 30                                    |                             |                                              | 1588SL30C-0690 | 8                                       | 272 | 232 | 214 | 36 | ○              |
| 7.0                                                                      | 10                                    |                             |                                              | 1588SL10C-0700 | 8                                       | 117 | 80  | 71  | 36 | ●              |
|                                                                          | 12                                    |                             |                                              | 1588SL12C-0700 | 8                                       | 131 | 93  | 84  | 36 | ●              |
|                                                                          | 15                                    |                             |                                              | 1588SL15C-0700 | 8                                       | 160 | 120 | 111 | 36 | ●              |
|                                                                          | 20                                    |                             |                                              | 1588SL20C-0700 | 8                                       | 202 | 162 | 144 | 36 | ●              |
|                                                                          | 30                                    |                             |                                              | 1588SL30C-0700 | 8                                       | 272 | 232 | 214 | 36 | ●              |
| 7.1                                                                      | 10                                    |                             |                                              | 1588SL10C-0710 | 8                                       | 130 | 94  | 84  | 36 | ●              |
|                                                                          | 12                                    |                             |                                              | 1588SL12C-0710 | 8                                       | 146 | 108 | 96  | 36 | ●              |
|                                                                          | 15                                    |                             |                                              | 1588SL15C-0710 | 8                                       | 170 | 130 | 118 | 36 | ○              |
|                                                                          | 20                                    |                             |                                              | 1588SL20C-0710 | 8                                       | 213 | 173 | 155 | 36 | ○              |
|                                                                          | 30                                    |                             |                                              | 1588SL30C-0710 | 8                                       | 290 | 250 | 232 | 36 | ○              |

### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
 ✓ = Suitable · Empfohlen

| Type<br>Typ | Grade<br>Sorte | Workpiece material · Werkstückstoff             |                                   |                                   |        |        |                                           |                                |                                                      |                              |                            |                                            |   |
|-------------|----------------|-------------------------------------------------|-----------------------------------|-----------------------------------|--------|--------|-------------------------------------------|--------------------------------|------------------------------------------------------|------------------------------|----------------------------|--------------------------------------------|---|
|             |                | Carbon steel<br>Kohlenstoff-<br>Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel · Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Grey cast<br>iron<br>Gusseisen | Nodular cast<br>iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Warmfeste<br>Leg. |   |
|             |                |                                                 |                                   | ~40HRC                            | ~50HRC | ~60HRC |                                           |                                |                                                      |                              |                            |                                            |   |
| 1588SL*     | KDG303         | ✓                                               | ✓                                 | ✓                                 |        |        |                                           | ✓                              | ✓                                                    | ✓                            |                            |                                            | ✓ |
| 1588SLK*    | KDG303         |                                                 |                                   |                                   |        |        |                                           |                                | ✓                                                    |                              |                            |                                            |   |

All articles 1588SLK on demand / Alle Artikel 1588SLK auf Anfrage

Code key C 8  
ISO Kennzeichen

Cutting data 96-109  
Schnittdaten

Technical Information C110-116  
Technische Information

Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge

# Drilling · Bohren

Solid carbide drills · Vollhartmetallbohrer

SL & SLK

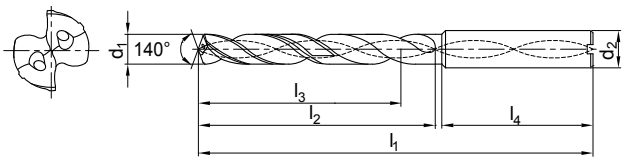
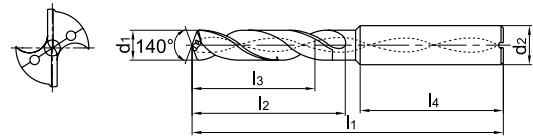
Please add K when ordering / Bitte bei der Bestellung K ergänzen

General machining · Allgemeine Bearbeitung  
( Deep drill · Tieflochbohrer)

1588SL10C / 1588SL12C / 1588SL15C



1588SL20C / 1588SL30C



| Drilling diameter<br>Bohrerdurchmesser<br>d1<br>12/15D(m7)<br>20/30D(h7) | Drilling depth<br>Bohrtiefe<br>l/d1 | Cooling mode<br>Kühlmittel | Shank<br>Schaft                              | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |     |     |     |    | Grade<br>Sorte |
|--------------------------------------------------------------------------|-------------------------------------|----------------------------|----------------------------------------------|----------------|-----------------------------------------|-----|-----|-----|----|----------------|
|                                                                          |                                     |                            |                                              |                | d2(h5)                                  | l1  | l2  | l3  | l4 | KDG303         |
|                                                                          |                                     |                            |                                              |                |                                         |     |     |     |    |                |
| 7.2                                                                      | 10                                  | Internal<br>Intern         | Straight<br>shank<br><br>Zylinder-<br>schaft | 1588SL10C-0720 | 8                                       | 130 | 94  | 84  | 36 | ●              |
|                                                                          | 12                                  |                            |                                              | 1588SL12C-0720 | 8                                       | 146 | 108 | 96  | 36 | ●              |
|                                                                          | 15                                  |                            |                                              | 1588SL15C-0720 | 8                                       | 170 | 130 | 118 | 36 | ○              |
|                                                                          | 20                                  |                            |                                              | 1588SL20C-0720 | 8                                       | 213 | 173 | 155 | 36 | ●              |
|                                                                          | 30                                  |                            |                                              | 1588SL30C-0720 | 8                                       | 290 | 250 | 232 | 36 | ○              |
| 7.3                                                                      | 10                                  |                            |                                              | 1588SL10C-0730 | 8                                       | 130 | 94  | 84  | 36 | ●              |
|                                                                          | 12                                  |                            |                                              | 1588SL12C-0730 | 8                                       | 146 | 108 | 96  | 36 | ●              |
|                                                                          | 15                                  |                            |                                              | 1588SL15C-0730 | 8                                       | 170 | 130 | 118 | 36 | ○              |
|                                                                          | 20                                  |                            |                                              | 1588SL20C-0730 | 8                                       | 213 | 173 | 155 | 36 | ○              |
|                                                                          | 30                                  |                            |                                              | 1588SL30C-0730 | 8                                       | 290 | 250 | 232 | 36 | ○              |
| 7.4                                                                      | 10                                  |                            |                                              | 1588SL10C-0740 | 8                                       | 130 | 94  | 84  | 36 | ●              |
|                                                                          | 12                                  |                            |                                              | 1588SL12C-0740 | 8                                       | 146 | 108 | 96  | 36 | ●              |
|                                                                          | 15                                  |                            |                                              | 1588SL15C-0740 | 8                                       | 170 | 130 | 118 | 36 | ○              |
|                                                                          | 20                                  |                            |                                              | 1588SL20C-0740 | 8                                       | 213 | 173 | 155 | 36 | ○              |
|                                                                          | 30                                  |                            |                                              | 1588SL30C-0740 | 8                                       | 290 | 250 | 232 | 36 | ○              |
| 7.5                                                                      | 10                                  |                            |                                              | 1588SL10C-0750 | 8                                       | 130 | 94  | 84  | 36 | ●              |
|                                                                          | 12                                  |                            |                                              | 1588SL12C-0750 | 8                                       | 146 | 108 | 96  | 36 | ●              |
|                                                                          | 15                                  |                            |                                              | 1588SL15C-0750 | 8                                       | 170 | 130 | 118 | 36 | ○              |
|                                                                          | 20                                  |                            |                                              | 1588SL20C-0750 | 8                                       | 213 | 173 | 155 | 36 | ●              |
|                                                                          | 30                                  |                            |                                              | 1588SL30C-0750 | 8                                       | 290 | 250 | 232 | 36 | ●              |
| 7.6                                                                      | 10                                  |                            |                                              | 1588SL10C-0760 | 8                                       | 130 | 94  | 84  | 36 | ●              |
|                                                                          | 12                                  |                            |                                              | 1588SL12C-0760 | 8                                       | 146 | 108 | 96  | 36 | ●              |
|                                                                          | 15                                  |                            |                                              | 1588SL15C-0760 | 8                                       | 180 | 140 | 128 | 36 | ○              |
|                                                                          | 20                                  |                            |                                              | 1588SL20C-0760 | 8                                       | 223 | 183 | 165 | 36 | ○              |
|                                                                          | 30                                  |                            |                                              | 1588SL30C-0760 | 8                                       | 305 | 265 | 246 | 36 | ○              |
| 7.7                                                                      | 10                                  |                            |                                              | 1588SL10C-0770 | 8                                       | 130 | 94  | 84  | 36 | ●              |
|                                                                          | 12                                  |                            |                                              | 1588SL12C-0770 | 8                                       | 146 | 108 | 96  | 36 | ●              |
|                                                                          | 15                                  |                            |                                              | 1588SL15C-0770 | 8                                       | 180 | 140 | 128 | 36 | ○              |
|                                                                          | 20                                  |                            |                                              | 1588SL20C-0770 | 8                                       | 223 | 183 | 165 | 36 | ○              |
|                                                                          | 30                                  |                            |                                              | 1588SL30C-0770 | 8                                       | 305 | 265 | 246 | 36 | ○              |
| 7.8                                                                      | 10                                  |                            |                                              | 1588SL10C-0780 | 8                                       | 130 | 94  | 84  | 36 | ●              |
|                                                                          | 12                                  |                            |                                              | 1588SL12C-0780 | 8                                       | 146 | 108 | 96  | 36 | ●              |
|                                                                          | 15                                  |                            |                                              | 1588SL15C-0780 | 8                                       | 180 | 140 | 128 | 36 | ○              |
|                                                                          | 20                                  |                            |                                              | 1588SL20C-0780 | 8                                       | 223 | 183 | 165 | 36 | ○              |
|                                                                          | 30                                  |                            |                                              | 1588SL30C-0780 | 8                                       | 305 | 265 | 246 | 36 | ●              |
| 7.9                                                                      | 10                                  |                            |                                              | 1588SL10C-0790 | 8                                       | 130 | 94  | 84  | 36 | ●              |
|                                                                          | 12                                  |                            |                                              | 1588SL12C-0790 | 8                                       | 146 | 108 | 96  | 36 | ●              |
|                                                                          | 15                                  |                            |                                              | 1588SL15C-0790 | 8                                       | 180 | 140 | 128 | 36 | ○              |
|                                                                          | 20                                  |                            |                                              | 1588SL20C-0790 | 8                                       | 223 | 183 | 165 | 36 | ○              |
|                                                                          | 30                                  |                            |                                              | 1588SL30C-0790 | 8                                       | 305 | 265 | 246 | 36 | ○              |
| 8.0                                                                      | 10                                  |                            |                                              | 1588SL10C-0800 | 8                                       | 130 | 94  | 84  | 36 | ●              |
|                                                                          | 12                                  |                            |                                              | 1588SL12C-0800 | 8                                       | 146 | 108 | 96  | 36 | ●              |
|                                                                          | 15                                  |                            |                                              | 1588SL15C-0800 | 8                                       | 180 | 140 | 128 | 36 | ●              |
|                                                                          | 20                                  |                            |                                              | 1588SL20C-0800 | 8                                       | 223 | 183 | 165 | 36 | ●              |
|                                                                          | 30                                  |                            |                                              | 1588SL30C-0800 | 8                                       | 305 | 265 | 246 | 36 | ●              |
| 8.1                                                                      | 10                                  |                            |                                              | 1588SL10C-0810 | 10                                      | 148 | 105 | 94  | 40 | ●              |
|                                                                          | 12                                  |                            |                                              | 1588SL12C-0810 | 10                                      | 162 | 120 | 108 | 40 | ●              |
|                                                                          | 15                                  |                            |                                              | 1588SL15C-0810 | 10                                      | 194 | 150 | 138 | 40 | ○              |
|                                                                          | 20                                  |                            |                                              | 1588SL20C-0810 | 10                                      | 239 | 195 | 176 | 40 | ○              |
|                                                                          | 30                                  |                            |                                              | 1588SL30C-0810 | 10                                      | 330 | 285 | 265 | 40 | ○              |

# Drilling · Bohren

Solid carbide drills · Vollhartmetallbohrer

| Drilling diameter<br>Bohrerdurchmesser<br>d1<br>12/15D(m7)<br>20/30D(h7) | Drilling<br>depth<br>Bohrtiefe<br>(l/d1) | Cooling<br>mode<br>Kühlmittel. | Shank<br>Schaft                              | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |     |     |     |    | Grade<br>Sorte |
|--------------------------------------------------------------------------|------------------------------------------|--------------------------------|----------------------------------------------|----------------|-----------------------------------------|-----|-----|-----|----|----------------|
|                                                                          |                                          |                                |                                              |                | d2(h5)                                  | l1  | l2  | l3  | l4 | KDG303         |
|                                                                          |                                          |                                |                                              |                |                                         |     |     |     |    |                |
| 8.2                                                                      | 10                                       | Intern<br>Internal             | Straight<br>shank<br><br>Zylinder-<br>schaft | 1588SL10C-0820 | 10                                      | 148 | 105 | 94  | 40 | ●              |
|                                                                          | 12                                       |                                |                                              | 1588SL12C-0820 | 10                                      | 162 | 120 | 108 | 40 | ●              |
|                                                                          | 15                                       |                                |                                              | 1588SL15C-0820 | 10                                      | 194 | 150 | 138 | 40 | ○              |
|                                                                          | 20                                       |                                |                                              | 1588SL20C-0820 | 10                                      | 239 | 195 | 176 | 40 | ○              |
|                                                                          | 30                                       |                                |                                              | 1588SL30C-0820 | 10                                      | 330 | 285 | 265 | 40 | ○              |
| 8.3                                                                      | 10                                       |                                |                                              | 1588SL10C-0830 | 10                                      | 148 | 105 | 94  | 40 | ●              |
|                                                                          | 12                                       |                                |                                              | 1588SL12C-0830 | 10                                      | 162 | 120 | 108 | 40 | ●              |
|                                                                          | 15                                       |                                |                                              | 1588SL15C-0830 | 10                                      | 194 | 150 | 138 | 40 | ○              |
|                                                                          | 20                                       |                                |                                              | 1588SL20C-0830 | 10                                      | 239 | 195 | 176 | 40 | ○              |
|                                                                          | 30                                       |                                |                                              | 1588SL30C-0830 | 10                                      | 330 | 285 | 265 | 40 | ○              |
| 8.4                                                                      | 10                                       |                                |                                              | 1588SL10C-0840 | 10                                      | 148 | 105 | 94  | 40 | ●              |
|                                                                          | 12                                       |                                |                                              | 1588SL12C-0840 | 10                                      | 162 | 120 | 108 | 40 | ●              |
|                                                                          | 15                                       |                                |                                              | 1588SL15C-0840 | 10                                      | 194 | 150 | 138 | 40 | ○              |
|                                                                          | 20                                       |                                |                                              | 1588SL20C-0840 | 10                                      | 239 | 195 | 176 | 40 | ○              |
|                                                                          | 30                                       |                                |                                              | 1588SL30C-0840 | 10                                      | 330 | 285 | 265 | 40 | ○              |
| 8.5                                                                      | 10                                       |                                |                                              | 1588SL10C-0850 | 10                                      | 148 | 105 | 94  | 40 | ●              |
|                                                                          | 12                                       |                                |                                              | 1588SL12C-0850 | 10                                      | 162 | 120 | 108 | 40 | ●              |
|                                                                          | 15                                       |                                |                                              | 1588SL15C-0850 | 10                                      | 194 | 150 | 138 | 40 | ●              |
|                                                                          | 20                                       |                                |                                              | 1588SL20C-0850 | 10                                      | 239 | 195 | 176 | 40 | ●              |
|                                                                          | 30                                       |                                |                                              | 1588SL30C-0850 | 10                                      | 330 | 285 | 265 | 40 | ●              |
| 8.6                                                                      | 10                                       |                                |                                              | 1588SL10C-0860 | 10                                      | 148 | 105 | 94  | 40 | ●              |
|                                                                          | 12                                       |                                |                                              | 1588SL12C-0860 | 10                                      | 162 | 120 | 108 | 40 | ●              |
|                                                                          | 15                                       |                                |                                              | 1588SL15C-0860 | 10                                      | 204 | 160 | 148 | 40 | ●              |
|                                                                          | 20                                       |                                |                                              | 1588SL20C-0860 | 10                                      | 249 | 205 | 186 | 40 | ○              |
|                                                                          | 30                                       |                                |                                              | 1588SL30C-0860 | 10                                      | 340 | 295 | 275 | 40 | ○              |
| 8.7                                                                      | 10                                       |                                |                                              | 1588SL10C-0870 | 10                                      | 148 | 105 | 94  | 40 | ●              |
|                                                                          | 12                                       |                                |                                              | 1588SL12C-0870 | 10                                      | 162 | 120 | 108 | 40 | ●              |
|                                                                          | 15                                       |                                |                                              | 1588SL15C-0870 | 10                                      | 204 | 160 | 148 | 40 | ○              |
|                                                                          | 20                                       |                                |                                              | 1588SL20C-0870 | 10                                      | 249 | 205 | 186 | 40 | ○              |
|                                                                          | 30                                       |                                |                                              | 1588SL30C-0870 | 10                                      | 340 | 295 | 275 | 40 | ○              |
| 8.8                                                                      | 10                                       |                                |                                              | 1588SL10C-0880 | 10                                      | 148 | 105 | 94  | 40 | ●              |
|                                                                          | 12                                       |                                |                                              | 1588SL12C-0880 | 10                                      | 162 | 120 | 108 | 40 | ●              |
|                                                                          | 15                                       |                                |                                              | 1588SL15C-0880 | 10                                      | 204 | 160 | 148 | 40 | ●              |
|                                                                          | 20                                       |                                |                                              | 1588SL20C-0880 | 10                                      | 249 | 205 | 186 | 40 | ○              |
|                                                                          | 30                                       |                                |                                              | 1588SL30C-0880 | 10                                      | 340 | 295 | 275 | 40 | ○              |
| 8.9                                                                      | 10                                       |                                |                                              | 1588SL10C-0890 | 10                                      | 148 | 105 | 94  | 40 | ●              |
|                                                                          | 12                                       |                                |                                              | 1588SL12C-0890 | 10                                      | 162 | 120 | 108 | 40 | ●              |
|                                                                          | 15                                       |                                |                                              | 1588SL15C-0890 | 10                                      | 204 | 160 | 148 | 40 | ○              |
|                                                                          | 20                                       |                                |                                              | 1588SL20C-0890 | 10                                      | 249 | 205 | 186 | 40 | ○              |
|                                                                          | 30                                       |                                |                                              | 1588SL30C-0890 | 10                                      | 340 | 295 | 275 | 40 | ○              |
| 9.0                                                                      | 10                                       |                                |                                              | 1588SL10C-0900 | 10                                      | 148 | 105 | 94  | 40 | ●              |
|                                                                          | 12                                       |                                |                                              | 1588SL12C-0900 | 10                                      | 162 | 120 | 108 | 40 | ●              |
|                                                                          | 15                                       |                                |                                              | 1588SL15C-0900 | 10                                      | 204 | 160 | 148 | 40 | ●              |
|                                                                          | 20                                       |                                |                                              | 1588SL20C-0900 | 10                                      | 249 | 205 | 186 | 40 | ○              |
|                                                                          | 30                                       |                                |                                              | 1588SL30C-0900 | 10                                      | 340 | 295 | 275 | 40 | ○              |
| 9.1                                                                      | 10                                       |                                |                                              | 1588SL10C-0910 | 10                                      | 158 | 115 | 103 | 40 | ●              |
|                                                                          | 12                                       |                                |                                              | 1588SL12C-0910 | 10                                      | 174 | 132 | 120 | 40 | ○              |
|                                                                          | 15                                       |                                |                                              | 1588SL15C-0910 | 10                                      | 216 | 172 | 160 | 40 | ○              |
|                                                                          | 20                                       |                                |                                              | 1588SL20C-0910 | 10                                      | 262 | 218 | 196 | 36 | ○              |
|                                                                          | 30                                       |                                |                                              | 1588SL30C-0910 | 10                                      | 360 | 315 | 292 | 40 | ○              |
| 9.2                                                                      | 10                                       |                                |                                              | 1588SL10C-0920 | 10                                      | 158 | 115 | 103 | 40 | ●              |
|                                                                          | 12                                       |                                |                                              | 1588SL12C-0920 | 10                                      | 174 | 132 | 120 | 40 | ●              |
|                                                                          | 15                                       |                                |                                              | 1588SL15C-0920 | 10                                      | 216 | 172 | 160 | 40 | ○              |
|                                                                          | 20                                       |                                |                                              | 1588SL20C-0920 | 10                                      | 262 | 218 | 196 | 36 | ○              |
|                                                                          | 30                                       |                                |                                              | 1588SL30C-0920 | 10                                      | 360 | 315 | 292 | 40 | ○              |

## Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Type<br>Typ | Grade<br>Sorte | Workpiece material · Werkstückstoff             |                                   |                                   |        |        |                                           |                                |                                                      |                              |                            |                                            |   |
|-------------|----------------|-------------------------------------------------|-----------------------------------|-----------------------------------|--------|--------|-------------------------------------------|--------------------------------|------------------------------------------------------|------------------------------|----------------------------|--------------------------------------------|---|
|             |                | Carbon steel<br>Kohlenstoff-<br>Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel · Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Grey cast<br>iron<br>Gusseisen | Nodular cast<br>iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Warmfeste<br>Leg. |   |
|             |                |                                                 |                                   | ~40HRC                            | ~50HRC | ~60HRC |                                           |                                |                                                      |                              |                            |                                            |   |
| 1588SL*     | KDG303         | ✓                                               | ✓                                 | ✓                                 |        |        |                                           | ✓                              | ✓                                                    | ✓                            |                            |                                            | ✓ |
| 1588SLK*    | KDG303         |                                                 |                                   |                                   |        |        |                                           |                                | ✓                                                    |                              |                            |                                            |   |

All articles 1588SLK on demand / Alle Artikel 1588SLK auf Anfrage

Code key C 8  
ISO Kennzeichen

Cutting data 96-109  
Schnittdaten

Technical Information C110-116  
Technische Information

Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge

# Drilling • Bohren

Solid carbide drills • Vollhartmetallbohrer

SL & SLK

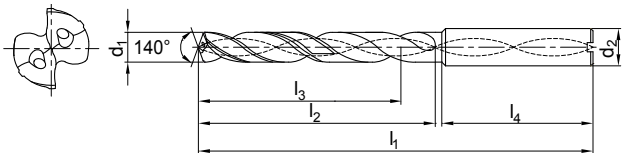
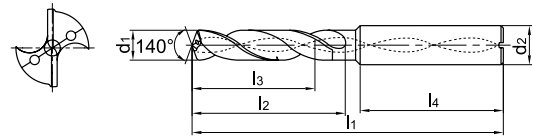
Please add K when ordering / Bitte bei der Bestellung K ergänzen

General machining • Allgemeine Bearbeitung  
( Deep drill • Tieflochbohrer)

1588SL10C / 1588SL12C / 1588SL15C



1588SL20C / 1588SL30C



| Drilling diameter<br>Bohrerdurchmesser<br>d1<br>12/15D(m7)<br>20/30D(h7) | Drilling<br>depth<br>Bohrtiefe<br>(l/d1) | Cooling<br>mode<br>Kühlmittel. | Shank<br>Schaft                              | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |     |     |     |    | Grade<br>Sorte |
|--------------------------------------------------------------------------|------------------------------------------|--------------------------------|----------------------------------------------|----------------|-----------------------------------------|-----|-----|-----|----|----------------|
|                                                                          |                                          |                                |                                              |                | d2(h5)                                  | l1  | l2  | l3  | l4 | KDG303         |
|                                                                          |                                          |                                |                                              |                |                                         |     |     |     |    |                |
| 9.3                                                                      | 10                                       | Internal                       | Straight<br>shank<br><br>Zylinder-<br>schaft | 1588SL10C-0930 | 10                                      | 158 | 115 | 103 | 40 | ●              |
|                                                                          | 12                                       |                                |                                              | 1588SL12C-0930 | 10                                      | 174 | 132 | 120 | 40 | ●              |
|                                                                          | 15                                       |                                |                                              | 1588SL15C-0930 | 10                                      | 216 | 172 | 160 | 40 | ○              |
|                                                                          | 20                                       |                                |                                              | 1588SL20C-0930 | 10                                      | 262 | 218 | 196 | 36 | ○              |
|                                                                          | 30                                       |                                |                                              | 1588SL30C-0930 | 10                                      | 360 | 315 | 292 | 40 | ○              |
| 9.4                                                                      | 10                                       |                                |                                              | 1588SL10C-0940 | 10                                      | 158 | 115 | 103 | 40 | ●              |
|                                                                          | 12                                       |                                |                                              | 1588SL12C-0940 | 10                                      | 174 | 132 | 120 | 40 | ●              |
|                                                                          | 15                                       |                                |                                              | 1588SL15C-0940 | 10                                      | 216 | 172 | 160 | 40 | ○              |
|                                                                          | 20                                       |                                |                                              | 1588SL20C-0940 | 10                                      | 262 | 218 | 196 | 36 | ○              |
|                                                                          | 30                                       |                                |                                              | 1588SL30C-0940 | 10                                      | 360 | 315 | 292 | 40 | ○              |
| 9.5                                                                      | 10                                       |                                |                                              | 1588SL10C-0950 | 10                                      | 158 | 115 | 103 | 40 | ●              |
|                                                                          | 12                                       |                                |                                              | 1588SL12C-0950 | 10                                      | 174 | 132 | 120 | 40 | ●              |
|                                                                          | 15                                       |                                |                                              | 1588SL15C-0950 | 10                                      | 216 | 172 | 160 | 40 | ○              |
|                                                                          | 20                                       |                                |                                              | 1588SL20C-0950 | 10                                      | 262 | 218 | 196 | 36 | ●              |
|                                                                          | 30                                       |                                |                                              | 1588SL30C-0950 | 10                                      | 360 | 315 | 292 | 40 | ●              |
| 9.6                                                                      | 10                                       |                                |                                              | 1588SL10C-0960 | 10                                      | 158 | 115 | 103 | 40 | ●              |
|                                                                          | 12                                       |                                |                                              | 1588SL12C-0960 | 10                                      | 174 | 132 | 120 | 40 | ○              |
|                                                                          | 15                                       |                                |                                              | 1588SL15C-0960 | 10                                      | 226 | 182 | 170 | 40 | ○              |
|                                                                          | 20                                       |                                |                                              | 1588SL20C-0960 | 10                                      | 272 | 228 | 206 | 40 | ○              |
|                                                                          | 30                                       |                                |                                              | 1588SL30C-0960 | 10                                      | 372 | 328 | 305 | 40 | ○              |
| 9.7                                                                      | 10                                       |                                |                                              | 1588SL10C-0970 | 10                                      | 158 | 115 | 103 | 40 | ●              |
|                                                                          | 12                                       |                                |                                              | 1588SL12C-0970 | 10                                      | 174 | 132 | 120 | 40 | ○              |
|                                                                          | 15                                       |                                |                                              | 1588SL15C-0970 | 10                                      | 226 | 182 | 170 | 40 | ○              |
|                                                                          | 20                                       |                                |                                              | 1588SL20C-0970 | 10                                      | 272 | 228 | 206 | 40 | ○              |
|                                                                          | 30                                       |                                |                                              | 1588SL30C-0970 | 10                                      | 372 | 328 | 305 | 40 | ○              |
| 9.8                                                                      | 10                                       |                                |                                              | 1588SL10C-0980 | 10                                      | 158 | 115 | 103 | 40 | ●              |
|                                                                          | 12                                       |                                |                                              | 1588SL12C-0980 | 10                                      | 174 | 132 | 120 | 40 | ●              |
|                                                                          | 15                                       |                                |                                              | 1588SL15C-0980 | 10                                      | 226 | 182 | 170 | 40 | ○              |
|                                                                          | 20                                       |                                |                                              | 1588SL20C-0980 | 10                                      | 272 | 228 | 206 | 40 | ○              |
|                                                                          | 30                                       |                                |                                              | 1588SL30C-0980 | 10                                      | 372 | 328 | 305 | 40 | ○              |
| 9.9                                                                      | 10                                       |                                |                                              | 1588SL10C-0990 | 10                                      | 158 | 115 | 103 | 40 | ●              |
|                                                                          | 12                                       |                                |                                              | 1588SL12C-0990 | 10                                      | 174 | 132 | 120 | 40 | ○              |
|                                                                          | 15                                       |                                |                                              | 1588SL15C-0990 | 10                                      | 226 | 182 | 170 | 40 | ○              |
|                                                                          | 20                                       |                                |                                              | 1588SL20C-0990 | 10                                      | 272 | 228 | 206 | 40 | ○              |
|                                                                          | 30                                       |                                |                                              | 1588SL30C-0990 | 10                                      | 372 | 328 | 305 | 40 | ○              |
| 10.0                                                                     | 10                                       |                                |                                              | 1588SL10C-1000 | 10                                      | 158 | 115 | 103 | 40 | ●              |
|                                                                          | 12                                       |                                |                                              | 1588SL12C-1000 | 10                                      | 174 | 132 | 120 | 40 | ●              |
|                                                                          | 15                                       |                                |                                              | 1588SL15C-1000 | 10                                      | 226 | 182 | 170 | 40 | ●              |
|                                                                          | 20                                       |                                |                                              | 1588SL20C-1000 | 10                                      | 272 | 228 | 206 | 40 | ●              |
|                                                                          | 30                                       |                                |                                              | 1588SL30C-1000 | 10                                      | 372 | 328 | 305 | 40 | ●              |
| 10.1                                                                     | 10                                       |                                |                                              | 1588SL10C-1010 | 12                                      | 183 | 135 | 121 | 45 | ●              |
|                                                                          | 12                                       |                                |                                              | 1588SL12C-1010 | 12                                      | 204 | 156 | 144 | 45 | ●              |
|                                                                          | 15                                       |                                |                                              | 1588SL15C-1010 | 12                                      | 240 | 190 | 178 | 45 | ○              |
|                                                                          | 20                                       |                                |                                              | 1588SL20C-1010 | 12                                      | 292 | 242 | 220 | 45 | ○              |
|                                                                          | 30                                       |                                |                                              | 1588SL30C-1010 | 12                                      | 392 | 344 | 322 | 45 | ○              |
| 10.2                                                                     | 10                                       |                                |                                              | 1588SL10C-1020 | 12                                      | 183 | 135 | 121 | 45 | ●              |
|                                                                          | 12                                       |                                |                                              | 1588SL12C-1020 | 12                                      | 204 | 156 | 144 | 45 | ●              |
|                                                                          | 15                                       |                                |                                              | 1588SL15C-1020 | 12                                      | 240 | 190 | 178 | 45 | ○              |
|                                                                          | 20                                       |                                |                                              | 1588SL20C-1020 | 12                                      | 292 | 242 | 220 | 45 | ○              |
|                                                                          | 30                                       |                                |                                              | 1588SL30C-1020 | 12                                      | 392 | 344 | 322 | 45 | ○              |



| Drilling diameter<br>Bohrerdurchmesser<br>d1<br>12/15D(m7)<br>20/30D(h7) | Drilling<br>depth<br>Bohrtiefe<br>(l/d1) | Cooling<br>mode<br>Kühlmittel. | Shank<br>Schaft                          | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |     |     |     |    | Grade<br>Sorte |
|--------------------------------------------------------------------------|------------------------------------------|--------------------------------|------------------------------------------|----------------|-----------------------------------------|-----|-----|-----|----|----------------|
|                                                                          |                                          |                                |                                          |                | d2(h5)                                  | l1  | l2  | l3  | l4 | KDG303         |
|                                                                          |                                          |                                |                                          |                |                                         |     |     |     |    |                |
| 10.3                                                                     | 10                                       | Internal<br>Intern             | Straight<br>shank<br>Zylinder-<br>schaft | 1588SL10C-1030 | 12                                      | 183 | 135 | 121 | 45 | ●              |
|                                                                          | 12                                       |                                |                                          | 1588SL12C-1030 | 12                                      | 204 | 156 | 144 | 45 | ●              |
|                                                                          | 15                                       |                                |                                          | 1588SL15C-1030 | 12                                      | 240 | 190 | 178 | 45 | ○              |
|                                                                          | 20                                       |                                |                                          | 1588SL20C-1030 | 12                                      | 292 | 242 | 220 | 45 | ○              |
| 10.4                                                                     | 10                                       |                                |                                          | 1588SL10C-1040 | 12                                      | 183 | 135 | 121 | 45 | ●              |
|                                                                          | 12                                       |                                |                                          | 1588SL12C-1040 | 12                                      | 204 | 156 | 144 | 45 | ●              |
|                                                                          | 15                                       |                                |                                          | 1588SL15C-1040 | 12                                      | 240 | 190 | 178 | 45 | ○              |
|                                                                          | 20                                       |                                |                                          | 1588SL20C-1040 | 12                                      | 292 | 242 | 220 | 45 | ○              |
| 10.5                                                                     | 10                                       |                                |                                          | 1588SL10C-1050 | 12                                      | 183 | 135 | 121 | 45 | ●              |
|                                                                          | 12                                       |                                |                                          | 1588SL12C-1050 | 12                                      | 204 | 156 | 144 | 45 | ●              |
|                                                                          | 15                                       |                                |                                          | 1588SL15C-1050 | 12                                      | 240 | 190 | 178 | 45 | ○              |
|                                                                          | 20                                       |                                |                                          | 1588SL20C-1050 | 12                                      | 292 | 242 | 220 | 45 | ●              |
| 10.6                                                                     | 10                                       |                                |                                          | 1588SL10C-1060 | 12                                      | 183 | 135 | 121 | 45 | ●              |
|                                                                          | 12                                       |                                |                                          | 1588SL12C-1060 | 12                                      | 204 | 156 | 144 | 45 | ●              |
|                                                                          | 15                                       |                                |                                          | 1588SL15C-1060 | 12                                      | 248 | 198 | 186 | 45 | ○              |
|                                                                          | 20                                       |                                |                                          | 1588SL20C-1060 | 12                                      | 300 | 250 | 228 | 45 | ○              |
| 10.7                                                                     | 10                                       |                                |                                          | 1588SL10C-1070 | 12                                      | 183 | 135 | 121 | 45 | ●              |
|                                                                          | 12                                       |                                |                                          | 1588SL12C-1070 | 12                                      | 204 | 156 | 144 | 45 | ○              |
|                                                                          | 15                                       |                                |                                          | 1588SL15C-1070 | 12                                      | 248 | 198 | 186 | 45 | ○              |
|                                                                          | 20                                       |                                |                                          | 1588SL20C-1070 | 12                                      | 300 | 250 | 228 | 45 | ○              |
| 10.8                                                                     | 10                                       |                                |                                          | 1588SL10C-1080 | 12                                      | 183 | 135 | 121 | 45 | ●              |
|                                                                          | 12                                       |                                |                                          | 1588SL12C-1080 | 12                                      | 204 | 156 | 144 | 45 | ○              |
|                                                                          | 15                                       |                                |                                          | 1588SL15C-1080 | 12                                      | 248 | 198 | 186 | 45 | ○              |
|                                                                          | 20                                       |                                |                                          | 1588SL20C-1080 | 12                                      | 300 | 250 | 228 | 45 | ○              |
| 10.9                                                                     | 10                                       |                                |                                          | 1588SL10C-1090 | 12                                      | 183 | 135 | 121 | 45 | ●              |
|                                                                          | 12                                       |                                |                                          | 1588SL12C-1090 | 12                                      | 204 | 156 | 144 | 45 | ○              |
|                                                                          | 15                                       |                                |                                          | 1588SL15C-1090 | 12                                      | 248 | 198 | 186 | 45 | ○              |
|                                                                          | 20                                       |                                |                                          | 1588SL20C-1090 | 12                                      | 300 | 250 | 228 | 45 | ○              |
| 11.0                                                                     | 10                                       |                                |                                          | 1588SL10C-1100 | 12                                      | 183 | 135 | 121 | 45 | ●              |
|                                                                          | 12                                       |                                |                                          | 1588SL12C-1100 | 12                                      | 204 | 156 | 144 | 45 | ●              |
|                                                                          | 15                                       |                                |                                          | 1588SL15C-1100 | 12                                      | 248 | 198 | 186 | 45 | ●              |
|                                                                          | 20                                       |                                |                                          | 1588SL20C-1100 | 12                                      | 300 | 250 | 228 | 45 | ●              |
| 11.1                                                                     | 10                                       |                                |                                          | 1588SL10C-1110 | 12                                      | 183 | 135 | 121 | 45 | ●              |
|                                                                          | 12                                       |                                |                                          | 1588SL12C-1110 | 12                                      | 204 | 156 | 144 | 45 | ○              |
|                                                                          | 15                                       |                                |                                          | 1588SL15C-1110 | 12                                      | 262 | 212 | 200 | 45 | ○              |
|                                                                          | 20                                       |                                |                                          | 1588SL20C-1110 | 12                                      | 315 | 265 | 240 | 45 | ○              |
| 11.2                                                                     | 10                                       |                                |                                          | 1588SL10C-1120 | 12                                      | 183 | 135 | 121 | 45 | ●              |
|                                                                          | 12                                       |                                |                                          | 1588SL12C-1120 | 12                                      | 204 | 156 | 144 | 45 | ●              |
|                                                                          | 15                                       |                                |                                          | 1588SL15C-1120 | 12                                      | 262 | 212 | 200 | 45 | ○              |
|                                                                          | 20                                       |                                |                                          | 1588SL20C-1120 | 12                                      | 315 | 265 | 240 | 45 | ○              |
| 11.3                                                                     | 10                                       |                                |                                          | 1588SL10C-1130 | 12                                      | 183 | 135 | 121 | 45 | ●              |
|                                                                          | 12                                       |                                |                                          | 1588SL12C-1130 | 12                                      | 204 | 156 | 144 | 45 | ○              |
|                                                                          | 15                                       |                                |                                          | 1588SL15C-1130 | 12                                      | 262 | 212 | 200 | 45 | ○              |
|                                                                          | 20                                       |                                |                                          | 1588SL20C-1130 | 12                                      | 315 | 265 | 240 | 45 | ○              |
| 11.4                                                                     | 10                                       |                                |                                          | 1588SL10C-1140 | 12                                      | 183 | 135 | 121 | 45 | ●              |
|                                                                          | 12                                       |                                |                                          | 1588SL12C-1140 | 12                                      | 204 | 156 | 144 | 45 | ○              |
|                                                                          | 15                                       |                                |                                          | 1588SL15C-1140 | 12                                      | 262 | 212 | 200 | 45 | ○              |
|                                                                          | 20                                       |                                |                                          | 1588SL20C-1140 | 12                                      | 315 | 265 | 240 | 45 | ○              |
| 11.5                                                                     | 10                                       |                                |                                          | 1588SL10C-1150 | 12                                      | 183 | 135 | 121 | 45 | ●              |
|                                                                          | 12                                       |                                |                                          | 1588SL12C-1150 | 12                                      | 204 | 156 | 144 | 45 | ●              |
|                                                                          | 15                                       |                                |                                          | 1588SL15C-1150 | 12                                      | 262 | 212 | 200 | 45 | ●              |
|                                                                          | 20                                       |                                |                                          | 1588SL20C-1150 | 12                                      | 315 | 265 | 240 | 45 | ●              |
| 11.6                                                                     | 10                                       |                                |                                          | 1588SL10C-1160 | 12                                      | 183 | 135 | 121 | 45 | ●              |
|                                                                          | 12                                       |                                |                                          | 1588SL12C-1160 | 12                                      | 204 | 156 | 144 | 45 | ○              |
|                                                                          | 15                                       |                                |                                          | 1588SL15C-1160 | 12                                      | 272 | 222 | 210 | 45 | ○              |
|                                                                          | 20                                       |                                |                                          | 1588SL20C-1160 | 12                                      | 325 | 275 | 250 | 45 | ○              |

### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen

✓ = Suitable · Empfohlen

| Type<br>Typ | Grade<br>Sorte | Workpiece material · Werkstückstoff             |                                   |                                   |        |        |                                           |                                |                                                      |                              |                            |                                            |   |
|-------------|----------------|-------------------------------------------------|-----------------------------------|-----------------------------------|--------|--------|-------------------------------------------|--------------------------------|------------------------------------------------------|------------------------------|----------------------------|--------------------------------------------|---|
|             |                | Carbon steel<br>Kohlenstoff-<br>Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel · Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Grey cast<br>iron<br>Gusseisen | Nodular cast<br>iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Warmfeste<br>Leg. |   |
|             |                |                                                 |                                   | ~40HRC                            | ~50HRC | ~60HRC |                                           |                                |                                                      |                              |                            |                                            |   |
| 1588SL*     | KDG303         | ✓                                               | ✓                                 | ✓                                 |        |        |                                           | ✓                              | ✓                                                    | ✓                            |                            |                                            | ✓ |
| 1588SLK*    | KDG303         |                                                 |                                   |                                   |        |        |                                           |                                | ✓                                                    |                              |                            |                                            |   |

All articles 1588SLK on demand / Alle Artikel 1588SLK auf Anfrage

Code key C 8  
ISO Kennzeichen

Cutting data 96-109  
Schnittdaten

Technical Information C110-116  
Technische Information

Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge



# Drilling · Bohren

Solid carbide drills · Vollhartmetallbohrer

SL & SLK

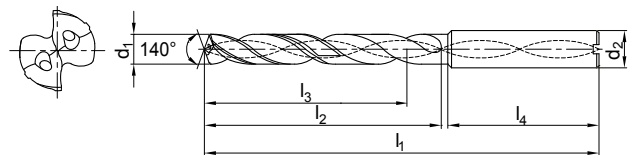
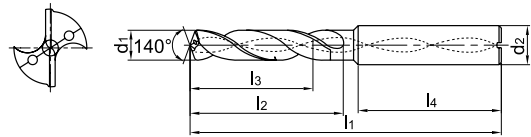
Please add K when ordering / Bitte bei der Bestellung K ergänzen

General machining · Allgemeine Bearbeitung  
( Deep drill · Tieflochbohrer)

1588SL10C / 1588SL12C / 1588SL15C



1588SL20C / 1588SL30C

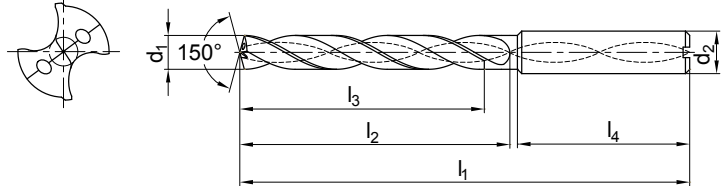


| Drilling diameter<br>Bohrerdurchmesser<br>d1<br>12/15D(m7)<br>20/30D(h7) | Drilling depth<br>Bohrtiefe<br>(l/d1) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                       | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |     |     |     |    | Grade<br>Sorte |
|--------------------------------------------------------------------------|---------------------------------------|-----------------------------|---------------------------------------|----------------|-----------------------------------------|-----|-----|-----|----|----------------|
|                                                                          |                                       |                             |                                       |                | d2(h5)                                  | l1  | l2  | l3  | l4 | KDG303         |
|                                                                          |                                       |                             |                                       |                |                                         |     |     |     |    |                |
| 11.7                                                                     | 10                                    | Internal<br>Intern          | Straight shank<br>Zylinder-<br>schaft | 1588SL10C-1170 | 12                                      | 183 | 135 | 121 | 45 | ●              |
|                                                                          | 12                                    |                             |                                       | 1588SL12C-1170 | 12                                      | 204 | 156 | 144 | 45 | ●              |
|                                                                          | 15                                    |                             |                                       | 1588SL15C-1170 | 12                                      | 272 | 222 | 210 | 45 | ○              |
|                                                                          | 20                                    |                             |                                       | 1588SL20C-1170 | 12                                      | 325 | 275 | 250 | 45 | ○              |
| 11.8                                                                     | 10                                    |                             |                                       | 1588SL10C-1180 | 12                                      | 183 | 135 | 121 | 45 | ●              |
|                                                                          | 12                                    |                             |                                       | 1588SL12C-1180 | 12                                      | 204 | 156 | 144 | 45 | ●              |
|                                                                          | 15                                    |                             |                                       | 1588SL15C-1180 | 12                                      | 272 | 222 | 210 | 45 | ○              |
|                                                                          | 20                                    |                             |                                       | 1588SL20C-1180 | 12                                      | 325 | 275 | 250 | 45 | ○              |
| 11.9                                                                     | 10                                    |                             |                                       | 1588SL10C-1190 | 12                                      | 183 | 135 | 121 | 45 | ●              |
|                                                                          | 12                                    |                             |                                       | 1588SL12C-1190 | 12                                      | 204 | 156 | 144 | 45 | ○              |
|                                                                          | 15                                    |                             |                                       | 1588SL15C-1190 | 12                                      | 272 | 222 | 210 | 45 | ○              |
|                                                                          | 20                                    |                             |                                       | 1588SL20C-1190 | 12                                      | 325 | 275 | 250 | 45 | ○              |
| 12.0                                                                     | 10                                    |                             |                                       | 1588SL10C-1200 | 12                                      | 183 | 135 | 121 | 45 | ●              |
|                                                                          | 12                                    |                             |                                       | 1588SL12C-1200 | 12                                      | 204 | 156 | 144 | 45 | ●              |
|                                                                          | 15                                    |                             |                                       | 1588SL15C-1200 | 12                                      | 272 | 222 | 210 | 45 | ●              |
|                                                                          | 20                                    |                             |                                       | 1588SL20C-1200 | 12                                      | 325 | 275 | 250 | 45 | ○              |
| 12.25                                                                    | 10                                    |                             |                                       | 1588SL10C-1225 | 14                                      | 209 | 160 | 144 | 45 | ●              |
| 12.5                                                                     | 10                                    |                             |                                       | 1588SL10C-1250 | 14                                      | 209 | 160 | 144 | 45 | ●              |
|                                                                          | 12                                    |                             |                                       | 1588SL12C-1250 | 14                                      | 230 | 182 | 168 | 45 | ●              |
|                                                                          | 20                                    |                             |                                       | 1588SL20C-1250 | 14                                      | 325 | 275 | 250 | 45 | ○              |
| 12.7                                                                     | 10                                    |                             |                                       | 1588SL10C-1270 | 14                                      | 209 | 160 | 144 | 45 | ●              |
|                                                                          | 12                                    |                             |                                       | 1588SL12C-1270 | 14                                      | 230 | 182 | 168 | 45 | ○              |
| 12.75                                                                    | 10                                    |                             |                                       | 1588SL10C-1275 | 14                                      | 209 | 160 | 144 | 45 | ●              |
| 12.8                                                                     | 10                                    |                             |                                       | 1588SL10C-1280 | 14                                      | 209 | 160 | 144 | 45 | ●              |
|                                                                          | 12                                    |                             |                                       | 1588SL12C-1280 | 14                                      | 230 | 182 | 168 | 45 | ○              |
|                                                                          | 10                                    |                             |                                       | 1588SL10C-1300 | 14                                      | 209 | 160 | 144 | 45 | ●              |
| 13.0                                                                     | 12                                    |                             |                                       | 1588SL12C-1300 | 14                                      | 230 | 182 | 168 | 45 | ●              |
|                                                                          | 20                                    |                             |                                       | 1588SL20C-1300 | 14                                      | 338 | 290 | 265 | 45 | ○              |
| 13.1                                                                     | 10                                    |                             |                                       | 1588SL10C-1310 | 14                                      | 209 | 160 | 144 | 45 | ●              |
|                                                                          | 10                                    |                             |                                       | 1588SL10C-1350 | 14                                      | 209 | 160 | 144 | 45 | ●              |
| 13.5                                                                     | 12                                    |                             |                                       | 1588SL12C-1350 | 14                                      | 230 | 182 | 168 | 45 | ●              |
|                                                                          | 20                                    |                             |                                       | 1588SL20C-1350 | 14                                      | 338 | 290 | 265 | 45 | ○              |
| 13.8                                                                     | 10                                    |                             |                                       | 1588SL10C-1380 | 14                                      | 209 | 160 | 144 | 45 | ○              |
|                                                                          | 10                                    |                             |                                       | 1588SL10C-1400 | 14                                      | 209 | 160 | 144 | 45 | ●              |
| 14.0                                                                     | 12                                    |                             |                                       | 1588SL12C-1400 | 14                                      | 230 | 182 | 168 | 45 | ●              |
|                                                                          | 20                                    |                             |                                       | 1588SL20C-1400 | 14                                      | 367 | 318 | 290 | 45 | ○              |
|                                                                          | 12                                    |                             |                                       | 1588SL12C-1450 | 16                                      | 260 | 208 | 194 | 48 | ●              |
| 14.5                                                                     | 12                                    |                             |                                       | 1588SL12C-1500 | 16                                      | 260 | 208 | 194 | 48 | ●              |
| 15.0                                                                     | 12                                    |                             |                                       | 1588SL12C-1550 | 16                                      | 260 | 208 | 194 | 48 | ●              |
| 15.5                                                                     | 12                                    |                             |                                       | 1588SL12C-1600 | 16                                      | 260 | 208 | 194 | 48 | ●              |
| 16.0                                                                     | 12                                    |                             |                                       | 1588SL12C-1650 | 18                                      | 286 | 234 | 218 | 48 | ●              |
| 16.5                                                                     | 12                                    |                             |                                       | 1588SL12C-1700 | 18                                      | 286 | 234 | 218 | 48 | ●              |
| 17.0                                                                     | 12                                    |                             |                                       | 1588SL12C-1750 | 18                                      | 286 | 234 | 218 | 48 | ●              |
| 17.5                                                                     | 12                                    |                             |                                       | 1588SL12C-1800 | 18                                      | 286 | 234 | 218 | 48 | ●              |
| 18.0                                                                     | 12                                    |                             |                                       | 1588SL12C-1850 | 20                                      | 310 | 258 | 240 | 48 | ○              |
| 18.5                                                                     | 12                                    |                             |                                       | 1588SL12C-1900 | 20                                      | 310 | 258 | 240 | 48 | ○              |
| 19.0                                                                     | 12                                    |                             |                                       | 1588SL12C-1950 | 20                                      | 310 | 258 | 240 | 48 | ○              |
| 19.5                                                                     | 12                                    |                             |                                       | 1588SL12C-2000 | 20                                      | 310 | 258 | 240 | 48 | ○              |
| 20.0                                                                     | 12                                    |                             |                                       | 1588SL12C-2050 | 22                                      | 310 | 258 | 240 | 48 | ○              |
| 20.5                                                                     | 12                                    |                             |                                       | 1588SL12C-2100 | 22                                      | 310 | 258 | 240 | 48 | ○              |
| 21.0                                                                     | 12                                    |                             |                                       |                |                                         |     |     |     |    |                |

### SP series · SP Serie

### General machining · Allgemeine Bearbeitung

#### 1534SP03C Pilot drills · Pilotbohrer



| 1534SP03C*<br>Drilling diameter<br>Bohrerdurchmesser<br>d <sub>1</sub> (h <sub>7</sub> ) | Drilling depth<br>Bohrtiefe<br>l(l/d <sub>1</sub> ) | 1588SL20C*/30C*<br>Drilling diameter<br>Bohrerdurchmesser<br>d <sub>1</sub> (h <sub>7</sub> ) | Cooling mode<br>Kühlmittel | Shank<br>Schaft                  | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                |                |                |                | Grade<br>Sorte<br><br>KDG303 |
|------------------------------------------------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------------------------------------------------|----------------------------|----------------------------------|----------------|-----------------------------------------|----------------|----------------|----------------|----------------|------------------------------|
|                                                                                          |                                                     |                                                                                               |                            |                                  |                | d <sub>2</sub> (h <sub>6</sub> )        | l <sub>1</sub> | l <sub>2</sub> | l <sub>3</sub> | l <sub>4</sub> |                              |
| 3.03                                                                                     | 3                                                   | 3.0                                                                                           | Internal<br>Intern         | Straight shank<br>Zylinderschaft | 1534SP03C-0303 | 6                                       | 62             | 20             | 14             | 36             | ●                            |
| 3.13                                                                                     | 3                                                   | 3.10                                                                                          |                            |                                  | 1534SP03C-0313 | 6                                       | 62             | 20             | 14             | 36             | ○                            |
| 3.23                                                                                     | 3                                                   | 3.20                                                                                          |                            |                                  | 1534SP03C-0323 | 6                                       | 62             | 20             | 14             | 36             | ○                            |
| 3.33                                                                                     | 3                                                   | 3.30                                                                                          |                            |                                  | 1534SP03C-0333 | 6                                       | 62             | 20             | 14             | 36             | ●                            |
| 3.43                                                                                     | 3                                                   | 3.40                                                                                          |                            |                                  | 1534SP03C-0343 | 6                                       | 62             | 20             | 14             | 36             | ●                            |
| 3.53                                                                                     | 3                                                   | 3.50                                                                                          |                            |                                  | 1534SP03C-0353 | 6                                       | 62             | 20             | 14             | 36             | ●                            |
| 3.63                                                                                     | 3                                                   | 3.60                                                                                          |                            |                                  | 1534SP03C-0363 | 6                                       | 62             | 20             | 14             | 36             | ○                            |
| 3.73                                                                                     | 3                                                   | 3.70                                                                                          |                            |                                  | 1534SP03C-0373 | 6                                       | 62             | 20             | 14             | 36             | ○                            |
| 3.83                                                                                     | 3                                                   | 3.80                                                                                          |                            |                                  | 1534SP03C-0383 | 6                                       | 66             | 24             | 17             | 36             | ○                            |
| 3.93                                                                                     | 3                                                   | 3.90                                                                                          |                            |                                  | 1534SP03C-0393 | 6                                       | 66             | 24             | 17             | 36             | ○                            |
| 4.03                                                                                     | 3                                                   | 4.0                                                                                           |                            |                                  | 1534SP03C-0403 | 6                                       | 66             | 24             | 17             | 36             | ●                            |
| 4.13                                                                                     | 3                                                   | 4.10                                                                                          |                            |                                  | 1534SP03C-0413 | 6                                       | 66             | 24             | 17             | 36             | ○                            |
| 4.23                                                                                     | 3                                                   | 4.20                                                                                          |                            |                                  | 1534SP03C-0423 | 6                                       | 66             | 24             | 17             | 36             | ○                            |
| 4.33                                                                                     | 3                                                   | 4.30                                                                                          |                            |                                  | 1534SP03C-0433 | 6                                       | 66             | 24             | 17             | 36             | ○                            |
| 4.43                                                                                     | 3                                                   | 4.40                                                                                          |                            |                                  | 1534SP03C-0443 | 6                                       | 66             | 24             | 17             | 36             | ○                            |
| 4.53                                                                                     | 3                                                   | 4.50                                                                                          |                            |                                  | 1534SP03C-0453 | 6                                       | 66             | 24             | 17             | 36             | ●                            |
| 4.63                                                                                     | 3                                                   | 4.60                                                                                          |                            |                                  | 1534SP03C-0463 | 6                                       | 66             | 24             | 17             | 36             | ●                            |
| 4.73                                                                                     | 3                                                   | 4.70                                                                                          |                            |                                  | 1534SP03C-0473 | 6                                       | 66             | 24             | 17             | 36             | ○                            |
| 4.83                                                                                     | 3                                                   | 4.80                                                                                          |                            |                                  | 1534SP03C-0483 | 6                                       | 66             | 28             | 20             | 36             | ○                            |
| 4.93                                                                                     | 3                                                   | 4.90                                                                                          |                            |                                  | 1534SP03C-0493 | 6                                       | 66             | 28             | 20             | 36             | ○                            |
| 5.03                                                                                     | 3                                                   | 5.0                                                                                           |                            |                                  | 1534SP03C-0503 | 6                                       | 66             | 28             | 20             | 36             | ●                            |
| 5.13                                                                                     | 3                                                   | 5.10                                                                                          |                            |                                  | 1534SP03C-0513 | 6                                       | 66             | 28             | 20             | 36             | ○                            |
| 5.23                                                                                     | 3                                                   | 5.20                                                                                          |                            |                                  | 1534SP03C-0523 | 6                                       | 66             | 28             | 20             | 36             | ●                            |
| 5.33                                                                                     | 3                                                   | 5.30                                                                                          |                            |                                  | 1534SP03C-0533 | 6                                       | 66             | 28             | 20             | 36             | ○                            |
| 5.43                                                                                     | 3                                                   | 5.40                                                                                          |                            |                                  | 1534SP03C-0543 | 6                                       | 66             | 28             | 20             | 36             | ○                            |
| 5.53                                                                                     | 3                                                   | 5.50                                                                                          |                            |                                  | 1534SP03C-0553 | 6                                       | 66             | 28             | 20             | 36             | ●                            |
| 5.63                                                                                     | 3                                                   | 5.60                                                                                          |                            |                                  | 1534SP03C-0563 | 6                                       | 66             | 28             | 20             | 36             | ●                            |
| 5.73                                                                                     | 3                                                   | 5.70                                                                                          |                            |                                  | 1534SP03C-0573 | 6                                       | 66             | 28             | 20             | 36             | ○                            |

#### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Type<br>Typ | Grade<br>Sorte | Workpiece material · Werkstückstoff             |                                   |                                   |        |        |                                           |                                |                                                      |                              |                            |                                             |
|-------------|----------------|-------------------------------------------------|-----------------------------------|-----------------------------------|--------|--------|-------------------------------------------|--------------------------------|------------------------------------------------------|------------------------------|----------------------------|---------------------------------------------|
|             |                | Carbon steel<br>Kohlenstoff-<br>Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel · Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Grey cast<br>iron<br>Gusseisen | Nodular cast<br>iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Wärmefeste<br>Leg. |
|             |                |                                                 |                                   | ~40HRC                            | ~50HRC | ~60HRC |                                           |                                |                                                      |                              |                            |                                             |
| 1588SL*     | KDG303         | ✓                                               | ✓                                 | ✓                                 |        |        | ✓                                         | ✓                              | ✓                                                    | ✓                            |                            | ✓                                           |
| 1588SLK*    | KDG303         |                                                 |                                   |                                   |        |        |                                           | ✓                              |                                                      |                              |                            |                                             |
| 1534SP*     | KDG303         | ✓                                               | ✓                                 | ✓                                 |        |        | ✓                                         | ✓                              | ✓                                                    | ✓                            |                            | ✓                                           |

All articles 1588SLK on demand / Alle Artikel 1588SLK auf Anfrage

Code key C 8  
ISO Kennzeichen

Cutting data 96-109  
Schnittdaten

Technical Information C110-116  
Technische Information

Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge

# Drilling · Bohren

Solid carbide drills · Vollhartmetallbohrer

## SP series · SP Serie

General machining · Allgemeine Bearbeitung

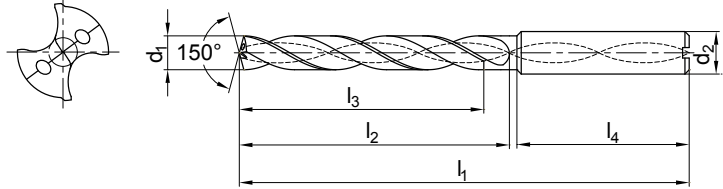
### 1534SP03C Pilot drills · Pilotbohrer



Internal Coolant  
Interne Kühlung



Straight shank  
Zylinderschaft



| 1534SP03C*<br>Drilling diameter<br>Bohrerdurchmesser<br>d <sub>1</sub> (h <sub>7</sub> ) | Drilling depth<br>Bohrtiefe<br>l/d <sub>1</sub> | 1588SL20C*/30C*<br>Drilling diameter<br>Bohrerdurchmesser<br>d <sub>1</sub> (h <sub>7</sub> ) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                  | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                |                |                |                | Grade<br>Sorte |
|------------------------------------------------------------------------------------------|-------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------|----------------------------------|----------------|-----------------------------------------|----------------|----------------|----------------|----------------|----------------|
|                                                                                          |                                                 |                                                                                               |                             |                                  |                | d <sub>2</sub> (h <sub>6</sub> )        | l <sub>1</sub> | l <sub>2</sub> | l <sub>3</sub> | l <sub>4</sub> | KDG303         |
| 5.83                                                                                     | 3                                               | 5.80                                                                                          | Internal<br>Intern          | Straight shank<br>Zylinderschaft | 1534SP03C-0583 | 6                                       | 66             | 28             | 20             | 36             | ○              |
| 5.93                                                                                     | 3                                               | 5.90                                                                                          |                             |                                  | 1534SP03C-0593 | 6                                       | 66             | 28             | 20             | 36             | ○              |
| 6.03                                                                                     | 3                                               | 6.0                                                                                           |                             |                                  | 1534SP03C-0603 | 6                                       | 66             | 28             | 20             | 36             | ●              |
| 6.13                                                                                     | 3                                               | 6.10                                                                                          |                             |                                  | 1534SP03C-0613 | 8                                       | 79             | 34             | 24             | 36             | ○              |
| 6.23                                                                                     | 3                                               | 6.20                                                                                          |                             |                                  | 1534SP03C-0623 | 8                                       | 79             | 34             | 24             | 36             | ○              |
| 6.33                                                                                     | 3                                               | 6.30                                                                                          |                             |                                  | 1534SP03C-0633 | 8                                       | 79             | 34             | 24             | 36             | ●              |
| 6.43                                                                                     | 3                                               | 6.40                                                                                          |                             |                                  | 1534SP03C-0643 | 8                                       | 79             | 34             | 24             | 36             | ●              |
| 6.53                                                                                     | 3                                               | 6.50                                                                                          |                             |                                  | 1534SP03C-0653 | 8                                       | 79             | 34             | 24             | 36             | ●              |
| 6.63                                                                                     | 3                                               | 6.60                                                                                          |                             |                                  | 1534SP03C-0663 | 8                                       | 79             | 34             | 24             | 36             | ○              |
| 6.73                                                                                     | 3                                               | 6.70                                                                                          |                             |                                  | 1534SP03C-0673 | 8                                       | 79             | 34             | 24             | 36             | ○              |
| 6.83                                                                                     | 3                                               | 6.80                                                                                          |                             |                                  | 1534SP03C-0683 | 8                                       | 79             | 34             | 24             | 36             | ○              |
| 6.93                                                                                     | 3                                               | 6.90                                                                                          |                             |                                  | 1534SP03C-0693 | 8                                       | 79             | 34             | 24             | 36             | ○              |
| 7.03                                                                                     | 3                                               | 7.0                                                                                           |                             |                                  | 1534SP03C-0703 | 8                                       | 79             | 34             | 24             | 36             | ●              |
| 7.13                                                                                     | 3                                               | 7.10                                                                                          |                             |                                  | 1534SP03C-0713 | 8                                       | 79             | 41             | 29             | 36             | ○              |
| 7.23                                                                                     | 3                                               | 7.20                                                                                          |                             |                                  | 1534SP03C-0723 | 8                                       | 79             | 41             | 29             | 36             | ○              |
| 7.33                                                                                     | 3                                               | 7.30                                                                                          |                             |                                  | 1534SP03C-0733 | 8                                       | 79             | 41             | 29             | 36             | ●              |
| 7.43                                                                                     | 3                                               | 7.40                                                                                          |                             |                                  | 1534SP03C-0743 | 8                                       | 79             | 41             | 29             | 36             | ○              |
| 7.53                                                                                     | 3                                               | 7.50                                                                                          |                             |                                  | 1534SP03C-0753 | 8                                       | 79             | 41             | 29             | 36             | ●              |
| 7.63                                                                                     | 3                                               | 7.60                                                                                          |                             |                                  | 1534SP03C-0763 | 8                                       | 79             | 41             | 29             | 36             | ○              |
| 7.73                                                                                     | 3                                               | 7.70                                                                                          |                             |                                  | 1534SP03C-0773 | 8                                       | 79             | 41             | 29             | 36             | ○              |
| 7.83                                                                                     | 3                                               | 7.80                                                                                          |                             |                                  | 1534SP03C-0783 | 8                                       | 79             | 41             | 29             | 36             | ○              |
| 7.93                                                                                     | 3                                               | 7.90                                                                                          |                             |                                  | 1534SP03C-0793 | 8                                       | 79             | 41             | 29             | 36             | ○              |
| 8.03                                                                                     | 3                                               | 8.0                                                                                           |                             |                                  | 1534SP03C-0803 | 8                                       | 79             | 41             | 29             | 36             | ●              |
| 8.13                                                                                     | 3                                               | 8.10                                                                                          |                             |                                  | 1534SP03C-0813 | 10                                      | 89             | 47             | 35             | 40             | ○              |
| 8.23                                                                                     | 3                                               | 8.20                                                                                          |                             |                                  | 1534SP03C-0823 | 10                                      | 89             | 47             | 35             | 40             | ○              |
| 8.33                                                                                     | 3                                               | 8.30                                                                                          |                             |                                  | 1534SP03C-0833 | 10                                      | 89             | 47             | 35             | 40             | ○              |
| 8.43                                                                                     | 3                                               | 8.40                                                                                          |                             |                                  | 1534SP03C-0843 | 10                                      | 89             | 47             | 35             | 40             | ○              |
| 8.53                                                                                     | 3                                               | 8.50                                                                                          |                             |                                  | 1534SP03C-0853 | 10                                      | 89             | 47             | 35             | 40             | ●              |
| 8.63                                                                                     | 3                                               | 8.60                                                                                          |                             |                                  | 1534SP03C-0863 | 10                                      | 89             | 47             | 35             | 40             | ●              |
| 8.73                                                                                     | 3                                               | 8.70                                                                                          |                             |                                  | 1534SP03C-0873 | 10                                      | 89             | 47             | 35             | 40             | ●              |
| 8.83                                                                                     | 3                                               | 8.80                                                                                          |                             |                                  | 1534SP03C-0883 | 10                                      | 89             | 47             | 35             | 40             | ●              |
| 8.93                                                                                     | 3                                               | 8.90                                                                                          |                             |                                  | 1534SP03C-0893 | 10                                      | 89             | 47             | 35             | 40             | ○              |
| 9.03                                                                                     | 3                                               | 9.0                                                                                           |                             |                                  | 1534SP03C-0903 | 10                                      | 89             | 47             | 35             | 40             | ●              |
| 9.13                                                                                     | 3                                               | 9.10                                                                                          |                             |                                  | 1534SP03C-0913 | 10                                      | 89             | 47             | 35             | 40             | ○              |
| 9.23                                                                                     | 3                                               | 9.20                                                                                          |                             |                                  | 1534SP03C-0923 | 10                                      | 89             | 47             | 35             | 40             | ○              |
| 9.33                                                                                     | 3                                               | 9.30                                                                                          |                             |                                  | 1534SP03C-0933 | 10                                      | 89             | 47             | 35             | 40             | ○              |

| 1534SP03C*<br>Drilling diameter<br>Bohrerdurchmesser<br>d <sub>1</sub> (h <sub>7</sub> ) | Drilling depth<br>Bohrtiefe<br>l(l/d <sub>1</sub> ) | 1588SL20C*/30C*<br>Drilling diameter<br>Bohrerdurchmesser<br>d <sub>1</sub> (h <sub>7</sub> ) | Cooling mode<br>Kühlmittel | Shank<br>Schaft                              | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                |                |                |                | Grade<br>Sorte<br><br>KDG303 |
|------------------------------------------------------------------------------------------|-----------------------------------------------------|-----------------------------------------------------------------------------------------------|----------------------------|----------------------------------------------|----------------|-----------------------------------------|----------------|----------------|----------------|----------------|------------------------------|
|                                                                                          |                                                     |                                                                                               |                            |                                              |                | d <sub>2</sub> (h <sub>6</sub> )        | l <sub>1</sub> | l <sub>2</sub> | l <sub>3</sub> | l <sub>4</sub> |                              |
| 9.43                                                                                     | 3                                                   | 9.40                                                                                          | Internal<br>Intern         | Straight<br>shank<br><br>Zylinder-<br>schaft | 1534SP03C-0943 | 10                                      | 89             | 47             | 35             | 40             | ○                            |
| 9.53                                                                                     | 3                                                   | 9.50                                                                                          |                            |                                              | 1534SP03C-0953 | 10                                      | 89             | 47             | 35             | 40             | ●                            |
| 9.63                                                                                     | 3                                                   | 9.60                                                                                          |                            |                                              | 1534SP03C-0963 | 10                                      | 89             | 47             | 35             | 40             | ○                            |
| 9.73                                                                                     | 3                                                   | 9.70                                                                                          |                            |                                              | 1534SP03C-0973 | 10                                      | 89             | 47             | 35             | 40             | ○                            |
| 9.83                                                                                     | 3                                                   | 9.80                                                                                          |                            |                                              | 1534SP03C-0983 | 10                                      | 89             | 47             | 35             | 40             | ●                            |
| 9.93                                                                                     | 3                                                   | 9.90                                                                                          |                            |                                              | 1534SP03C-0993 | 10                                      | 89             | 47             | 35             | 40             | ○                            |
| 10.03                                                                                    | 3                                                   | 10.0                                                                                          |                            |                                              | 1534SP03C-1003 | 10                                      | 89             | 47             | 35             | 40             | ●                            |
| 10.13                                                                                    | 3                                                   | 10.10                                                                                         |                            |                                              | 1534SP03C-1013 | 12                                      | 102            | 55             | 40             | 45             | ●                            |
| 10.23                                                                                    | 3                                                   | 10.20                                                                                         |                            |                                              | 1534SP03C-1023 | 12                                      | 102            | 55             | 40             | 45             | ○                            |
| 10.33                                                                                    | 3                                                   | 10.30                                                                                         |                            |                                              | 1534SP03C-1033 | 12                                      | 102            | 55             | 40             | 45             | ○                            |
| 10.43                                                                                    | 3                                                   | 10.40                                                                                         |                            |                                              | 1534SP03C-1043 | 12                                      | 102            | 55             | 40             | 45             | ○                            |
| 10.53                                                                                    | 3                                                   | 10.50                                                                                         |                            |                                              | 1534SP03C-1053 | 12                                      | 102            | 55             | 40             | 45             | ●                            |
| 10.63                                                                                    | 3                                                   | 10.60                                                                                         |                            |                                              | 1534SP03C-1063 | 12                                      | 102            | 55             | 40             | 45             | ○                            |
| 10.73                                                                                    | 3                                                   | 10.70                                                                                         |                            |                                              | 1534SP03C-1073 | 12                                      | 102            | 55             | 40             | 45             | ○                            |
| 10.83                                                                                    | 3                                                   | 10.80                                                                                         |                            |                                              | 1534SP03C-1083 | 12                                      | 102            | 55             | 40             | 45             | ●                            |
| 10.93                                                                                    | 3                                                   | 10.90                                                                                         |                            |                                              | 1534SP03C-1093 | 12                                      | 102            | 55             | 40             | 45             | ○                            |
| 11.03                                                                                    | 3                                                   | 11.0                                                                                          |                            |                                              | 1534SP03C-1103 | 12                                      | 102            | 55             | 40             | 45             | ●                            |
| 11.13                                                                                    | 3                                                   | 11.10                                                                                         |                            |                                              | 1534SP03C-1113 | 12                                      | 102            | 55             | 40             | 45             | ○                            |
| 11.23                                                                                    | 3                                                   | 11.20                                                                                         |                            |                                              | 1534SP03C-1123 | 12                                      | 102            | 55             | 40             | 45             | ○                            |
| 11.33                                                                                    | 3                                                   | 11.30                                                                                         |                            |                                              | 1534SP03C-1133 | 12                                      | 102            | 55             | 40             | 45             | ○                            |
| 11.43                                                                                    | 3                                                   | 11.40                                                                                         |                            |                                              | 1534SP03C-1143 | 12                                      | 102            | 55             | 40             | 45             | ○                            |
| 11.53                                                                                    | 3                                                   | 11.50                                                                                         |                            |                                              | 1534SP03C-1153 | 12                                      | 102            | 55             | 40             | 45             | ●                            |
| 11.63                                                                                    | 3                                                   | 11.60                                                                                         |                            |                                              | 1534SP03C-1163 | 12                                      | 102            | 55             | 40             | 45             | ○                            |
| 11.73                                                                                    | 3                                                   | 11.70                                                                                         |                            |                                              | 1534SP03C-1173 | 12                                      | 102            | 55             | 40             | 45             | ○                            |
| 11.83                                                                                    | 3                                                   | 11.80                                                                                         |                            |                                              | 1534SP03C-1183 | 12                                      | 102            | 55             | 40             | 45             | ●                            |
| 11.93                                                                                    | 3                                                   | 11.90                                                                                         |                            |                                              | 1534SP03C-1193 | 12                                      | 102            | 55             | 40             | 45             | ○                            |
| 12.03                                                                                    | 3                                                   | 12.0                                                                                          |                            |                                              | 1534SP03C-1203 | 12                                      | 102            | 55             | 40             | 45             | ●                            |
| 12.13                                                                                    | 3                                                   | 12.10                                                                                         |                            |                                              | 1534SP03C-1213 | 14                                      | 107            | 60             | 43             | 45             | ○                            |
| 12.23                                                                                    | 3                                                   | 12.20                                                                                         |                            |                                              | 1534SP03C-1223 | 14                                      | 107            | 60             | 43             | 45             | ○                            |
| 12.33                                                                                    | 3                                                   | 12.30                                                                                         |                            |                                              | 1534SP03C-1233 | 14                                      | 107            | 60             | 43             | 45             | ○                            |
| 12.43                                                                                    | 3                                                   | 12.40                                                                                         |                            |                                              | 1534SP03C-1243 | 14                                      | 107            | 60             | 43             | 45             | ○                            |
| 12.53                                                                                    | 3                                                   | 12.50                                                                                         |                            |                                              | 1534SP03C-1253 | 14                                      | 107            | 60             | 43             | 45             | ●                            |
| 12.63                                                                                    | 3                                                   | 12.60                                                                                         |                            |                                              | 1534SP03C-1263 | 14                                      | 107            | 60             | 43             | 45             | ○                            |
| 12.73                                                                                    | 3                                                   | 12.70                                                                                         |                            |                                              | 1534SP03C-1273 | 14                                      | 107            | 60             | 43             | 45             | ○                            |
| 12.83                                                                                    | 3                                                   | 12.80                                                                                         |                            |                                              | 1534SP03C-1283 | 14                                      | 107            | 60             | 43             | 45             | ○                            |
| 12.93                                                                                    | 3                                                   | 12.90                                                                                         |                            |                                              | 1534SP03C-1293 | 14                                      | 107            | 60             | 43             | 45             | ○                            |

### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen

✓ = Suitable · Empfohlen

| Type<br>Typ | Grade<br>Sorte | Workpiece material · Werkstückstoff             |                                   |                                   |        |        |                                           |                                |                                                 |                              |                            |                                            |
|-------------|----------------|-------------------------------------------------|-----------------------------------|-----------------------------------|--------|--------|-------------------------------------------|--------------------------------|-------------------------------------------------|------------------------------|----------------------------|--------------------------------------------|
|             |                | Carbon steel<br>Kohlenstoff-<br>Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel · Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Grey cast<br>iron<br>Gusseisen | Nodular cast<br>iron<br>GGG<br>Kugelgraphitguss | Aluminum<br>alloy<br>Aluleg. | Copper alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Warmfeste<br>Leg. |
|             |                |                                                 |                                   | ~40HRC                            | ~50HRC | ~60HRC |                                           |                                |                                                 |                              |                            |                                            |
| 1534SP*     | KDG303         | ✓                                               | ✓                                 | ✓                                 |        |        | ✓                                         | ✓                              | ✓                                               | ✓                            |                            | ✓                                          |

Code key C 8  
ISO Kennzeichen

Cutting data 96-109  
Schnittdaten

Technical Information C110-116  
Technische Information

Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge

# Drilling ▪ Bohren

Solid carbide drills ▪ Vollhartmetallbohrer

| 1534SP03C*<br>Drilling diameter<br>Bohrerdurchmesser<br>d <sub>1</sub> (h7) | Drilling<br>depth<br>Bohrtiefe<br>(l/d <sub>1</sub> ) | 1588SL20C*/30C*<br>Drilling diameter<br>Bohrerdurchmesser<br>d <sub>1</sub> (h7) | Cooling<br>mode<br>Kühlmittel | Shank<br>Schaft                          | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                |                |                |                | Grade<br>Sorte<br><br>KDG303 |
|-----------------------------------------------------------------------------|-------------------------------------------------------|----------------------------------------------------------------------------------|-------------------------------|------------------------------------------|----------------|-----------------------------------------|----------------|----------------|----------------|----------------|------------------------------|
|                                                                             |                                                       |                                                                                  |                               |                                          |                | d <sub>2</sub> (h6)                     | l <sub>1</sub> | l <sub>2</sub> | l <sub>3</sub> | l <sub>4</sub> |                              |
| 13.03                                                                       | 3                                                     | 13.0                                                                             | Internal<br>Intern            | Straight<br>shank<br>Zylinder-<br>schaft | 1534SP03C-1303 | 14                                      | 107            | 60             | 43             | 45             | ○                            |
| 13.53                                                                       | 3                                                     | 13.50                                                                            |                               |                                          | 1534SP03C-1353 | 14                                      | 107            | 60             | 43             | 45             | ○                            |
| 14.03                                                                       | 3                                                     | 14.0                                                                             |                               |                                          | 1534SP03C-1403 | 14                                      | 107            | 60             | 43             | 45             | ○                            |
| 14.53                                                                       | 3                                                     | 14.50                                                                            |                               |                                          | 1534SP03C-1453 | 16                                      | 115            | 65             | 45             | 48             | ○                            |
| 15.03                                                                       | 3                                                     | 15.0                                                                             |                               |                                          | 1534SP03C-1503 | 16                                      | 115            | 65             | 45             | 48             | ○                            |
| 15.53                                                                       | 3                                                     | 15.50                                                                            |                               |                                          | 1534SP03C-1553 | 16                                      | 115            | 65             | 45             | 48             | ○                            |
| 16.03                                                                       | 3                                                     | 16.0                                                                             |                               |                                          | 1534SP03C-1603 | 16                                      | 115            | 65             | 45             | 48             | ○                            |
| 16.53                                                                       | 3                                                     | 16.50                                                                            |                               |                                          | 1534SP03C-1653 | 18                                      | 123            | 73             | 51             | 48             | ○                            |
| 17.03                                                                       | 3                                                     | 17.0                                                                             |                               |                                          | 1534SP03C-1703 | 18                                      | 123            | 73             | 51             | 48             | ○                            |
| 17.53                                                                       | 3                                                     | 17.50                                                                            |                               |                                          | 1534SP03C-1753 | 18                                      | 123            | 73             | 51             | 48             | ○                            |
| 18.03                                                                       | 3                                                     | 18.0                                                                             |                               |                                          | 1534SP03C-1803 | 18                                      | 123            | 73             | 51             | 48             | ○                            |
| 18.53                                                                       | 3                                                     | 18.50                                                                            |                               |                                          | 1534SP03C-1853 | 20                                      | 131            | 79             | 55             | 50             | ○                            |
| 19.03                                                                       | 3                                                     | 19.0                                                                             |                               |                                          | 1534SP03C-1903 | 20                                      | 131            | 79             | 55             | 50             | ○                            |
| 19.53                                                                       | 3                                                     | 19.50                                                                            |                               |                                          | 1534SP03C-1953 | 20                                      | 131            | 79             | 55             | 50             | ○                            |
| 20.03                                                                       | 3                                                     | 20.0                                                                             |                               |                                          | 1534SP03C-2003 | 20                                      | 131            | 79             | 55             | 50             | ○                            |

✓ = Very suitable · Sehr empfohlen

✓ = Suitable · Empfohlen

## Material Overview · Material Übersicht

| Type<br>Typ | Grade<br>Sorte | Workpiece material · Werkstückstoff             |                                   |                                   |        |        |                                           |                                |                                                 |                              |                            |                                            |
|-------------|----------------|-------------------------------------------------|-----------------------------------|-----------------------------------|--------|--------|-------------------------------------------|--------------------------------|-------------------------------------------------|------------------------------|----------------------------|--------------------------------------------|
|             |                | Carbon steel<br>Kohlenstoff-<br>Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel · Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Grey cast<br>iron<br>Gusseisen | Nodular cast<br>iron<br>GGG<br>Kugelgraphitguss | Aluminum<br>alloy<br>Aluleg. | Copper alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Warmfeste<br>Leg. |
|             |                |                                                 |                                   | ~40HRC                            | ~50HRC | ~60HRC |                                           |                                |                                                 |                              |                            |                                            |
| 1534SP*     | KDG303         | ✓                                               | ✓                                 | ✓                                 |        |        | ✓                                         | ✓                              | ✓                                               | ✓                            |                            | ✓                                          |

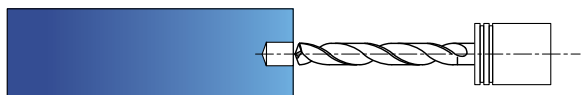


## SL series · SL Serie

### Recommended cutting data · Schnittdatenempfehlung (Deep drill · Tieflochbohrer)

#### 1 Preparation pilot hole with 1534SP03C\*

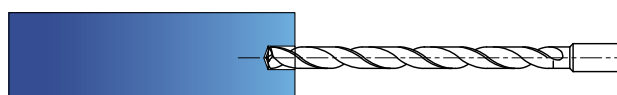
##### Herstellung der Pilotbohrung mit 1534SP03C\*



- Top angel of pilot drill must be bigger than SL-drill.  
*Spitzenwinkel des Pilotbohrers muß größer sein als beim SL-Bohrer.*
- Diameter of pilot drill must be 0.01~0.04mm bigger than SL-drill.  
*Der Durchmesser des Pilotbohrers sollte 0.01~0.04 mm größer sein als beim SL-Bohrer.*
- The pilot hole should be 1~3×D.  
*Tiefe der Pilotbohrung soll 1~3×D betragen.*
- $V_c$ : 60-80 m/min;  $f$ : 0.1-0.25 mm/r;  $a_p$ : 1~3×D

#### 2 Entering into pilot hole with SL-drill

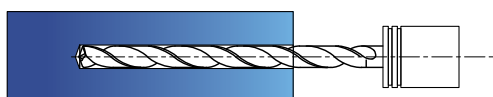
##### Einführen des SL-Bohrers in die Pilotbohrung



- Entering the pilot hole with low cutting speed. ( $V_c$ : 20~30m/min)  
*Den SL-Bohrer mit geringer Drehzahl in die Pilotbohrung einführen. ( $V_c$ : 20~30 m/min)*
- 1~3 mm stop before end of pilot hole. ( $V_f=0$ )  
*1~3 mm vor dem Lochende stehenbleiben. ( $V_f=0$ )*
- Increase cutting speed up to recommended parameter and than start feed rate.  
*Die Schnittgeschwindigkeit auf die empfohlenen Parameter erhöhen und erst dann mit dem Vorschub beginnen.*

#### 3 Making deep hole

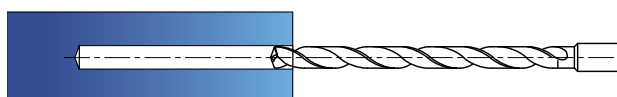
##### Herstellung der Tieflochbohrung



- Drilling with suitable cutting speed and feed rate.  
*Bohren mit geeigneter Schnittgeschwindigkeit und Vorschüben.*
- At cross holes feed rate should be reduced to 0.05 mm/rev..  
*Bei Querbohrungen den Vorschub auf 0.05 mm/u reduzieren.*

#### 4 Pull back of drill

##### Herausziehen des Bohrers



- After reaching the required depth reduce the cutting speed ( $V_c$ : 20~30 m/min) and pull back the drill by high feed rate. ( $V_f$ : 2000 mm/min)  
*Nach Erreichen der geforderten Bohrtiefe die Schnittgeschwindigkeit reduzieren ( $V_c$ : 20~30 m/min) und den Bohrer mit hohem Vorschub ( $V_f$ : 2000 mm/min) herausziehen.*

C

Solid carbide drills  
Vollhartmetallbohrer

## Solid carbide drills ▪ Vollhartmetallbohrer

**NOTES / NOTIZEN:**

**C**

## Solid carbide drills Vollhartmetallbohrer

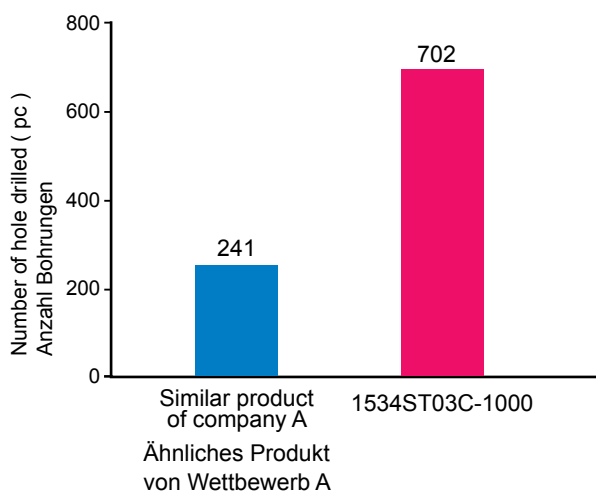


## series twist drill Spiralbohrer Serie

*For soft steel & stainless steel  
Für weichen & rostfreien Stahl*

■ ST special series. A bigger space for chips and its curved edges increases the sharpness of the drills during cutting. Especially suitable for cutting materials with long chips, such as low carbon steels with a high elongation rate and austenitic stainless steel.

Ein definierter Spanraum in Verbindung mit einer scharfen Schneide ermöglicht das Bohren mit einer hohen Produktivität von langspanenden Stahlwerkstoffen und rostfreien Werkstoffen.



Type / Typ: 1534ST03C-1000

Size / Größe: Ø10mm

Workpiece material

Werkstückstoff: 1Cr18Ni9Ti

Cutting speed / Schnittgeschw.: 70m/min

Rotating speed / Umdrehung pro min: 2200r/min

Feed rate per revolution /

Vorschub pro Umdrehung: 0.15mm/r

Feed rate · Vorschub: 330mm/min

Drilling depth · Bohrtiefe: 30mm(L/D=3)

Cooling system / Kühlsystem

water-soluble liquid (Internal) /

wasserlösliche Emulsion (Intern)

Machine / Maschine: Mikron UCP 1000



Chips (Company A)  
(Wettbewerber A)



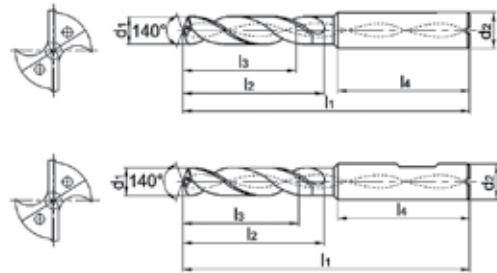
1534ST03C-1000 chips (ZCC CT)

# Drilling • Bohren

Solid carbide drills • Vollhartmetallbohrer

## ST series • ST Serie

for soft and stainless steel • für weichen & rostfreien Stahl



- First choice for drilling soft & stainless steel.
- Sharp cutting edge can avoid build-up edge, suitable for drilling hole with high performance.
- Erste Wahl für das Bohren von weichen und rostfreien Stählen.
- Scharfe Schneiden reduzieren bzw. vermeiden Aufbauschneidenbildung. Besonders geeignet für das Hochleistungsbohren.

| Drill diameter<br>Bohrer Ø<br>d1(m7) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft            | Type<br>Typ    | Basic dimension(mm) • Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte<br><br>KDG303 |
|--------------------------------------|---------------------------------------|-----------------------------|----------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|------------------------------|
|                                      |                                       |                             |                            |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                              |
|                                      |                                       |                             |                            |                | d2(h6)                                  | l1                            | l2                         | l3                                             | l4                          |                              |
| 3.0                                  | 3                                     | Internal • Intern           | Straight shank<br>Zylinder | 1534ST03C-0300 | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●                            |
|                                      | 5                                     |                             | Weldon                     | 1536ST05C-0300 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ●                            |
|                                      | 5                                     |                             | Weldon                     | 1636ST05C-0300 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ○                            |
| 3.1                                  | 3                                     |                             | Straight shank<br>Zylinder | 1534ST03C-0310 | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●                            |
|                                      | 5                                     |                             | Weldon                     | 1536ST05C-0310 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ●                            |
|                                      | 5                                     |                             | Weldon                     | 1636ST05C-0310 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ○                            |
| 3.2                                  | 3                                     |                             | Straight shank<br>Zylinder | 1534ST03C-0320 | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●                            |
|                                      | 5                                     |                             | Weldon                     | 1536ST05C-0320 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ●                            |
|                                      | 5                                     |                             | Weldon                     | 1636ST05C-0320 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ○                            |
| 3.25                                 | 3                                     |                             | Straight shank<br>Zylinder | 1534ST03C-0325 | 6                                       | 62                            | 20                         | 14                                             | 36                          | ○                            |
|                                      | 5                                     |                             | Weldon                     | 1536ST05C-0325 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ○                            |
|                                      | 5                                     |                             | Weldon                     | 1636ST05C-0325 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ○                            |
| 3.3                                  | 3                                     |                             | Straight shank<br>Zylinder | 1534ST03C-0330 | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●                            |
|                                      | 5                                     |                             | Weldon                     | 1536ST05C-0330 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ●                            |
|                                      | 5                                     |                             | Weldon                     | 1636ST05C-0330 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ○                            |
| 3.4                                  | 3                                     |                             | Straight shank<br>Zylinder | 1534ST03C-0340 | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●                            |
|                                      | 5                                     |                             | Weldon                     | 1536ST05C-0340 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ●                            |
|                                      | 5                                     |                             | Weldon                     | 1636ST05C-0340 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ○                            |
| 3.5                                  | 3                                     |                             | Straight shank<br>Zylinder | 1534ST03C-0350 | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●                            |
|                                      | 5                                     |                             | Weldon                     | 1536ST05C-0350 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ●                            |
|                                      | 5                                     |                             | Weldon                     | 1636ST05C-0350 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ○                            |
| 3.6                                  | 3                                     |                             | Straight shank<br>Zylinder | 1534ST03C-0360 | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●                            |
|                                      | 5                                     |                             | Weldon                     | 1536ST05C-0360 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ●                            |
|                                      | 5                                     |                             | Weldon                     | 1636ST05C-0360 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ○                            |
| 3.7                                  | 3                                     |                             | Straight shank<br>Zylinder | 1534ST03C-0370 | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●                            |
|                                      | 5                                     |                             | Weldon                     | 1536ST05C-0370 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ●                            |
|                                      | 5                                     |                             | Weldon                     | 1636ST05C-0370 | 6                                       | 66                            | 28                         | 23                                             | 36                          | ○                            |
| 3.8                                  | 3                                     |                             | Straight shank<br>Zylinder | 1534ST03C-0380 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●                            |
|                                      | 5                                     |                             | Weldon                     | 1536ST05C-0380 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●                            |
|                                      | 5                                     |                             | Weldon                     | 1636ST05C-0380 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ○                            |

# Drilling · Bohren

Solid carbide drills · Vollhartmetallbohrer

| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (m7) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel | Shank<br>Schaft                  | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte<br><br>KDG303 |
|---------------------------------------------------|---------------------------------------|----------------------------|----------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|------------------------------|
|                                                   |                                       |                            |                                  |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                              |
|                                                   |                                       |                            |                                  |                | d <sub>2</sub> (h <sub>6</sub> )        | l <sub>1</sub>                | l <sub>2</sub>             | l <sub>3</sub>                                 | l <sub>4</sub>              |                              |
| 3.9                                               | 3                                     | Internal - Intern          | Straight shank<br>Zylinderschaft | 1534ST03C-0390 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●                            |
|                                                   | 5                                     |                            |                                  | 1536ST05C-0390 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●                            |
|                                                   | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-0390 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ○                            |
| 4.0                                               | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0400 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●                            |
|                                                   | 5                                     |                            |                                  | 1536ST05C-0400 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●                            |
|                                                   | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-0400 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ○                            |
| 4.1                                               | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0410 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●                            |
|                                                   | 5                                     |                            |                                  | 1536ST05C-0410 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●                            |
|                                                   | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-0410 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ○                            |
| 4.2                                               | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0420 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●                            |
|                                                   | 5                                     |                            |                                  | 1536ST05C-0420 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●                            |
|                                                   | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-0420 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ○                            |
| 4.3                                               | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0430 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●                            |
|                                                   | 5                                     |                            |                                  | 1536ST05C-0430 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●                            |
|                                                   | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-0430 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ○                            |
| 4.4                                               | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0440 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●                            |
|                                                   | 5                                     |                            |                                  | 1536ST05C-0440 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●                            |
|                                                   | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-0440 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ○                            |
| 4.5                                               | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0450 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●                            |
|                                                   | 5                                     |                            |                                  | 1536ST05C-0450 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●                            |
|                                                   | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-0450 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ○                            |
| 4.6                                               | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0460 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●                            |
|                                                   | 5                                     |                            |                                  | 1536ST05C-0460 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●                            |
|                                                   | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-0460 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ○                            |
| 4.65                                              | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0465 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ○                            |
|                                                   | 5                                     |                            |                                  | 1536ST05C-0465 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ○                            |
|                                                   | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-0465 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ○                            |
| 4.7                                               | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0470 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●                            |
|                                                   | 5                                     |                            |                                  | 1536ST05C-0470 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ●                            |
|                                                   | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-0470 | 6                                       | 74                            | 36                         | 29                                             | 36                          | ○                            |
| 4.8                                               | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0480 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●                            |
|                                                   | 5                                     |                            |                                  | 1536ST05C-0480 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●                            |
|                                                   | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-0480 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ○                            |

C

Solid carbide drills  
Vollhartmetallbohrer

## Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Grade<br>Sorte | Workpiece material · Werkstückstoff             |                                   |                                   |        |        |                                           |                        |                                                 |                              |                               |                                             |
|----------------|-------------------------------------------------|-----------------------------------|-----------------------------------|--------|--------|-------------------------------------------|------------------------|-------------------------------------------------|------------------------------|-------------------------------|---------------------------------------------|
|                | Carbon steel<br>Kohlenstoff-<br>Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel · Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron<br>Gusseisen | Nodular<br>cast iron<br>GGG<br>Kugelgraphitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Wärmefeste<br>Leg. |
|                |                                                 |                                   | ~40HRC                            | ~50HRC | ~60HRC |                                           |                        |                                                 |                              |                               |                                             |
| KDG303         | ✓                                               | ✓                                 |                                   |        |        | ✓                                         |                        |                                                 |                              |                               | ✓                                           |

Code key C 8  
ISO Kennzeichen

Cutting data 96-109  
Schnittdaten

Technical Information C110-116  
Technische Information

Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge

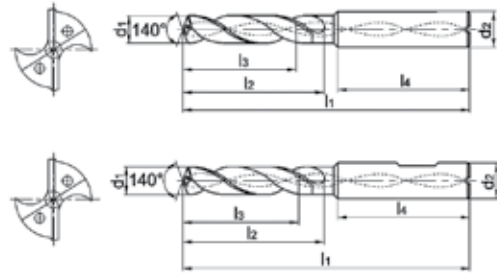


# Drilling • Bohren

Solid carbide drills • Vollhartmetallbohrer

## ST series • ST Serie

for soft and stainless steel • für weichen & rostfreien Stahl



- First choice for drilling soft & stainless steel.
- Sharp cutting edge can avoid build-up edge, suitable for drilling with high performance.
- Erste Wahl für das Bohren von weichen und rostfreien Stählen.
- Scharfe Schneiden reduzieren bzw. vermeiden Aufbauschneidenbildung. Besonders geeignet für das Hochleistungsbohren.

| Drill diameter<br>Bohrer Ø<br>d1(m7) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                  | Type<br>Typ    | Basic dimension(mm) • Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|--------------------------------------|---------------------------------------|-----------------------------|----------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                      |                                       |                             |                                  |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                      |                                       |                             |                                  |                | d2(h6)                                  | l1                            | l2                         | l3                                             | l4                          |                |
| 4.9                                  | 3                                     | Internal • Intern           | Straight shank<br>Zylinderschaft | 1534ST03C-0490 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                      | 5                                     |                             | Weldon shank • Schaft            | 1536ST05C-0490 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                      | 5                                     |                             | Weldon shank • Schaft            | 1636ST05C-0490 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ○              |
| 5.0                                  | 3                                     |                             | Straight shank<br>Zylinderschaft | 1534ST03C-0500 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                      | 5                                     |                             | Weldon shank • Schaft            | 1536ST05C-0500 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                      | 5                                     |                             | Weldon shank • Schaft            | 1636ST05C-0500 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ○              |
| 5.1                                  | 3                                     |                             | Straight shank<br>Zylinderschaft | 1534ST03C-0510 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                      | 5                                     |                             | Weldon shank • Schaft            | 1536ST05C-0510 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                      | 5                                     |                             | Weldon shank • Schaft            | 1636ST05C-0510 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ○              |
| 5.2                                  | 3                                     |                             | Straight shank<br>Zylinderschaft | 1534ST03C-0520 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                      | 5                                     |                             | Weldon shank • Schaft            | 1536ST05C-0520 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                      | 5                                     |                             | Weldon shank • Schaft            | 1636ST05C-0520 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ○              |
| 5.3                                  | 3                                     |                             | Straight shank<br>Zylinderschaft | 1534ST03C-0530 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                      | 5                                     |                             | Weldon shank • Schaft            | 1536ST05C-0530 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                      | 5                                     |                             | Weldon shank • Schaft            | 1636ST05C-0530 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ○              |
| 5.4                                  | 3                                     |                             | Straight shank<br>Zylinderschaft | 1534ST03C-0540 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                      | 5                                     |                             | Weldon shank • Schaft            | 1536ST05C-0540 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                      | 5                                     |                             | Weldon shank • Schaft            | 1636ST05C-0540 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ○              |
| 5.5                                  | 3                                     |                             | Straight shank<br>Zylinderschaft | 1534ST03C-0550 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                      | 5                                     |                             | Weldon shank • Schaft            | 1536ST05C-0550 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                      | 5                                     |                             | Weldon shank • Schaft            | 1636ST05C-0550 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ○              |
| 5.55                                 | 3                                     |                             | Straight shank<br>Zylinderschaft | 1534ST03C-0555 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ○              |
|                                      | 5                                     |                             | Weldon shank • Schaft            | 1536ST05C-0555 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ○              |
|                                      | 5                                     |                             | Weldon shank • Schaft            | 1636ST05C-0555 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ○              |
| 5.6                                  | 3                                     |                             | Straight shank<br>Zylinderschaft | 1534ST03C-0560 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                      | 5                                     |                             | Weldon shank • Schaft            | 1536ST05C-0560 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                      | 5                                     |                             | Weldon shank • Schaft            | 1636ST05C-0560 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ○              |
| 5.7                                  | 3                                     |                             | Straight shank<br>Zylinderschaft | 1534ST03C-0570 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                      | 5                                     |                             | Weldon shank • Schaft            | 1536ST05C-0570 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                      | 5                                     |                             | Weldon shank • Schaft            | 1636ST05C-0570 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ○              |

| Drill diameter<br>Bohrer Ø<br>d1(m7) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel | Shank<br>Schaft                  | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|--------------------------------------|---------------------------------------|----------------------------|----------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                      |                                       |                            |                                  |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                      |                                       |                            |                                  |                | d2(h6)                                  | l1                            | l2                         | l3                                             | l4                          |                |
| 5.8                                  | 3                                     | Internal · Intern          | Straight shank<br>Zylinderschaft | 1534ST03C-0580 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                      | 5                                     |                            |                                  | 1536ST05C-0580 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                      | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-0580 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ○              |
| 5.9                                  | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0590 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                      | 5                                     |                            |                                  | 1536ST05C-0590 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                      | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-0590 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ○              |
| 6.0                                  | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0600 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
|                                      | 5                                     |                            |                                  | 1536ST05C-0600 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                      | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-0600 | 6                                       | 82                            | 44                         | 35                                             | 36                          | ○              |
| 6.1                                  | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0610 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ○              |
|                                      | 5                                     |                            |                                  | 1536ST05C-0610 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-0610 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ○              |
| 6.2                                  | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0620 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                      | 5                                     |                            |                                  | 1536ST05C-0620 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-0620 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ○              |
| 6.3                                  | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0630 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                      | 5                                     |                            |                                  | 1536ST05C-0630 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-0630 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ○              |
| 6.4                                  | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0640 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                      | 5                                     |                            |                                  | 1536ST05C-0640 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-0640 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ○              |
| 6.5                                  | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0650 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                      | 5                                     |                            |                                  | 1536ST05C-0650 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-0650 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ○              |
| 6.6                                  | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0660 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                      | 5                                     |                            |                                  | 1536ST05C-0660 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-0660 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ○              |
| 6.7                                  | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0670 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                      | 5                                     |                            |                                  | 1536ST05C-0670 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-0670 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ○              |
| 6.75                                 | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0675 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ○              |
|                                      | 5                                     |                            |                                  | 1536ST05C-0675 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ○              |
|                                      | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-0675 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ○              |
| 6.80                                 | 5                                     |                            | Straight shank<br>Zylinderschaft | 1536ST05C-0680 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |

### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Grade<br>Sorte | Workpiece material · Werkstückstoff             |                                   |                                   |        |        |                                           |                        |                                                       |                              |                               |                                             |
|----------------|-------------------------------------------------|-----------------------------------|-----------------------------------|--------|--------|-------------------------------------------|------------------------|-------------------------------------------------------|------------------------------|-------------------------------|---------------------------------------------|
|                | Carbon steel<br>Kohlenstoff-<br>Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel · Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron<br>Gusseisen | Nodular<br>cast iron<br>GGG<br>Kugelgrah-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Wärmefeste<br>Leg. |
|                |                                                 |                                   | ~40HRC                            | ~50HRC | ~60HRC |                                           |                        |                                                       |                              |                               |                                             |
| KDG303         | ✓                                               | ✓                                 |                                   |        |        | ✓                                         |                        |                                                       |                              |                               | ✓                                           |

Code key C 8  
ISO Kennzeichen

Cutting data 96-109  
Schnittdaten

Technical Information C110-116  
Technische Information

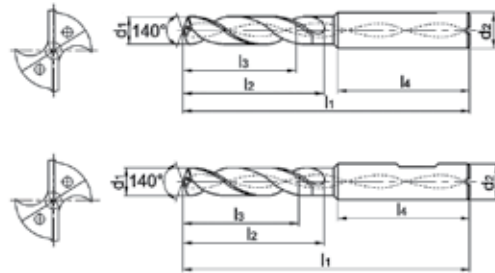
Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge

# Drilling • Bohren

Solid carbide drills • Vollhartmetallbohrer

## ST series • ST Serie

for soft and stainless steel • für weichen & rostfreien Stahl



- First choice for drilling soft & stainless steel.
- Sharp cutting edge can avoid build-up edge, suitable for drilling with high performance.
- Erste Wahl für das Bohren von weichen und rostfreien Stählen.
- Scharfe Schneiden reduzieren bzw. vermeiden Aufbauschneidenbildung. Besonders geeignet für das Hochleistungsbohren.

| Drill diameter<br>Bohrer Ø<br>d1(m7) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel | Shank<br>Schaft                  | Type<br>Typ    | Basic dimension(mm) • Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|--------------------------------------|---------------------------------------|----------------------------|----------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                      |                                       |                            |                                  |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                      |                                       |                            |                                  |                | d2(h6)                                  | l1                            | l2                         | l3                                             | l4                          |                |
| 6.9                                  | 3                                     | Internal • Intern          | Straight shank<br>Zylinderschaft | 1534ST03C-0690 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1536ST05C-0690 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1636ST05C-0690 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ○              |
| 7.0                                  | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0700 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1536ST05C-0700 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1636ST05C-0700 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ○              |
| 7.1                                  | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0710 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1536ST05C-0710 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1636ST05C-0710 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ○              |
| 7.2                                  | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0720 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1536ST05C-0720 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1636ST05C-0720 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ○              |
| 7.3                                  | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0730 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1536ST05C-0730 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1636ST05C-0730 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ○              |
| 7.4                                  | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0740 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1536ST05C-0740 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1636ST05C-0740 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ○              |
| 7.5                                  | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0750 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1536ST05C-0750 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1636ST05C-0750 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ○              |
| 7.6                                  | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0760 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1536ST05C-0760 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1636ST05C-0760 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ○              |
| 7.7                                  | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0770 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1536ST05C-0770 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1636ST05C-0770 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ○              |
| 7.8                                  | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0780 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1536ST05C-0780 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1636ST05C-0780 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ○              |

# Drilling · Bohren

Solid carbide drills · Vollhartmetallbohrer

| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (m7) | Drilling depth<br>Bohrtiefe<br>(L/d <sub>1</sub> ) | Cooling mode<br>Kühlmittel | Shank<br>Schaft                  | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte<br><br>KDG303 |
|---------------------------------------------------|----------------------------------------------------|----------------------------|----------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|------------------------------|
|                                                   |                                                    |                            |                                  |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                              |
|                                                   |                                                    |                            |                                  |                | d <sub>2</sub> (h <sub>6</sub> )        | l <sub>1</sub>                | l <sub>2</sub>             | l <sub>3</sub>                                 | l <sub>4</sub>              |                              |
| 7.9                                               | 3                                                  | Internal · Intern          | Straight shank<br>Zylinderschaft | 1534ST03C-0790 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●                            |
|                                                   | 5                                                  |                            | Weldon shank · Schaft            | 1536ST05C-0790 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●                            |
|                                                   | 5                                                  |                            | Weldon shank · Schaft            | 1636ST05C-0790 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ○                            |
| 8.0                                               | 3                                                  |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0800 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●                            |
|                                                   | 5                                                  |                            | Weldon shank · Schaft            | 1536ST05C-0800 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ●                            |
|                                                   | 5                                                  |                            | Weldon shank · Schaft            | 1636ST05C-0800 | 8                                       | 91                            | 53                         | 43                                             | 36                          | ○                            |
| 8.1                                               | 3                                                  |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0810 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●                            |
|                                                   | 5                                                  |                            | Weldon shank · Schaft            | 1536ST05C-0810 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●                            |
|                                                   | 5                                                  |                            | Weldon shank · Schaft            | 1636ST05C-0810 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ○                            |
| 8.2                                               | 3                                                  |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0820 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●                            |
|                                                   | 5                                                  |                            | Weldon shank · Schaft            | 1536ST05C-0820 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●                            |
|                                                   | 5                                                  |                            | Weldon shank · Schaft            | 1636ST05C-0820 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ○                            |
| 8.3                                               | 3                                                  |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0830 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●                            |
|                                                   | 5                                                  |                            | Weldon shank · Schaft            | 1536ST05C-0830 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●                            |
|                                                   | 5                                                  |                            | Weldon shank · Schaft            | 1636ST05C-0830 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ○                            |
| 8.4                                               | 3                                                  |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0840 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●                            |
|                                                   | 5                                                  |                            | Weldon shank · Schaft            | 1536ST05C-0840 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●                            |
|                                                   | 5                                                  |                            | Weldon shank · Schaft            | 1636ST05C-0840 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ○                            |
| 8.5                                               | 3                                                  |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0850 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●                            |
|                                                   | 5                                                  |                            | Weldon shank · Schaft            | 1536ST05C-0850 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●                            |
|                                                   | 5                                                  |                            | Weldon shank · Schaft            | 1636ST05C-0850 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ○                            |
| 8.6                                               | 3                                                  |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0860 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●                            |
|                                                   | 5                                                  |                            | Weldon shank · Schaft            | 1536ST05C-0860 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●                            |
|                                                   | 5                                                  |                            | Weldon shank · Schaft            | 1636ST05C-0860 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ○                            |
| 8.7                                               | 3                                                  |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0870 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●                            |
|                                                   | 5                                                  |                            | Weldon shank · Schaft            | 1536ST05C-0870 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●                            |
|                                                   | 5                                                  |                            | Weldon shank · Schaft            | 1636ST05C-0870 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ○                            |
| 8.8                                               | 3                                                  |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0880 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●                            |
|                                                   | 5                                                  |                            | Weldon shank · Schaft            | 1536ST05C-0880 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●                            |
|                                                   | 5                                                  |                            | Weldon shank · Schaft            | 1636ST05C-0880 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ○                            |
| 8.9                                               | 3                                                  |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0890 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●                            |
|                                                   | 5                                                  |                            | Weldon shank · Schaft            | 1536ST05C-0890 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●                            |
|                                                   | 5                                                  |                            | Weldon shank · Schaft            | 1636ST05C-0890 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ○                            |
| 9.0                                               | 3                                                  |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0900 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ○                            |
|                                                   | 5                                                  |                            | Weldon shank · Schaft            | 1536ST05C-0900 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●                            |
|                                                   | 5                                                  |                            | Weldon shank · Schaft            | 1636ST05C-0900 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ○                            |

## Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Grade<br>Sorte | Workpiece material · Werkstückstoff             |                                   |                                   |        |        |                                           |                        |                                                      |                              |                               |                                            |
|----------------|-------------------------------------------------|-----------------------------------|-----------------------------------|--------|--------|-------------------------------------------|------------------------|------------------------------------------------------|------------------------------|-------------------------------|--------------------------------------------|
|                | Carbon steel<br>Kohlenstoff-<br>Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel · Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron<br>Gusseisen | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Wärmfeste<br>Leg. |
|                |                                                 |                                   | ~40HRC                            | ~50HRC | ~60HRC |                                           |                        |                                                      |                              |                               |                                            |
| KDG303         | ✓                                               | ✓                                 |                                   |        |        | ✓                                         |                        |                                                      |                              |                               | ✓                                          |

Code key C 8  
ISO Kennzeichen

Cutting data 96-109  
Schnittdaten

Technical Information C110-116  
Technische Information

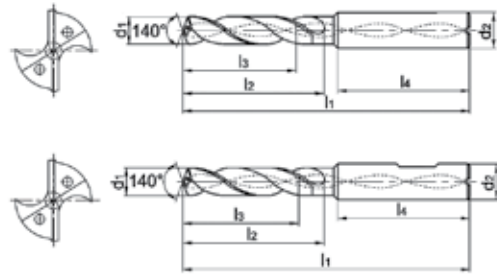
Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge

# Drilling • Bohren

Solid carbide drills • Vollhartmetallbohrer

## ST series • ST Serie

for soft and stainless steel • für weichen & rostfreien Stahl



- First choice for drilling soft & stainless steel.
- Sharp cutting edge can avoid build-up edge, suitable for drilling with high performance.
- Erste Wahl für das Bohren von weichen und rostfreien Stählen.
- Scharfe Schneiden reduzieren bzw. vermeiden Aufbauschneidenbildung. Besonders geeignet für das Hochleistungsbohren.

| Drill diameter<br>Bohrer Ø<br>d1(m7) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel | Shank<br>Schaft                  | Type<br>Typ    | Basic dimension(mm) • Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|--------------------------------------|---------------------------------------|----------------------------|----------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                      |                                       |                            |                                  |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                      |                                       |                            |                                  |                | d2(h6)                                  | l1                            | l2                         | l3                                             | l4                          |                |
| 9.1                                  | 3                                     | Internal • Intern          | Straight shank<br>Zylinderschaft | 1534ST03C-0910 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1536ST05C-0910 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
| 9.2                                  | 5                                     |                            | Weldon shank • Schaft            | 1636ST05C-0910 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ○              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1536ST05C-0920 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
| 9.3                                  | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0930 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1536ST05C-0930 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1636ST05C-0930 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ○              |
| 9.4                                  | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0940 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1536ST05C-0940 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1636ST05C-0940 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ○              |
| 9.5                                  | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0950 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1536ST05C-0950 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1636ST05C-0950 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ○              |
| 9.6                                  | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0960 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1536ST05C-0960 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1636ST05C-0960 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ○              |
| 9.7                                  | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0970 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1536ST05C-0970 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1636ST05C-0970 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ○              |
| 9.8                                  | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0980 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1536ST05C-0980 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1636ST05C-0980 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ○              |
| 9.9                                  | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-0990 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1536ST05C-0990 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1636ST05C-0990 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ○              |
| 10.0                                 | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1000 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1536ST05C-1000 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1636ST05C-1000 | 10                                      | 103                           | 61                         | 49                                             | 40                          | ○              |
| 10.1                                 | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1010 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1536ST05C-1010 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 5                                     |                            | Weldon shank • Schaft            | 1636ST05C-1010 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○              |



| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (m7) | Drilling depth<br>Bohrtiefe<br>(L/d <sub>1</sub> ) | Cooling mode<br>Kühlmittel | Shank<br>Schaft                  | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte<br><br>KDG303 |
|---------------------------------------------------|----------------------------------------------------|----------------------------|----------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|------------------------------|
|                                                   |                                                    |                            |                                  |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                              |
|                                                   |                                                    |                            |                                  |                | d <sub>2</sub> (h <sub>6</sub> )        | l <sub>1</sub>                | l <sub>2</sub>             | l <sub>3</sub>                                 | l <sub>4</sub>              |                              |
| 10.2                                              | 5                                                  | Internal · Intern          | Straight shank<br>Zylinderschaft | 1536ST05C-1020 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●                            |
| 10.25                                             | 3                                                  |                            |                                  | 1534ST03C-1025 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●                            |
|                                                   | 5                                                  |                            | Weldon                           | 1536ST05C-1025 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○                            |
| 10.3                                              | 5                                                  |                            |                                  | 1636ST05C-1025 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○                            |
|                                                   | 3                                                  |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1030 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●                            |
| 10.3                                              | 5                                                  |                            |                                  | 1536ST05C-1030 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●                            |
|                                                   | 5                                                  |                            | Weldon                           | 1636ST05C-1030 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○                            |
| 10.4                                              | 3                                                  |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1040 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●                            |
|                                                   | 5                                                  |                            |                                  | 1536ST05C-1040 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●                            |
| 10.4                                              | 5                                                  |                            | Weldon                           | 1636ST05C-1040 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○                            |
| 10.5                                              | 3                                                  |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1050 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ○                            |
|                                                   | 5                                                  |                            |                                  | 1536ST05C-1050 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●                            |
| 10.5                                              | 5                                                  |                            | Weldon                           | 1636ST05C-1050 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○                            |
| 10.6                                              | 3                                                  |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1060 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●                            |
|                                                   | 5                                                  |                            |                                  | 1536ST05C-1060 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●                            |
| 10.6                                              | 5                                                  |                            | Weldon                           | 1636ST05C-1060 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○                            |
| 10.7                                              | 3                                                  |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1070 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●                            |
|                                                   | 5                                                  |                            |                                  | 1536ST05C-1070 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●                            |
| 10.7                                              | 5                                                  |                            | Weldon                           | 1636ST05C-1070 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○                            |
| 10.8                                              | 3                                                  |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1080 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●                            |
|                                                   | 5                                                  |                            |                                  | 1536ST05C-1080 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●                            |
| 10.8                                              | 5                                                  |                            | Weldon                           | 1636ST05C-1080 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○                            |
| 10.9                                              | 3                                                  |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1090 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●                            |
|                                                   | 5                                                  |                            |                                  | 1536ST05C-1090 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●                            |
| 10.9                                              | 5                                                  |                            | Weldon                           | 1636ST05C-1090 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○                            |
| 11.0                                              | 3                                                  |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1100 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●                            |
|                                                   | 5                                                  |                            |                                  | 1536ST05C-1100 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●                            |
| 11.0                                              | 5                                                  |                            | Weldon                           | 1636ST05C-1100 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○                            |
| 11.1                                              | 3                                                  |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1110 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●                            |
|                                                   | 5                                                  |                            |                                  | 1536ST05C-1110 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●                            |
| 11.1                                              | 5                                                  |                            | Weldon                           | 1636ST05C-1110 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○                            |
| 11.2                                              | 3                                                  |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1120 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●                            |
|                                                   | 5                                                  |                            |                                  | 1536ST05C-1120 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●                            |
| 11.2                                              | 5                                                  |                            | Weldon                           | 1636ST05C-1120 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○                            |
| 11.3                                              | 3                                                  |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1130 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●                            |
|                                                   | 5                                                  |                            |                                  | 1536ST05C-1130 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●                            |
| 11.3                                              | 5                                                  |                            | Weldon                           | 1636ST05C-1130 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○                            |

### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
 ✓ = Suitable · Empfohlen

| Grade<br>Sorte | Workpiece material · Werkstückstoff             |                                   |                                   |        |        |                                           |                        |                                                       |                              |                               |                                            |
|----------------|-------------------------------------------------|-----------------------------------|-----------------------------------|--------|--------|-------------------------------------------|------------------------|-------------------------------------------------------|------------------------------|-------------------------------|--------------------------------------------|
|                | Carbon steel<br>Kohlenstoff-<br>Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel · Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron<br>Gusseisen | Nodular<br>cast iron<br>GGG<br>Kugelgrah-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Warmfeste<br>Leg. |
|                |                                                 |                                   | ~40HRC                            | ~50HRC | ~60HRC |                                           |                        |                                                       |                              |                               |                                            |
| KDG303         | ✓                                               | ✓                                 |                                   |        |        | ✓                                         |                        |                                                       |                              |                               | ✓                                          |

Code key C 8  
ISO Kennzeichen

Cutting data 96-109  
Schnittdaten

Technical Information C110-116  
Technische Information

Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge

C

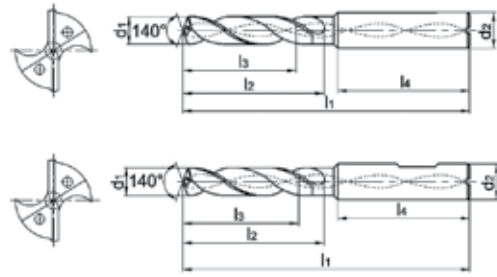
Solid carbide drills  
Vollhartmetallbohrer

# Drilling • Bohren

Solid carbide drills • Vollhartmetallbohrer

## ST series • ST Serie

for soft and stainless steel • für weichen & rostfreien Stahl



- First choice for drilling soft & stainless steel.
- Sharp cutting edge can avoid build-up edge, suitable for drilling with high performance.
- Erste Wahl für das Bohren von weichen und rostfreien Stählen.
- Scharfe Schneiden reduzieren bzw. vermeiden Aufbauschneidenbildung. Besonders geeignet für das Hochleistungsbohren.

| Drill diameter<br>Bohrer Ø<br>d1(m7) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel | Shank<br>Schaft                  | Type<br>Typ    | Basic dimension(mm) • Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|--------------------------------------|---------------------------------------|----------------------------|----------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                      |                                       |                            |                                  |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                      |                                       |                            |                                  |                | d2(h6)                                  | l1                            | l2                         | l3                                             | l4                          |                |
| 11.4                                 | 3                                     | Internal • Intern          | Straight shank<br>Zylinderschaft | 1534ST03C-1140 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                            |                                  | 1536ST05C-1140 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 5                                     |                            | Weldon                           | 1636ST05C-1140 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○              |
| 11.5                                 | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1150 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                            |                                  | 1536ST05C-1150 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 5                                     |                            | Weldon                           | 1636ST05C-1150 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○              |
| 11.6                                 | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1160 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                            |                                  | 1536ST05C-1160 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 5                                     |                            | Weldon                           | 1636ST05C-1160 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○              |
| 11.7                                 | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1170 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                            |                                  | 1536ST05C-1170 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 5                                     |                            | Weldon                           | 1636ST05C-1170 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○              |
| 11.8                                 | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1180 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                            |                                  | 1536ST05C-1180 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 5                                     |                            | Weldon                           | 1636ST05C-1180 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○              |
| 11.9                                 | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1190 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                            |                                  | 1536ST05C-1190 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 5                                     |                            | Weldon                           | 1636ST05C-1190 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○              |
| 12.0                                 | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1200 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
|                                      | 5                                     |                            |                                  | 1536ST05C-1200 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                      | 5                                     |                            | Weldon                           | 1636ST05C-1200 | 12                                      | 118                           | 71                         | 56                                             | 45                          | ○              |
| 12.20                                | 5                                     |                            |                                  | 1536ST05C-1220 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
| 12.25                                | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1225 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                      | 5                                     |                            |                                  | 1536ST05C-1225 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ○              |
|                                      | 5                                     |                            | Weldon                           | 1636ST05C-1225 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ○              |
| 12.3                                 | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1230 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                      | 5                                     |                            |                                  | 1536ST05C-1230 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                      | 5                                     |                            | Weldon                           | 1636ST05C-1230 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ○              |
| 12.5                                 | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1250 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                      | 5                                     |                            |                                  | 1536ST05C-1250 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                      | 5                                     |                            | Weldon                           | 1636ST05C-1250 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ○              |

# Drilling · Bohren

Solid carbide drills · Vollhartmetallbohrer

| Drill diameter<br>BohrerØ<br>d1(mm) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel | Shank<br>Schaft                  | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|-------------------------------------|---------------------------------------|----------------------------|----------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                     |                                       |                            |                                  |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                     |                                       |                            |                                  |                | d2(h6)                                  | l1                            | l2                         | l3                                             | l4                          |                |
| 12.7                                | 3                                     | Internal · Intern          | Straight shank<br>Zylinderschaft | 1534ST03C-1270 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                     | 5                                     |                            | Weldon shank · Schaft            | 1536ST05C-1270 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                     | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-1270 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ○              |
| 12.75                               | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1275 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                     | 5                                     |                            | Weldon shank · Schaft            | 1536ST05C-1275 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ○              |
|                                     | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-1275 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ○              |
| 12.8                                | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1280 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                     | 5                                     |                            | Weldon shank · Schaft            | 1536ST05C-1280 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                     | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-1280 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ○              |
| 13.0                                | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1300 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ○              |
|                                     | 5                                     |                            | Weldon shank · Schaft            | 1536ST05C-1300 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                     | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-1300 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ○              |
| 13.1                                | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1310 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                     | 5                                     |                            | Weldon shank · Schaft            | 1536ST05C-1310 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                     | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-1310 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ○              |
| 13.5                                | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1350 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                     | 5                                     |                            | Weldon shank · Schaft            | 1536ST05C-1350 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                     | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-1350 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ○              |
| 13.8                                | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1380 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                     | 5                                     |                            | Weldon shank · Schaft            | 1536ST05C-1380 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                     | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-1380 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ○              |
| 14.0                                | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1400 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
|                                     | 5                                     |                            | Weldon shank · Schaft            | 1536ST05C-1400 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ●              |
|                                     | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-1400 | 14                                      | 124                           | 77                         | 60                                             | 45                          | ○              |
| 14.25                               | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1425 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                     | 5                                     |                            | Weldon shank · Schaft            | 1536ST05C-1425 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ○              |
|                                     | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-1425 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ○              |
| 14.3                                | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1430 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                     | 5                                     |                            | Weldon shank · Schaft            | 1536ST05C-1430 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                     | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-1430 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ○              |
| 14.5                                | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1450 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                     | 5                                     |                            | Weldon shank · Schaft            | 1536ST05C-1450 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                     | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-1450 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ○              |
| 14.75                               | 3                                     |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1475 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
|                                     | 5                                     |                            | Weldon shank · Schaft            | 1536ST05C-1475 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ○              |
|                                     | 5                                     |                            | Weldon shank · Schaft            | 1636ST05C-1475 | 16                                      | 133                           | 83                         | 63                                             | 48                          | ○              |

## Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Grade<br>Sorte | Workpiece material · Werkstückstoff             |                                   |                                   |        |        |                                           |                        |                                                 |                              |                               |                                             |
|----------------|-------------------------------------------------|-----------------------------------|-----------------------------------|--------|--------|-------------------------------------------|------------------------|-------------------------------------------------|------------------------------|-------------------------------|---------------------------------------------|
|                | Carbon steel<br>Kohlenstoff-<br>Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel · Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron<br>Gusseisen | Nodular<br>cast iron<br>GGG<br>Kugelgraphitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Wärmefeste<br>Leg. |
|                |                                                 |                                   | ~40HRC                            | ~50HRC | ~60HRC |                                           |                        |                                                 |                              |                               |                                             |
| KDG303         | ✓                                               | ✓                                 |                                   |        |        | ✓                                         |                        |                                                 |                              |                               | ✓                                           |

Code key C 8  
ISO Kennzeichen

Cutting data 96-109  
Schnittdaten

Technical Information C110-116  
Technische Information

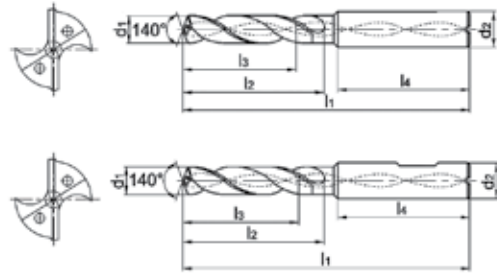
Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge

# Drilling • Bohren

Solid carbide drills • Vollhartmetallbohrer

## ST series • ST Serie

for soft and stainless steel • für weichen & rostfreien Stahl



- First choice for drilling soft & stainless steel.
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- Erste Wahl für das Bohren von weichen und rostfreien Stählen.
- Scharfe Schneiden reduzieren bzw. vermeiden Aufbauschneidenbildung. Besonders geeignet für das Hochleistungsbohren.

| Drill diameter<br>Bohrer Ø<br>d1(m7) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                  | Type<br>Typ    | Basic dimension(mm) • Basis Abmessungen |                               |                            |                               |                             | Grade<br>Sorte |
|--------------------------------------|---------------------------------------|-----------------------------|----------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|-------------------------------|-----------------------------|----------------|
|                                      |                                       |                             |                                  |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | Recommended<br>drilling depth | Shank length<br>Schaftlänge |                |
|                                      |                                       |                             |                                  |                | d2(h6)                                  | l1                            | l2                         | l3                            | l4                          |                |
| 14.8                                 | 3                                     | Internal • Intern           | Straight shank<br>Zylinderschaft | 1534ST03C-1480 | 16                                      | 115                           | 65                         | 45                            | 48                          | ●              |
|                                      | 5                                     |                             |                                  | 1536ST05C-1480 | 16                                      | 133                           | 83                         | 63                            | 48                          | ●              |
|                                      | 5                                     |                             | Weldon                           | 1636ST05C-1480 | 16                                      | 133                           | 83                         | 63                            | 48                          | ○              |
| 15.0                                 | 3                                     |                             | Straight shank<br>Zylinderschaft | 1534ST03C-1500 | 16                                      | 115                           | 65                         | 45                            | 48                          | ●              |
|                                      | 5                                     |                             |                                  | 1536ST05C-1500 | 16                                      | 133                           | 83                         | 63                            | 48                          | ●              |
|                                      | 5                                     |                             | Weldon                           | 1636ST05C-1500 | 16                                      | 133                           | 83                         | 63                            | 48                          | ○              |
| 15.1                                 | 3                                     |                             | Straight shank<br>Zylinderschaft | 1534ST03C-1510 | 16                                      | 115                           | 65                         | 45                            | 48                          | ●              |
|                                      | 5                                     |                             |                                  | 1536ST05C-1510 | 16                                      | 133                           | 83                         | 63                            | 48                          | ●              |
|                                      | 5                                     |                             | Weldon                           | 1636ST05C-1510 | 16                                      | 133                           | 83                         | 63                            | 48                          | ○              |
| 15.5                                 | 3                                     |                             | Straight shank<br>Zylinderschaft | 1534ST03C-1550 | 16                                      | 115                           | 65                         | 45                            | 48                          | ●              |
|                                      | 5                                     |                             |                                  | 1536ST05C-1550 | 16                                      | 133                           | 83                         | 63                            | 48                          | ●              |
|                                      | 5                                     |                             | Weldon                           | 1636ST05C-1550 | 16                                      | 133                           | 83                         | 63                            | 48                          | ○              |
| 15.8                                 | 3                                     |                             | Straight shank<br>Zylinderschaft | 1534ST03C-1580 | 16                                      | 115                           | 65                         | 45                            | 48                          | ●              |
|                                      | 5                                     |                             |                                  | 1536ST05C-1580 | 16                                      | 133                           | 83                         | 63                            | 48                          | ●              |
|                                      | 5                                     |                             | Weldon                           | 1636ST05C-1580 | 16                                      | 133                           | 83                         | 63                            | 48                          | ○              |
| 16.0                                 | 3                                     |                             | Straight shank<br>Zylinderschaft | 1534ST03C-1600 | 16                                      | 115                           | 65                         | 45                            | 48                          | ●              |
|                                      | 5                                     |                             |                                  | 1536ST05C-1600 | 16                                      | 133                           | 83                         | 63                            | 48                          | ●              |
|                                      | 5                                     |                             | Weldon                           | 1636ST05C-1600 | 16                                      | 133                           | 83                         | 63                            | 48                          | ○              |
| 16.5                                 | 3                                     |                             | Straight shank<br>Zylinderschaft | 1534ST03C-1650 | 18                                      | 123                           | 73                         | 51                            | 48                          | ●              |
|                                      | 5                                     |                             |                                  | 1536ST05C-1650 | 18                                      | 143                           | 93                         | 71                            | 48                          | ●              |
|                                      | 5                                     |                             | Weldon                           | 1636ST05C-1650 | 18                                      | 143                           | 93                         | 71                            | 48                          | ○              |
| 16.75                                | 3                                     |                             | Straight shank<br>Zylinderschaft | 1534ST03C-1675 | 18                                      | 123                           | 73                         | 51                            | 48                          | ●              |
|                                      | 5                                     |                             |                                  | 1536ST05C-1675 | 18                                      | 143                           | 93                         | 71                            | 48                          | ○              |
|                                      | 5                                     |                             | Weldon                           | 1636ST05C-1675 | 18                                      | 143                           | 93                         | 71                            | 48                          | ○              |
| 16.8                                 | 3                                     |                             | Straight shank<br>Zylinderschaft | 1534ST03C-1680 | 18                                      | 123                           | 73                         | 51                            | 48                          | ●              |
|                                      | 5                                     |                             |                                  | 1536ST05C-1680 | 18                                      | 143                           | 93                         | 71                            | 48                          | ●              |
|                                      | 5                                     |                             | Weldon                           | 1636ST05C-1680 | 18                                      | 143                           | 93                         | 71                            | 48                          | ○              |
| 17.0                                 | 3                                     |                             | Straight shank<br>Zylinderschaft | 1534ST03C-1700 | 18                                      | 123                           | 73                         | 51                            | 48                          | ●              |
|                                      | 5                                     |                             |                                  | 1536ST05C-1700 | 18                                      | 143                           | 93                         | 71                            | 48                          | ●              |
|                                      | 5                                     |                             | Weldon                           | 1636ST05C-1700 | 18                                      | 143                           | 93                         | 71                            | 48                          | ●              |

| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (m7) | Drilling depth<br>Bohrtiefe<br>(L/d <sub>1</sub> ) | Cooling mode<br>Kühlmittel | Shank<br>Schaft                  | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|---------------------------------------------------|----------------------------------------------------|----------------------------|----------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                                   |                                                    |                            |                                  |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                                   |                                                    |                            |                                  |                | d <sub>2</sub> (h <sub>6</sub> )        | l <sub>1</sub>                | l <sub>2</sub>             | l <sub>3</sub>                                 | l <sub>4</sub>              |                |
| 17.5                                              | 3                                                  | Internal · Intern          | Straight shank<br>Zylinderschaft | 1534ST03C-1750 | 18                                      | 123                           | 73                         | 51                                             | 48                          | ●              |
|                                                   | 5                                                  |                            |                                  | 1536ST05C-1750 | 18                                      | 143                           | 93                         | 71                                             | 48                          | ●              |
|                                                   | 5                                                  |                            | Weldon shank · Schaft            | 1636ST05C-1750 | 18                                      | 143                           | 93                         | 71                                             | 48                          | ○              |
| 17.8                                              | 3                                                  |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1780 | 18                                      | 123                           | 73                         | 51                                             | 48                          | ●              |
|                                                   | 5                                                  |                            |                                  | 1536ST05C-1780 | 18                                      | 143                           | 93                         | 71                                             | 48                          | ●              |
|                                                   | 5                                                  |                            | Weldon shank · Schaft            | 1636ST05C-1780 | 18                                      | 143                           | 93                         | 71                                             | 48                          | ○              |
| 18.0                                              | 3                                                  |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1800 | 18                                      | 123                           | 73                         | 51                                             | 48                          | ●              |
|                                                   | 5                                                  |                            |                                  | 1536ST05C-1800 | 18                                      | 143                           | 93                         | 71                                             | 48                          | ●              |
|                                                   | 5                                                  |                            | Weldon shank · Schaft            | 1636ST05C-1800 | 18                                      | 143                           | 93                         | 71                                             | 48                          | ○              |
| 18.5                                              | 3                                                  |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1850 | 20                                      | 131                           | 79                         | 55                                             | 50                          | ●              |
|                                                   | 5                                                  |                            |                                  | 1536ST05C-1850 | 20                                      | 153                           | 101                        | 77                                             | 50                          | ●              |
|                                                   | 5                                                  |                            | Weldon shank · Schaft            | 1636ST05C-1850 | 20                                      | 153                           | 101                        | 77                                             | 50                          | ○              |
| 18.8                                              | 3                                                  |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1880 | 20                                      | 131                           | 79                         | 55                                             | 50                          | ●              |
|                                                   | 5                                                  |                            |                                  | 1536ST05C-1880 | 20                                      | 153                           | 101                        | 77                                             | 50                          | ●              |
|                                                   | 5                                                  |                            | Weldon shank · Schaft            | 1636ST05C-1880 | 20                                      | 153                           | 101                        | 77                                             | 50                          | ○              |
| 19.0                                              | 3                                                  |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1900 | 20                                      | 131                           | 79                         | 55                                             | 50                          | ●              |
|                                                   | 5                                                  |                            |                                  | 1536ST05C-1900 | 20                                      | 153                           | 101                        | 77                                             | 50                          | ●              |
|                                                   | 5                                                  |                            | Weldon shank · Schaft            | 1636ST05C-1900 | 20                                      | 153                           | 101                        | 77                                             | 50                          | ○              |
| 19.5                                              | 3                                                  |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1950 | 20                                      | 131                           | 79                         | 55                                             | 50                          | ●              |
|                                                   | 5                                                  |                            |                                  | 1536ST05C-1950 | 20                                      | 153                           | 101                        | 77                                             | 50                          | ●              |
|                                                   | 5                                                  |                            | Weldon shank · Schaft            | 1636ST05C-1950 | 20                                      | 153                           | 101                        | 77                                             | 50                          | ○              |
| 19.8                                              | 3                                                  |                            | Straight shank<br>Zylinderschaft | 1534ST03C-1980 | 20                                      | 131                           | 79                         | 55                                             | 50                          | ●              |
|                                                   | 5                                                  |                            |                                  | 1536ST05C-1980 | 20                                      | 153                           | 101                        | 77                                             | 50                          | ●              |
|                                                   | 5                                                  |                            | Weldon shank · Schaft            | 1636ST05C-1980 | 20                                      | 153                           | 101                        | 77                                             | 50                          | ○              |
| 20.0                                              | 3                                                  |                            | Straight shank<br>Zylinderschaft | 1534ST03C-2000 | 20                                      | 131                           | 79                         | 55                                             | 50                          | ●              |
|                                                   | 5                                                  |                            |                                  | 1536ST05C-2000 | 20                                      | 153                           | 101                        | 77                                             | 50                          | ●              |
|                                                   | 5                                                  |                            | Weldon shank · Schaft            | 1636ST05C-2000 | 20                                      | 153                           | 101                        | 77                                             | 50                          | ○              |

### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Grade<br>Sorte | Workpiece material · Werkstückstoff             |                                   |                                   |        |        |                                           |                        |                                                       |                              |                               |                                             |
|----------------|-------------------------------------------------|-----------------------------------|-----------------------------------|--------|--------|-------------------------------------------|------------------------|-------------------------------------------------------|------------------------------|-------------------------------|---------------------------------------------|
|                | Carbon steel<br>Kohlenstoff-<br>Stahl<br>HB≤180 | Alloy steel<br>Legierter<br>Stahl | Hardened steel · Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron<br>Gusseisen | Nodular<br>cast iron<br>GGG<br>Kugelgrah-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Wärmefeste<br>Leg. |
|                |                                                 |                                   | ~40HRC                            | ~50HRC | ~60HRC |                                           |                        |                                                       |                              |                               |                                             |
| KDG303         | ✓                                               | ✓                                 |                                   |        |        | ✓                                         |                        |                                                       |                              |                               | ✓                                           |

Code key C 8  
ISO Kennzeichen

Cutting data 96-109  
Schnittdaten

Technical Information C110-116  
Technische Information

Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge



# SH

## series twist drill Spiralbohrer Serie

**For high hardness steel  
Für gehärteten Stahl**

- Uniquely designed chip-breakers and treated with high performance coating render to the drills high rigidity and durability. Especially suitable for the machining of heat treated materials (hardness up to HRC=40-60) and high strength steel (tensile strength 1500N/mm<sup>2</sup>).
- Speziell entwickelte Spangeometrie in Verbindung mit einer Hochleistungsbeschichtung gibt dem Bohrer die entsprechende Voraussetzung zum Zerspanen von gehärteten Stahl und von hochvergütetem Stahl (Zugfestigkeit 1500N/mm<sup>2</sup>) (HRC=40-60).



Type · Typ: 1534SH03-1000

Size / Durchmesser: Ø10.0mm

Workpiece material  
Werkstückstoff: S136 (53HRC)

Rotating speed  
Drehzahl: 800min<sup>-1</sup>

Cutting speed  
Schnittgeschwindigkeit: 25m/min

Feed rate per revolution  
Vorschub pro Umdrehung: 0.08mm

Feed rate  
Vorschub: 64mm/min

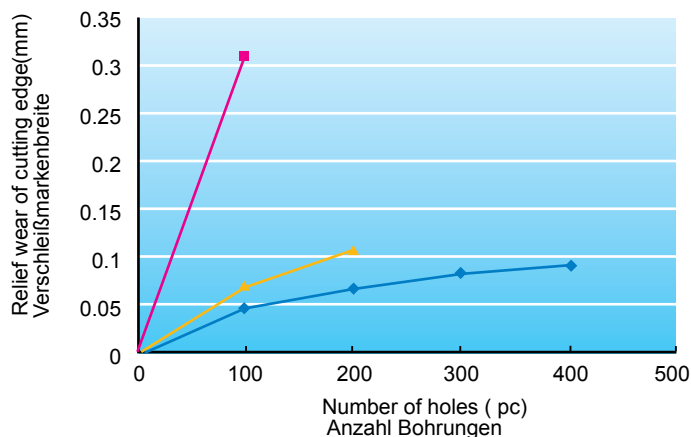
Drilling depth  
Bohrtiefe: 20mm (blind hole)

Cooling system: water-soluble liquid  
Kühlmittel.: Emulsion

Machine/Maschine: MIKRON UCP 1000

- 1534SH03-1000
- A company / Wettbewerber A
- B company / Wettbewerber B

Application of SH series drills in high hardness materials  
SH Serie in gehärtetem Stahl



### ■ Drill wear status in machining process · Verschleiß nach der Bearbeitung

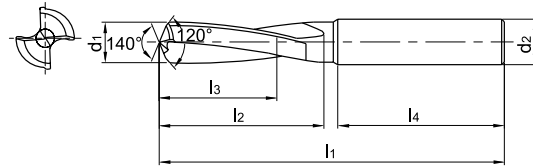
| Drill / Bohrer                       | ZCC 1534SH03-1000 | Similar product of company A<br>Vergleichbares Produkt A | Similar product of company B<br>Vergleichbares Produkt B |
|--------------------------------------|-------------------|----------------------------------------------------------|----------------------------------------------------------|
| Number of holes ( pc)<br>Bohrungen   | 400               | 100                                                      | 200                                                      |
| Wear value<br>Verschleißmarkenbreite | 0.08 mm           | Wear 0.31mm fracture 2.59 mm                             | 0.108 mm                                                 |

Wear  
Verschleiß



### SH series · SH Serie

for high hardness steel · für die Hartbearbeitung



- For drilling high hardness steel (HRC 40~60) and higher tensile strength.
- Small helical angle and large core designed, greatly improve tool rigidity.
- Bohren von gehärteten Stählen (HRC 40-60) und Stählen mit hoher Zugfestigkeit.
- Kleiner Spiralwinkel und größerer Kerndurchmesser (Seele). Erhöht die Werkzeugstabilität deutlich.

| Drill diameter<br>Bohrer Ø<br>d1(m7) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel | Shank<br>Schaft                  | Type<br>Typ   | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|--------------------------------------|---------------------------------------|----------------------------|----------------------------------|---------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                      |                                       |                            |                                  |               | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                      |                                       |                            |                                  |               | d2(h6)                                  | l1                            | l2                         | l3                                             | l4                          |                |
| 3.0                                  | 3                                     | External · Extern          | Straight shank<br>Zylinderschaft | 1534SH03-0300 | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●              |
| 3.3                                  | 3                                     |                            |                                  | 1534SH03-0330 | 6                                       | 62                            | 20                         | 14                                             | 36                          | ●              |
| 4.0                                  | 3                                     |                            |                                  | 1534SH03-0400 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
| 4.2                                  | 3                                     |                            |                                  | 1534SH03-0420 | 6                                       | 66                            | 24                         | 17                                             | 36                          | ●              |
| 5.0                                  | 3                                     |                            |                                  | 1534SH03-0500 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
| 6.0                                  | 3                                     |                            |                                  | 1534SH03-0600 | 6                                       | 66                            | 28                         | 20                                             | 36                          | ●              |
| 6.75                                 | 3                                     |                            |                                  | 1534SH03-0675 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
| 7.0                                  | 3                                     |                            |                                  | 1534SH03-0700 | 8                                       | 79                            | 34                         | 24                                             | 36                          | ●              |
| 8.0                                  | 3                                     |                            |                                  | 1534SH03-0800 | 8                                       | 79                            | 41                         | 29                                             | 36                          | ●              |
| 8.5                                  | 3                                     |                            |                                  | 1534SH03-0850 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
| 9.0                                  | 3                                     |                            |                                  | 1534SH03-0900 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
| 10.0                                 | 3                                     |                            |                                  | 1534SH03-1000 | 10                                      | 89                            | 47                         | 35                                             | 40                          | ●              |
| 10.25                                | 3                                     |                            |                                  | 1534SH03-1025 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
| 10.5                                 | 3                                     |                            |                                  | 1534SH03-1050 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
| 12.0                                 | 3                                     |                            |                                  | 1534SH03-1200 | 12                                      | 102                           | 55                         | 40                                             | 45                          | ●              |
| 12.5                                 | 3                                     |                            |                                  | 1534SH03-1250 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
| 14.0                                 | 3                                     |                            |                                  | 1534SH03-1400 | 14                                      | 107                           | 60                         | 43                                             | 45                          | ●              |
| 14.5                                 | 3                                     |                            |                                  | 1534SH03-1450 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |
| 16.0                                 | 3                                     |                            |                                  | 1534SH03-1600 | 16                                      | 115                           | 65                         | 45                                             | 48                          | ●              |

C

Solid carbide drills  
Vollhartmetallbohrer

### Material Overview · Material Übersicht

- ✓ = Very suitable · Sehr empfohlen
- ✓ = Suitable · Empfohlen

| Grade<br>Sorte | Workpiece material · Werkstückstoff |                                                                   |                                   |        |        |                                           |                        |                                                 |                              |                               |                                            |
|----------------|-------------------------------------|-------------------------------------------------------------------|-----------------------------------|--------|--------|-------------------------------------------|------------------------|-------------------------------------------------|------------------------------|-------------------------------|--------------------------------------------|
|                | Mild steel<br>Baustahl<br>HB≤180    | Carbon steel<br>Alloy Steel<br>Kohlenstoff-<br>Legierter<br>Stahl | Hardened steel · Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron<br>Gusseisen | Nodular<br>cast iron<br>GGG<br>Kugelgraphitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Warmfeste<br>Leg. |
|                |                                     |                                                                   | ~40HRC                            | ~50HRC | ~60HRC |                                           |                        |                                                 |                              |                               |                                            |
| KDG303         |                                     |                                                                   | ✓                                 | ✓      | ✓      |                                           |                        |                                                 |                              |                               |                                            |

Code key C 8  
ISO Kennzeichen

Cutting data 96-109  
Schnittdaten

Technical Information C110-116  
Technische Information

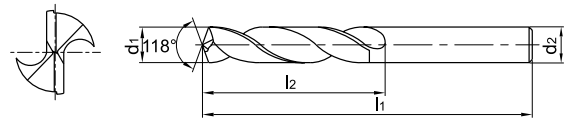
Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge

# Drilling · Bohren

Solid carbide drills · Vollhartmetallbohrer

## SC series · SC Serie

for cast iron & AL alloy · für Grauguss & Alu-Legierungen



- For materials with short chips such as cast iron, silicon-aluminum alloy etc.
- Cutting edge and shank with same diameter.
- Zur Bearbeitung von kurzspanenden Werkstoffen.
- Gleicher Schneiden- und Schaftdurchmesser.

| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (h <sub>8</sub> ) | Drilling depth<br>Bohrtiefe<br>(L/d <sub>1</sub> ) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                   | Type<br>Typ   | Basic dimension(mm) · Basis Abmessungen |                               |                            | Grade<br>Sorte<br><br>YK20F |
|----------------------------------------------------------------|----------------------------------------------------|-----------------------------|-----------------------------------|---------------|-----------------------------------------|-------------------------------|----------------------------|-----------------------------|
|                                                                |                                                    |                             |                                   |               | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge |                             |
|                                                                |                                                    |                             |                                   |               | d <sub>2</sub> (h <sub>7</sub> )        | l <sub>1</sub>                | l <sub>2</sub>             |                             |
| 2.0                                                            | 3                                                  | External · Extern           | Straight shank<br>Zylinder-schaft | 1105SC03-0200 | 2.0                                     | 38                            | 12                         | ●                           |
|                                                                | 5                                                  |                             |                                   | 1101SC05-0200 | 2.0                                     | 49                            | 24                         | ○                           |
| 2.5                                                            | 3                                                  |                             |                                   | 1105SC03-0250 | 2.5                                     | 43                            | 14                         | ●                           |
|                                                                | 5                                                  |                             |                                   | 1101SC05-0250 | 2.5                                     | 57                            | 30                         | ○                           |
| 2.8                                                            | 3                                                  |                             |                                   | 1105SC03-0280 | 2.8                                     | 46                            | 16                         | ●                           |
|                                                                | 5                                                  |                             |                                   | 1101SC05-0280 | 2.8                                     | 61                            | 33                         | ○                           |
| 3.0                                                            | 3                                                  |                             |                                   | 1105SC03-0300 | 3.0                                     | 46                            | 16                         | ●                           |
|                                                                | 5                                                  |                             |                                   | 1101SC05-0300 | 3.0                                     | 61                            | 33                         | ○                           |
| 3.1                                                            | 3                                                  |                             |                                   | 1105SC03-0310 | 3.1                                     | 49                            | 18                         | ●                           |
| 3.2                                                            | 3                                                  |                             |                                   | 1105SC03-0320 | 3.2                                     | 49                            | 18                         | ●                           |
| 3.3                                                            | 3                                                  |                             |                                   | 1105SC03-0330 | 3.3                                     | 49                            | 18                         | ●                           |
| 3.4                                                            | 3                                                  |                             |                                   | 1105SC03-0340 | 3.4                                     | 52                            | 20                         | ●                           |
|                                                                | 5                                                  |                             |                                   | 1101SC05-0350 | 3.5                                     | 70                            | 39                         | ○                           |
| 3.5                                                            | 3                                                  |                             |                                   | 1105SC03-0350 | 3.5                                     | 52                            | 20                         | ●                           |
|                                                                | 5                                                  |                             |                                   | 1101SC05-0350 | 3.5                                     | 70                            | 39                         | ○                           |
| 3.6                                                            | 3                                                  |                             |                                   | 1105SC03-0360 | 3.6                                     | 52                            | 20                         | ●                           |
| 3.7                                                            | 3                                                  |                             |                                   | 1105SC03-0370 | 3.7                                     | 52                            | 20                         | ●                           |
| 3.8                                                            | 3                                                  |                             |                                   | 1105SC03-0380 | 3.8                                     | 55                            | 22                         | ●                           |
|                                                                | 5                                                  |                             |                                   | 1101SC05-0380 | 3.8                                     | 75                            | 43                         | ○                           |
| 3.9                                                            | 3                                                  |                             |                                   | 1105SC03-0390 | 3.9                                     | 55                            | 22                         | ○                           |
| 4.0                                                            | 3                                                  |                             |                                   | 1105SC03-0400 | 4.0                                     | 55                            | 22                         | ●                           |
|                                                                | 5                                                  |                             |                                   | 1101SC05-0400 | 4.0                                     | 75                            | 43                         | ○                           |
| 4.1                                                            | 3                                                  |                             |                                   | 1105SC03-0410 | 4.1                                     | 55                            | 22                         | ●                           |
| 4.2                                                            | 3                                                  |                             |                                   | 1105SC03-0420 | 4.2                                     | 55                            | 22                         | ●                           |
|                                                                | 5                                                  |                             |                                   | 1101SC05-0420 | 4.2                                     | 75                            | 43                         | ○                           |
| 4.3                                                            | 3                                                  |                             |                                   | 1105SC03-0430 | 4.3                                     | 58                            | 24                         | ●                           |
| 4.4                                                            | 3                                                  |                             |                                   | 1105SC03-0440 | 4.4                                     | 58                            | 24                         | ●                           |
| 4.5                                                            | 3                                                  |                             |                                   | 1105SC03-0450 | 4.5                                     | 58                            | 24                         | ●                           |
|                                                                | 5                                                  |                             |                                   | 1101SC05-0450 | 4.5                                     | 80                            | 47                         | ○                           |
| 4.6                                                            | 3                                                  |                             |                                   | 1105SC03-0460 | 4.6                                     | 58                            | 24                         | ●                           |
| 4.7                                                            | 3                                                  |                             |                                   | 1105SC03-0470 | 4.7                                     | 58                            | 24                         | ○                           |
| 4.8                                                            | 3                                                  |                             |                                   | 1105SC03-0480 | 4.8                                     | 62                            | 26                         | ●                           |
|                                                                | 5                                                  |                             |                                   | 1101SC05-0480 | 4.8                                     | 86                            | 52                         | ○                           |
| 4.9                                                            | 3                                                  |                             |                                   | 1105SC03-0490 | 4.9                                     | 62                            | 26                         | ●                           |

| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (h <sub>8</sub> ) | Drilling depth<br>Bohrtiefe<br>(L/d <sub>1</sub> ) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                   | Type<br>Typ   | Basic dimension(mm) · Basis Abmessungen |                               |                            | Grade<br>Sorte |
|----------------------------------------------------------------|----------------------------------------------------|-----------------------------|-----------------------------------|---------------|-----------------------------------------|-------------------------------|----------------------------|----------------|
|                                                                |                                                    |                             |                                   |               | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge |                |
|                                                                |                                                    |                             |                                   |               | d <sub>2</sub> (h <sub>7</sub> )        | l <sub>1</sub>                | l <sub>2</sub>             | YK20F          |
| 5.0                                                            | 3                                                  | External · Extern           | Straight shank<br>Zylinder-schaft | 1105SC03-0500 | 5.0                                     | 62                            | 26                         | ●              |
|                                                                | 5                                                  |                             |                                   | 1101SC05-0500 | 5.0                                     | 86                            | 52                         | ○              |
| 5.1                                                            | 3                                                  |                             |                                   | 1105SC03-0510 | 5.1                                     | 62                            | 26                         | ●              |
| 5.2                                                            | 3                                                  |                             |                                   | 1105SC03-0520 | 5.2                                     | 62                            | 26                         | ●              |
| 5.3                                                            | 3                                                  |                             |                                   | 1105SC03-0530 | 5.3                                     | 62                            | 26                         | ●              |
| 5.4                                                            | 3                                                  |                             |                                   | 1105SC03-0540 | 5.4                                     | 66                            | 28                         | ○              |
| 5.5                                                            | 3                                                  |                             |                                   | 1105SC03-0550 | 5.5                                     | 66                            | 28                         | ●              |
|                                                                | 5                                                  |                             |                                   | 1101SC05-0550 | 5.5                                     | 93                            | 57                         | ○              |
| 5.6                                                            | 3                                                  |                             |                                   | 1105SC03-0560 | 5.6                                     | 66                            | 28                         | ●              |
| 5.7                                                            | 3                                                  |                             |                                   | 1105SC03-0570 | 5.7                                     | 66                            | 28                         | ●              |
| 5.8                                                            | 3                                                  |                             |                                   | 1105SC03-0580 | 5.8                                     | 66                            | 28                         | ●              |
|                                                                | 5                                                  |                             |                                   | 1101SC05-0580 | 5.8                                     | 93                            | 57                         | ○              |
| 5.9                                                            | 3                                                  |                             |                                   | 1105SC03-0590 | 5.9                                     | 66                            | 28                         | ○              |
| 6.0                                                            | 3                                                  |                             |                                   | 1105SC03-0600 | 6.0                                     | 66                            | 28                         | ●              |
|                                                                | 5                                                  |                             |                                   | 1101SC05-0600 | 6.0                                     | 93                            | 57                         | ○              |
| 6.1                                                            | 3                                                  |                             |                                   | 1105SC03-0610 | 6.1                                     | 70                            | 31                         | ●              |
| 6.2                                                            | 3                                                  |                             |                                   | 1105SC03-0620 | 6.2                                     | 70                            | 31                         | ●              |
| 6.3                                                            | 3                                                  |                             |                                   | 1105SC03-0630 | 6.3                                     | 70                            | 31                         | ○              |
| 6.4                                                            | 3                                                  |                             |                                   | 1105SC03-0640 | 6.4                                     | 70                            | 31                         | ●              |
| 6.5                                                            | 3                                                  |                             |                                   | 1105SC03-0650 | 6.5                                     | 70                            | 31                         | ●              |
|                                                                | 5                                                  |                             |                                   | 1101SC05-0650 | 6.5                                     | 101                           | 63                         | ○              |
| 6.6                                                            | 3                                                  |                             |                                   | 1105SC03-0660 | 6.6                                     | 70                            | 31                         | ●              |
| 6.7                                                            | 3                                                  |                             |                                   | 1105SC03-0670 | 6.7                                     | 70                            | 31                         | ●              |
| 6.8                                                            | 3                                                  |                             |                                   | 1105SC03-0680 | 6.8                                     | 74                            | 34                         | ●              |
|                                                                | 5                                                  |                             |                                   | 1101SC05-0680 | 6.8                                     | 109                           | 69                         | ○              |
| 6.9                                                            | 3                                                  |                             |                                   | 1105SC03-0690 | 6.9                                     | 74                            | 34                         | ○              |
| 7.0                                                            | 3                                                  |                             |                                   | 1105SC03-0700 | 7.0                                     | 74                            | 34                         | ●              |
|                                                                | 5                                                  |                             |                                   | 1101SC05-0700 | 7.0                                     | 109                           | 69                         | ○              |
| 7.1                                                            | 3                                                  |                             |                                   | 1105SC03-0710 | 7.1                                     | 74                            | 34                         | ●              |
| 7.2                                                            | 3                                                  |                             |                                   | 1105SC03-0720 | 7.2                                     | 74                            | 34                         | ○              |
| 7.3                                                            | 3                                                  |                             |                                   | 1105SC03-0730 | 7.3                                     | 74                            | 34                         | ○              |
| 7.4                                                            | 3                                                  |                             |                                   | 1105SC03-0740 | 7.4                                     | 74                            | 34                         | ●              |

C

Solid carbide drills  
Vollhartmetallbohrer

### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Grade<br>Sorte | Workpiece material · Werkstückstoff |                                                                    |                                   |        |        |                                           |                        |                                                      |                              |                               |                                            |
|----------------|-------------------------------------|--------------------------------------------------------------------|-----------------------------------|--------|--------|-------------------------------------------|------------------------|------------------------------------------------------|------------------------------|-------------------------------|--------------------------------------------|
|                | Mild steel<br>Baustahl<br>HB≤180    | Carbon steel<br>Alloy Steel<br>Kohlenstoff-,<br>Legierter<br>Stahl | Hardened steel · Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron<br>Gusseisen | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Warmfeste<br>Leg. |
|                |                                     |                                                                    | ~40HRC                            | ~50HRC | ~60HRC |                                           |                        |                                                      |                              |                               |                                            |
| YK20F          |                                     |                                                                    |                                   |        |        |                                           | ✓                      | ✓                                                    |                              |                               |                                            |

Code key C 8  
ISO Kennzeichen

Cutting data 96-109  
Schnittdaten

Technical Information C110-116  
Technische Information

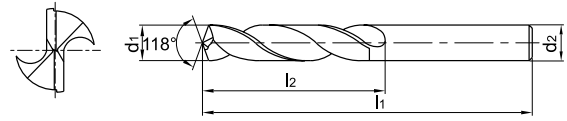
Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge

# Drilling · Bohren

Solid carbide drills · Vollhartmetallbohrer

## SC series · SC Serie

for cast iron, AL alloy · für Grauguss & Alu-Legierungen



- For materials with short chips such as cast iron, silicon-aluminum alloy etc.
- Cutting edge and shank with same diameter.
- Zur Bearbeitung von kurzspanenden Werkstoffen.
- Gleicher Schneiden- und Schaftdurchmesser.

| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (h <sub>8</sub> ) | Drilling depth<br>Bohrtiefe<br>(L/d <sub>1</sub> ) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                  | Type<br>Typ   | Basic dimension(mm) · Basis Abmessungen |                               |                            | Grade<br>Sorte<br><br>YK20F |
|----------------------------------------------------------------|----------------------------------------------------|-----------------------------|----------------------------------|---------------|-----------------------------------------|-------------------------------|----------------------------|-----------------------------|
|                                                                |                                                    |                             |                                  |               | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge |                             |
|                                                                |                                                    |                             |                                  |               | d <sub>2</sub> (h <sub>7</sub> )        | l <sub>1</sub>                | l <sub>2</sub>             |                             |
| 7.5                                                            | 3                                                  | External · Extern           | Straight shank<br>Zylinderschaft | 1105SC03-0750 | 7.5                                     | 74                            | 34                         | ●                           |
|                                                                | 5                                                  |                             |                                  | 1101SC05-0750 | 7.5                                     | 109                           | 69                         | ○                           |
| 7.6                                                            | 3                                                  |                             |                                  | 1105SC03-0760 | 7.6                                     | 79                            | 37                         | ○                           |
| 7.7                                                            | 3                                                  |                             |                                  | 1105SC03-0770 | 7.7                                     | 79                            | 37                         | ○                           |
| 7.8                                                            | 3                                                  |                             |                                  | 1105SC03-0780 | 7.8                                     | 79                            | 37                         | ●                           |
|                                                                | 5                                                  |                             |                                  | 1101SC05-0780 | 7.8                                     | 117                           | 75                         | ○                           |
| 7.9                                                            | 3                                                  |                             |                                  | 1105SC03-0790 | 7.9                                     | 79                            | 37                         | ●                           |
| 8.0                                                            | 3                                                  |                             |                                  | 1105SC03-0800 | 8.0                                     | 79                            | 37                         | ●                           |
|                                                                | 5                                                  |                             |                                  | 1101SC05-0800 | 8.0                                     | 117                           | 75                         | ○                           |
| 8.1                                                            | 3                                                  |                             |                                  | 1105SC03-0810 | 8.1                                     | 79                            | 37                         | ●                           |
| 8.2                                                            | 3                                                  |                             |                                  | 1105SC03-0820 | 8.2                                     | 79                            | 37                         | ●                           |
| 8.3                                                            | 3                                                  |                             |                                  | 1105SC03-0830 | 8.3                                     | 79                            | 37                         | ○                           |
| 8.4                                                            | 3                                                  |                             |                                  | 1105SC03-0840 | 8.4                                     | 79                            | 37                         | ●                           |
| 8.5                                                            | 3                                                  |                             |                                  | 1105SC03-0850 | 8.5                                     | 79                            | 37                         | ●                           |
|                                                                | 5                                                  |                             |                                  | 1101SC05-0850 | 8.5                                     | 117                           | 75                         | ○                           |
| 8.6                                                            | 3                                                  |                             |                                  | 1105SC03-0860 | 8.6                                     | 84                            | 40                         | ●                           |
| 8.7                                                            | 3                                                  |                             |                                  | 1105SC03-0870 | 8.7                                     | 84                            | 40                         | ●                           |
| 8.8                                                            | 3                                                  |                             |                                  | 1105SC03-0880 | 8.8                                     | 84                            | 40                         | ○                           |
|                                                                | 5                                                  |                             |                                  | 1101SC05-0880 | 8.8                                     | 125                           | 81                         | ○                           |
| 8.9                                                            | 3                                                  |                             |                                  | 1105SC03-0890 | 8.9                                     | 84                            | 40                         | ○                           |
| 9.0                                                            | 3                                                  |                             |                                  | 1105SC03-0900 | 9.0                                     | 84                            | 40                         | ●                           |
|                                                                | 5                                                  |                             |                                  | 1101SC05-0900 | 9.0                                     | 125                           | 81                         | ○                           |
| 9.1                                                            | 3                                                  |                             |                                  | 1105SC03-0910 | 9.1                                     | 84                            | 40                         | ●                           |
| 9.2                                                            | 3                                                  |                             |                                  | 1105SC03-0920 | 9.2                                     | 84                            | 40                         | ●                           |
| 9.3                                                            | 3                                                  |                             |                                  | 1105SC03-0930 | 9.3                                     | 84                            | 40                         | ●                           |
| 9.4                                                            | 3                                                  |                             |                                  | 1105SC03-0940 | 9.4                                     | 84                            | 40                         | ○                           |
| 9.5                                                            | 3                                                  |                             |                                  | 1105SC03-0950 | 9.5                                     | 84                            | 40                         | ●                           |
|                                                                | 5                                                  |                             |                                  | 1101SC05-0950 | 9.5                                     | 125                           | 81                         | ○                           |
| 9.6                                                            | 3                                                  |                             |                                  | 1105SC03-0960 | 9.6                                     | 89                            | 43                         | ○                           |
| 9.7                                                            | 3                                                  |                             |                                  | 1105SC03-0970 | 9.7                                     | 89                            | 43                         | ○                           |
| 9.8                                                            | 3                                                  |                             |                                  | 1105SC03-0980 | 9.8                                     | 89                            | 43                         | ●                           |
|                                                                | 5                                                  |                             |                                  | 1101SC05-0980 | 9.8                                     | 133                           | 87                         | ○                           |
| 9.9                                                            | 3                                                  |                             |                                  | 1105SC03-0990 | 9.9                                     | 89                            | 43                         | ●                           |



| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (h <sub>8</sub> ) | Drilling depth<br>Bohrtiefe<br>(L/d <sub>1</sub> ) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                   | Type<br>Typ   | Basic dimension(mm) · Basis Abmessungen |                               |                            | Grade<br>Sorte |
|----------------------------------------------------------------|----------------------------------------------------|-----------------------------|-----------------------------------|---------------|-----------------------------------------|-------------------------------|----------------------------|----------------|
|                                                                |                                                    |                             |                                   |               | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge |                |
|                                                                |                                                    |                             |                                   |               | d <sub>2</sub> (h <sub>7</sub> )        | l <sub>1</sub>                | l <sub>2</sub>             | YK20F          |
| 10.0                                                           | 3                                                  | External · Extern           | Straight shank<br>Zylinder-schaft | 1105SC03-1000 | 10.0                                    | 89                            | 43                         | ●              |
|                                                                | 5                                                  |                             |                                   | 1101SC05-1000 | 10.0                                    | 133                           | 87                         | ○              |
| 10.1                                                           | 3                                                  |                             |                                   | 1105SC03-1010 | 10.1                                    | 89                            | 43                         | ○              |
| 10.2                                                           | 3                                                  |                             |                                   | 1105SC03-1020 | 10.2                                    | 89                            | 43                         | ●              |
| 10.4                                                           | 3                                                  |                             |                                   | 1105SC03-1040 | 10.4                                    | 89                            | 43                         | ○              |
| 10.5                                                           | 3                                                  |                             |                                   | 1105SC03-1050 | 10.5                                    | 89                            | 43                         | ●              |
|                                                                | 5                                                  |                             |                                   | 1101SC05-1050 | 10.5                                    | 133                           | 87                         | ○              |
| 10.7                                                           | 3                                                  |                             |                                   | 1105SC03-1070 | 10.7                                    | 95                            | 47                         | ○              |
| 10.8                                                           | 3                                                  |                             |                                   | 1105SC03-1080 | 10.8                                    | 95                            | 47                         | ○              |
|                                                                | 5                                                  |                             |                                   | 1101SC05-1080 | 10.8                                    | 142                           | 94                         | ○              |
| 11.0                                                           | 3                                                  |                             |                                   | 1105SC03-1100 | 11.0                                    | 95                            | 47                         | ●              |
|                                                                | 5                                                  |                             |                                   | 1101SC05-1100 | 11.0                                    | 142                           | 94                         | ○              |
| 11.5                                                           | 3                                                  |                             |                                   | 1105SC03-1150 | 11.5                                    | 95                            | 47                         | ●              |
|                                                                | 5                                                  |                             |                                   | 1101SC05-1150 | 11.5                                    | 142                           | 94                         | ○              |
| 12.0                                                           | 3                                                  |                             |                                   | 1105SC03-1200 | 12.0                                    | 102                           | 51                         | ●              |
|                                                                | 5                                                  |                             |                                   | 1101SC05-1200 | 12.0                                    | 151                           | 101                        | ○              |
| 12.5                                                           | 3                                                  |                             |                                   | 1105SC03-1250 | 12.5                                    | 102                           | 51                         | ●              |
|                                                                | 5                                                  |                             |                                   | 1101SC05-1250 | 12.5                                    | 151                           | 101                        | ○              |
| 12.8                                                           | 3                                                  |                             |                                   | 1105SC03-1280 | 12.8                                    | 102                           | 51                         | ○              |
| 13.0                                                           | 3                                                  |                             |                                   | 1105SC03-1300 | 13.0                                    | 102                           | 51                         | ●              |
|                                                                | 5                                                  |                             |                                   | 1101SC05-1300 | 13.0                                    | 151                           | 101                        | ○              |
| 13.1                                                           | 3                                                  |                             |                                   | 1105SC03-1310 | 13.1                                    | 102                           | 51                         | ○              |
| 13.5                                                           | 3                                                  |                             |                                   | 1105SC03-1350 | 13.5                                    | 107                           | 54                         | ○              |
|                                                                | 5                                                  |                             |                                   | 1101SC05-1350 | 13.5                                    | 160                           | 108                        | ○              |
| 14.0                                                           | 3                                                  |                             |                                   | 1105SC03-1400 | 14.0                                    | 107                           | 54                         | ●              |
|                                                                | 5                                                  |                             |                                   | 1101SC05-1400 | 14.0                                    | 160                           | 108                        | ○              |
| 14.3                                                           | 3                                                  |                             |                                   | 1105SC03-1430 | 14.3                                    | 111                           | 56                         | ○              |
| 14.5                                                           | 3                                                  |                             |                                   | 1105SC03-1450 | 14.5                                    | 111                           | 56                         | ○              |
|                                                                | 5                                                  |                             |                                   | 1101SC05-1450 | 14.5                                    | 169                           | 114                        | ○              |
| 15.0                                                           | 3                                                  |                             |                                   | 1105SC03-1500 | 15.0                                    | 111                           | 56                         | ●              |
|                                                                | 5                                                  |                             |                                   | 1101SC05-1500 | 15.0                                    | 169                           | 114                        | ○              |
| 15.5                                                           | 5                                                  |                             |                                   | 1101SC05-1550 | 15.5                                    | 178                           | 120                        | ○              |
| 16.0                                                           | 3                                                  |                             |                                   | 1105SC03-1600 | 16.0                                    | 115                           | 58                         | ●              |
|                                                                | 5                                                  |                             |                                   | 1101SC05-1600 | 16.0                                    | 178                           | 120                        | ○              |

### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Grade<br>Sorte | Workpiece material · Werkstückstoff |                                                                   |                                   |        |        |                                           |                        |                                                      |                              |                               |                                            |
|----------------|-------------------------------------|-------------------------------------------------------------------|-----------------------------------|--------|--------|-------------------------------------------|------------------------|------------------------------------------------------|------------------------------|-------------------------------|--------------------------------------------|
|                | Mild steel<br>Baustahl<br>HB≤180    | Carbon steel<br>Alloy Steel<br>Kohlenstoff-<br>Legierter<br>Stahl | Hardened steel · Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron<br>Gusseisen | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Warmfeste<br>Leg. |
|                |                                     |                                                                   | ~40HRC                            | ~50HRC | ~60HRC |                                           |                        |                                                      |                              |                               |                                            |
| YK20F          |                                     |                                                                   |                                   |        |        |                                           | ✓                      | ✓                                                    | ✓                            |                               |                                            |

Code key C 8  
ISO Kennzeichen

Cutting data 96-109  
Schnittdaten

Technical Information C110-116  
Technische Information

Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge

# Drilling • Bohren

Solid carbide drills • Vollhartmetallbohrer

## PA series • PA Serie

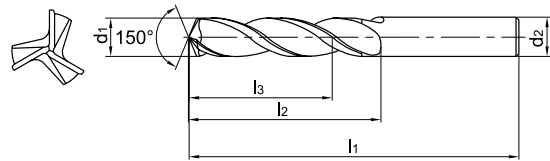
for AL alloy • für Alu-Legierungen



External Coolant  
Externe Kühlung



Straight shank  
Zylinderschaft



- For drilling solid workpiece composed of Al alloy etc.
- Three-lips structure can achieve high feed rate and prominent centering capability.
- High machining reliability, suitable for poor conditions such as interrupted cutting.
- Bohren von stabilen Werkstücken aus Alu-Legierungen.
- 3-Lippen-Bohrerform ist besonders geeignet für hohe Vorschübe.
- Hohe Bearbeitungssicherheit auch bei ungünstigen Bedingungen (z.B. unterbrochenem Schnitt)

| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (h7) | Drilling depth<br>Bohrtiefe<br>(L/d <sub>1</sub> ) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                  | Type<br>Typ   | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                | Grade · Sorte |       |
|---------------------------------------------------|----------------------------------------------------|-----------------------------|----------------------------------|---------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|---------------|-------|
|                                                   |                                                    |                             |                                  |               | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | KDG303        | YK30F |
|                                                   |                                                    |                             |                                  |               | d <sub>2</sub> (h7)                     | l <sub>1</sub>                | l <sub>2</sub>             | l <sub>3</sub>                                 |               |       |
| 3.0                                               | 3                                                  | External · Extern           | Straight shank<br>Zylinderschaft | 1165PA03-0300 | 3.0                                     | 46                            | 16                         | 12                                             | ●             | ●     |
| 3.1                                               | 3                                                  |                             |                                  | 1165PA03-0310 | 3.1                                     | 49                            | 18                         | 14                                             | ●             | ●     |
| 3.2                                               | 3                                                  |                             |                                  | 1165PA03-0320 | 3.2                                     | 49                            | 18                         | 14                                             | ●             | ●     |
| 3.3                                               | 3                                                  |                             |                                  | 1165PA03-0330 | 3.3                                     | 49                            | 18                         | 14                                             | ●             | ●     |
| 3.4                                               | 3                                                  |                             |                                  | 1165PA03-0340 | 3.4                                     | 52                            | 20                         | 15                                             | ●             | ●     |
| 3.5                                               | 3                                                  |                             |                                  | 1165PA03-0350 | 3.5                                     | 52                            | 20                         | 15                                             | ●             | ●     |
| 3.6                                               | 3                                                  |                             |                                  | 1165PA03-0360 | 3.6                                     | 52                            | 20                         | 15                                             | ●             | ○     |
| 3.7                                               | 3                                                  |                             |                                  | 1165PA03-0370 | 3.7                                     | 52                            | 20                         | 15                                             | ●             | ○     |
| 3.8                                               | 3                                                  |                             |                                  | 1165PA03-0380 | 3.8                                     | 55                            | 22                         | 17                                             | ●             | ●     |
| 3.9                                               | 3                                                  |                             |                                  | 1165PA03-0390 | 3.9                                     | 55                            | 22                         | 17                                             | ●             | ●     |
| 4.0                                               | 3                                                  |                             |                                  | 1165PA03-0400 | 4.0                                     | 55                            | 22                         | 17                                             | ●             | ●     |
| 4.1                                               | 3                                                  |                             |                                  | 1165PA03-0410 | 4.1                                     | 55                            | 22                         | 17                                             | ●             | ●     |
| 4.2                                               | 3                                                  |                             |                                  | 1165PA03-0420 | 4.2                                     | 55                            | 22                         | 17                                             | ●             | ●     |
| 4.3                                               | 3                                                  |                             |                                  | 1165PA03-0430 | 4.3                                     | 58                            | 24                         | 18                                             | ●             | ●     |
| 4.4                                               | 3                                                  |                             |                                  | 1165PA03-0440 | 4.4                                     | 58                            | 24                         | 18                                             | ●             | ○     |
| 4.5                                               | 3                                                  |                             |                                  | 1165PA03-0450 | 4.5                                     | 58                            | 24                         | 18                                             | ●             | ●     |
| 4.6                                               | 3                                                  |                             |                                  | 1165PA03-0460 | 4.6                                     | 58                            | 24                         | 18                                             | ●             | ●     |
| 4.7                                               | 3                                                  |                             |                                  | 1165PA03-0470 | 4.7                                     | 58                            | 24                         | 18                                             | ●             | ●     |
| 4.8                                               | 3                                                  |                             |                                  | 1165PA03-0480 | 4.8                                     | 62                            | 26                         | 20                                             | ●             | ○     |
| 4.9                                               | 3                                                  |                             |                                  | 1165PA03-0490 | 4.9                                     | 62                            | 26                         | 20                                             | ●             | ●     |
| 5.0                                               | 3                                                  |                             |                                  | 1165PA03-0500 | 5.0                                     | 62                            | 26                         | 20                                             | ●             | ●     |
| 5.1                                               | 3                                                  |                             |                                  | 1165PA03-0510 | 5.1                                     | 62                            | 26                         | 20                                             | ●             | ●     |
| 5.2                                               | 3                                                  |                             |                                  | 1165PA03-0520 | 5.2                                     | 62                            | 26                         | 20                                             | ●             | ●     |
| 5.3                                               | 3                                                  |                             |                                  | 1165PA03-0530 | 5.3                                     | 62                            | 26                         | 20                                             | ●             | ●     |
| 5.4                                               | 3                                                  |                             |                                  | 1165PA03-0540 | 5.4                                     | 66                            | 28                         | 21                                             | ●             | ○     |
| 5.5                                               | 3                                                  |                             |                                  | 1165PA03-0550 | 5.5                                     | 66                            | 28                         | 21                                             | ●             | ●     |
| 5.6                                               | 3                                                  |                             |                                  | 1165PA03-0560 | 5.6                                     | 66                            | 28                         | 21                                             | ●             | ●     |
| 5.7                                               | 3                                                  |                             |                                  | 1165PA03-0570 | 5.7                                     | 66                            | 28                         | 21                                             | ●             | ●     |
| 5.8                                               | 3                                                  |                             |                                  | 1165PA03-0580 | 5.8                                     | 66                            | 28                         | 21                                             | ●             | ●     |
| 5.9                                               | 3                                                  |                             |                                  | 1165PA03-0590 | 5.9                                     | 66                            | 28                         | 21                                             | ●             | ●     |
| 6.0                                               | 3                                                  |                             |                                  | 1165PA03-0600 | 6.0                                     | 66                            | 28                         | 21                                             | ●             | ●     |
| 6.1                                               | 3                                                  |                             |                                  | 1165PA03-0610 | 6.1                                     | 70                            | 31                         | 23                                             | ●             | ●     |
| 6.2                                               | 3                                                  |                             |                                  | 1165PA03-0620 | 6.2                                     | 70                            | 31                         | 23                                             | ●             | ●     |

# Drilling · Bohren

Solid carbide drills · Vollhartmetallbohrer

| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (h7) | Drilling depth<br>Bohrtiefe<br>(L/d <sub>1</sub> ) | Cooling mode<br>Kühlmittel. | Shank<br>Schaft                   | Type<br>Typ   | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                | Grade · Sorte |       |
|---------------------------------------------------|----------------------------------------------------|-----------------------------|-----------------------------------|---------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|---------------|-------|
|                                                   |                                                    |                             |                                   |               | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | KDG303        | YK30F |
|                                                   |                                                    |                             |                                   |               | d <sub>2</sub> (h7)                     | l <sub>1</sub>                | l <sub>2</sub>             | l <sub>3</sub>                                 |               |       |
| 6.3                                               | 3                                                  | External · Extern           | Straight shank<br>Zylinder-schaft | 1165PA03-0630 | 6.3                                     | 70                            | 31                         | 23                                             |               | ○     |
| 6.4                                               | 3                                                  |                             |                                   | 1165PA03-0640 | 6.4                                     | 70                            | 31                         | 23                                             | ●             | ○     |
| 6.5                                               | 3                                                  |                             |                                   | 1165PA03-0650 | 6.5                                     | 70                            | 31                         | 23                                             | ●             | ●     |
| 6.6                                               | 3                                                  |                             |                                   | 1165PA03-0660 | 6.6                                     | 70                            | 31                         | 23                                             | ●             | ●     |
| 6.7                                               | 3                                                  |                             |                                   | 1165PA03-0670 | 6.7                                     | 70                            | 31                         | 23                                             | ●             |       |
| 6.8                                               | 3                                                  |                             |                                   | 1165PA03-0680 | 6.8                                     | 74                            | 34                         | 25                                             | ●             | ●     |
| 6.9                                               | 3                                                  |                             |                                   | 1165PA03-0690 | 6.9                                     | 74                            | 34                         | 25                                             |               | ●     |
| 7.0                                               | 3                                                  |                             |                                   | 1165PA03-0700 | 7.0                                     | 74                            | 34                         | 25                                             | ●             | ●     |
| 7.1                                               | 3                                                  |                             |                                   | 1165PA03-0710 | 7.1                                     | 74                            | 34                         | 25                                             |               | ○     |
| 7.2                                               | 3                                                  |                             |                                   | 1165PA03-0720 | 7.2                                     | 74                            | 34                         | 25                                             |               | ○     |
| 7.3                                               | 3                                                  |                             |                                   | 1165PA03-0730 | 7.3                                     | 74                            | 34                         | 25                                             |               | ○     |
| 7.4                                               | 3                                                  |                             |                                   | 1165PA03-0740 | 7.4                                     | 74                            | 34                         | 25                                             | ●             |       |
| 7.5                                               | 3                                                  |                             |                                   | 1165PA03-0750 | 7.5                                     | 74                            | 34                         | 25                                             | ○             |       |
| 7.6                                               | 3                                                  |                             |                                   | 1165PA03-0760 | 7.6                                     | 79                            | 37                         | 27                                             |               | ●     |
| 7.7                                               | 3                                                  |                             |                                   | 1165PA03-0770 | 7.7                                     | 79                            | 37                         | 27                                             |               | ○     |
| 7.8                                               | 3                                                  |                             |                                   | 1165PA03-0780 | 7.8                                     | 79                            | 37                         | 27                                             |               | ●     |
| 7.9                                               | 3                                                  |                             |                                   | 1165PA03-0790 | 7.9                                     | 79                            | 37                         | 27                                             |               | ○     |
| 8.0                                               | 3                                                  |                             |                                   | 1165PA03-0800 | 8.0                                     | 79                            | 37                         | 27                                             | ●             | ●     |
| 8.1                                               | 3                                                  |                             |                                   | 1165PA03-0810 | 8.1                                     | 79                            | 37                         | 27                                             | ●             |       |
| 8.2                                               | 3                                                  |                             |                                   | 1165PA03-0820 | 8.2                                     | 79                            | 37                         | 27                                             |               | ●     |
| 8.3                                               | 3                                                  |                             |                                   | 1165PA03-0830 | 8.3                                     | 79                            | 37                         | 27                                             |               | ○     |
| 8.4                                               | 3                                                  |                             |                                   | 1165PA03-0840 | 8.4                                     | 79                            | 37                         | 27                                             |               | ○     |
| 8.5                                               | 3                                                  |                             |                                   | 1165PA03-0850 | 8.5                                     | 79                            | 37                         | 27                                             | ●             | ●     |
| 8.6                                               | 3                                                  |                             |                                   | 1165PA03-0860 | 8.6                                     | 84                            | 40                         | 29                                             |               | ●     |
| 8.7                                               | 3                                                  |                             |                                   | 1165PA03-0870 | 8.7                                     | 84                            | 40                         | 29                                             | ●             |       |
| 8.8                                               | 3                                                  |                             |                                   | 1165PA03-0880 | 8.8                                     | 84                            | 40                         | 29                                             |               | ○     |
| 8.9                                               | 3                                                  |                             |                                   | 1165PA03-0890 | 8.9                                     | 84                            | 40                         | 29                                             |               | ○     |
| 9.0                                               | 3                                                  |                             |                                   | 1165PA03-0900 | 9.0                                     | 84                            | 40                         | 29                                             | ●             | ●     |
| 9.1                                               | 3                                                  |                             |                                   | 1165PA03-0910 | 9.1                                     | 84                            | 40                         | 29                                             |               | ○     |
| 9.2                                               | 3                                                  |                             |                                   | 1165PA03-0920 | 9.2                                     | 84                            | 40                         | 29                                             |               | ○     |
| 9.3                                               | 3                                                  |                             |                                   | 1165PA03-0930 | 9.3                                     | 84                            | 40                         | 29                                             |               | ○     |
| 9.4                                               | 3                                                  |                             |                                   | 1165PA03-0940 | 9.4                                     | 84                            | 40                         | 29                                             |               | ○     |
| 9.5                                               | 3                                                  |                             |                                   | 1165PA03-0950 | 9.5                                     | 84                            | 40                         | 29                                             | ●             |       |
| 9.6                                               | 3                                                  |                             |                                   | 1165PA03-0960 | 9.6                                     | 89                            | 43                         | 31                                             |               | ○     |
| 9.7                                               | 3                                                  |                             |                                   | 1165PA03-0970 | 9.7                                     | 89                            | 43                         | 31                                             |               | ○     |
| 9.8                                               | 3                                                  |                             |                                   | 1165PA03-0980 | 9.8                                     | 89                            | 43                         | 31                                             | ●             |       |

## Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Grade<br>Sorte | Workpiece material · Werkstückstoff |                                                                     |                                   |        |        |                                           |                                |                                                      |                              |                               |                                            |
|----------------|-------------------------------------|---------------------------------------------------------------------|-----------------------------------|--------|--------|-------------------------------------------|--------------------------------|------------------------------------------------------|------------------------------|-------------------------------|--------------------------------------------|
|                | Mild steel<br>Baustahl<br>HB≤180    | Carbon steel,<br>Alloy steel<br>Kohlenstoff-,<br>Legierter<br>Stahl | Hardened steel · gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | gray Cast<br>iron<br>Gusseisen | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Wärmfeste<br>Leg. |
|                |                                     |                                                                     | ~40HRC                            | ~50HRC | ~60HRC |                                           |                                |                                                      |                              |                               |                                            |
| KDG303         |                                     |                                                                     |                                   |        |        | ✓                                         | ✗                              | ✓                                                    | ✗                            |                               | ✓                                          |
| YK30F          |                                     |                                                                     |                                   |        |        | ✓                                         | ✓                              | ✓                                                    | ✗                            |                               | ✓                                          |

Code key C 8  
ISO Kennzeichen

Cutting data 96-109  
Schnittdaten

Technical Information C110-116  
Technische Information

Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge

# Drilling · Bohren

Solid carbide drills · Vollhartmetallbohrer

## PA series · PA Serie

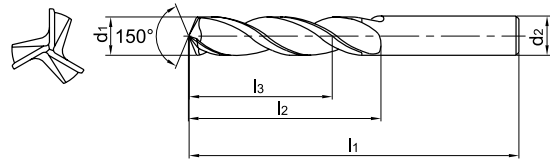
for AL alloy · für Alu-Legierungen



External Coolant  
Externe Kühlung



Straight shank  
Zylinderschaft



- For drilling solid workpiece composed of Al alloy etc.
- Three-lips structure can achieve high feed rate and prominent centering capability.
- High machining reliability, suitable for poor conditions such as interrupted cutting.
- Bohren von stabilen Werkstücken aus Alu - Legierungen.
- 3 Lippen Bohrerform ist besonders geeignet für hohe Vorschübe.
- Hohe Bearbeitungssicherheit auch bei ungünstigen Bedingungen (z.B. unterbrochenem Schnitt)

| Drill diameter<br>Bohrer Ø<br>d1(h7) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel | Shank<br>Schaft                   | Type<br>Typ   | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                | Grade · Sorte |       |
|--------------------------------------|---------------------------------------|----------------------------|-----------------------------------|---------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|---------------|-------|
|                                      |                                       |                            |                                   |               | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | KDG303        | YK30F |
|                                      |                                       |                            |                                   |               | d2(h7)                                  | l1                            | l2                         | l3                                             |               |       |
| 9.9                                  | 3                                     | External · Extern          | Straight shank<br>Zylinder-schaft | 1165PA03-0990 | 9.9                                     | 89                            | 43                         | 31                                             |               | ●     |
| 10.0                                 | 3                                     |                            |                                   | 1165PA03-1000 | 10.0                                    | 89                            | 43                         | 31                                             | ●             | ●     |
| 10.1                                 | 3                                     |                            |                                   | 1165PA03-1010 | 10.1                                    | 89                            | 43                         | 31                                             |               | ○     |
| 10.2                                 | 3                                     |                            |                                   | 1165PA03-1020 | 10.2                                    | 89                            | 43                         | 31                                             | ●             |       |
| 10.3                                 | 3                                     |                            |                                   | 1165PA03-1030 | 10.3                                    | 89                            | 43                         | 31                                             | ●             |       |
| 10.5                                 | 3                                     |                            |                                   | 1165PA03-1050 | 10.5                                    | 89                            | 43                         | 31                                             | ●             |       |
| 11.0                                 | 3                                     |                            |                                   | 1165PA03-1100 | 11.0                                    | 95                            | 47                         | 33                                             | ○             | ●     |
| 11.2                                 | 3                                     |                            |                                   | 1165PA03-1120 | 11.2                                    | 95                            | 47                         | 33                                             |               | ○     |
| 11.5                                 | 3                                     |                            |                                   | 1165PA03-1150 | 11.5                                    | 95                            | 47                         | 33                                             | ○             |       |
| 11.8                                 | 3                                     |                            |                                   | 1165PA03-1180 | 11.8                                    | 95                            | 47                         | 33                                             | ○             | ○     |
| 12.0                                 | 3                                     |                            |                                   | 1165PA03-1200 | 12.0                                    | 102                           | 51                         | 35                                             | ●             | ●     |
| 12.1                                 | 3                                     |                            |                                   | 1165PA03-1210 | 12.1                                    | 102                           | 51                         | 35                                             |               | ○     |
| 12.5                                 | 3                                     |                            |                                   | 1165PA03-1250 | 12.5                                    | 102                           | 51                         | 35                                             | ●             | ○     |
| 13.0                                 | 3                                     |                            |                                   | 1165PA03-1300 | 13.0                                    | 102                           | 51                         | 35                                             |               | ●     |
| 13.5                                 | 3                                     |                            |                                   | 1165PA03-1350 | 13.5                                    | 107                           | 54                         | 37                                             | ○             |       |
| 14.0                                 | 3                                     |                            |                                   | 1165PA03-1400 | 14.0                                    | 107                           | 54                         | 37                                             | ●             |       |
| 14.5                                 | 3                                     |                            |                                   | 1165PA03-1450 | 14.5                                    | 111                           | 56                         | 38                                             | ●             |       |
| 15.0                                 | 3                                     |                            |                                   | 1165PA03-1500 | 15.0                                    | 111                           | 56                         | 38                                             | ●             |       |
| 15.5                                 | 3                                     |                            |                                   | 1165PA03-1550 | 15.5                                    | 115                           | 58                         | 38                                             |               | ○     |
| 16.0                                 | 3                                     |                            |                                   | 1165PA03-1600 | 16.0                                    | 115                           | 58                         | 38                                             | ●             |       |
| 16.5                                 | 3                                     |                            |                                   | 1165PA03-1650 | 16.5                                    | 119                           | 60                         | 39                                             |               | ○     |
| 17.0                                 | 3                                     |                            |                                   | 1165PA03-1700 | 17.0                                    | 119                           | 60                         | 39                                             |               | ●     |
| 17.5                                 | 3                                     |                            |                                   | 1165PA03-1750 | 17.5                                    | 123                           | 62                         | 40                                             |               | ○     |
| 18.0                                 | 3                                     |                            |                                   | 1165PA03-1800 | 18.0                                    | 123                           | 62                         | 40                                             | ●             | ●     |
| 18.5                                 | 3                                     |                            |                                   | 1165PA03-1850 | 18.5                                    | 127                           | 64                         | 41                                             |               | ○     |
| 19.0                                 | 3                                     |                            |                                   | 1165PA03-1900 | 19.0                                    | 127                           | 64                         | 41                                             |               | ○     |
| 19.5                                 | 3                                     |                            |                                   | 1165PA03-1950 | 19.5                                    | 131                           | 66                         | 42                                             |               | ○     |
| 20.0                                 | 3                                     |                            |                                   | 1165PA03-2000 | 20.0                                    | 131                           | 66                         | 42                                             |               | ○     |

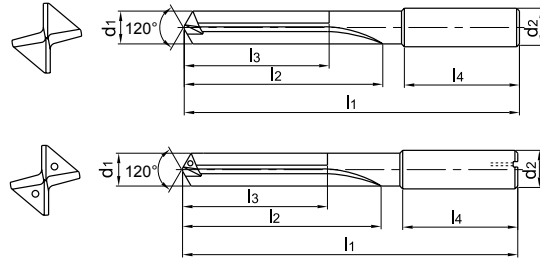
### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Grade<br>Sorte | Workpiece material · Werkstückstoff |                                                                     |                                   |        |        |                                           |                                |                                                      |                              |                               |                                            |
|----------------|-------------------------------------|---------------------------------------------------------------------|-----------------------------------|--------|--------|-------------------------------------------|--------------------------------|------------------------------------------------------|------------------------------|-------------------------------|--------------------------------------------|
|                | Mild steel<br>Baustahl<br>HB≤180    | Carbon steel,<br>Alloy steel<br>Kohlenstoff-,<br>Legierter<br>Stahl | Hardened steel · gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | gray Cast<br>iron<br>Gusseisen | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Warmfeste<br>Leg. |
|                |                                     |                                                                     | ~40HRC                            | ~50HRC | ~60HRC |                                           |                                |                                                      |                              |                               |                                            |
| KDG303         |                                     |                                                                     |                                   |        |        | ✓                                         | ✗                              | ✓                                                    | ✗                            |                               | ✓                                          |
| YK30F          |                                     |                                                                     |                                   |        |        | ✓                                         | ✓                              | ✓                                                    | ✗                            |                               | ✓                                          |

### PC series · PC Serie

for cast iron, AL alloy · für Grauguss & Alu-Legierungen



- For materials with short chips such as cast iron, silicon-aluminum alloy etc.
- Excellent self centering capability can machine high efficiently, and the hole precision can reach H7.
- High positional accuracy, high linearity and good surface finish can be obtained in the hole drilled.
- Bearbeitung von kurzspanenden Werkstoffen wie Grauguss, Silizium-Alu-Legierungen etc.
- Exzellente Zentrierungseigenschaften für hocheffiziente Bearbeitung, Bohrungsqualität bis H7.
- Hohe Genauigkeit, hohe Zentrität und gute Oberflächenqualität werden auf der gesamten Bohrungslänge erzielt.

| Drill diameter<br>Bohrer Ø<br>d1(m7) | Drilling depth<br>Bohrtiefe<br>(L/d1) | Cooling mode<br>Kühlmittel | Shank<br>Schaft                  | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|--------------------------------------|---------------------------------------|----------------------------|----------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                      |                                       |                            |                                  |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                      |                                       |                            |                                  |                | d2(h6)                                  | l1                            | l2                         | l3                                             | l4                          |                |
| 4.0                                  | 5                                     | External · Extern          | Straight shank<br>Zylinderschaft | 1576PC05-0400  | 6.0                                     | 74                            | 36                         | 29                                             | 36                          | ●              |
|                                      |                                       | Internal · Intern          |                                  | 1576PC05C-0400 | 6.0                                     | 74                            | 36                         | 29                                             | 36                          | ●              |
| 4.2                                  | 5                                     | External · Extern          |                                  | 1576PC05-0420  | 6.0                                     | 74                            | 36                         | 29                                             | 36                          | ○              |
|                                      |                                       | Internal · Intern          |                                  | 1576PC05C-0420 | 6.0                                     | 74                            | 36                         | 29                                             | 36                          | ●              |
| 5.0                                  | 5                                     | External · Extern          |                                  | 1576PC05-0500  | 6.0                                     | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                      |                                       | Internal · Intern          |                                  | 1576PC05C-0500 | 6.0                                     | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                      | 15                                    | Internal · Intern          |                                  | 1579PC15C-0500 | 6.0                                     | 145                           | 105                        | 96                                             | 36                          | ○              |
| 6.0                                  | 5                                     | External · Extern          |                                  | 1576PC05-0600  | 6.0                                     | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                      |                                       | Internal · Intern          |                                  | 1576PC05C-0600 | 6.0                                     | 82                            | 44                         | 35                                             | 36                          | ●              |
|                                      | 15                                    | Internal · Intern          |                                  | 1579PC15C-0600 | 6.0                                     | 145                           | 105                        | 96                                             | 36                          | ○              |
| 6.75                                 | 5                                     | External · Extern          |                                  | 1576PC05-0675  | 8.0                                     | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      |                                       | Internal · Intern          |                                  | 1576PC05C-0675 | 8.0                                     | 91                            | 53                         | 43                                             | 36                          | ●              |
| 7.0                                  | 5                                     | External · Extern          |                                  | 1576PC05-0700  | 8.0                                     | 91                            | 53                         | 43                                             | 36                          | ○              |
|                                      |                                       | Internal · Intern          |                                  | 1576PC05C-0700 | 8.0                                     | 91                            | 53                         | 43                                             | 36                          | ●              |
| 8.0                                  | 5                                     | External · Extern          |                                  | 1576PC05-0800  | 8.0                                     | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      |                                       | Internal · Intern          |                                  | 1576PC05C-0800 | 8.0                                     | 91                            | 53                         | 43                                             | 36                          | ●              |
|                                      | 15                                    | Internal · Intern          |                                  | 1579PC15C-0800 | 8.0                                     | 180                           | 137                        | 127                                            | 36                          | ○              |
| 8.5                                  | 5                                     | External · Extern          |                                  | 1576PC05-0850  | 10.0                                    | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                      |                                       | Internal · Intern          |                                  | 1576PC05C-0850 | 10.0                                    | 103                           | 61                         | 49                                             | 40                          | ●              |
| 9.0                                  | 5                                     | External · Extern          |                                  | 1576PC05-0900  | 10.0                                    | 103                           | 61                         | 49                                             | 40                          | ○              |
|                                      |                                       | Internal · Intern          |                                  | 1576PC05C-0900 | 10.0                                    | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                      | 15                                    | Internal · Intern          |                                  | 1579PC15C-0900 | 10.0                                    | 217                           | 170                        | 158                                            | 40                          | ○              |

### Material Overview · Material Übersicht

- ✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Grade<br>Sorte | Workpiece material · Werkstückstoff |                                                                   |                                   |        |        |                                           |                        |                                                      |                              |                               |                                             |
|----------------|-------------------------------------|-------------------------------------------------------------------|-----------------------------------|--------|--------|-------------------------------------------|------------------------|------------------------------------------------------|------------------------------|-------------------------------|---------------------------------------------|
|                | Mild steel<br>Baustahl<br>HB≤180    | Carbon steel<br>Alloy Steel<br>Kohlenstoff-<br>Legierter<br>Stahl | Hardened steel · Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron<br>Gusseisen | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Wärmefeste<br>Leg. |
|                |                                     |                                                                   | ~40HRC                            | ~50HRC | ~60HRC |                                           |                        |                                                      |                              |                               |                                             |
| YK20F          |                                     |                                                                   |                                   |        |        |                                           | ✓                      | ✓                                                    | ✓                            |                               |                                             |

Code key C 8  
ISO Kennzeichen

Cutting data 96-109  
Schnittdaten

Technical Information C110-116  
Technische Information

Non-standard tailor made C 117-121  
Bestellformular für Sonderwerkzeuge

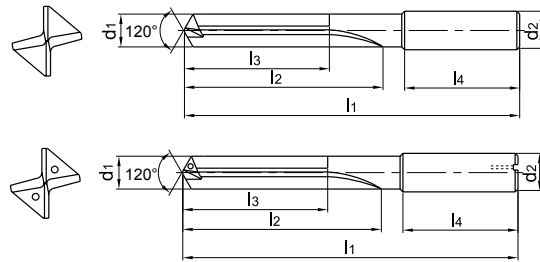


# Drilling · Bohren

Solid carbide drills · Vollhartmetallbohrer

## PC series · PC Serie

for cast iron, AL alloy · für Grauguss & Alu-Legierungen

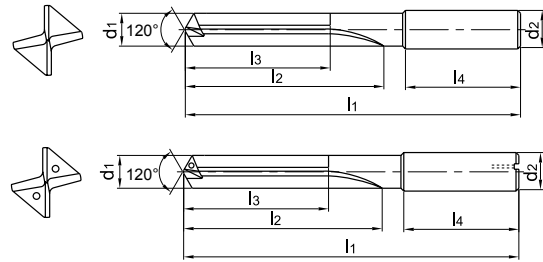


- For materials with short chips such as cast iron, silicon-aluminum alloy etc.
- Excellent self centering capability can machine high efficiently, and the hole precision can reach H7.
- High positional accuracy, high linearity and good surface finish can be obtained in the hole drilled.
- Bearbeitung von kurzspanenden Werkstoffen wie Grauguss, Silizium-Alu-Legierungen etc.
- Exzellente Zentrierungseigenschaften für hocheffiziente Bearbeitung, Bohrungsqualität bis H7.
- Hohe Genauigkeit, hohe Zentrität und gute Oberflächenqualität werden auf der gesamten Bohrungslänge erzielt.

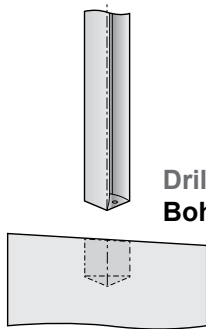
| Drill diameter<br>Bohrer Ø<br>d <sub>1</sub> (m7) | Drilling depth<br>Bohrtiefe<br>(L/d <sub>1</sub> ) | Cooling mode<br>Kühlmittel | Shank<br>Schaft                   | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            |                                                |                             | Grade<br>Sorte |
|---------------------------------------------------|----------------------------------------------------|----------------------------|-----------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|------------------------------------------------|-----------------------------|----------------|
|                                                   |                                                    |                            |                                   |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | effective drill. length<br>Effektive Nutzlänge | Shank length<br>Schaftlänge |                |
|                                                   |                                                    |                            |                                   |                | d <sub>2</sub> (h <sub>6</sub> )        | l <sub>1</sub>                | l <sub>2</sub>             | l <sub>3</sub>                                 | l <sub>4</sub>              |                |
| 10.0                                              | 5                                                  | External · Extern          | Straight shank<br>Zylinder-schaft | 1576PC05-1000  | 10.0                                    | 103                           | 61                         | 49                                             | 40                          | ●              |
|                                                   |                                                    | Internal · Intern          |                                   | 1576PC05C-1000 | 10.0                                    | 103                           | 61                         | 49                                             | 40                          | ●              |
| 10.25                                             | 5                                                  | Internal · Intern          |                                   | 1579PC15C-1000 | 10.0                                    | 217                           | 170                        | 158                                            | 40                          | ○              |
|                                                   |                                                    | External · Extern          |                                   | 1576PC05-1025  | 12.0                                    | 118                           | 71                         | 56                                             | 45                          | ○              |
| 11.0                                              | 5                                                  | Internal · Intern          |                                   | 1576PC05C-1025 | 12.0                                    | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   |                                                    | External · Extern          |                                   | 1576PC05-1100  | 12.0                                    | 118                           | 71                         | 56                                             | 45                          | ○              |
| 11.0                                              | 5                                                  | Internal · Intern          |                                   | 1576PC05C-1100 | 12.0                                    | 118                           | 71                         | 56                                             | 45                          | ●              |
|                                                   |                                                    | Internal · Intern          |                                   | 1579PC15C-1100 | 12.0                                    | 258                           | 205                        | 190                                            | 45                          | ○              |
| 12.0                                              | 5                                                  | External · Extern          |                                   | 1576PC05-1200  | 12.0                                    | 118                           | 71                         | 56                                             | 45                          | ○              |
|                                                   |                                                    | Internal · Intern          |                                   | 1576PC05C-1200 | 12.0                                    | 118                           | 71                         | 56                                             | 45                          | ●              |
| 12.0                                              | 5                                                  | Internal · Intern          |                                   | 1579PC15C-1200 | 12.0                                    | 258                           | 205                        | 190                                            | 45                          | ○              |
| 13.0                                              | 5                                                  | External · Extern          |                                   | 1576PC05-1300  | 14.0                                    | 124                           | 77                         | 60                                             | 45                          | ○              |
|                                                   |                                                    | Internal · Intern          |                                   | 1576PC05C-1300 | 14.0                                    | 124                           | 77                         | 60                                             | 45                          | ●              |
| 14.0                                              | 5                                                  | External · Extern          |                                   | 1576PC05-1400  | 14.0                                    | 124                           | 77                         | 60                                             | 45                          | ○              |
|                                                   |                                                    | Internal · Intern          |                                   | 1576PC05C-1400 | 14.0                                    | 124                           | 77                         | 60                                             | 45                          | ●              |
| 14.0                                              | 5                                                  | Internal · Intern          |                                   | 1579PC15C-1400 | 14.0                                    | 290                           | 236                        | 219                                            | 45                          | ○              |
| 15.0                                              | 5                                                  | External · Extern          |                                   | 1576PC05-1500  | 16.0                                    | 133                           | 83                         | 63                                             | 48                          | ○              |
|                                                   |                                                    | Internal · Intern          |                                   | 1576PC05C-1500 | 16.0                                    | 133                           | 83                         | 63                                             | 48                          | ○              |
| 15.5                                              | 5                                                  | External · Extern          |                                   | 1576PC05-1550  | 16.0                                    | 133                           | 83                         | 63                                             | 48                          | ○              |
|                                                   |                                                    | Internal · Intern          |                                   | 1576PC05C-1550 | 16.0                                    | 133                           | 83                         | 63                                             | 48                          | ○              |
| 16.0                                              | 5                                                  | External · Extern          |                                   | 1576PC05-1600  | 16.0                                    | 133                           | 83                         | 63                                             | 48                          | ●              |
|                                                   |                                                    | Internal · Intern          |                                   | 1576PC05C-1600 | 16.0                                    | 133                           | 83                         | 63                                             | 48                          | ○              |
| 17.0                                              | 5                                                  | External · Extern          |                                   | 1576PC05-1700  | 18.0                                    | 143                           | 93                         | 71                                             | 48                          | ○              |
|                                                   |                                                    | Internal · Intern          |                                   | 1576PC05C-1700 | 18.0                                    | 143                           | 93                         | 71                                             | 48                          | ○              |
| 17.5                                              | 5                                                  | External · Extern          |                                   | 1576PC05-1750  | 18.0                                    | 143                           | 93                         | 71                                             | 48                          | ○              |
|                                                   |                                                    | Internal · Intern          |                                   | 1576PC05C-1750 | 18.0                                    | 143                           | 93                         | 71                                             | 48                          | ○              |
| 18.0                                              | 5                                                  | External · Extern          |                                   | 1576PC05-1800  | 18.0                                    | 143                           | 93                         | 71                                             | 48                          | ○              |
|                                                   |                                                    | Internal · Intern          |                                   | 1576PC05C-1800 | 18.0                                    | 143                           | 93                         | 71                                             | 48                          | ●              |
| 19.5                                              | 5                                                  | External · Extern          |                                   | 1576PC05-1950  | 20.0                                    | 153                           | 101                        | 77                                             | 50                          | ○              |
|                                                   |                                                    | Internal · Intern          |                                   | 1576PC05C-1950 | 20.0                                    | 153                           | 101                        | 77                                             | 50                          | ○              |
| 20.0                                              | 5                                                  | External · Extern          |                                   | 1576PC05-2000  | 20.0                                    | 153                           | 101                        | 77                                             | 50                          | ○              |
|                                                   |                                                    | Internal · Intern          |                                   | 1576PC05C-2000 | 20.0                                    | 153                           | 101                        | 77                                             | 50                          | ●              |

### PC series · PC Serie

for cast iron & AL alloy · für Grauguss & Alu-Legierungen



- For materials with short chips such as cast iron, silicon-aluminum alloy etc.
- Excellent self centering capability can machine high efficiently, and the hole precision can reach H7.
- High positional accuracy, high linearity and good surface finish can be obtained in the hole drilled.
- Bearbeitung von kurzspanenden Werkstoffen wie Grauguss, Silizium - Alu - Legierungen etc.
- Exzellente Zentrierungseigenschaften für hocheffiziente Bearbeitung, Bohrungsqualität bis H7.
- Hohe Genauigkeit, hohe Zentrität und gute Oberflächenqualität werden auf der gesamten Bohrungslänge erzielt.



**Drill inclined face**  
**Bohren in Schrägen**

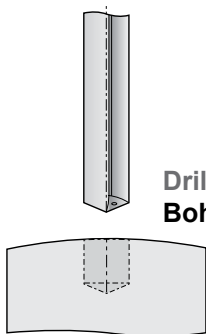
Please reduce the feed rate correspondingly to the basis of recommended parameters when drilling inclined or curved face.

**Bitte beim Bohren in Schrägen oder balligen Flächen den Vorschub entsprechend reduzieren.**

**Feed rate**  
**Vorschub**

| Inclined angle $\alpha$<br>Neigungswinkel | Max. feed rate<br>Max. Vorschub |
|-------------------------------------------|---------------------------------|
| 1°                                        | 80%                             |
| 2°                                        | 50%                             |
| 3°                                        | 30%                             |

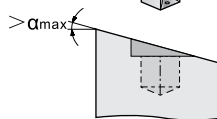
**Feed rate 100%**  
**Vorschub**



**Drill curved face**  
**Bohren in balligen Flächen**

Pretreatment should be carried out when the face possess a large inclined angle, drill hole at the flat face which milled firstly.

**Beim Bohren in sehr großen schrägen Flächen ist eine Vorbearbeitung zu empfehlen (Anfasen).**



### Material Overview · Material Übersicht

- ✓ = Very suitable · Sehr empfohlen
- ✓ = Suitable · Empfohlen

| Grade<br>Sorte | Workpiece material · Werkstückstoff |                                                                    |                                   |        |        |                                           |                        |                                                 |                              |                               |                                            |
|----------------|-------------------------------------|--------------------------------------------------------------------|-----------------------------------|--------|--------|-------------------------------------------|------------------------|-------------------------------------------------|------------------------------|-------------------------------|--------------------------------------------|
|                | Mild steel<br>Baustahl<br>HB≤180    | Carbon steel<br>Alloy Steel<br>Kohlenstoff-,<br>Legierter<br>Stahl | Hardened steel · Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron<br>Gusseisen | Nodular<br>cast iron<br>GGG<br>Kugelgraphitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Warmfeste<br>Leg. |
|                |                                     |                                                                    | ~40HRC                            | ~50HRC | ~60HRC |                                           |                        |                                                 |                              |                               |                                            |
| YK20F          |                                     |                                                                    |                                   |        |        |                                           | ✓                      | ✓                                               | ✓                            |                               |                                            |

Code key **C 8**  
ISO Kennzeichen

Cutting data **96-109**  
Schnittdaten

Technical Information **C110-116**  
Technische Information

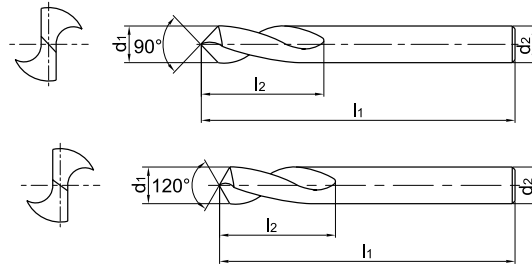
Non-standard tailor made **C 117-121**  
Bestellformular für Sonderwerkzeuge

# Drilling · Bohren

Solid carbide drills · Vollhartmetallbohrer

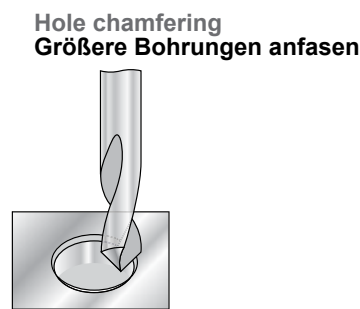
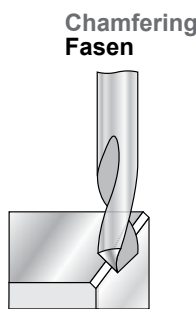
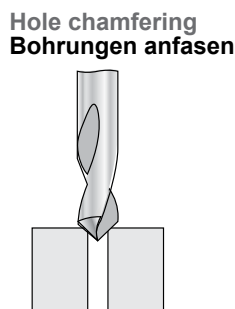
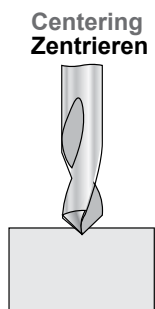
## SC series · SC Serie

for steel, stainless steel, cast iron and non-ferrous material  
für Stahl, rostfreier Stahl, Gusswerkstoffe und NE-Metalle



- Suitable for drilling center hole and chamfer.
- Comparing with common centering drills, it possesses more stable centering capability. Even at the slant face, it is also easy to carry out center drilling.
- Zum Zentrierbohren und Fasen.
- Die Bohrer sind in ihrer Stabilität höher im Vergleich zu normalen Zentrierbohrern.

| Drill diameter<br>Bohrer Ø<br>d1(h6) | Point angle<br>Spitzen-<br>winkel | Cooling mode<br>Kühlmittel | Shank<br>Schaft                          | Type<br>Typ    | Basic dimension(mm) · Basis Abmessungen |                               |                            | Grade<br>Sorte |        |
|--------------------------------------|-----------------------------------|----------------------------|------------------------------------------|----------------|-----------------------------------------|-------------------------------|----------------------------|----------------|--------|
|                                      |                                   |                            |                                          |                | Shank diameter Ø<br>Schaftdurchmesser   | Overall length<br>Gesamtlänge | Flute length<br>Nutenlänge | YK30F          | KDG303 |
|                                      |                                   |                            |                                          |                | d2(h6)                                  | l1                            | l2                         |                |        |
| 5                                    | 90°                               | External<br>Extern         | Straight<br>shank<br>Zylinder-<br>schaft | 1143SC90-0500  | 5.00                                    | 62                            | 10                         | ○              | ●      |
|                                      | 120°                              |                            |                                          | 1143SC120-0500 | 5.00                                    | 62                            | 10                         | ○              | ●      |
| 6                                    | 90°                               |                            |                                          | 1143SC90-0600  | 6.00                                    | 66                            | 15                         | ○              | ●      |
|                                      | 120°                              |                            |                                          | 1143SC120-0600 | 6.00                                    | 66                            | 15                         | ○              | ●      |
| 8                                    | 90°                               |                            |                                          | 1143SC90-0800  | 8.00                                    | 79                            | 17                         | ○              | ●      |
|                                      | 120°                              |                            |                                          | 1143SC120-0800 | 8.00                                    | 79                            | 17                         | ○              | ●      |
| 10                                   | 90°                               |                            |                                          | 1143SC90-1000  | 10.00                                   | 89                            | 20                         | ○              | ●      |
|                                      | 120°                              |                            |                                          | 1143SC120-1000 | 10.00                                   | 89                            | 20                         | ○              | ●      |
| 12                                   | 90°                               |                            |                                          | 1143SC90-1200  | 12.00                                   | 102                           | 25                         | ○              | ●      |
|                                      | 120°                              |                            |                                          | 1143SC120-1200 | 12.00                                   | 102                           | 25                         | ○              | ●      |
| 14                                   | 90°                               |                            |                                          | 1143SC90-1400  | 14.00                                   | 107                           | 30                         | ○              | ●      |
|                                      | 120°                              |                            |                                          | 1143SC120-1400 | 14.00                                   | 107                           | 30                         | ○              | ●      |
| 16                                   | 90°                               |                            |                                          | 1143SC90-1600  | 16.00                                   | 115                           | 35                         | ○              | ●      |
|                                      | 120°                              |                            |                                          | 1143SC120-1600 | 16.00                                   | 115                           | 35                         | ○              | ●      |
| 20                                   | 90°                               |                            |                                          | 1143SC90-2000  | 20.00                                   | 131                           | 40                         | ○              | ●      |
|                                      | 120°                              |                            |                                          | 1143SC120-2000 | 20.00                                   | 131                           | 40                         | ○              | ●      |



## Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Grade<br>Sorte | Workpiece material · Werkstückstoff |                                                                   |                                   |        |        |                                           |                        |                                                      |                              |                               |                                            |
|----------------|-------------------------------------|-------------------------------------------------------------------|-----------------------------------|--------|--------|-------------------------------------------|------------------------|------------------------------------------------------|------------------------------|-------------------------------|--------------------------------------------|
|                | Mild steel<br>Baustahl<br>HB≤180    | Carbon steel<br>Alloy Steel<br>Kohlenstoff-<br>Legierter<br>Stahl | Hardened steel · Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron<br>Gusseisen | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Warmfeste<br>Leg. |
|                |                                     |                                                                   | ~40HRC                            | ~50HRC | ~60HRC |                                           |                        |                                                      |                              |                               |                                            |
| YK20F          | ✓                                   | ✓                                                                 |                                   |        |        |                                           | ✓                      | ✓                                                    | ✓                            | ✓                             |                                            |
| KDG303         | ✓                                   | ✓                                                                 | ✓                                 | ✓      |        | ✓                                         | ✓                      | ✓                                                    | ✓                            | ✓                             | ✓                                          |

## NOTES / NOTIZEN:

# Drilling · Bohren

Recommended cutting data · Schnittdatenempfehlung

SU series twist drills · SU Spiralbohrer Serie (External coolant / Externe Kühlung)

3D

5D

| Workpiece material<br>Werkstückstoff | Mild steel<br>Baustahl<br>HB≤180 |             | Carbon steel,<br>alloy steel<br>Kohlenstoffstahl<br>Leg. Stahl<br>~30HRC |             | Pre-hardened<br>steel<br>Vergüteter Stahl<br>~40HRC |             | Stainless steel<br>Rostfreier Stahl |             | Cast iron<br>Gusseisen    |             | Nodular<br>cast iron<br>GGG<br>Kugelgraphitguss |             | Aluminum alloy<br>Alulegierungen |             | Heat resistant<br>alloy<br>Warmfeste<br>Legierungen |             |
|--------------------------------------|----------------------------------|-------------|--------------------------------------------------------------------------|-------------|-----------------------------------------------------|-------------|-------------------------------------|-------------|---------------------------|-------------|-------------------------------------------------|-------------|----------------------------------|-------------|-----------------------------------------------------|-------------|
| Vc                                   | 60~120m/min                      |             | 60~120m/min                                                              |             | 40~70m/min                                          |             | 25~40m/min                          |             | 60~120m/min               |             | 50~100m/min                                     |             | 60~140m/min                      |             | 15~25m/min                                          |             |
| Ø<br>(mm)                            | n<br>(min <sup>-1</sup> )        | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                                                | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                           | f<br>(mm/r) | n<br>(min <sup>-1</sup> )           | f<br>(mm/r) | n<br>(min <sup>-1</sup> ) | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                       | f<br>(mm/r) | n<br>(min <sup>-1</sup> )        | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                           | f<br>(mm/r) |
| 2                                    | 14000                            | 0.06~0.08   | 14000                                                                    | 0.06~0.08   | 9500                                                | 0.06~0.08   | 5500                                | 0.02~0.05   | 14000                     | 0.06~0.08   | 11000                                           | 0.06~0.08   | 16000                            | 0.06~0.08   | 3200                                                | 0.02~0.04   |
| 3                                    | 9500                             | 0.09~0.12   | 9500                                                                     | 0.09~0.12   | 6300                                                | 0.09~0.12   | 3700                                | 0.03~0.07   | 9500                      | 0.09~0.12   | 7400                                            | 0.09~0.12   | 10600                            | 0.09~0.12   | 2100                                                | 0.03~0.06   |
| 4                                    | 7000                             | 0.10~0.15   | 7000                                                                     | 0.10~0.15   | 4700                                                | 0.10~0.15   | 2700                                | 0.04~0.08   | 7000                      | 0.10~0.15   | 5600                                            | 0.10~0.15   | 8000                             | 0.10~0.15   | 1600                                                | 0.04~0.07   |
| 5                                    | 5700                             | 0.12~0.18   | 5700                                                                     | 0.12~0.18   | 3800                                                | 0.12~0.18   | 2200                                | 0.05~0.10   | 5700                      | 0.12~0.18   | 4500                                            | 0.12~0.18   | 6400                             | 0.12~0.18   | 1250                                                | 0.05~0.09   |
| 6                                    | 4700                             | 0.14~0.20   | 4700                                                                     | 0.14~0.20   | 3100                                                | 0.14~0.20   | 1850                                | 0.06~0.12   | 4700                      | 0.14~0.20   | 3700                                            | 0.14~0.20   | 5300                             | 0.14~0.20   | 1050                                                | 0.06~0.11   |
| 8                                    | 3600                             | 0.16~0.24   | 3600                                                                     | 0.16~0.24   | 2400                                                | 0.16~0.24   | 1400                                | 0.08~0.16   | 3600                      | 0.16~0.24   | 2800                                            | 0.16~0.24   | 4000                             | 0.16~0.24   | 800                                                 | 0.08~0.14   |
| 10                                   | 2800                             | 0.18~0.27   | 2800                                                                     | 0.18~0.27   | 1900                                                | 0.18~0.27   | 1100                                | 0.10~0.18   | 2800                      | 0.18~0.27   | 2200                                            | 0.18~0.27   | 3200                             | 0.18~0.27   | 600                                                 | 0.10~0.16   |
| 12                                   | 2400                             | 0.20~0.30   | 2400                                                                     | 0.20~0.30   | 1600                                                | 0.20~0.30   | 930                                 | 0.12~0.20   | 2400                      | 0.20~0.30   | 1900                                            | 0.20~0.30   | 2700                             | 0.20~0.30   | 500                                                 | 0.12~0.18   |
| 14                                   | 2100                             | 0.22~0.35   | 2100                                                                     | 0.22~0.35   | 1400                                                | 0.22~0.35   | 800                                 | 0.13~0.22   | 2100                      | 0.22~0.35   | 1600                                            | 0.22~0.35   | 2300                             | 0.22~0.35   | 450                                                 | 0.13~0.20   |
| 16                                   | 1800                             | 0.25~0.36   | 1800                                                                     | 0.25~0.36   | 1200                                                | 0.25~0.36   | 700                                 | 0.14~0.25   | 1800                      | 0.25~0.36   | 1400                                            | 0.25~0.36   | 2000                             | 0.25~0.36   | 400                                                 | 0.14~0.23   |
| 18                                   | 1600                             | 0.28~0.38   | 1600                                                                     | 0.28~0.38   | 1100                                                | 0.28~0.38   | 620                                 | 0.15~0.28   | 1600                      | 0.28~0.38   | 1200                                            | 0.28~0.38   | 1800                             | 0.28~0.38   | 350                                                 | 0.15~0.25   |
| 20                                   | 1400                             | 0.30~0.40   | 1400                                                                     | 0.30~0.40   | 950                                                 | 0.30~0.40   | 550                                 | 0.16~0.30   | 1400                      | 0.30~0.40   | 1100                                            | 0.30~0.40   | 1600                             | 0.30~0.40   | 320                                                 | 0.16~0.28   |

1. When the tool is used for the first time, please make a test cutting with 90% of cutting speed or 85% feed rate mentioned above. If the cutting conditions remain stable, gradually increase the cutting speed and feed rate.
2. The cutting conditions above are for drilling with emulsion.
3. Use a collet without any defect or dust. The radial run-out of drill must be under 0.02mm.
4. These conditions above are for cutting depth under 5D.

1. Beim ersten Einsatz 90% der empfohlenen Schnittgeschwindigkeit oder 85% des Vorschubes wählen. Bei stabiler Bearbeitung die Schnittdaten entsprechend erhöhen.
2. Die obigen Schnittdatenempfehlungen basieren auf dem Einsatz von Emulsion.
3. Keine defekte Werkzeugaufnahme wählen. Die Rundlaufgenauigkeit muss unter 0,02mm liegen.
4. Die obigen Schnittdaten sind für Bohrungstiefen unter 5xD ausgelegt.



### SU series twist drills · SU Spiralbohrer Serie (Internal coolant / Interne Kühlung)

**3D**
**5D**

| Workpiece material<br>Werkstückstoff | Mild steel<br>Baustahl<br>HB≤180 |             | Carbon steel,<br>alloy steel<br>Kohlenstoffstahl<br>Leg. Stahl<br>~30HRC |             | Pre-hardened<br>steel<br>Vergüteter Stahl<br>~40HRC |             | Stainless steel<br>Rostfreier Stahl |             | Cast iron<br>Gusseisen    |             | Nodular cast iron<br>GGG<br>Kugelgraphitguss |             | Aluminum alloy<br>Alulegierungen |             | Heat resistant alloy<br>Warmfeste Legierungen |             |
|--------------------------------------|----------------------------------|-------------|--------------------------------------------------------------------------|-------------|-----------------------------------------------------|-------------|-------------------------------------|-------------|---------------------------|-------------|----------------------------------------------|-------------|----------------------------------|-------------|-----------------------------------------------|-------------|
| Vc                                   | 80~150m/min                      |             | 80~150m/min                                                              |             | 50~80m/min                                          |             | 50~80m/min                          |             | 80~150m/min               |             | 60~120m/min                                  |             | 100~180m/min                     |             | 15~25m/min                                    |             |
| Ø<br>(mm)                            | n<br>(min <sup>-1</sup> )        | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                                                | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                           | f<br>(mm/r) | n<br>(min <sup>-1</sup> )           | f<br>(mm/r) | n<br>(min <sup>-1</sup> ) | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                    | f<br>(mm/r) | n<br>(min <sup>-1</sup> )        | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                     | f<br>(mm/r) |
| <b>3</b>                             | 12700                            | 0.09~0.12   | 12700                                                                    | 0.09~0.12   | 7400                                                | 0.09~0.12   | 6300                                | 0.03~0.07   | 12700                     | 0.09~0.12   | 9500                                         | 0.09~0.12   | 15000                            | 0.09~0.12   | 2100                                          | 0.03~0.06   |
| <b>4</b>                             | 9600                             | 0.10~0.15   | 9600                                                                     | 0.10~0.15   | 5600                                                | 0.10~0.15   | 4700                                | 0.04~0.08   | 9600                      | 0.10~0.15   | 7000                                         | 0.10~0.15   | 11100                            | 0.10~0.15   | 1600                                          | 0.04~0.07   |
| <b>5</b>                             | 7600                             | 0.12~0.18   | 7600                                                                     | 0.12~0.18   | 4500                                                | 0.12~0.18   | 3800                                | 0.05~0.10   | 7600                      | 0.12~0.18   | 5700                                         | 0.12~0.18   | 9000                             | 0.12~0.18   | 1250                                          | 0.05~0.09   |
| <b>6</b>                             | 6400                             | 0.14~0.20   | 6400                                                                     | 0.14~0.20   | 3700                                                | 0.14~0.20   | 3200                                | 0.06~0.12   | 6400                      | 0.14~0.20   | 4700                                         | 0.14~0.20   | 7400                             | 0.14~0.20   | 1050                                          | 0.06~0.11   |
| <b>8</b>                             | 4800                             | 0.16~0.24   | 4800                                                                     | 0.16~0.24   | 2800                                                | 0.16~0.24   | 2400                                | 0.08~0.16   | 4800                      | 0.16~0.24   | 3600                                         | 0.16~0.24   | 5600                             | 0.16~0.24   | 800                                           | 0.08~0.14   |
| <b>10</b>                            | 3800                             | 0.18~0.27   | 3800                                                                     | 0.18~0.27   | 2200                                                | 0.18~0.27   | 1900                                | 0.10~0.18   | 3800                      | 0.18~0.27   | 2800                                         | 0.18~0.27   | 4500                             | 0.18~0.27   | 600                                           | 0.10~0.16   |
| <b>12</b>                            | 3200                             | 0.20~0.30   | 3200                                                                     | 0.20~0.30   | 1900                                                | 0.20~0.30   | 1600                                | 0.12~0.20   | 3200                      | 0.20~0.30   | 2400                                         | 0.20~0.30   | 3700                             | 0.20~0.30   | 500                                           | 0.12~0.18   |
| <b>14</b>                            | 2700                             | 0.22~0.35   | 2700                                                                     | 0.22~0.35   | 1600                                                | 0.22~0.35   | 1350                                | 0.13~0.22   | 2700                      | 0.22~0.35   | 2100                                         | 0.22~0.35   | 3200                             | 0.22~0.35   | 450                                           | 0.13~0.20   |
| <b>16</b>                            | 2400                             | 0.25~0.36   | 2400                                                                     | 0.25~0.36   | 1400                                                | 0.25~0.36   | 1200                                | 0.14~0.25   | 2400                      | 0.25~0.36   | 1800                                         | 0.25~0.36   | 2800                             | 0.25~0.36   | 400                                           | 0.14~0.23   |
| <b>18</b>                            | 2100                             | 0.28~0.38   | 2100                                                                     | 0.28~0.38   | 1200                                                | 0.28~0.38   | 1050                                | 0.15~0.28   | 2100                      | 0.28~0.38   | 1600                                         | 0.28~0.38   | 2500                             | 0.28~0.38   | 350                                           | 0.15~0.25   |
| <b>20</b>                            | 1900                             | 0.30~0.40   | 1900                                                                     | 0.30~0.40   | 1100                                                | 0.30~0.40   | 950                                 | 0.16~0.30   | 1900                      | 0.30~0.40   | 1400                                         | 0.30~0.40   | 2300                             | 0.30~0.40   | 320                                           | 0.16~0.28   |

1. When the tool is used for the first time, please make a test cutting with 90% of cutting speed or 85% feed rate mentioned above. If the cutting conditions remain stable, gradually increase the cutting speed and feed rate.
2. The cutting conditions above are for drilling with emulsion.
3. Use a collet without any defect or dust. The radial run-out of drill must be under 0.02mm.
4. These conditions above are for cutting depth under 5D.

1. Beim ersten Einsatz 90% der empfohlenen Schnittgeschwindigkeit oder 85% des Vorschubes wählen. Bei stabiler Bearbeitung die Schnittdaten entsprechend erhöhen.
2. Die obigen Schnittdatenempfehlungen basieren auf dem Einsatz von Emulsion.
3. Keine defekte Werkzeugaufnahme wählen. Die Rundlaufgenauigkeit muss unter 0,02mm liegen.
4. Die obigen Schnittdaten sind für Bohrungstiefen unter 5xD ausgelegt.

**C**

Solid carbide drills  
Vollhartmetallbohrer

# Drilling • Bohren

Recommended cutting data • Schnittdatenempfehlung

## SU series twist drills • SU Spiralbohrer Serie (Internal coolant / Interne Kühlung)

8D

| Workpiece material<br>Werkstückstoff | Mild steel<br>Baustahl<br>HB≤180 |             | Carbon steel,<br>alloy steel<br>Kohlenstoffstahl<br>Leg. Stahl<br>~30HRC |             | Pre-hardened<br>steel<br>Vergüteter Stahl<br>~40HRC |             | Stainless steel<br>Rostfreier Stahl |             | Cast iron<br>Gusseisen    |             | Nodular<br>cast iron<br>GGG<br>Kugelgraphitguss |             | Aluminum alloy<br>Alulegierungen |             | Heat resistant<br>alloy<br>Warmfeste<br>Legierungen |             |
|--------------------------------------|----------------------------------|-------------|--------------------------------------------------------------------------|-------------|-----------------------------------------------------|-------------|-------------------------------------|-------------|---------------------------|-------------|-------------------------------------------------|-------------|----------------------------------|-------------|-----------------------------------------------------|-------------|
| Vc                                   | 80~150m/min                      |             | 80~150m/min                                                              |             | 50~80m/min                                          |             | 40~60m/min                          |             | 80~150m/min               |             | 60~120m/min                                     |             | 100~180m/min                     |             | 15~25m/min                                          |             |
| Ø<br>(mm)                            | n<br>(min <sup>-1</sup> )        | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                                                | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                           | f<br>(mm/r) | n<br>(min <sup>-1</sup> )           | f<br>(mm/r) | n<br>(min <sup>-1</sup> ) | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                       | f<br>(mm/r) | n<br>(min <sup>-1</sup> )        | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                           | f<br>(mm/r) |
| 3                                    | 12700                            | 0.06~0.10   | 12700                                                                    | 0.06~0.10   | 7400                                                | 0.06~0.10   | 5300                                | 0.03~0.07   | 12700                     | 0.06~0.10   | 9500                                            | 0.06~0.10   | 15000                            | 0.09~0.12   | 2100                                                | 0.03~0.06   |
| 4                                    | 9600                             | 0.08~0.12   | 9600                                                                     | 0.08~0.12   | 5600                                                | 0.08~0.12   | 4000                                | 0.04~0.08   | 9600                      | 0.08~0.12   | 7000                                            | 0.08~0.12   | 11100                            | 0.10~0.15   | 1600                                                | 0.04~0.07   |
| 5                                    | 7600                             | 0.10~0.14   | 7600                                                                     | 0.10~0.14   | 4500                                                | 0.10~0.14   | 3200                                | 0.05~0.10   | 7600                      | 0.10~0.14   | 5700                                            | 0.10~0.14   | 9000                             | 0.10~0.14   | 1250                                                | 0.05~0.09   |
| 6                                    | 6400                             | 0.11~0.16   | 6400                                                                     | 0.11~0.16   | 3700                                                | 0.11~0.16   | 2700                                | 0.06~0.12   | 6400                      | 0.11~0.16   | 4700                                            | 0.11~0.16   | 7400                             | 0.11~0.16   | 1050                                                | 0.06~0.11   |
| 8                                    | 4800                             | 0.13~0.19   | 4800                                                                     | 0.13~0.19   | 2800                                                | 0.13~0.19   | 2000                                | 0.08~0.16   | 4800                      | 0.13~0.19   | 3600                                            | 0.13~0.19   | 5600                             | 0.13~0.19   | 800                                                 | 0.08~0.14   |
| 10                                   | 3800                             | 0.14~0.22   | 3800                                                                     | 0.14~0.22   | 2200                                                | 0.14~0.22   | 1600                                | 0.10~0.18   | 3800                      | 0.14~0.22   | 2800                                            | 0.14~0.22   | 4500                             | 0.14~0.22   | 600                                                 | 0.10~0.16   |
| 12                                   | 3200                             | 0.16~0.24   | 3200                                                                     | 0.16~0.24   | 1900                                                | 0.16~0.24   | 1300                                | 0.12~0.20   | 3200                      | 0.16~0.24   | 2400                                            | 0.16~0.24   | 3700                             | 0.16~0.24   | 500                                                 | 0.12~0.18   |
| 14                                   | 2700                             | 0.18~0.28   | 2700                                                                     | 0.18~0.28   | 1600                                                | 0.18~0.28   | 1100                                | 0.13~0.22   | 2700                      | 0.18~0.28   | 2100                                            | 0.18~0.28   | 3200                             | 0.18~0.28   | 450                                                 | 0.13~0.20   |
| 16                                   | 2400                             | 0.20~0.29   | 2400                                                                     | 0.20~0.29   | 1400                                                | 0.20~0.29   | 1000                                | 0.14~0.25   | 2400                      | 0.20~0.29   | 1800                                            | 0.20~0.29   | 2800                             | 0.20~0.29   | 400                                                 | 0.14~0.23   |
| 18                                   | 2100                             | 0.24~0.32   | 2100                                                                     | 0.24~0.32   | 1200                                                | 0.24~0.32   | 880                                 | 0.15~0.28   | 2100                      | 0.24~0.32   | 1600                                            | 0.24~0.32   | 2500                             | 0.24~0.32   | 350                                                 | 0.15~0.25   |

1. When the tool is used for the first time, please make a test cutting with 90% of cutting speed or 85% feed rate mentioned above. If the cutting conditions remain stable, gradually increase the cutting speed and feed rate.
2. The cutting conditions above are for drilling with emulsion.
3. Use a collet without any defect or dust. The radial run-out of drill must be under 0.02mm.
4. These conditions above are for cutting depth under 8D.

1. Beim ersten Einsatz 90% der empfohlenen Schnittgeschwindigkeit oder 85% des Vorschubes wählen. Bei stabiler Bearbeitung die Schnittdaten entsprechend erhöhen.
2. Die obigen Schnittdatenempfehlungen basieren auf dem Einsatz von Emulsion.
3. Keine defekte Werkzeugaufnahme wählen. Die Rundlaufgenauigkeit muss unter 0,02mm liegen.
4. Die obigen Schnittdaten sind für Bohrungstiefen unter 8xD ausgelegt.

### SU series step drills · SU Stufenbohrer Serie (External coolant / Externe Kühlung)

3D

| workpiece material<br>Werkstückstoff | Mild steel<br>Baustahl<br>HB≤180 |             | Carbon steel,<br>alloy steel<br>Kohlenstoffstahl<br>Leg. Stahl<br>~30HRC |             | Pre-hardened<br>steel<br>Vergüteter Stahl<br>~40HRC |             | Stainless steel<br>Rostfreier Stahl |             | Cast iron<br>Gusseisen    |             | Nodular<br>cast iron<br>GGG<br>Kugelgrahitguss |             | Aluminum alloy<br>Alulegierungen |             | Heat resistant<br>alloy<br>Warmfeste<br>Legierungen |             |
|--------------------------------------|----------------------------------|-------------|--------------------------------------------------------------------------|-------------|-----------------------------------------------------|-------------|-------------------------------------|-------------|---------------------------|-------------|------------------------------------------------|-------------|----------------------------------|-------------|-----------------------------------------------------|-------------|
| Vc                                   | 50~100m/min                      |             | 50~100m/min                                                              |             | 30~50m/min                                          |             | 25~40m/min                          |             | 50~100m/min               |             | 40~80m/min                                     |             | 60~120m/min                      |             | 15~25m/min                                          |             |
| Ø<br>(mm)                            | n<br>(min <sup>-1</sup> )        | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                                                | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                           | f<br>(mm/r) | n<br>(min <sup>-1</sup> )           | f<br>(mm/r) | n<br>(min <sup>-1</sup> ) | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                      | f<br>(mm/r) | n<br>(min <sup>-1</sup> )        | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                           | f<br>(mm/r) |
| 3.3                                  | 5800                             | 0.09~0.12   | 5800                                                                     | 0.09~0.12   | 3850                                                | 0.09~0.12   | 2900                                | 0.03~0.07   | 5800                      | 0.09~0.12   | 5000                                           | 0.09~0.12   | 10000                            | 0.09~0.12   | 1600                                                | 0.03~0.06   |
| 4.2                                  | 4550                             | 0.10~0.15   | 4550                                                                     | 0.10~0.15   | 3000                                                | 0.10~0.15   | 2300                                | 0.04~0.08   | 4550                      | 0.10~0.15   | 3800                                           | 0.10~0.15   | 7600                             | 0.10~0.15   | 1250                                                | 0.04~0.07   |
| 5                                    | 3800                             | 0.12~0.18   | 3800                                                                     | 0.12~0.18   | 2550                                                | 0.12~0.18   | 1900                                | 0.05~0.10   | 3800                      | 0.12~0.18   | 3200                                           | 0.12~0.18   | 6400                             | 0.12~0.18   | 1050                                                | 0.05~0.10   |
| 6.75                                 | 2850                             | 0.14~0.20   | 2850                                                                     | 0.14~0.20   | 1900                                                | 0.14~0.20   | 1400                                | 0.06~0.12   | 2850                      | 0.14~0.20   | 2400                                           | 0.14~0.20   | 4800                             | 0.14~0.20   | 800                                                 | 0.06~0.11   |
| 7                                    | 2750                             | 0.15~0.22   | 2750                                                                     | 0.15~0.22   | 1800                                                | 0.15~0.22   | 1350                                | 0.07~0.14   | 2750                      | 0.15~0.22   | 2300                                           | 0.15~0.22   | 4550                             | 0.15~0.22   | 730                                                 | 0.07~0.12   |
| 8.5                                  | 2250                             | 0.16~0.24   | 2250                                                                     | 0.16~0.24   | 1500                                                | 0.16~0.24   | 1100                                | 0.08~0.16   | 2250                      | 0.16~0.24   | 1800                                           | 0.16~0.24   | 3600                             | 0.16~0.24   | 600                                                 | 0.08~0.14   |
| 9                                    | 2100                             | 0.17~0.25   | 2100                                                                     | 0.17~0.25   | 1400                                                | 0.17~0.25   | 1050                                | 0.09~0.17   | 2100                      | 0.17~0.25   | 1750                                           | 0.17~0.25   | 3500                             | 0.17~0.25   | 560                                                 | 0.09~0.15   |
| 10.25                                | 1850                             | 0.18~0.27   | 1850                                                                     | 0.18~0.27   | 1250                                                | 0.18~0.27   | 930                                 | 0.10~0.18   | 1850                      | 0.18~0.27   | 1550                                           | 0.18~0.27   | 3100                             | 0.18~0.27   | 500                                                 | 0.10~0.16   |
| 10.5                                 | 1800                             | 0.19~0.28   | 1800                                                                     | 0.19~0.28   | 1200                                                | 0.19~0.28   | 900                                 | 0.11~0.19   | 1800                      | 0.19~0.28   | 1500                                           | 0.19~0.28   | 3000                             | 0.19~0.28   | 480                                                 | 0.11~0.17   |
| 12                                   | 1600                             | 0.20~0.30   | 1600                                                                     | 0.20~0.30   | 1050                                                | 0.20~0.30   | 800                                 | 0.12~0.20   | 1600                      | 0.20~0.30   | 1300                                           | 0.20~0.30   | 2600                             | 0.20~0.30   | 450                                                 | 0.12~0.18   |
| 12.5                                 | 1550                             | 0.20~0.30   | 1550                                                                     | 0.20~0.30   | 1000                                                | 0.20~0.30   | 760                                 | 0.12~0.20   | 1550                      | 0.20~0.30   | 1250                                           | 0.20~0.30   | 2550                             | 0.20~0.30   | 410                                                 | 0.12~0.18   |
| 14                                   | 1350                             | 0.22~0.35   | 1350                                                                     | 0.22~0.35   | 900                                                 | 0.22~0.35   | 700                                 | 0.14~0.24   | 1350                      | 0.22~0.35   | 1150                                           | 0.22~0.35   | 2300                             | 0.22~0.35   | 370                                                 | 0.13~0.20   |
| 14.5                                 | 1300                             | 0.22~0.35   | 1300                                                                     | 0.22~0.35   | 880                                                 | 0.22~0.35   | 650                                 | 0.14~0.24   | 1300                      | 0.22~0.35   | 1050                                           | 0.22~0.35   | 2200                             | 0.22~0.35   | 350                                                 | 0.13~0.20   |

1. When the tool is used for the first time, please make a test cutting with 90% of cutting speed or 85% feed rate mentioned above. If the cutting conditions remain stable, gradually increase the cutting speed and feed rate.
2. The cutting conditions above are for drilling with emulsion.
3. Use a collet without any defect or dust. The radial run-out of drill must be under 0.02mm.

1. Beim ersten Einsatz 90% der empfohlenen Schnittgeschwindigkeit oder 85% des Vorschubes wählen. Bei stabiler Bearbeitung die Schnittdaten entsprechend erhöhen.
2. Die obigen Schnittdatenempfehlungen basieren auf dem Einsatz von Emulsion.
3. Keine defekte Werkzeugaufnahme wählen. Die Rundlaufgenauigkeit muss unten 0,02mm liegen.

C

Solid carbide drills  
Vollhartmetallbohrer

# Drilling · Bohren

Recommended cutting data · Schnittdatenempfehlung

## SL series twist deep drills · SL Spiraltiefbohrer Serie (Internal coolant · Interne Kühlung)

10D 12D 15D

| Workpiece material<br>Werkstück-stoff | Mild steel<br>Baustahl<br>HB≤180 |               | Carbon steel,<br>alloy steel<br>Kohlenstoffstahl<br>Leg. Stahl<br>~30HRC |               | Pre-hardened<br>steel<br>Vergüteter Stahl<br>~40HRC |               | Stainless steel<br>Rostfreier Stahl |               | Cast iron<br>Gusseisen    |               | Nodular<br>cast iron<br>GGG<br>Kugelgraphitguss |               | Aluminum alloy<br>Alulegierungen |               | Heat resistant<br>alloy<br>Warmfeste<br>Legierungen |               |
|---------------------------------------|----------------------------------|---------------|--------------------------------------------------------------------------|---------------|-----------------------------------------------------|---------------|-------------------------------------|---------------|---------------------------|---------------|-------------------------------------------------|---------------|----------------------------------|---------------|-----------------------------------------------------|---------------|
| Vc                                    | 60~120m/min                      |               | 60~120m/min                                                              |               | 50~80 m/min                                         |               | 40~60 m/min                         |               | 80~150 m/min              |               | 60~120 m/min                                    |               | 100~180 m/min                    |               | 10~20 m/min                                         |               |
| Ø<br>(mm)                             | n<br>(min <sup>-1</sup> )        | f<br>(mm/r)   | n<br>(min <sup>-1</sup> )                                                | f<br>(mm/r)   | n<br>(min <sup>-1</sup> )                           | f<br>(mm/r)   | n<br>(min <sup>-1</sup> )           | f<br>(mm/r)   | n<br>(min <sup>-1</sup> ) | f<br>(mm/r)   | n<br>(min <sup>-1</sup> )                       | f<br>(mm/r)   | n<br>(min <sup>-1</sup> )        | f<br>(mm/r)   | n<br>(min <sup>-1</sup> )                           | f<br>(mm/r)   |
| 3                                     | 10600                            | 0.06~<br>0.1  | 10600                                                                    | 0.06~<br>0.1  | 7400                                                | 0.06~<br>0.1  | 5300                                | 0.03~<br>0.07 | 12700                     | 0.06~<br>0.1  | 9500                                            | 0.06~<br>0.1  | 15000                            | 0.09~<br>0.12 | 2100                                                | 0.03~<br>0.06 |
| 4                                     | 8000                             | 0.08~<br>0.12 | 8000                                                                     | 0.08~<br>0.12 | 5600                                                | 0.08~<br>0.12 | 4000                                | 0.04~<br>0.08 | 96000                     | 0.08~<br>0.12 | 7000                                            | 0.08~<br>0.12 | 11000                            | 0.10~<br>0.15 | 1600                                                | 0.04~<br>0.07 |
| 5                                     | 6400                             | 0.10~<br>0.14 | 6400                                                                     | 0.10~<br>0.14 | 4500                                                | 0.10~<br>0.14 | 3200                                | 0.05~<br>0.10 | 7600                      | 0.10~<br>0.14 | 5700                                            | 0.10~<br>0.14 | 9000                             | 0.10~<br>0.15 | 1250                                                | 0.05~<br>0.9  |
| 6                                     | 5300                             | 0.11~<br>0.16 | 5300                                                                     | 0.11~<br>0.16 | 3700                                                | 0.11~<br>0.16 | 2700                                | 0.06~<br>0.12 | 6400                      | 0.11~<br>0.16 | 4700                                            | 0.11~<br>0.16 | 7400                             | 0.11~<br>0.16 | 1050                                                | 0.06~<br>0.11 |
| 8                                     | 4000                             | 0.13~<br>0.19 | 4000                                                                     | 0.13~<br>0.19 | 2800                                                | 0.13~<br>0.19 | 2000                                | 0.08~<br>0.16 | 4800                      | 0.13~<br>0.19 | 3600                                            | 0.13~<br>0.19 | 5600                             | 0.13~<br>0.19 | 800                                                 | 0.08~<br>0.14 |
| 10                                    | 3200                             | 0.14~<br>0.22 | 3200                                                                     | 0.14~<br>0.22 | 2200                                                | 0.14~<br>0.22 | 1600                                | 0.10~<br>0.18 | 3800                      | 0.14~<br>0.22 | 2800                                            | 0.14~<br>0.22 | 4500                             | 0.14~<br>0.22 | 600                                                 | 0.10~<br>0.16 |
| 12                                    | 2700                             | 0.16~<br>0.24 | 2700                                                                     | 0.16~<br>0.24 | 1900                                                | 0.16~<br>0.24 | 1300                                | 0.12~<br>0.20 | 3200                      | 0.16~<br>0.24 | 2400                                            | 0.16~<br>0.24 | 3700                             | 0.16~<br>0.24 | 500                                                 | 0.12~<br>0.18 |
| 14                                    | 2300                             | 0.18~<br>0.28 | 2300                                                                     | 0.18~<br>0.28 | 1600                                                | 0.18~<br>0.28 | 1100                                | 0.13~<br>0.22 | 2700                      | 0.18~<br>0.28 | 2100                                            | 0.18~<br>0.28 | 3200                             | 0.18~<br>0.28 | 450                                                 | 0.13~<br>0.20 |
| 16                                    | 2100                             | 0.20~<br>0.30 | 2100                                                                     | 0.20~<br>0.30 | 1400                                                | 0.20~<br>0.30 | 1050                                | 0.14~<br>0.25 | 2100                      | 0.20~<br>0.30 | 1800                                            | 0.20~<br>0.30 | 2800                             | 0.25~<br>0.36 | 400                                                 | 0.14~<br>0.23 |
| 18                                    | 1800                             | 0.22~<br>0.32 | 1800                                                                     | 0.22~<br>0.32 | 1200                                                | 0.22~<br>0.32 | 950                                 | 0.15~<br>0.28 | 1800                      | 0.22~<br>0.32 | 1600                                            | 0.22~<br>0.32 | 2500                             | 0.28~<br>0.38 | 350                                                 | 0.15~<br>0.25 |
| 20                                    | 1600                             | 0.25~<br>0.35 | 1600                                                                     | 0.25~<br>0.35 | 1100                                                | 0.25~<br>0.35 | 800                                 | 0.16~<br>0.30 | 1600                      | 0.25~<br>0.35 | 1400                                            | 0.25~<br>0.35 | 2300                             | 0.30~<br>0.40 | 320                                                 | 0.16~<br>0.28 |

## SL series twist deep drills · SL Spiraltiefbohrer Serie (Internal coolant · Interne Kühlung)

20D 30D

| Workpiece material<br>Werkstück-stoff | Mild steel<br>Baustahl<br>HB≤180 |             | Carbon steel,<br>alloy steel<br>Kohlenstoffstahl<br>Leg. Stahl<br>~30HRC |             | Pre-hardened<br>steel<br>Vergüteter Stahl<br>~40HRC |             | Stainless steel<br>Rostfreier Stahl |             | Cast iron<br>Gusseisen    |             | Nodular<br>cast iron<br>GGG<br>Kugelgraphitguss |             | Aluminum alloy<br>Alu.<br>Legierungen |             | Heat resistant<br>alloy<br>Warmfeste<br>Legierungen |             |
|---------------------------------------|----------------------------------|-------------|--------------------------------------------------------------------------|-------------|-----------------------------------------------------|-------------|-------------------------------------|-------------|---------------------------|-------------|-------------------------------------------------|-------------|---------------------------------------|-------------|-----------------------------------------------------|-------------|
| Vc                                    | 70~90 m/min                      |             | 50~80 m/min                                                              |             | 40~60 m/min                                         |             | 40~60 m/min                         |             | 50~80 m/min               |             | 60~80 m/min                                     |             | 100~180 m/min                         |             | 8~15 m/min                                          |             |
| Ø<br>(mm)                             | n<br>(min <sup>-1</sup> )        | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                                                | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                           | f<br>(mm/r) | n<br>(min <sup>-1</sup> )           | f<br>(mm/r) | n<br>(min <sup>-1</sup> ) | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                       | f<br>(mm/r) | n<br>(min <sup>-1</sup> )             | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                           | f<br>(mm/r) |
| 3                                     | 8250                             | 0.06~0.1    | 7650                                                                     | 0.06~0.1    | 5200                                                | 0.06~0.1    | 4750                                | 0.03~0.07   | 7100                      | 0.06~0.1    | 7600                                            | 0.06~0.1    | 12750                                 | 0.09~0.12   | 1350                                                | 0.03~0.06   |
| 4                                     | 6250                             | 0.08~0.12   | 5750                                                                     | 0.08~0.12   | 3900                                                | 0.08~0.12   | 3600                                | 0.04~0.08   | 5400                      | 0.08~0.12   | 5600                                            | 0.08~0.12   | 9350                                  | 0.10~0.15   | 1050                                                | 0.04~0.07   |
| 5                                     | 5000                             | 0.10~0.14   | 4600                                                                     | 0.10~0.14   | 3150                                                | 0.10~0.14   | 2900                                | 0.05~0.10   | 4250                      | 0.10~0.14   | 4550                                            | 0.10~0.14   | 7650                                  | 0.10~0.15   | 800                                                 | 0.05~0.9    |
| 6                                     | 4150                             | 0.11~0.16   | 3800                                                                     | 0.11~0.16   | 2600                                                | 0.11~0.16   | 2450                                | 0.06~0.12   | 3600                      | 0.11~0.16   | 3750                                            | 0.11~0.16   | 6300                                  | 0.11~0.16   | 700                                                 | 0.06~0.11   |
| 8                                     | 3100                             | 0.13~0.19   | 2900                                                                     | 0.13~0.19   | 1950                                                | 0.13~0.19   | 1800                                | 0.08~0.16   | 2700                      | 0.13~0.19   | 2900                                            | 0.13~0.19   | 4750                                  | 0.13~0.19   | 500                                                 | 0.08~0.14   |
| 10                                    | 2500                             | 0.14~0.22   | 2300                                                                     | 0.14~0.22   | 1550                                                | 0.14~0.22   | 1450                                | 0.10~0.18   | 2150                      | 0.14~0.22   | 2250                                            | 0.14~0.22   | 3850                                  | 0.14~0.22   | 400                                                 | 0.10~0.16   |
| 12                                    | 2100                             | 0.16~0.24   | 1950                                                                     | 0.16~0.24   | 1350                                                | 0.16~0.24   | 1150                                | 0.12~0.20   | 1800                      | 0.16~0.24   | 1900                                            | 0.16~0.24   | 3150                                  | 0.16~0.24   | 350                                                 | 0.12~0.18   |
| 14                                    | 1800                             | 0.18~0.28   | 1650                                                                     | 0.18~0.28   | 1100                                                | 0.18~0.28   | 1000                                | 0.13~0.22   | 1500                      | 0.18~0.28   | 1700                                            | 0.18~0.28   | 2700                                  | 0.18~0.28   | 300                                                 | 0.13~0.20   |

1. When the tool is used for the first time, please make a test cutting with 90% of cutting speed or 85% feed rate mentioned above. If the cutting conditions remain stable, gradually increase the cutting speed and feed rate.
2. The cutting conditions above are for drilling with emulsion.
3. Use a collet without any defect or dust. The radial run-out of drill must be under 0.02mm.
4. These conditions above are for cutting depth below 30xD.

1. Beim ersten Einsatz 90% der empfohlenen Schnittgeschwindigkeit oder 85% des Vorschubs wählen. Bei stabiler Bearbeitung die Schnittdaten entsprechend erhöhen.
2. Die obigen Schnittdatenempfehlungen basieren auf dem Einsatz von Emulsion.
3. Keine defekte Werkzeugaufnahme wählen. Die Rundlaufgenauigkeit muss unter 0,02mm liegen.
4. Die obigen Schnittdaten sind für Bohrungstiefen unter 30xD ausgelegt.

### SP series pilot drills · SP Pilotbohrer Serie (Internal coolant · Interne Kühlung)

3D

| Workpiece material<br>Werkstückstoff | Mild steel<br>Baustahl<br>HB≤180 |             | Carbon steel,<br>alloy steel<br>Kohlenstoffstahl<br>Leg. Stahl<br>~30HRC |             | Pre-hardened<br>steel<br>Vergüteter Stahl<br>~40HRC |             | Stainless steel/<br>Rostfreier Stahl |             | Cast iron/<br>Gusseisen   |             | Nodular<br>cast iron<br>GGG<br>Kugelgraphitguss |             | Aluminum alloy/<br>Alulegierungen |             | Heat resistant<br>alloy<br>Warmfeste<br>Legierungen |             |
|--------------------------------------|----------------------------------|-------------|--------------------------------------------------------------------------|-------------|-----------------------------------------------------|-------------|--------------------------------------|-------------|---------------------------|-------------|-------------------------------------------------|-------------|-----------------------------------|-------------|-----------------------------------------------------|-------------|
| Vc                                   | 80~150m/min                      |             | 80~150m/min                                                              |             | 50~80m/min                                          |             | 50~80m/min                           |             | 80~150m/min               |             | 60~120m/min                                     |             | 100~180m/min                      |             | 15~25m/min                                          |             |
| Ø<br>(mm)                            | n<br>(min <sup>-1</sup> )        | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                                                | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                           | f<br>(mm/r) | n<br>(min <sup>-1</sup> )            | f<br>(mm/r) | n<br>(min <sup>-1</sup> ) | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                       | f<br>(mm/r) | n<br>(min <sup>-1</sup> )         | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                           | f<br>(mm/r) |
| 3                                    | 12700                            | 0.09~0.12   | 12700                                                                    | 0.09~0.12   | 7400                                                | 0.09~0.12   | 6300                                 | 0.03~0.07   | 12700                     | 0.09~0.12   | 9500                                            | 0.09~0.12   | 15000                             | 0.09~0.12   | 2100                                                | 0.03~0.06   |
| 4                                    | 9600                             | 0.10~0.15   | 9600                                                                     | 0.10~0.15   | 5600                                                | 0.10~0.15   | 4700                                 | 0.04~0.08   | 9600                      | 0.10~0.15   | 7000                                            | 0.10~0.15   | 11100                             | 0.10~0.15   | 1600                                                | 0.04~0.07   |
| 5                                    | 7600                             | 0.12~0.18   | 7600                                                                     | 0.12~0.18   | 4500                                                | 0.12~0.18   | 3800                                 | 0.05~0.10   | 7600                      | 0.12~0.18   | 5700                                            | 0.12~0.18   | 9000                              | 0.12~0.18   | 1250                                                | 0.05~0.09   |
| 6                                    | 6400                             | 0.14~0.20   | 6400                                                                     | 0.14~0.20   | 3700                                                | 0.14~0.20   | 3200                                 | 0.06~0.12   | 6400                      | 0.14~0.20   | 4700                                            | 0.14~0.20   | 7400                              | 0.14~0.20   | 1050                                                | 0.06~0.11   |
| 8                                    | 4800                             | 0.16~0.24   | 4800                                                                     | 0.16~0.24   | 2800                                                | 0.16~0.24   | 2400                                 | 0.08~0.16   | 4800                      | 0.16~0.24   | 3600                                            | 0.16~0.24   | 5600                              | 0.16~0.24   | 800                                                 | 0.08~0.14   |
| 10                                   | 3800                             | 0.18~0.27   | 3800                                                                     | 0.18~0.27   | 2200                                                | 0.18~0.27   | 1900                                 | 0.10~0.18   | 3800                      | 0.18~0.27   | 2800                                            | 0.18~0.27   | 4500                              | 0.18~0.27   | 600                                                 | 0.10~0.16   |
| 12                                   | 3200                             | 0.20~0.30   | 3200                                                                     | 0.20~0.30   | 1900                                                | 0.20~0.30   | 1600                                 | 0.12~0.20   | 3200                      | 0.20~0.30   | 2400                                            | 0.20~0.30   | 3700                              | 0.20~0.30   | 500                                                 | 0.12~0.18   |
| 14                                   | 2700                             | 0.22~0.35   | 2700                                                                     | 0.22~0.35   | 1600                                                | 0.22~0.35   | 1350                                 | 0.13~0.22   | 2700                      | 0.22~0.35   | 2100                                            | 0.22~0.35   | 3200                              | 0.22~0.35   | 450                                                 | 0.13~0.20   |

1. When the tool is used for the first time, please make a test cutting with 90% of cutting speed or 85% feed rate mentioned above. If the cutting conditions remain stable, gradually increase the cutting speed and feed rate.
2. The cutting conditions above are for drilling with emulsion.
3. Use a collet without any defect or dust. The radial run-out of drill must be under 0.02mm.
4. These conditions above are for cutting depth below 3xD.

1. Beim ersten Einsatz 90% der empfohlenen Schnittgeschwindigkeit oder 85% des Vorschubs wählen. Bei stabiler Bearbeitung die Schnittdaten entsprechend erhöhen.
2. Die obigen Schnittdatenempfehlungen basieren auf dem Einsatz von Emulsion.
3. Keine defekte Werkzeugaufnahme wählen. Die Rundlaufgenauigkeit muss unter 0,02mm liegen.
4. Die obigen Schnittdaten sind für Bohrungstiefen unter 3xD ausgelegt.

C

Solid carbide drills  
Vollhartmetallbohrer

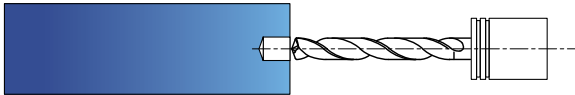


### SL series · SL Serie

### Recommended cutting data · Schnittdatenempfehlung (Deep drill · Tiefbohrer)

#### 1 Preparation pilot hole with 1534SP03C\*

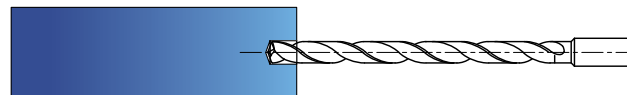
##### Herstellung der Pilotbohrung mit 1534SP03C\*



- Top angel of pilot drill must be bigger than SL-drill.  
*Spitzenwinkel des Pilotbohrers muß größer sein als beim SL-Bohrer.*
- Diameter of pilot drill must be 0.01~0.04mm bigger than SL-drill.  
*Der Durchmesser des Pilotbohrers sollte 0.01~0.04 mm größer sein als beim SL-Bohrer.*
- The pilot hole should be  $1\sim 3\times D$ .  
*Tiefe der Pilotbohrung soll  $1\sim 3\times D$  betragen.*
- $V_c$ : 60-80 m/min;  $f$ : 0.1-0.25 mm/r;  $a_p$ :  $1\sim 3\times D$

#### 2 Entering into pilot hole with SL-drill

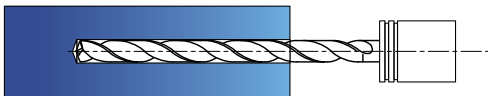
##### Einführen des SL-Bohrers in die Pilotbohrung



- Entering the pilot hole with low cutting speed. ( $V_c$ : 20~30 m/min)  
*Den SL-Bohrer mit geringer Drehzahl in die Pilotbohrung einführen. ( $V_c$ : 20~30 m/min)*
- 1~3 mm stop before end of pilot hole. ( $V_f=0$ )  
*1~3 mm vor dem Lochende stehenbleiben. ( $V_f=0$ )*
- Increase cutting speed up to recommended parameter and than start feed rate.  
*Die Schnittgeschwindigkeit auf die empfohlenen Parameter erhöhen und erst dann mit dem Vorschub beginnen.*

#### 3 Making deep hole

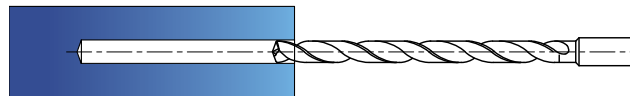
##### Herstellung der Tieflochbohrung



- Drilling with suitable cutting speed and feed rate.  
*Bohren mit geeigneter Schnittgeschwindigkeit und Vorschüben.*
- At cross holes feed rate should be reduced to 0.05 mm/rev..  
*Bei Querbohrungen den Vorschub auf 0.05 mm/u reduzieren.*

#### 4 Pull back of drill

##### Herausziehen des Bohrers



- After reaching the required depth reduce the cutting speed ( $V_c$ : 20~30 m/min) and pull back the drill by high feed rate. ( $V_f$ : 2000 mm/min)  
*Nach Erreichen der geforderten Bohrtiefe die Schnittgeschwindigkeit reduzieren ( $V_c$ : 20~30 m/min) und den Bohrer mit hohem Vorschub ( $V_f$ : 2000 mm/min) herausziehen.*

### General information · Allgemeiner Hinweis

If surface contour is not flat use suitable operation (e.g. face milling with solid carbide endmill) for preparation.

*Sollte die Kontur des Bauteils eine Schräge aufweisen, eine geeignete Bearbeitung (z.B. Planfräsen mit VHM - Fräser) zur Begradigung durchführen.*

### ST series twist drills · ST Spiralbohrer Serie (Internal coolant / Interne Kühlung)

3D

5D

| Workpiece material<br>Werkstück-stoff | Mild steel<br>Baustahl<br>HB≤180 |             | Carbon steel, alloy steel<br>Kohlenstoff - stahl<br>Leg. Stahl<br>~30HRC |             | Stainless steel · Rostfreier Stahl |             |                           |             |                           |             |
|---------------------------------------|----------------------------------|-------------|--------------------------------------------------------------------------|-------------|------------------------------------|-------------|---------------------------|-------------|---------------------------|-------------|
|                                       |                                  |             |                                                                          |             | Austenite                          |             | Martensite                |             | Ferrite                   |             |
| Vc                                    | 80~150m/min                      |             | 80~150m/min                                                              |             | 40~80 m/min                        |             | 50~100 m/min              |             | 60~120 m/min              |             |
| Ø<br>(mm)                             | n<br>(min <sup>-1</sup> )        | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                                                | f<br>(mm/r) | n<br>(min <sup>-1</sup> )          | f<br>(mm/r) | n<br>(min <sup>-1</sup> ) | f<br>(mm/r) | n<br>(min <sup>-1</sup> ) | f<br>(mm/r) |
| 3                                     | 12700                            | 0.09~0.12   | 12700                                                                    | 0.09~0.12   | 6300                               | 0.03~0.07   | 7400                      | 0.03~0.07   | 9000                      | 0.03~0.07   |
| 4                                     | 9600                             | 0.10~0.15   | 9600                                                                     | 0.10~0.15   | 4700                               | 0.04~0.08   | 5600                      | 0.04~0.08   | 6700                      | 0.04~0.08   |
| 5                                     | 7600                             | 0.12~0.18   | 7600                                                                     | 0.12~0.18   | 3800                               | 0.05~0.10   | 4500                      | 0.05~0.10   | 5400                      | 0.05~0.10   |
| 6                                     | 6400                             | 0.14~0.20   | 6400                                                                     | 0.14~0.20   | 3200                               | 0.06~0.12   | 3700                      | 0.06~0.12   | 4500                      | 0.06~0.12   |
| 8                                     | 4800                             | 0.16~0.24   | 4800                                                                     | 0.16~0.24   | 2400                               | 0.08~0.16   | 2800                      | 0.08~0.16   | 3400                      | 0.08~0.16   |
| 10                                    | 3800                             | 0.18~0.27   | 3800                                                                     | 0.18~0.27   | 1900                               | 0.10~0.18   | 2200                      | 0.10~0.18   | 2700                      | 0.10~0.18   |
| 12                                    | 3200                             | 0.20~0.30   | 3200                                                                     | 0.20~0.30   | 1600                               | 0.12~0.20   | 1900                      | 0.12~0.20   | 2300                      | 0.12~0.20   |
| 14                                    | 2700                             | 0.22~0.35   | 2700                                                                     | 0.22~0.35   | 1350                               | 0.13~0.22   | 1600                      | 0.13~0.22   | 1900                      | 0.13~0.22   |
| 16                                    | 2400                             | 0.25~0.36   | 2400                                                                     | 0.25~0.36   | 1200                               | 0.14~0.25   | 1400                      | 0.14~0.25   | 1700                      | 0.14~0.25   |
| 18                                    | 2100                             | 0.28~0.38   | 2100                                                                     | 0.28~0.38   | 1050                               | 0.15~0.28   | 1200                      | 0.15~0.28   | 1500                      | 0.15~0.28   |
| 20                                    | 1900                             | 0.30~0.40   | 1900                                                                     | 0.30~0.40   | 950                                | 0.16~0.30   | 1100                      | 0.16~0.30   | 1350                      | 0.16~0.30   |

1. When the tool is used for the first time, please make a test cutting with 90% of cutting speed or 85% feed rate mentioned above. If the cutting conditions remain stable, gradually increase the cutting speed and feed rate.
2. The cutting conditions above are for drilling with emulsion.
3. Use a collet without any defect or dust. The radial run-out of drill must be under 0.02mm.
4. These conditions above are for cutting depth under 5D.

1. Beim ersten Einsatz 90% der empfohlenen Schnittgeschwindigkeit oder 85% des Vorschubes wählen. Bei stabiler Bearbeitung die Schnittdaten entsprechend erhöhen.
2. Die obigen Schnittdatenempfehlungen basieren auf dem Einsatz von Emulsion.
3. Keine defekte Werkzeugaufnahme wählen. Die Rundlaufgenauigkeit muss unter 0,02mm liegen.
4. Die obigen Schnittdaten sind für Bohrungstiefen unter 5xD ausgelegt.

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Solid carbide drills  
Vollhartmetallbohrer

# Drilling · Bohren

Recommended cutting data · Schnittdatenempfehlung

## SH series step drills · SH Spiralbohrer Serie (External coolant / Externe Kühlung)

3D

| Workpiece material<br>Werkstückstoff | Hardened steel · Gehärteter Stahl |             |                           |             |                           |             |
|--------------------------------------|-----------------------------------|-------------|---------------------------|-------------|---------------------------|-------------|
|                                      | 40~50HRC                          |             | 50~55HRC                  |             | 55~60HRC                  |             |
| Vc                                   | 20~40m/min                        |             | 15~30m/min                |             | 10~20m/min                |             |
| Ø<br>(mm)                            | n<br>(min <sup>-1</sup> )         | f<br>(mm/r) | n<br>(min <sup>-1</sup> ) | f<br>(mm/r) | n<br>(min <sup>-1</sup> ) | f<br>(mm/r) |
| 3                                    | 3200                              | 0.02~0.03   | 2100                      | 0.02~0.03   | 1060                      | 0.015~0.02  |
| 4                                    | 2400                              | 0.03~0.04   | 1600                      | 0.03~0.04   | 800                       | 0.02~0.025  |
| 5                                    | 1900                              | 0.04~0.05   | 1250                      | 0.04~0.05   | 640                       | 0.025~0.03  |
| 6                                    | 1600                              | 0.05~0.06   | 1050                      | 0.05~0.06   | 530                       | 0.03~0.04   |
| 8                                    | 1200                              | 0.06~0.08   | 800                       | 0.06~0.07   | 400                       | 0.04~0.05   |
| 10                                   | 950                               | 0.08~0.10   | 640                       | 0.07~0.08   | 320                       | 0.05~0.06   |
| 12                                   | 800                               | 0.10~0.12   | 530                       | 0.08~0.09   | 270                       | 0.06~0.07   |
| 14                                   | 680                               | 0.12~0.14   | 450                       | 0.09~0.10   | 230                       | 0.07~0.08   |
| 16                                   | 600                               | 0.14~0.16   | 400                       | 0.10~0.12   | 200                       | 0.08~0.10   |

1. When the tool is used for the first time, please make a test cutting with 90% of cutting speed or 85% feed rate mentioned above. If the cutting conditions remain stable, gradually increase the cutting speed and feed rate.
2. The cutting conditions above are for drilling with emulsion.
3. Use a collet without any defect or dust. The radial run-out of drill must be under 0.02mm.
4. These conditions above are for cutting depth under 3D.

1. Beim ersten Einsatz 90% der empfohlenen Schnittgeschwindigkeit oder 85% des Vorschubes wählen. Bei stabiler Bearbeitung die Schnittdaten entsprechend erhöhen.
2. Die obigen Schnittdatenempfehlungen basieren auf dem Einsatz von Emulsion.
3. Keine defekte Werkzeugaufnahme wählen. Die Rundlaufgenauigkeit muss unter 0,02mm liegen.
4. Die obigen Schnittdaten sind für Bohrungstiefen unter 3xD ausgelegt.

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### SC series twist drills · SC Spiralbohrer Serie ( External coolant / Externe Kühlung)

**3D**
**5D**

| Workpiece material<br>Werkstückstoff | Cast iron<br>Grauguss     |             | Nodular cast iron<br>GGG<br>Kugelgraphitguss |             | Silicon aluminium alloy<br>Silizium Alulegierung |             |                           |             | Aluminum alloy<br>Alulegierung |             |
|--------------------------------------|---------------------------|-------------|----------------------------------------------|-------------|--------------------------------------------------|-------------|---------------------------|-------------|--------------------------------|-------------|
|                                      |                           |             |                                              |             | Si≤10%                                           |             | Si>10%                    |             |                                |             |
| Vc                                   | 50~80m/min                |             | 40~70m/min                                   |             | 100~180m/min                                     |             | 80~140m/min               |             | 120~200m/min                   |             |
| Ø<br>(mm)                            | n<br>(min <sup>-1</sup> ) | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                    | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                        | f<br>(mm/r) | n<br>(min <sup>-1</sup> ) | f<br>(mm/r) | n<br>(min <sup>-1</sup> )      | f<br>(mm/r) |
| 2                                    | 9550                      | 0.06~ 0.08  | 8000                                         | 0.06~ 0.08  | 20000                                            | 0.07~0.16   | 18000                     | 0.07~0.16   | 24000                          | 0.07~0.16   |
| 3                                    | 6400                      | 0.09~ 0.12  | 5300                                         | 0.09~ 0.12  | 15000                                            | 0.09~0.18   | 12700                     | 0.09~0.18   | 16000                          | 0.09~0.18   |
| 4                                    | 4800                      | 0.10~ 0.15  | 4000                                         | 0.10~ 0.15  | 11000                                            | 0.10~0.22   | 9600                      | 0.10~0.22   | 12000                          | 0.10~0.22   |
| 5                                    | 3800                      | 0.12~ 0.18  | 3200                                         | 0.12~ 0.18  | 9000                                             | 0.12~0.25   | 7600                      | 0.12~0.25   | 10000                          | 0.12~0.25   |
| 6                                    | 3100                      | 0.14~ 0.20  | 2700                                         | 0.14~ 0.20  | 7400                                             | 0.14~0.28   | 6400                      | 0.14~0.28   | 8500                           | 0.14~0.28   |
| 8                                    | 2400                      | 0.16~ 0.24  | 2000                                         | 0.16~ 0.24  | 5600                                             | 0.18~0.32   | 4800                      | 0.18~0.32   | 6400                           | 0.18~0.32   |
| 10                                   | 1900                      | 0.18~ 0.27  | 1600                                         | 0.18~ 0.27  | 4500                                             | 0.22~0.36   | 3800                      | 0.22~0.36   | 5000                           | 0.22~0.36   |
| 12                                   | 1600                      | 0.20~ 0.30  | 1300                                         | 0.20~ 0.30  | 3700                                             | 0.25~0.40   | 3200                      | 0.25~0.40   | 4200                           | 0.25~0.40   |
| 14                                   | 1350                      | 0.22~ 0.35  | 1150                                         | 0.22~ 0.35  | 3200                                             | 0.27~0.44   | 2700                      | 0.27~0.44   | 3600                           | 0.27~0.44   |
| 16                                   | 1200                      | 0.25~ 0.36  | 1000                                         | 0.25~ 0.36  | 2800                                             | 0.32~0.48   | 2400                      | 0.32~0.48   | 3200                           | 0.32~0.48   |

1. When the tool is used for the first time, please make a test cutting with 90% of cutting speed or 85% feed rate mentioned above. If the cutting conditions remain stable, gradually increase the cutting speed and feed rate.
2. The cutting conditions above are for drilling with emulsion.
3. Use a collet without any defect or dust. The radial run-out of drill must be under 0.02mm.
4. These conditions above are for cutting depth under 5D.

1. Beim ersten Einsatz 90% der empfohlenen Schnittgeschwindigkeit oder 85% des Vorschubes wählen. Bei stabiler Bearbeitung die Schnittdaten entsprechend erhöhen.
2. Die obigen Schnittdatenempfehlungen basieren auf dem Einsatz von Emulsion.
3. Keine defekte Werkzeugaufnahme wählen. Die Rundlaufgenauigkeit muss unter 0,02mm liegen.
4. Die obigen Schnittdaten sind für Bohrungstiefen unter 5xD ausgelegt.

**C**

Solid carbide drills  
Vollhartmetallbohrer

# Drilling • Bohren

Recommended cutting data • Schnittdatenempfehlung

PA series coated three-lips drills (External coolant)  
PA Serie, beschichtete 3-Lippenbohrer (Externe Kühlung)

3D

| Workpiece material<br>Werkstückstoff | Cast iron<br>Grauguss     |             | Nodular cast iron<br>GGG<br>Kugelgraphitguss |             | Silicon aluminium alloy<br>Silizium Alulegierung |             |                           |             | Aluminum alloy<br>Alulegierung |             | Heat resistant alloy<br>Warmfeste Legierung |             |
|--------------------------------------|---------------------------|-------------|----------------------------------------------|-------------|--------------------------------------------------|-------------|---------------------------|-------------|--------------------------------|-------------|---------------------------------------------|-------------|
|                                      |                           |             |                                              |             | Si≤10%                                           |             | Si>10%                    |             |                                |             |                                             |             |
| Vc                                   | 60~120m/min               |             | 50~100m/min                                  |             | 100~180m/min                                     |             | 80~140m/min               |             | 120~200m/min                   |             | 20~40m/min                                  |             |
| Ø<br>(mm)                            | n<br>(min <sup>-1</sup> ) | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                    | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                        | f<br>(mm/r) | n<br>(min <sup>-1</sup> ) | f<br>(mm/r) | n<br>(min <sup>-1</sup> )      | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                   | f<br>(mm/r) |
| 3                                    | 9500                      | 0.09~0.12   | 7400                                         | 0.09~0.12   | 14000                                            | 0.07~0.16   | 12700                     | 0.07~0.16   | 16000                          | 0.07~0.16   | 3200                                        | 0.03~0.06   |
| 4                                    | 7000                      | 0.10~0.15   | 5600                                         | 0.10~0.15   | 10000                                            | 0.09~0.18   | 9600                      | 0.09~0.18   | 12000                          | 0.09~0.18   | 2400                                        | 0.04~0.07   |
| 5                                    | 5700                      | 0.12~0.18   | 4500                                         | 0.12~0.18   | 9000                                             | 0.10~0.22   | 7600                      | 0.10~0.22   | 10000                          | 0.10~0.22   | 1900                                        | 0.05~0.09   |
| 6                                    | 4700                      | 0.14~0.20   | 3700                                         | 0.14~0.20   | 7400                                             | 0.12~0.25   | 6400                      | 0.12~0.25   | 8500                           | 0.12~0.25   | 1600                                        | 0.06~0.11   |
| 8                                    | 3600                      | 0.16~0.24   | 2800                                         | 0.16~0.24   | 5600                                             | 0.14~0.28   | 4800                      | 0.14~0.28   | 6400                           | 0.14~0.28   | 1200                                        | 0.08~0.14   |
| 10                                   | 2800                      | 0.18~0.27   | 2200                                         | 0.18~0.27   | 4500                                             | 0.18~0.32   | 3800                      | 0.18~0.32   | 5000                           | 0.18~0.32   | 950                                         | 0.10~0.16   |
| 12                                   | 2400                      | 0.20~0.30   | 1900                                         | 0.20~0.30   | 3700                                             | 0.22~0.36   | 3200                      | 0.22~0.36   | 4200                           | 0.22~0.36   | 800                                         | 0.12~0.18   |
| 14                                   | 2100                      | 0.22~0.35   | 1600                                         | 0.22~0.35   | 3200                                             | 0.25~0.40   | 2700                      | 0.25~0.40   | 3600                           | 0.25~0.40   | 700                                         | 0.13~0.20   |
| 16                                   | 1800                      | 0.25~0.36   | 1400                                         | 0.25~0.36   | 2800                                             | 0.27~0.44   | 2400                      | 0.27~0.44   | 3200                           | 0.27~0.44   | 600                                         | 0.14~0.23   |
| 18                                   | 1600                      | 0.28~0.38   | 1200                                         | 0.28~0.38   | 2500                                             | 0.32~0.48   | 2100                      | 0.32~0.48   | 2800                           | 0.32~0.48   | 530                                         | 0.15~0.25   |
| 20                                   | 1400                      | 0.30~0.40   | 1100                                         | 0.30~0.40   | 2300                                             | 0.36~0.54   | 1900                      | 0.36~0.54   | 2550                           | 0.36~0.54   | 480                                         | 0.16~0.28   |

1. When the tool is used for the first time, please make a test cutting with 90% of cutting speed or 85% feed rate mentioned above. If the cutting conditions remain stable, gradually increase the cutting speed and feed rate.
2. The cutting conditions above are for drilling with emulsion.
3. Use a collet without any defect or dust. The radial run-out of drill must be under 0.02mm.
4. These conditions above are for cutting depth under 3D.

1. Beim ersten Einsatz 90% der empfohlenen Schnittgeschwindigkeit oder 85% des Vorschubes wählen. Bei stabiler Bearbeitung die Schnittdaten entsprechend erhöhen.
2. Die obigen Schnittdatenempfehlungen basieren auf dem Einsatz von Emulsion.
3. Keine defekte Werkzeugaufnahme wählen. Die Rundlaufgenauigkeit muss unter 0,02mm liegen.
4. Die obigen Schnittdaten sind für Bohrungstiefen unter 3xD ausgelegt.



### PC series straight flute drills (External coolant) PC gerade genutete Bohrer Serie (Externe Kühlung)

3D

5D

| Workpiece material<br>Werkstückstoff | Cast iron<br>Grauguss     |             | Nodular cast iron<br>GGG<br>Kugelgraphitguss |             | Silicon aluminium alloy<br>Silizium Alulegierung |             |                           |             | Aluminum alloy<br>Alulegierung |             |
|--------------------------------------|---------------------------|-------------|----------------------------------------------|-------------|--------------------------------------------------|-------------|---------------------------|-------------|--------------------------------|-------------|
|                                      |                           |             |                                              |             | Si≤10%                                           |             | Si>10%                    |             |                                |             |
| Vc                                   | 60~120m/min               |             | 50~100m/min                                  |             | 100~200m/min                                     |             | 80~160m/min               |             | 120~220m/min                   |             |
| Ø<br>(mm)                            | n<br>(min <sup>-1</sup> ) | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                    | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                        | f<br>(mm/r) | n<br>(min <sup>-1</sup> ) | f<br>(mm/r) | n<br>(min <sup>-1</sup> )      | f<br>(mm/r) |
| 4                                    | 7000                      | 0.10~ 0.15  | 5600                                         | 0.10~ 0.15  | 11000                                            | 0.12~ 0.20  | 9600                      | 0.12~ 0.20  | 12000                          | 0.12~ 0.20  |
| 5                                    | 5700                      | 0.12~ 0.18  | 4500                                         | 0.12~ 0.18  | 9000                                             | 0.14~ 0.26  | 7600                      | 0.14~ 0.26  | 10000                          | 0.14~ 0.26  |
| 6                                    | 4700                      | 0.14~ 0.20  | 3700                                         | 0.14~ 0.20  | 7400                                             | 0.16~ 0.28  | 6400                      | 0.16~ 0.28  | 8500                           | 0.16~ 0.28  |
| 8                                    | 3600                      | 0.16~ 0.24  | 2800                                         | 0.16~ 0.24  | 5500                                             | 0.18~ 0.30  | 4800                      | 0.18~ 0.30  | 6400                           | 0.18~ 0.30  |
| 10                                   | 2800                      | 0.18~ 0.27  | 2200                                         | 0.18~ 0.27  | 4500                                             | 0.20~ 0.32  | 3800                      | 0.20~ 0.32  | 5000                           | 0.20~ 0.32  |
| 12                                   | 2400                      | 0.20~ 0.30  | 1900                                         | 0.20~ 0.30  | 3700                                             | 0.24~ 0.36  | 3200                      | 0.24~ 0.36  | 4200                           | 0.24~ 0.36  |
| 14                                   | 2100                      | 0.22~ 0.35  | 1600                                         | 0.22~ 0.35  | 3200                                             | 0.28~ 0.44  | 2700                      | 0.28~ 0.44  | 3600                           | 0.28~ 0.44  |
| 16                                   | 1800                      | 0.25~ 0.36  | 1400                                         | 0.25~ 0.36  | 2800                                             | 0.30~ 0.48  | 2400                      | 0.30~ 0.48  | 3200                           | 0.30~ 0.48  |
| 18                                   | 1600                      | 0.28~ 0.38  | 1200                                         | 0.28~ 0.38  | 2500                                             | 0.34~ 0.52  | 2100                      | 0.34~ 0.52  | 3000                           | 0.34~ 0.52  |
| 20                                   | 1400                      | 0.30~ 0.40  | 1100                                         | 0.30~ 0.40  | 2300                                             | 0.40~ 0.63  | 1900                      | 0.40~ 0.63  | 2500                           | 0.40~ 0.63  |

1. When the tool is used for the first time, please make a test cutting with 90% of cutting speed or 85% feed rate mentioned above. If the cutting conditions remain stable, gradually increase the cutting speed and feed rate.
2. The cutting conditions above are for drilling with emulsion.
3. Use a collet without any defect or dust. The radial run-out of drill must be under 0.02mm.
4. These conditions above are for cutting depth under 5D.

1. Beim ersten Einsatz 90% der empfohlenen Schnittgeschwindigkeit oder 85% des Vorschubes wählen. Bei stabiler Bearbeitung die Schnittdaten entsprechend erhöhen.
2. Die obigen Schnittdatenempfehlungen basieren auf dem Einsatz von Emulsion.
3. Keine defekte Werkzeugaufnahme wählen. Die Rundlaufgenauigkeit muss unter 0,02mm liegen.
4. Die obigen Schnittdaten sind für Bohrungstiefen unter 5xD ausgelegt.

C

Solid carbide drills  
Vollhartmetallbohrer

# Drilling • Bohren

Recommended cutting data • Schnittdatenempfehlung

PC series straight flute drills (Internal coolant)  
PC Bohrer Serie, gerade genutete (Interne Kühlung)

15D

| Workpiece material<br>Werkstückstoff | Cast iron<br>Grauguss     |             | Nodular cast iron<br>GGG<br>Kugelgraphitguss |             | Silicon aluminium alloy<br>Silizium Alulegierung. |             |                           |             | Aluminum alloy<br>Alulegierung |             |
|--------------------------------------|---------------------------|-------------|----------------------------------------------|-------------|---------------------------------------------------|-------------|---------------------------|-------------|--------------------------------|-------------|
|                                      |                           |             |                                              |             | Si≤10%                                            |             | Si>10%                    |             |                                |             |
| Vc                                   | 60~120m/min               |             | 50~100m/min                                  |             | 100~200m/min                                      |             | 80~160m/min               |             | 120~220m/min                   |             |
| Ø<br>(mm)                            | n<br>(min <sup>-1</sup> ) | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                    | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                         | f<br>(mm/r) | n<br>(min <sup>-1</sup> ) | f<br>(mm/r) | n<br>(min <sup>-1</sup> )      | f<br>(mm/r) |
| 5                                    | 5700                      | 0.08~ 0.14  | 4500                                         | 0.08~ 0.14  | 9000                                              | 0.09~ 0.18  | 7600                      | 0.09~ 0.18  | 10000                          | 0.09~ 0.18  |
| 6                                    | 4700                      | 0.10~ 0.16  | 3700                                         | 0.10~ 0.16  | 7400                                              | 0.12~ 0.20  | 6400                      | 0.12~ 0.20  | 8500                           | 0.12~ 0.20  |
| 8                                    | 3600                      | 0.12~ 0.20  | 2800                                         | 0.12~ 0.20  | 5500                                              | 0.12~ 0.24  | 4800                      | 0.12~ 0.24  | 6400                           | 0.12~ 0.24  |
| 10                                   | 2800                      | 0.14~ 0.23  | 2200                                         | 0.14~ 0.23  | 4500                                              | 0.16~ 0.28  | 3800                      | 0.16~ 0.28  | 5000                           | 0.16~ 0.28  |
| 12                                   | 2400                      | 0.16~ 0.26  | 1900                                         | 0.16~ 0.26  | 3700                                              | 0.18~ 0.32  | 3200                      | 0.18~ 0.32  | 4200                           | 0.18~ 0.32  |
| 14                                   | 2100                      | 0.18~ 0.32  | 1600                                         | 0.18~ 0.32  | 3200                                              | 0.20~ 0.36  | 2700                      | 0.20~ 0.36  | 3600                           | 0.20~ 0.36  |

1. When the tool is used for the first time, please make a test cutting with 90% of cutting speed or 85% feed rate mentioned above. If the cutting conditions remain stable, gradually increase the cutting speed and feed rate.
2. The cutting conditions above are for drilling with emulsion.
3. Use a collet without any defect or dust. The radial run-out of drill must be under 0.02mm.
4. These conditions above are for cutting depth under 15D.

1. Beim ersten Einsatz 90% der empfohlenen Schnittgeschwindigkeit oder 85% des Vorschubes wählen. Bei stabiler Bearbeitung die Schnittdaten entsprechend erhöhen.
2. Die obigen Schnittdatenempfehlungen basieren auf dem Einsatz von Emulsion.
3. Keine defekte Werkzeugaufnahme wählen. Die Rundlaufgenauigkeit muss unter 0,02mm liegen.
4. Die obigen Schnittdaten sind für Bohrungstiefen unter 15xD ausgelegt.

C

Solid carbide drills  
Vollhartmetallbohrer

### SC series centering drill · SC Serie Zentrierbohrer (External coolant / Externe Kühlung)

#### CENTER LOCATING · ZENTRIERBOHREN

| Workpiece material<br>Werkstückstoff | Cast iron<br>Grauguss     |             | Nodular cast iron<br>GGG<br>Kugelgraphitguss |             | Silicon aluminium alloy<br>Silizium Alulegierung |             |                           |             | Aluminum alloy<br>Alulegierung |             |
|--------------------------------------|---------------------------|-------------|----------------------------------------------|-------------|--------------------------------------------------|-------------|---------------------------|-------------|--------------------------------|-------------|
|                                      |                           |             |                                              |             | Si≤10%                                           |             | Si>10%                    |             |                                |             |
| Vc                                   | 60~120m/min               |             | 50~100m/min                                  |             | 100~180m/min                                     |             | 80~140m/min               |             | 120~200m/min                   |             |
| Ø<br>(mm)                            | n<br>(min <sup>-1</sup> ) | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                    | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                        | f<br>(mm/r) | n<br>(min <sup>-1</sup> ) | f<br>(mm/r) | n<br>(min <sup>-1</sup> )      | f<br>(mm/r) |
| 5                                    | 6400                      | 0.09~0.14   | 5100                                         | 0.09~0.14   | 9000                                             | 0.12~0.25   | 7600                      | 0.12~0.25   | 10000                          | 0.12~0.25   |
| 6                                    | 5300                      | 0.12~0.16   | 4200                                         | 0.12~0.16   | 7400                                             | 0.14~0.28   | 6400                      | 0.14~0.28   | 8500                           | 0.14~0.28   |
| 8                                    | 4000                      | 0.13~0.20   | 3200                                         | 0.13~0.20   | 5600                                             | 0.18~0.32   | 4800                      | 0.18~0.32   | 6400                           | 0.18~0.32   |
| 10                                   | 3200                      | 0.17~0.25   | 2500                                         | 0.17~0.25   | 4500                                             | 0.22~0.36   | 3800                      | 0.22~0.36   | 5000                           | 0.22~0.36   |
| 12                                   | 2700                      | 0.20~0.30   | 2100                                         | 0.20~0.30   | 3700                                             | 0.25~0.40   | 3200                      | 0.25~0.40   | 4200                           | 0.25~0.40   |
| 14                                   | 2400                      | 0.22~0.32   | 1800                                         | 0.22~0.32   | 3200                                             | 0.27~0.44   | 2700                      | 0.27~0.44   | 3600                           | 0.27~0.44   |
| 16                                   | 2000                      | 0.24~0.34   | 1600                                         | 0.24~0.34   | 2800                                             | 0.32~0.48   | 2400                      | 0.32~0.48   | 3200                           | 0.32~0.48   |
| 20                                   | 1600                      | 0.28~0.40   | 1300                                         | 0.28~0.40   | 2300                                             | 0.40~0.60   | 1900                      | 0.40~0.60   | 2550                           | 0.40~0.60   |

1. The cutting conditions above are applicable for center drilling.
2. When the tool is used for the first time, please make a test cutting with 90% of cutting speed or 85% feed rate mentioned above. If the cutting conditions remain stable, gradually increase the cutting speed and feed rate.
3. The cutting conditions above are for drilling with emulsion.
4. Please reduce the feed speed when center drilling at inclined and curved face.
5. Use a collet without any defect or dust. The radial run-out of drill must be under 0.02mm.

1. Obige Schnittdatenempfehlungen gelten für das Zentrierbohren.
2. Beim ersten Einsatz 90% der empfohlenen Schnittgeschwindigkeit oder 85% des Vorschubes wählen. Bei stabiler Bearbeitung die Schnittdaten entsprechend erhöhen.
3. Die obigen Schnittdatenempfehlungen basieren auf dem Einsatz von Emulsion.
4. Beim Bohren in sehr großen schrägen und ungeraden Flächen, Schnittdaten reduzieren.
5. Keine defekte Werkzeugaufnahme wählen. Die Rundlaufgenauigkeit muss unter 0,02mm liegen.

#### CHAMFERING · FASEN

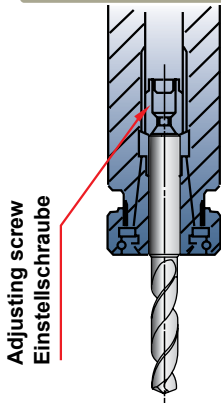
| Workpiece material<br>Werkstückstoff | Cast iron<br>Gusseisen    |             | Nodular cast iron<br>GGG<br>Kugelgraphitguss |             | Silicon aluminium alloy<br>Silizium Alulegierung |             |                           |             | Aluminum alloy<br>Alulegierung |             |
|--------------------------------------|---------------------------|-------------|----------------------------------------------|-------------|--------------------------------------------------|-------------|---------------------------|-------------|--------------------------------|-------------|
|                                      |                           |             |                                              |             | Si≤10%                                           |             | Si>10%                    |             |                                |             |
| Vc                                   | 90~180m/min               |             | 70~150m/min                                  |             | 150~270m/min                                     |             | 120~210m/min              |             | 180~300m/min                   |             |
| Ø<br>(mm)                            | n<br>(min <sup>-1</sup> ) | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                    | f<br>(mm/r) | n<br>(min <sup>-1</sup> )                        | f<br>(mm/r) | n<br>(min <sup>-1</sup> ) | f<br>(mm/r) | n<br>(min <sup>-1</sup> )      | f<br>(mm/r) |
| 5                                    | 9600                      | 0.09~0.20   | 7600                                         | 0.09~0.20   | 13500                                            | 0.12~0.30   | 11500                     | 0.12~0.30   | 15000                          | 0.12~0.30   |
| 6                                    | 8000                      | 0.12~0.22   | 6400                                         | 0.12~0.22   | 11100                                            | 0.14~0.34   | 9600                      | 0.14~0.34   | 12700                          | 0.14~0.34   |
| 8                                    | 6000                      | 0.13~0.28   | 4800                                         | 0.13~0.28   | 8400                                             | 0.18~0.40   | 7200                      | 0.18~0.40   | 9600                           | 0.18~0.40   |
| 10                                   | 4800                      | 0.17~0.32   | 3800                                         | 0.17~0.32   | 6800                                             | 0.22~0.44   | 5700                      | 0.22~0.44   | 7600                           | 0.22~0.44   |
| 12                                   | 4000                      | 0.20~0.38   | 3200                                         | 0.20~0.38   | 5600                                             | 0.25~0.50   | 4800                      | 0.25~0.50   | 6400                           | 0.25~0.50   |
| 14                                   | 3600                      | 0.22~0.42   | 2700                                         | 0.22~0.42   | 4800                                             | 0.27~0.56   | 4000                      | 0.27~0.56   | 5400                           | 0.27~0.56   |
| 16                                   | 3000                      | 0.24~0.46   | 2400                                         | 0.24~0.46   | 4200                                             | 0.32~0.60   | 3600                      | 0.32~0.60   | 4800                           | 0.32~0.60   |
| 20                                   | 2400                      | 0.28~0.58   | 1900                                         | 0.28~0.58   | 3500                                             | 0.40~0.76   | 2850                      | 0.40~0.76   | 3800                           | 0.40~0.76   |

1. When the tool is used for the first time, please make a test cutting with 90% of cutting speed or 85% feed rate mentioned above. If the cutting conditions remain stable, gradually increase the cutting speed and feed rate.
2. The cutting conditions above are applicable for chamfer drilling.
3. The cutting conditions above are for drilling with emulsion.
4. Use a collet without any defect or dust. The radial run-out of drill must be under 0.02mm.

1. Beim ersten Einsatz 90% der empfohlenen Schnittgeschwindigkeit oder 85% des Vorschubes wählen. Bei stabiler Bearbeitung die Schnittdaten entsprechend erhöhen.
2. Obige Schnittdatenempfehlungen gelten für das Fasen.
3. Die obigen Schnittdatenempfehlung basieren auf dem Einsatz von Emulsion.
4. Keine defekte Werkzeugaufnahme wählen. Die Rundlaufgenauigkeit muss unter 0,02mm liegen.

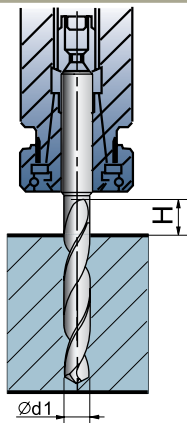
### Application guide of drills - Einsatzhinweise

#### Drill clamping Bohrer Aufnahme



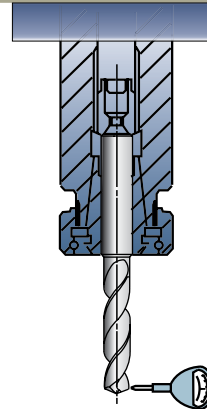
Guarantee tight clamping by using thrust bearing type collet chuck.  
Präzisionsspannzangen verwenden.

#### Max. drill length Max. Bohrtiefe



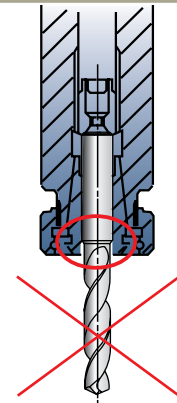
Ensure the size of H is over 1.5d  
Abstand H = 1.5d

#### Radial Run-out Rundlauftoleranz



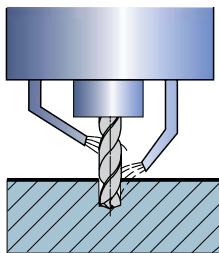
The Radial Run-out should be under 0.02mm.  
Rundlaufabweichung < 0,02mm

#### Wrong drill clamping Ungünstige Bohrer- klemmung



Don't clamp on the drill flutes.  
Bitte nicht auf dem Spankanal spannen.

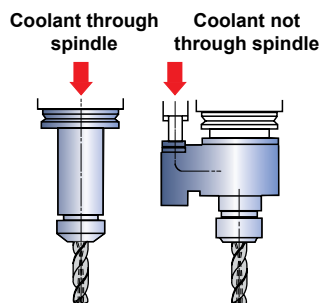
#### External: coolant method Externe Kühlmittelzufuhr



The coolant liquid should shoot to the end and the center of drill as shown in the figure.

Zwei Kühlmittelleitungen sind ideal. (Bohrerspitze und Bohrer, wie in der Abb. oben)

#### Internal: coolant method Interne Kühlmittelzufuhr



Coolant pressure is about 0.5~1mpa (coolant pressure is 2~3mpa when the diameter is less than Ø5 mm)  
Coolant volume is 1.5~4L/min.

Kühlmitteldruck ist ca. 0,5-1 mpa (bei Durchmesser unter 5mm, Kühlmitteldruck auf 2-3 mpa erhöhen)  
Kühlmittelmenge: 1,5-4L/min

#### Cautions to use coolant Handling mit Kühlmitteln

##### When using Internal Coolant

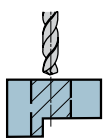
1. The little chip particles and dust will generate jamming in the oil hole. A fine mesh filter should be used to prevent jamming in the oil hole, especially for the small diameter drills.

2. Dirt and dust particles will adhere to the oil hole and lead to unsmooth coolant flow. Coolant change as early as possible is recommended.

1. Kleine Partikel können die Kühlmittelbohrungen verstopfen. Verwenden Sie daher bitte einen Kühlmittelfilter.

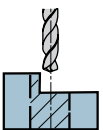
2. Stark verschmutztes Kühlmittel reduziert den Spanfluss. Wir empfehlen ein regelmäßiges Wechseln. Bitte prüfen Sie die einwandfreie Kühlmittelzufuhr.

#### Interrupted cutting unterbrochene Bearb.



Reduce the feed rate when drilling interrupted cut.

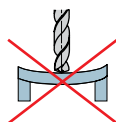
Reduzieren Sie den Vorschub an der unterbrochenen Stelle.



Pre-machining prior drilling  
Vorbearbeitung

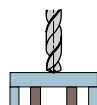
Machining a countersink with end mill prior to drilling.  
Planen Sie die Fläche mit einem Fräser vorab.

#### Thin workpiece Dünne Werkstücke

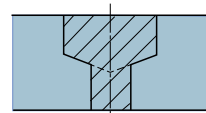


Bending occurs  
Add a supporter.

Wenn dünne Werkstücke sich verbiegen, verwenden Sie Hilfsmittel.



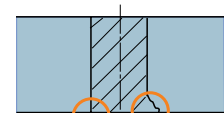
#### Stepped holes Stufenbohrung



1. Divided to two drilling processes.  
2. Drill the larger diameter hole firstly.  
3. Multiple step and chamfer drill can be produced by us.

1. Geteilt in 2 Prozesse  
2. Bohren Sie das größere Loch zuerst.  
3. Auf Anfrage bieten wir auch Stufenbohrer an, die Stufenbohrungen in einem Prozess herstellen können.

#### burrs and workpiece chippings on Exit Gratbildung oder Ausbrüche beim Austritt des Bohrers

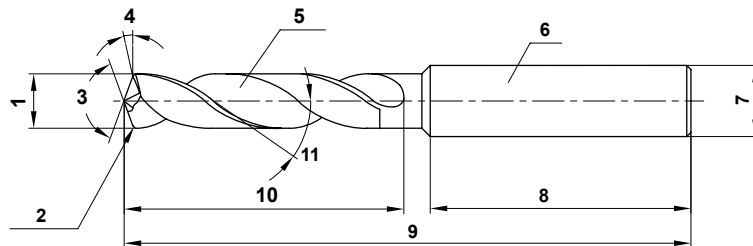


1. Reduce the feed rate at the end time of drilling through  
2. Chamfer machined at the exit position.  
3. Change the point angle.

1. Reduzieren Sie den Vorschub um ca. die Hälfte beim Austritt.  
2. Schleifen Sie eine Fase an den Bohrer.  
3. Tauschen Sie den Spitzenwinkel.

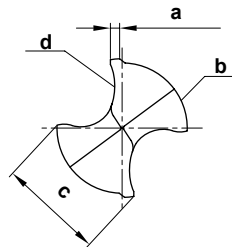
### Parts terminology of drill · Terminologie von VHM Bohrern

#### ● Version · Ausführung



- 1. Drilling diameter
- 2. Chamfer
- 3. Point angle
- 4. Clearance angle
- 5. Chip pocket
- 6. Shank
- 7. Shank diameter
- 8. Shank length
- 9. Overall length
- 10. Flute length
- 11. Helical angle

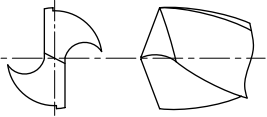
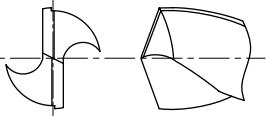
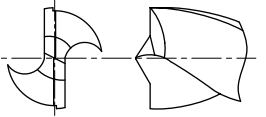
- 1. Bohrdurchmesser
- 2. Fase
- 3. Spitzenwinkel
- 4. Freiwinkel
- 5. Spanraum
- 6. Schaft
- 7. Schaftdurchmesser
- 8. Schaftlänge
- 9. Gesamtlänge
- 10. Schneidenlänge
- 11. Spiralwinkel



- a. Margin width
- b. Body clearance
- c. Land width
- d. Primary cutting edge

- a. Fasenbreite
- b. Körper Freischliff
- c. Primärfasenbreite
- d. Hauptschneide

#### ● Cutting edge shapes · Schneidkanten- Ausführung

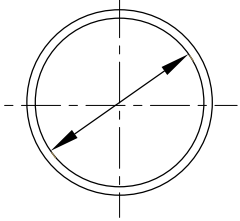
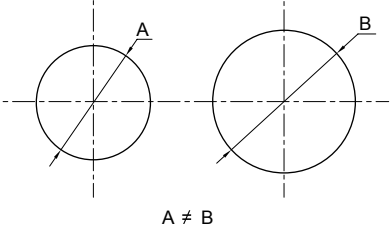
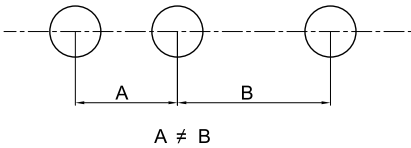
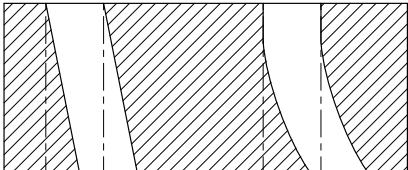
| Shape<br>Schneidkanten-<br>ausführung                                               | (Conical · konisch)                                                                                                                                                                                                                                                                                                                                                     | (Dual flats · flach)                                                                                                                                                                                                                                                                           | (Candler · Zentrierspitze)                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Features<br/>Merkmale</b>                                                        | <ul style="list-style-type: none"> <li>The flank face is conical and the clearance angel increases toward the center of drill.</li> <li>Wide applications, commonly used both for soft and hard materials.</li> <li>Die Flanke ist konisch und der Freiwinkel vergrößert sich zur Bohrermitte.</li> <li>Gebräuchliche Form für weiche und harte Materialien.</li> </ul> | <ul style="list-style-type: none"> <li>The flank face is dual flats, to facilitate cutting and initial entering.</li> <li>Often used for small diameter dirlls</li> <li>Flache Flanke für leichte Zerspanung.</li> <li>Diese Form ist geeignet für Bohrer mit kleinen Durchmessern.</li> </ul> | <ul style="list-style-type: none"> <li>This shape has two-stage point angle and perfect centering capability, less burs generate when drilling hole.</li> <li>It is the first choice for drilling thin plate.</li> <li>Diese Form hat 2 Winkelpunkte, für bessere Zentrierung und Reduzierung der Gratbildung.</li> <li>Geeignet für Stahlrahmen- und Blechbearbeitung.</li> </ul> |



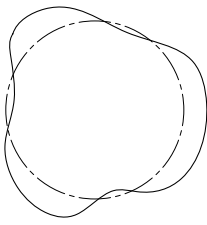
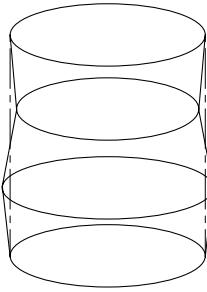
### Structure specification and cutting characteristics - Bohrerspezifikation und Schnittwerte

|                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Chip pocket</b><br><b>Spanraum</b>                         | The function of chip pocket is to remove the chips out of the hole. The larger the cross-sectional area is, the chips is easier to remove out.<br>Durch den Spanraum werden die Späne während der Bearbeitung aus der Bohrung geleitet.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Helical angle</b><br><b>Spiralwinkel</b>                   | The helical angle is the inclined angle of flute at the axial direction of a drill. It varies according to the different position of cutting edge. It decreases greatly as the periphery toward the center.<br>Der Spiralwinkel beschreibt die Steigung der Spiralnute. Er wird entsprechend dem zu bearbeitenden Material ausgelegt.<br><div style="text-align: center;"> <div>High hardness material</div> <div>Hochvergütetes Material</div> <div>Small</div> <div>klein</div> <div>← Helical angle →</div> <div>→ Spiralwinkel →</div> <div>Large</div> <div>groß</div> <div>soft material</div> <div>weiches Material</div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Flute length</b><br><b>Schneidenlänge bzw. Spirallänge</b> | It is determined by depth of hole, guide bush length and regrinding allowance. The longer the flute is, the worse the drill rigidity is. Since it greatly influences on the tool life, please minimize it as much as possible when other requirements are met. The minimal flute length generally is hole depth plus the 1.5 times of hole diameter.<br>Die Schneidenlänge muss die Bohrungstiefe, die Führungsbuchsenlänge und die Gesamtnachschleiflänge berücksichtigen. Je länger der Spiralwinkel, desto geringer die Bohrerstabilität. Da hierdurch die Standzeit stark beeinflusst wird, sollte er so kurz wie möglich gewählt werden. Die empfohlene minimale Spirallänge: sollte Bohrungstiefe +1,5 x Durchmesser.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Point angle</b><br><b>Spitzenwinkel</b>                    | Generally the angle is 140°, it is set differently as per various applications.<br>Der Spitzenwinkel beträgt normalerweise 140°, er kann jedoch je nach Anwendung unterschiedlich sein.<br><div style="text-align: center;"> <div>Soft material easy to cut</div> <div>Weiches Material, einfach zu bearbeiten</div> <div>Small</div> <div>← Point angle →</div> <div>→ Spitzenwinkel →</div> <div>Large</div> <div>for hard materials and high-efficiency machining</div> <div>gehärtetes Material und Hochleistungsbohren</div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Hole</b><br><b>Kerndurchmesser</b>                         | It is an important factor that influence, the rigidity and chip control of a drill. It is set according to applications.<br><div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <div>Low axial cutting force</div> <div>Low rigidity</div> <div>Materials easy to cut</div> </div> <div style="font-size: 2em;">}</div> <div style="text-align: center;"> <div>thin</div> <div>← hole →</div> <div>thick</div> </div> <div style="font-size: 2em;">{</div> <div style="text-align: center;"> <div>Large axial cutting force</div> <div>High rigidity</div> <div>High hardness materials, cross hole drilling etc.</div> </div> </div> <p>Der Kerndurchmesser ist ein wichtiger Faktor und hat Einfluß auf die Stabilität und Spankontrolle:</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <div>geringe Axialkraft</div> <div>geringe Stabilität</div> <div>leicht zu zerspanendes Material</div> </div> <div style="font-size: 2em;">}</div> <div style="text-align: center;"> <div>klein</div> <div>← Loch →</div> <div>groß</div> </div> <div style="font-size: 2em;">{</div> <div style="text-align: center;"> <div>hohe Axialkraft</div> <div>hohe Stabilität</div> <div>gehärtetes Material oder Querbohrungen.</div> </div> </div> |
| <b>Margin</b><br><b>Fasenbreite</b>                           | As a drill guide during drilling process. The margin width need to take the hole friction into consideration.<br><div style="text-align: center;"> <div>small</div> <div>← margin width →</div> <div>large</div> </div> <div style="text-align: center;"> <div>Low friction and drill guide</div> <div>← margin width →</div> <div>high friction and good drill guide</div> </div> <p>Die Fasenbreite beeinflusst die Führung und Friktion des Bohrers während der Bearbeitung.</p> <div style="text-align: center;"> <div>klein</div> <div>← Fasenbreite →</div> <div>groß</div> </div> <div style="text-align: center;"> <div>niedrige Friktion und Bohrer Führung</div> <div>← Fasenbreite →</div> <div>hohe Friktion und gute Bohrerführung</div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Back taper</b><br><b>Hinterschliff</b>                     | To decrease the friction with inside wall of the drilled hole, there is a back taper slightly from tool nose to shank. The degree is usually represented by the quantity decreasing in the diameter per 100 mm flute length.<br>Zur Reduzierung der Reibung während der Bearbeitung wird der Bohrerdurchmesser von der Schneide bis zum Schaft leicht reduziert.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Body clearance</b><br><b>Körperfreischliff</b>             | It is the part formed on the clearance face after margin, mainly to reduce the friction between inside wall of hole and drill periphery<br>Beschreibt den Bohrer hinter der Fasenbreite. Der Freischliff ist notwendig, um die Reibung des Bohrers während der Bearbeitung zu reduzieren.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

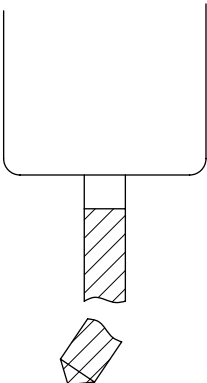
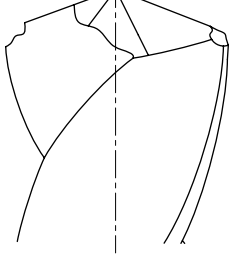
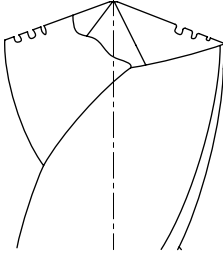
### Common problems and solutions · Allgemeine Fehlerbehebungen

| Problem · Fehler |                                                                                                                                                                                | Cause · Ursache                                                                                                                                                                                                                   | Solution · Lösung                                                                                                                                                                                                                                                                                                                      |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hole · Bohrung   | <p><b>Oversize holes</b><br/>Bohrung zu groß</p>                                              | <p>Poor clamping<br/>Large run-out around spindle</p> <p>Ungenügende Werkstück bzw. Werkzeug - Klemmung.<br/>großer Rundlauffehler<br/>Querschneide ist aus der Mitte</p>                                                         | <p>Select a holder and chuck with high precision<br/>Calibrating spindle<br/>Check and adjust after clamping drill</p> <p>Präzisions-Klemmung verwenden. Spindelspiel reduzieren. Bohrer im geklemmten Zustand prüfen und justieren.</p>                                                                                               |
|                  |                                                                                                                                                                                | <p>Non-symmetric point angle<br/>Large run-out<br/>Chisel edge is off center</p> <p>Kein symetrischer Spitzenwinkel,<br/>großer Rundlauffehler<br/>Querschneide ist aus der Mitte</p>                                             | <p>Regrind drill<br/>Check the precision after regrinding</p> <p>Bohrer nachschleifen, Nachschliff prüfen</p>                                                                                                                                                                                                                          |
|                  | <p><b>Irregular hole size</b><br/>Ungleichmäßige Bohrungsmaße</p>  <p>A ≠ B</p>              | <p>Non-symmetric point angle<br/>Large run-out<br/>Chisel edge is off center<br/>Excessive margin wear<br/>Kein symetrischer Spitzenwinkel,<br/>großer Rundlauffehler<br/>Querschneide ist aus der Mitte<br/>Hoher Verschleiß</p> | <p>Select the holder and chuck with high precision<br/>Calibrating the spindle<br/>Check and adjust after clamping drill</p> <p>Präzisions-Klemmung verwenden. Spindelspiel reduzieren. Bohrer im geklemmten Zustand prüfen und justieren.</p>                                                                                         |
|                  |                                                                                                                                                                                | <p>Poor clamping<br/>Large spindle run-out<br/>Workpiece is unfirmly hold<br/>Ungenügende Werkstück/Werkzeug-Klemmung.<br/>großer Rundlauffehler<br/>Querschneide ist aus der Mitte<br/>Hoher Verschleiß</p>                      | <p>Select the holder and chuck with high precision<br/>Calibrating spindle<br/>Check and adjust after clamping drill</p> <p>Präzisions-Klemmung verwenden. Spindelspiel reduzieren. Bohrer im geklemmten Zustand prüfen und justieren.</p>                                                                                             |
|                  |                                                                                                                                                                                | <p>Feed rate is too high<br/>Vorschub zu hoch</p>                                                                                                                                                                                 | <p>Reduce the feed speed<br/>Vorschub reduzieren</p>                                                                                                                                                                                                                                                                                   |
|                  |                                                                                                                                                                                | <p>Coolant is not enough<br/>Kühlmittel nicht ausreichend</p>                                                                                                                                                                     | <p>Change the coolant supply method, or increase coolant volume.<br/>Kühlmittelmenge erhöhen, oder Kühlmittelzufuhr ändern</p>                                                                                                                                                                                                         |
|                  | <p><b>Low position accuracy</b><br/>schlechte Bohrer - Positionierung</p>  <p>A ≠ B</p>     | <p>Poor re-positioning precision of spindle. Poor clamping<br/>Large run-out with spindle</p> <p>Unzureichende Klemmung sowie Spindel Positionierung.<br/>Großer Rundlaufabweichung der Spindel.</p>                              | <p>Improve the re-positioning precision of machine<br/>Select the holder and chuck with high precision<br/>Calibrating the spindle<br/>Check and adjust after clamping drill<br/>Positionierung der Maschine verbessern<br/>Präzisions-Klemmung verwenden. Spindel kalibrieren, Bohrer im geklemmten Zustand prüfen und justieren.</p> |
|                  |                                                                                                                                                                                | <p>The feed direction is not vertical to the workpiece surface<br/>Die Vorschubrichtung ist nicht vertikal zur Werkstückfläche</p>                                                                                                | <p>Adjust the feed direction vertical to the workpiece.<br/>Vorschubrichtung vertikal zur Werkstückoberfläche einstellen.</p>                                                                                                                                                                                                          |
|                  |                                                                                                                                                                                | <p>Top center not align with the spindle center (lathe)<br/>Werkzeugmitte nicht auf Spindelmitte ausgerichtet (Drehmaschine)</p>                                                                                                  | <p>Check and adjust alignment carefully before drilling<br/>Werkzeugmitte ausrichten</p>                                                                                                                                                                                                                                               |
|                  | <p><b>Bad linearity</b><br/><b>Bad perpendicularity</b><br/>Schlechter Bohrungsverlauf</p>  | <p>Excessive tool wear<br/>hoher Werkzeugverschleiß</p>                                                                                                                                                                           | <p>Regrind<br/>Nachschleifen</p>                                                                                                                                                                                                                                                                                                       |
|                  |                                                                                                                                                                                | <p>Poor center hole accuracy<br/>schlechte Bohrungsgenauigkeit</p>                                                                                                                                                                | <p>Increase the position accuracy of hole<br/>Bohrungspositionierung verbessern</p>                                                                                                                                                                                                                                                    |
|                  |                                                                                                                                                                                | <p>Non-symmetric point angle<br/>Large run-out<br/>Chisel edge is off center<br/>Kein symetrischer Spitzenwinkel,<br/>großer Rundlauffehler<br/>Querschneide ist aus der Mitte</p>                                                | <p>Regrind drill<br/>Check the precision after regrinding<br/>Bohrer nachschleifen, Nachschliff prüfen</p>                                                                                                                                                                                                                             |
|                  |                                                                                                                                                                                | <p>Insufficient drill rigidity<br/>Unzureichende Bohrerstabilität</p>                                                                                                                                                             | <p>Increase drill rigidity<br/>Bohrerstabilität verbessern</p>                                                                                                                                                                                                                                                                         |
|                  |                                                                                                                                                                                | <p>Uneven workpiece surface<br/>Top center ders not align with the spindle center (lathe)<br/>Unebene Werkstückoberfläche<br/>Werkzeugmitte nicht auf Spindelmitte ausgerichtet (Drehmaschinen)</p>                               | <p>The workpiece must be horizontal or pre-machined to horizontal before drilling<br/>Pre-drill a center hole</p> <p>Das Werkstück muss vor dem Bohren horizontal ausgerichtet bzw. vorbearbeitet werden.</p>                                                                                                                          |

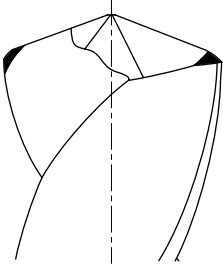
### Common problems and solutions · Allgemeine Fehlerbehebungen

|                         | Problem · Fehler                                                                                                                         | Cause · Ursache                                                                                                                                                                                                                               | Solution · Lösung                                                                                                                                                                                                                                                                   |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Hole<br/>Bohrung</b> | <b>Poor roundness<br/>Ungenaue Bohrung (Rundheit)</b>   | Non-symmetric point angle<br>Large drill run-out<br>Chisel edge is off center<br><br>Kein symmetrischer Spitzenwinkel, großer Rundlauffehler, Zentrumschneide ist aus der Mitte. Hoher Verschleiß.                                            | Regrind drill<br>Check the precision after regrinding<br><br>Bohrer nachschleifen, Nachschliff prüfen                                                                                                                                                                               |
|                         |                                                                                                                                          | Poor clamping<br>Large spindle run-out<br>Workpiece is unfirmly hold<br><br>Unzureichende Klemmung (Werkstück, Werkzeug). Große Rundlaufabweichung der Spindel                                                                                | Select the holder and chuck with high precision<br>Calibrating the spindle<br>Check run-out and adjust after clamping drill<br><br>Präzisions-Klemmung verwenden. Spindel kalibrieren, Bohrer im geklemmten Zustand auf Rundlauf prüfen und justieren                               |
|                         |                                                                                                                                          | Clearance angle is too large<br>Freiwinkel zu groß                                                                                                                                                                                            | Regrind drill<br>Bohrer nachschleifen                                                                                                                                                                                                                                               |
|                         |                                                                                                                                          | Insufficient drill rigidity<br>Ungenügende Bohrerstabilität                                                                                                                                                                                   | Increase drill rigidity<br>Bohrerstabilität verbessern                                                                                                                                                                                                                              |
|                         |                                                                                                                                          |                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                     |
|                         | <b>Poor workpiece surface quality<br/>Schlechte Werkstückoberflächenqualität</b>                                                         | Incorrect regrinding<br>Schlechter Bohrer Nachschliff                                                                                                                                                                                         | Regrind calibration<br>Nachschliff verbessern                                                                                                                                                                                                                                       |
|                         |                                                                                                                                          | Insufficient coolant or unsuitable coolant Type<br><br>Ungenügende Kühlmittelmenge bzw. -Methode                                                                                                                                              | Change coolant supply method, increase coolant volume<br>Select the cutting oil with good lubricating property<br>Kühlmittelzuführungsmethode ändern<br>Kühlmittelmenge erhöhen                                                                                                     |
|                         |                                                                                                                                          | Poor clamping<br>Large spindle run-out<br>Unzureichende Klemmung, großer Spiralrundlauffehler                                                                                                                                                 | Select the holder and chuck with high precision<br>Calibrating the spindle<br>Präzisions-Klemmung verwenden. Spindel kalibrieren                                                                                                                                                    |
|                         |                                                                                                                                          | Feed rate is too high<br>Vorschub zu hoch                                                                                                                                                                                                     | Decrease the feed rate<br>Vorschub verringern                                                                                                                                                                                                                                       |
|                         |                                                                                                                                          | Excessive wear on cutting edge<br>Excessive build-up on margin<br>Großer Schneidenverschleiß, große Aufbauschneidenbildung                                                                                                                    | Regrind drill<br>Select a coated drill<br>Bohrer nachschleifen, beschichtete Bohrer verwenden                                                                                                                                                                                       |
|                         |                                                                                                                                          | Chip jamming<br>Schlechte Spanabfuhr                                                                                                                                                                                                          | Select a suitable drill (considering flute geometry, helical angle etc)<br>Change the cutting method (adjust feed rate, use step feed etc)<br>Einen geeigneten Bohrer wählen (mit entsprechender Spannute, Spiralwinkel etc.)<br>Schnittgeschw. anpassen (Vorschub verringern usw.) |
|                         | <b>Poor cylindricity<br/>Schlechte Zylindrizität</b>  | Non-symmetric point angle<br>Large drill run-out<br>Chisel edge is off center<br>Excessive margin wear<br>Kein symmetrischer Spitzenwinkel, großer Rundlauffehler (Bohren)<br>Zentrumschneide ist aus der Mitte<br>großer Schneidenverschleiß | Regrind drill<br>Check the precision after regrinding<br>Bohrer nachschleifen, Nachschliff prüfen                                                                                                                                                                                   |
|                         |                                                                                                                                          | Feed speed is too low<br>Vorschub zu gering                                                                                                                                                                                                   | Increase the feed speed<br>Vorschub erhöhen                                                                                                                                                                                                                                         |

### Common problems and solutions · Allgemeine Fehlerbehebungen

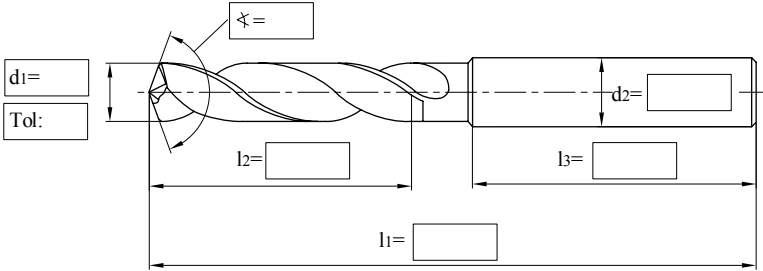
|                 | Problem · Fehler                                                                                                                                           | Cause · Ursache                                                                                                     | Solution Lösung                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Drill<br>Bohrer | <b>Drill breakage</b><br><b>Bruch des Bohrers</b>                         | Insufficient clamping of tool and/or workpiece<br>Nicht ausreichende Spannung des Werkzeuges und / oder Werkstücks. | Increase the rigidity of drill, machine, workpiece and clamp<br>Stabilität des Werkzeuges sowie Spannung des Werkzeuges bzw. Werkstücks verbessern                                                                                                                                                                                                                                                                                                                                                                   |
|                 |                                                                                                                                                            | Clearance angle is too small<br>Freiwinkel zu klein                                                                 | Use drill with bigger clearance angle or regrind.<br>Bohrer mit größerem Freiwinkel verwenden oder nachschleifen                                                                                                                                                                                                                                                                                                                                                                                                     |
|                 |                                                                                                                                                            | Feed rate is too high<br>Vorschub zu hoch                                                                           | Decrease the feed rate<br>Vorschub verringern                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                 |                                                                                                                                                            | Excessive drill wear<br>Hoher Verschleiß                                                                            | Regrind drill<br>Bohrer nachschleifen                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                 |                                                                                                                                                            | Chip jamming<br>Spänestau                                                                                           | Select a suitable drill (considering flute geometry, helical angle etc)<br>Change the cutting method (adjust feed rate, use step feed etc)<br>Einen geeigneten Bohrer wählen (mit entsprechender Spannute, Spiralwinkel etc.) Schnittgeschw. anpassen (Vorschub verringern, Bohrer lüften usw.)                                                                                                                                                                                                                      |
|                 |                                                                                                                                                            | Difficult entering the workpiece<br>Schwieriges Anbohren                                                            | Increase the rigidity of drill and machine Increase rigidity of workpiece and clamping. Select the drill with a sharp point for easy entry Pre-drill a centre hole. Adjust the level of workpiece or pre-machined to horizontal before drilling. Use guide bush or bush plate<br>Stabilität des Werkzeugs sowie Spannung der Maschine und des Werkstücks verbessern.<br>Bohrer mit scharfer Zentrierschneide. Pilotbohrung setzen. Anbohrwinkel korrigieren oder gerade Fläche fräsen. Einsatz einer Führungsbuchse. |
|                 | <b>Chipping on the cutting corner</b><br><b>Ausbröcklung am Bohrer</b>  | Hard skin or porous spot<br>Harte Oberfläche oder Lunker                                                            | Analyse the workpiece or select a suitable grade<br>Change the cutting parameters (cutting speed, feed rate or machining method)<br>Werkstoff prüfen und entsprechende Sorte auswählen. Schnittbedingungen ändern (Schnittgeschw., Vorschub oder Bearbeitungsmethode)                                                                                                                                                                                                                                                |
|                 |                                                                                                                                                            | Feed rate is too high<br>Vorschub zu hoch                                                                           | Decrease the feed rate<br>Vorschub verringern                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                 |                                                                                                                                                            | Insufficient coolant<br>Zu wenig Kühlmittel                                                                         | Change coolant supply method, increase coolant volume<br>Kühlmittelzufuhr verbessern / erhöhen                                                                                                                                                                                                                                                                                                                                                                                                                       |
|                 | <b>Chipping on cutting edge</b><br><b>Ausbröcklung an der Schreide</b>  | Poor clamping<br>Large spindle run-out<br>schlechte Spannung<br>großer Spiralrundlauf                               | Select the holder and chuck with high precision<br>Calibrating the spindle<br>Spannmittel mit höherer Präzision verwenden. Spindel neu ausrichten.                                                                                                                                                                                                                                                                                                                                                                   |
|                 |                                                                                                                                                            | Cutting speed and feed rate are too high<br>Decrease the feed rate<br>Schnittgeschwindigkeit und Vorschub zu hoch   | Reduce the cutting speed and feed rate.<br>Schnittgeschwindigkeit und Vorschub reduzieren.                                                                                                                                                                                                                                                                                                                                                                                                                           |
|                 |                                                                                                                                                            | Clearance angle is too large<br>Freiwinkel zu groß                                                                  | Regrind calibration<br>Bohrer mit kleinerem Freiwinkel verwenden oder nachschleifen                                                                                                                                                                                                                                                                                                                                                                                                                                  |

### Common problems and solutions · Allgemeine Fehlerbehebungen

|                                                   | Problem · Fehler                                                                                                                               | Cause · Ursache                                                                                 | Solution · Lösung                                                                                                                                |
|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| C<br>Solid carbide drills<br>Vollhartmetallbohrer | Abnormal wear on cutting corner<br>Übermäßiger Verschleiß<br> | Delay to regrind<br>Überfälliger Nachschliff                                                    | Regrind in time<br>Frühzeitiger Nachschliff                                                                                                      |
|                                                   |                                                                                                                                                | Drill point does not align with the spindle center (lathe)<br>Bohrerspizze steht nicht mittig   | Check and adjust alignment carefully before drilling<br>Bohrerposition auf Spindelmitte justieren.                                               |
|                                                   |                                                                                                                                                | Cutting speed is too high<br>Schnittgeschwindigkeit zu hoch                                     | Reduce cutting speed<br>Schnittgeschwindigkeit reduzieren                                                                                        |
|                                                   |                                                                                                                                                | Cutting edge shape is inappropriate<br>Schneidwinkel nicht geeignet                             | Select correct cutting edge shape<br>Richtigen Schneidwinkel wählen.                                                                             |
|                                                   |                                                                                                                                                | Unsuitable drill material<br>Schneidstoff ungeeignet                                            | Select the suitable drill material<br>Geeigneten Schneidstoff wählen                                                                             |
|                                                   |                                                                                                                                                | Incorrect coolant Type<br>Unzureichende Kühlung                                                 | Change coolant<br>Ausreichende Kühlung verwenden                                                                                                 |
|                                                   | Wear and chipping on chisel edge<br>Verschleiß und Ausbrüche an Querschneide                                                                   | Feed rate is too high<br>Vorschub zu hoch                                                       | Reduce feed rate<br>Vorschub reduzieren                                                                                                          |
|                                                   |                                                                                                                                                | Cutting edge shape is inappropriate<br>Schneidwinkel nicht geeignet                             | Select correct cutting edge shape<br>Richtigen Schneidwinkel wählen.                                                                             |
|                                                   |                                                                                                                                                | Unsuitable drill material<br>Schneidstoff ungeeignet                                            | Select the suitable drill material<br>Geeigneten Schneidstoff wählen.                                                                            |
|                                                   |                                                                                                                                                | Clearance angle is too small<br>Freiwinkel zu gering                                            | Regrind drill<br>Bohrer nachschleifen                                                                                                            |
|                                                   | Breakage on margin<br>Bruch der Führungsfase                                                                                                   | The size of guide bush or drill bush is too large<br>Führungsbuchse zu groß                     | Select another bush with correct size<br>Führungsbuchse austauschen                                                                              |
|                                                   | Margin build-up<br>Aufbauschneide an der Führungsfase                                                                                          | Excessive wear on cutting edge generates high heat<br>Hoher Verschleiß und Hitze                | Regrind drill<br>Bohrer nachschleifen                                                                                                            |
|                                                   |                                                                                                                                                | Insufficient coolant<br>Unzureichende Kühlung                                                   | Change coolant supply method, increase coolant volume<br>Kühlmittelzufuhr-Methode ändern                                                         |
|                                                   |                                                                                                                                                | Incorrect coolant Type<br>falscher Kühlmittelschmierstoff                                       | Change coolant<br>Kühlschmierstoff ändern                                                                                                        |
|                                                   |                                                                                                                                                | Workpiece material is too soft<br>Ungünstig zu zerspanendes Material                            | Change drill or machining method<br>Bohrer mit kleineren Freiwinkel wählen                                                                       |
|                                                   | High vibration<br>Hohe Vibrationen                                                                                                             | Clearance angle is too large<br>Freiwinkel zu groß                                              | Regrind drill<br>Bohrer nachschleifen                                                                                                            |
|                                                   |                                                                                                                                                | Drill rigidity is not enough<br>Bohrerstabilität zu gering                                      | Increase drill rigidity<br>Stabilität verbessern                                                                                                 |
|                                                   | Chips roll around the drill<br>Spänewickel                                                                                                     | Long chips<br>Chip removal is not fluent<br>Lange Späne, Abfuhr unzureichend                    | Change the drill and adjust machining method and cutting parameters<br>Schnittdaten optimieren, evt. Bohrer wechseln oder Maschine neu justieren |
|                                                   | One-side wear<br>Einseitiger Verschleiß                                                                                                        | Drill point does not align with the spindle center ( lathe )<br>Bohrerspizze steht nicht mittig | Check and adjust the alignment carefully before drilling<br>Bohrerposition auf Spindelmitte justieren.                                           |
|                                                   |                                                                                                                                                | Poor clamping<br>Schlechte Spannung                                                             | Fix drill carefully, control the radial run-out<br>Bohrerklemmung verbessern, Rundlauf kontrollieren.                                            |



### Twist drill · Spiralbohrer ( Non-standard Taylor made · Sonderwerkzeuge )

| Name:<br><br>Company / Firma:<br><br>Fax:<br><br>Tel:<br><br>E-mail:<br><br>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <br><b>Trade Technology</b><br>RUSSIA, Moscow, Ordzhonikidze str. 11 build 11<br>Tel.: +7(499)650-50-31<br><a href="http://www.zcc-ct.ru">www.zcc-ct.ru</a><br>E-mail: <a href="mailto:info@zcc-ct.ru">info@zcc-ct.ru</a> |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                             |                                                                                     |                                             |                                                                                     |                             |                  |                                   |                             |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |
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| <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <b>Machining information</b><br/> <b>Bearbeitungsinformationen</b> </div> <div style="width: 45%;"> <b>Selection of twist drill series</b><br/> <b>Spiralbohrerserie</b> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 45%;"> <div style="margin-bottom: 5px;">Size of machined hole<br/>Bohrungsdurchmesser <input style="width: 80px;" type="text"/> mm</div> <div style="margin-bottom: 5px;">Tolerance of machined hole<br/>Toleranz der Bohrung <input style="width: 80px;" type="text"/></div> <div style="margin-bottom: 5px;">Depth of machined hole<br/>Bohrtiefe <input style="width: 80px;" type="text"/> mm</div> </div> <div style="width: 45%;"> <div style="display: flex; justify-content: space-between; margin-bottom: 5px;"> <input type="checkbox"/> SU             <input type="checkbox"/> SH           </div> <div style="display: flex; justify-content: space-between;"> <input type="checkbox"/> ST             <input type="checkbox"/> SC           </div> </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                             |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                             |                                                                                     |                                             |                                                                                     |                             |                  |                                   |                             |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |
| <b>Workpiece material · Werkstückstoff</b> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <th rowspan="2">Carbon steel<br/>Kohlenstoff-Stahl</th> <th rowspan="2">Alloy steel<br/>Legierter Stahl</th> <th colspan="4">Hardened steel · gehärteter Stahl</th> <th rowspan="2">Stainless steel<br/>Rostfreier Stahl</th> <th rowspan="2">Cast iron, Nodular GGG<br/>Grauguss</th> <th rowspan="2">Copper alloy<br/>Kupfer-leg.</th> <th rowspan="2">Aluminum<br/>Alu.</th> <th>Aluminum alloy<br/>Aluleg.</th> <th rowspan="2">Titanium alloy<br/>Titanleg.</th> <th rowspan="2">Heat resist. alloy<br/>Warmfeste Leg.</th> </tr> <tr> <th>~40HRC</th> <th>~50HRC</th> <th>~60HRC</th> <th>~68HRC</th> <th>Si % =</th> </tr> <tr> <td><input style="width: 40px;" type="text"/></td> <td><input style="width: 40px;" type="text"/></td> <td><input style="width: 40px;" type="text"/></td> <td><input style="width: 40px;" type="text"/></td> <td><input style="width: 40px;" type="text"/></td> <td><input style="width: 40px;" type="text"/></td> <td><input style="width: 40px;" type="text"/></td> <td><input style="width: 40px;" type="text"/></td> <td><input style="width: 40px;" type="text"/></td> <td><input style="width: 40px;" type="text"/></td> <td><input style="width: 40px;" type="text"/></td> <td><input style="width: 40px;" type="text"/></td> <td><input style="width: 40px;" type="text"/></td> </tr> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                             | Carbon steel<br>Kohlenstoff-Stahl         | Alloy steel<br>Legierter Stahl            | Hardened steel · gehärteter Stahl         |                                           |                                           |                                           | Stainless steel<br>Rostfreier Stahl       | Cast iron, Nodular GGG<br>Grauguss        | Copper alloy<br>Kupfer-leg.               | Aluminum<br>Alu.                          | Aluminum alloy<br>Aluleg.                   | Titanium alloy<br>Titanleg.                                                         | Heat resist. alloy<br>Warmfeste Leg.        | ~40HRC                                                                              | ~50HRC                      | ~60HRC           | ~68HRC                            | Si % =                      | <input style="width: 40px;" type="text"/> | <input style="width: 40px;" type="text"/> | <input style="width: 40px;" type="text"/> | <input style="width: 40px;" type="text"/> | <input style="width: 40px;" type="text"/> | <input style="width: 40px;" type="text"/> | <input style="width: 40px;" type="text"/> | <input style="width: 40px;" type="text"/> | <input style="width: 40px;" type="text"/> | <input style="width: 40px;" type="text"/> | <input style="width: 40px;" type="text"/> | <input style="width: 40px;" type="text"/> | <input style="width: 40px;" type="text"/> |
| Carbon steel<br>Kohlenstoff-Stahl                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Alloy steel<br>Legierter Stahl                                                                                                                                                                                                                                                                              |                                           |                                           | Hardened steel · gehärteter Stahl         |                                           |                                           |                                           |                                           |                                           |                                           |                                           | Stainless steel<br>Rostfreier Stahl         |                                                                                     |                                             | Cast iron, Nodular GGG<br>Grauguss                                                  | Copper alloy<br>Kupfer-leg. | Aluminum<br>Alu. | Aluminum alloy<br>Aluleg.         | Titanium alloy<br>Titanleg. | Heat resist. alloy<br>Warmfeste Leg.      |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                             | ~40HRC                                    | ~50HRC                                    | ~60HRC                                    | ~68HRC                                    | Si % =                                    |                                           |                                           |                                           |                                           |                                           |                                             |                                                                                     |                                             |                                                                                     |                             |                  |                                   |                             |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |
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| <b>Tool information · Werkzeug Informationen</b> <div style="display: flex; justify-content: space-between; align-items: flex-start; margin-top: 10px;"> <div style="width: 60%;">  </div> <div style="width: 35%;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2">Shank · Schaft</th> </tr> <tr> <td style="text-align: center; vertical-align: middle;"><input type="checkbox"/></td> <td style="text-align: center;">Form HA</td> </tr> <tr> <td style="text-align: center; vertical-align: middle;"><input type="checkbox"/></td> <td style="text-align: center;">Form HB</td> </tr> <tr> <td style="text-align: center; vertical-align: middle;"><input type="checkbox"/></td> <td style="text-align: center;">Form HE</td> </tr> </table> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 45%;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2">Cooling / Kühlung</th> </tr> <tr> <td style="text-align: center; vertical-align: middle;"><input type="checkbox"/> External<br/>Extern</td> <td style="text-align: center; vertical-align: middle;"></td> </tr> <tr> <td style="text-align: center; vertical-align: middle;"><input type="checkbox"/> Internal<br/>Intern</td> <td style="text-align: center; vertical-align: middle;"></td> </tr> </table> </div> <div style="width: 45%;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2">Coating / Beschichtung</th> </tr> <tr> <td style="text-align: center; vertical-align: middle;"><input type="checkbox"/> Yes / Ja</td> <td></td> </tr> <tr> <td style="text-align: center; vertical-align: middle;"><input type="checkbox"/> No / Nein</td> <td></td> </tr> </table> </div> </div> |                                                                                                                                                                                                                                                                                                             | Shank · Schaft                            |                                           | <input type="checkbox"/>                  | Form HA                                   | <input type="checkbox"/>                  | Form HB                                   | <input type="checkbox"/>                  | Form HE                                   | Cooling / Kühlung                         |                                           | <input type="checkbox"/> External<br>Extern |  | <input type="checkbox"/> Internal<br>Intern |  | Coating / Beschichtung      |                  | <input type="checkbox"/> Yes / Ja |                             | <input type="checkbox"/> No / Nein        |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |
| Shank · Schaft                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                             |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                             |                                                                                     |                                             |                                                                                     |                             |                  |                                   |                             |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |
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| Cooling / Kühlung                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                             |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                             |                                                                                     |                                             |                                                                                     |                             |                  |                                   |                             |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |
| <input type="checkbox"/> External<br>Extern                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                          |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                             |                                                                                     |                                             |                                                                                     |                             |                  |                                   |                             |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |
| <input type="checkbox"/> Internal<br>Intern                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                          |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                             |                                                                                     |                                             |                                                                                     |                             |                  |                                   |                             |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |
| Coating / Beschichtung                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                             |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                             |                                                                                     |                                             |                                                                                     |                             |                  |                                   |                             |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |
| <input type="checkbox"/> Yes / Ja                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                             |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                             |                                                                                     |                                             |                                                                                     |                             |                  |                                   |                             |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |
| <input type="checkbox"/> No / Nein                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                             |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                             |                                                                                     |                                             |                                                                                     |                             |                  |                                   |                             |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |
| <b>Remarks:</b><br><b>Bemerkungen:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                             |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                             |                                                                                     |                                             |                                                                                     |                             |                  |                                   |                             |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |
| <b>Order quantity:</b><br><b>Auftragsmenge:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>Expected delivery date:</b><br><b>Gewünschtes Lieferdatum:</b>                                                                                                                                                                                                                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                             |                                                                                     |                                             |                                                                                     |                             |                  |                                   |                             |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |
| <b>Date · Datum:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>Confirmation · Unterschrift:</b>                                                                                                                                                                                                                                                                         |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                             |                                                                                     |                                             |                                                                                     |                             |                  |                                   |                             |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |                                           |

# Drilling · Bohren

Solid carbide drills · Vollhartmetallbohrer

## Step twist drill · Stufenspiralbohrer (Non-standard Taylor made · Sonderwerkzeuge)

Name:

Company / Firma:

Fax:

Tel:

E-mail:



**Trade Technology**

RUSSIA, Moscow, Ordzhonikidze str. 11 build 11

Tel.: +7(499)650-50-31

www.zcc-ct.ru

E-mail: info@zcc-ct.ru

### Machining information Bearbeitungsinformationen

Size of small machined hole  
Ø Kleine Bohrung

mm

Tolerance of small machined hole  
Toleranz der kleinen Bohrung

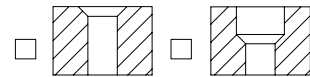
Size of big machined hole  
Ø Große Bohrung

mm

Tolerance of big machined hole  
Toleranz der großen Bohrung

Depth of machined hole  
Tiefe der großen Bohrung

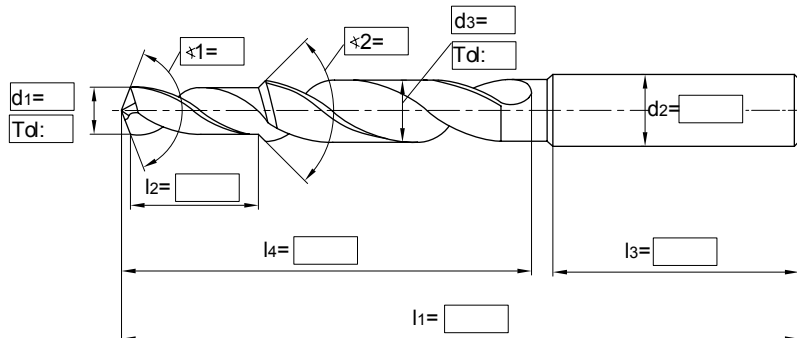
mm



### Workpiece material · Werkstückstoff

| Carbon steel<br>Kohlenstoff-Stahl | Alloy steel<br>Legierter Stahl | Hardened steel · gehärteter Stahl |        |        |        | Stainless steel<br>Rostfreier Stahl | Cast iron, Nodular GGG<br>Grauguss | Copper alloy<br>Kupfer-leg. | Aluminum Alu. | Aluminum alloy<br>Aluleg. | Titanium alloy<br>Titanleg. | Heat resist. alloy<br>Warmfeste Leg. |
|-----------------------------------|--------------------------------|-----------------------------------|--------|--------|--------|-------------------------------------|------------------------------------|-----------------------------|---------------|---------------------------|-----------------------------|--------------------------------------|
|                                   |                                | ~40HRC                            | ~50HRC | ~60HRC | ~68HRC |                                     |                                    |                             |               | Si % =                    |                             |                                      |
|                                   |                                |                                   |        |        |        |                                     |                                    |                             |               |                           |                             |                                      |

### Tool information · Werkzeug Informationen



#### Shank · Schaft

DIN6535

☐ Form HA

☐ Form HB

☐ Form HE

#### Cooling / Kühlung

☐ External  
Extern



☐ Internal  
Intern



#### Coating / Beschichtung

☐ Yes / Ja

☐ No / Nein

Remarks:  
Bemerkungen:

Order quantity: pieces  
Auftragsmenge: Stücke

Expected delivery date:  
Gewünschtes Lieferdatum:

Date · Datum:

Confirmation · Unterschrift:

### Three lips drill · Drei-Schneiden-Bohrer ( Non-standard Taylor made · Sonderwerkzeuge )

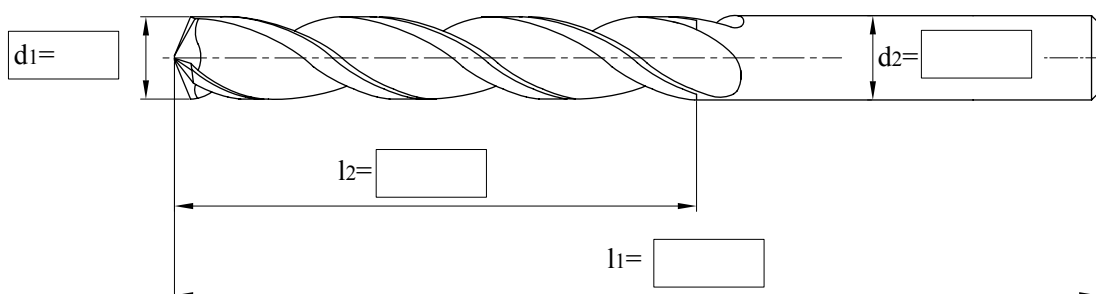
|                  |                                                                                                                                                                                                                                   |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name:            |  <b>Trade Technology</b><br>RUSSIA, Moscow, Ordzhonikidze str. 11 build 11<br>Tel.: +7(499)650-50-31<br>www.zcc-ct.ru<br>E-mail: info@zcc-ct.ru |
| Company / Firma: |                                                                                                                                                                                                                                   |
| Fax:             |                                                                                                                                                                                                                                   |
| Tel:             |                                                                                                                                                                                                                                   |
| E-mail:          |                                                                                                                                                                                                                                   |

### Workpiece material · Werkstückstoff

| Carbon steel<br>Kohlenstoff-Stahl | Alloy steel<br>Legierter Stahl | Hardened steel · gehärteter Stahl |        |        |        | Stainless steel<br>Rostfreier Stahl | Cast iron, Nodular GGG<br>Grauguss | Copper alloy<br>Kupfer-leg. | Aluminum<br>Alu. | Aluminum alloy<br>Aluleg. | Titanium alloy<br>Titanleg. | Heat resist. alloy<br>Warmfeste Leg. |
|-----------------------------------|--------------------------------|-----------------------------------|--------|--------|--------|-------------------------------------|------------------------------------|-----------------------------|------------------|---------------------------|-----------------------------|--------------------------------------|
|                                   |                                | ~40HRC                            | ~50HRC | ~60HRC | ~68HRC |                                     |                                    |                             |                  | Si % =                    |                             |                                      |
|                                   |                                |                                   |        |        |        |                                     |                                    |                             |                  |                           |                             |                                      |

| Cooling / Kühlung                            |                                                                                       |
|----------------------------------------------|---------------------------------------------------------------------------------------|
| <input type="checkbox"/> External<br>Externe |  |
| <input type="checkbox"/> Internal<br>Interne |  |

### Three lips drill · Drei-Schneiden-Bohrer



Remarks:  
Bemerkungen:

Order quantity: pieces  
Auftragsmenge: Stücke

Expected delivery date:  
Gewünschtes Lieferdatum:

Date · Datum:

Confirmation · Unterschrift:

# Drilling · Bohren

Solid carbide drills · Vollhartmetallbohrer

## Straight-flute drill · Gerade genutete Bohrer ( Non-standard Taylor made · Sonderwerkzeuge )

Name:

Company / Firma:

Fax:

Tel:

E-mail:



**Trade Technology**

RUSSIA, Moscow, Ordzhonikidze str. 11 build 11

Tel.: +7(499)650-50-31

www.zcc-ct.ru

E-mail: info@zcc-ct.ru

### Machining information and Workpiece Material · Bearbeitungsinfo und Werkstückstoff

|                                                    |                      |    |
|----------------------------------------------------|----------------------|----|
| Size of machined hole<br>Bohrungsdurchmesser       | <input type="text"/> | mm |
| Tolerance of machined hole<br>Toleranz der Bohrung | <input type="text"/> |    |
| Depth of machined hole<br>Bohrtiefe                | <input type="text"/> | mm |

- ☐ Grey cast iron  
Grauguss
- ☐ Nodular cast iron GGG  
Kugelgraphitguss
- ☐ Aluminium alloy  
Alulegierung
- ☐ Si Al alloy Si<10%  
Si-Alulegierung
- ☐ Si Al alloy Si≥10%  
Si-Alulegierung

Machined material trademark  
Spezieller Werkstoff

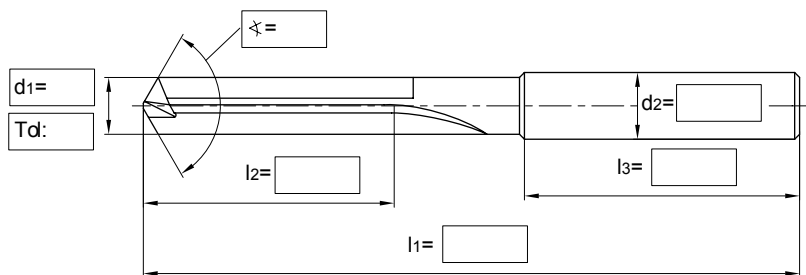
Tensile Strength · Zugfestigkeit

N/mm<sup>2</sup>

Hardness · Härte

The straight-flute drill is widely used for cutting short ship materials from cast iron and common Al alloy to high Si Al alloy  
Gerade genutete Bohrer werden weitestgehend für die Bearbeitung von Gusseisen und Aluleg. bis Si-Aluleg. eingesetzt.

### Tool information · Werkzeug Informationen



| Cooling / Kühlung                           |  |
|---------------------------------------------|--|
| <input type="checkbox"/> External<br>Extern |  |
| <input type="checkbox"/> Internal<br>Intern |  |

| Coating / Beschichtung             |  |
|------------------------------------|--|
| <input type="checkbox"/> Yes / Ja  |  |
| <input type="checkbox"/> No / Nein |  |

| Shank · Schaft           |         |
|--------------------------|---------|
| <input type="checkbox"/> | Form HA |
| <input type="checkbox"/> | Form HB |
| <input type="checkbox"/> | Form HE |

Remarks:

Bemerkungen:

Order quantity: pieces  
Auftragsmenge: Stücke

Expected delivery date:  
Gewünschtes Lieferdatum:

Date · Datum:

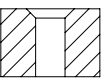
Confirmation · Unterschrift:

### Step straight-flute drill · Gerade genutete Stufen Bohrer

( Non-standard Taylor made · Sonderwerkzeuge )

|                  |                                                                                                                                                                                                                                                                                                             |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Name:            | <br><b>Trade Technology</b><br>RUSSIA, Moscow, Ordzhonikidze str. 11 build 11<br>Tel.: +7(499)650-50-31<br><a href="http://www.zcc-ct.ru">www.zcc-ct.ru</a><br>E-mail: <a href="mailto:info@zcc-ct.ru">info@zcc-ct.ru</a> |
| Company / Firma: |                                                                                                                                                                                                                                                                                                             |
| Fax:             |                                                                                                                                                                                                                                                                                                             |
| Tel:             |                                                                                                                                                                                                                                                                                                             |
| E-mail:          |                                                                                                                                                                                                                                                                                                             |

#### Machining information and Workpiece Material · Bearbeitungsinfo und Werkstückstoff

|                                                                  |                                                                                   |
|------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Machined hole<br>Bohrung                                         |  |
| Size of small machined hole<br>kleiner Lochdurchmesser           | <input type="text"/> mm                                                           |
| Tolerance of small machined hole<br>Toleranz der kleinen Bohrung | <input type="text"/>                                                              |
| Size of big machined hole<br>Ø Großer Lochdurchmesser            | <input type="text"/> mm                                                           |
| Tolerance of big machined hole<br>Toleranz der großen Bohrung    | <input type="text"/>                                                              |
| Depth of machined hole<br>Bohrtiefe                              | <input type="text"/> mm                                                           |

- ☐ Grey cast iron  
Grauguss
- ☐ Nodular cast iron GGG  
Kugelgraphitguss
- ☐ Aluminium alloy  
Alulegierung
- ☐ Si Al alloy Si<10%  
Si-Alulegierung
- ☐ Si Al alloy Si≥10%  
Si-Alulegierung

Machined material trademark  
Spezieller Werkstoff

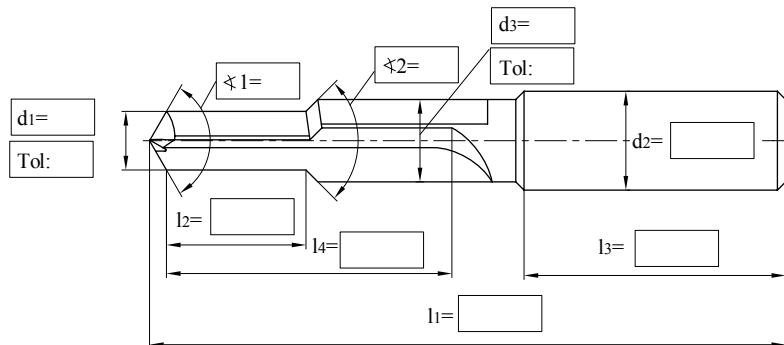
Tensile Strength · Zugfestigkeit

N/mm<sup>2</sup>

Hardness · Härte

The straight-flute drill is widely used for cutting short ship materials from cast iron and common Al alloy to high Si Al alloy  
Gerade genutete Bohrer werden weitestgehend für die Bearbeitung von Gusseisen und Aluleg. bis Si-Aluleg. eingesetzt.

#### Tool information · Werkzeug Informationen



|         |                          |         |
|---------|--------------------------|---------|
| DIN6535 | Shank · Schaft           |         |
|         | <input type="checkbox"/> | Form HA |
|         | <input type="checkbox"/> | Form HB |
|         | <input type="checkbox"/> | Form HE |

|                                             |                                                                                     |                                    |  |
|---------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------|--|
| Cooling / Kühlung                           |                                                                                     | Coating / Beschichtung             |  |
| <input type="checkbox"/> External<br>Extern |  | <input type="checkbox"/> Yes / Ja  |  |
| <input type="checkbox"/> Internal<br>Intern |  | <input type="checkbox"/> No / Nein |  |

Remarks:  
Bemerkungen:

Order quantity: pieces  
Auftragsmenge: Stücke

Expected delivery date:  
Gewünschtes Lieferdatum:

Date · Datum:

Confirmation · Unterschrift:

C

Solid carbide drills  
Vollhartmetallbohrer





# Reaming · Reiben

## Reamers · Reibahlen

**Solid carbide reamers overview**      **C142**      **Übersicht VHM Reibahlen**

Graphics identification      **C142**      Graphische  
Werkzeugbeschreibung

Code Key      **C143**      ISO Kennzeichnung

**Solid carbide reamer program**      **C144-C147**      **VHM Reibahlen Programm**

Recommended cutting datas      **C148**      Empfohlene Schnittdaten

**Technical information**      **C149-C151**      **Technische Informationen**

Order form for non-standard products      **C152**      Bestellformular für  
Sonderwerkzeuge

# Reaming · Reiben

Solid carbide reamers · Vollhartmetall-Reibahlen

## Solid carbide reamers overview · Übersicht VHM Reibahlen

| Name<br>Name                                                                    | Type<br>Typ | Shape<br>Ausführung                                                                 | Diameter<br>range<br>Durchmesser<br>bereich<br>Ø | Workpiece material<br>Werkstück Material                         |   |   |   |   |   |  |  | Page<br>Seite |      |
|---------------------------------------------------------------------------------|-------------|-------------------------------------------------------------------------------------|--------------------------------------------------|------------------------------------------------------------------|---|---|---|---|---|--|--|---------------|------|
|                                                                                 |             |                                                                                     |                                                  | P                                                                | M | K | N | S | H |  |  |               |      |
| Right helical<br>flute<br>Rechts<br>gedrallt                                    | 3101H7      |    | Ø4-Ø20                                           | Carbon steel<br>Alloy steel<br>Kohlenstoff - Stahl<br>Leg. Stahl |   |   |   |   |   |  |  | C144          | C148 |
| Straight flute<br>Gerade<br>genutet                                             | 3102H7      |    | Ø4-Ø20                                           |                                                                  |   |   |   |   |   |  |  | C145          |      |
| Straight flute<br>with inner hole<br>Gerad genutet<br>mit einem<br>inneren Loch | 3112H7      |   | Ø4-Ø20                                           |                                                                  |   |   |   |   |   |  |  | C146          |      |
| Left helical<br>flute<br>Links<br>gedrallt                                      | 3103H7      |  | Ø4-Ø20                                           |                                                                  |   |   |   |   |   |  |  | C147          |      |

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

## Solid carbide reamers icons information · VHM Reibahlen Grafische Beschreibung

### Precision class of reamed hole Bohrungstoleranzklasse

H7

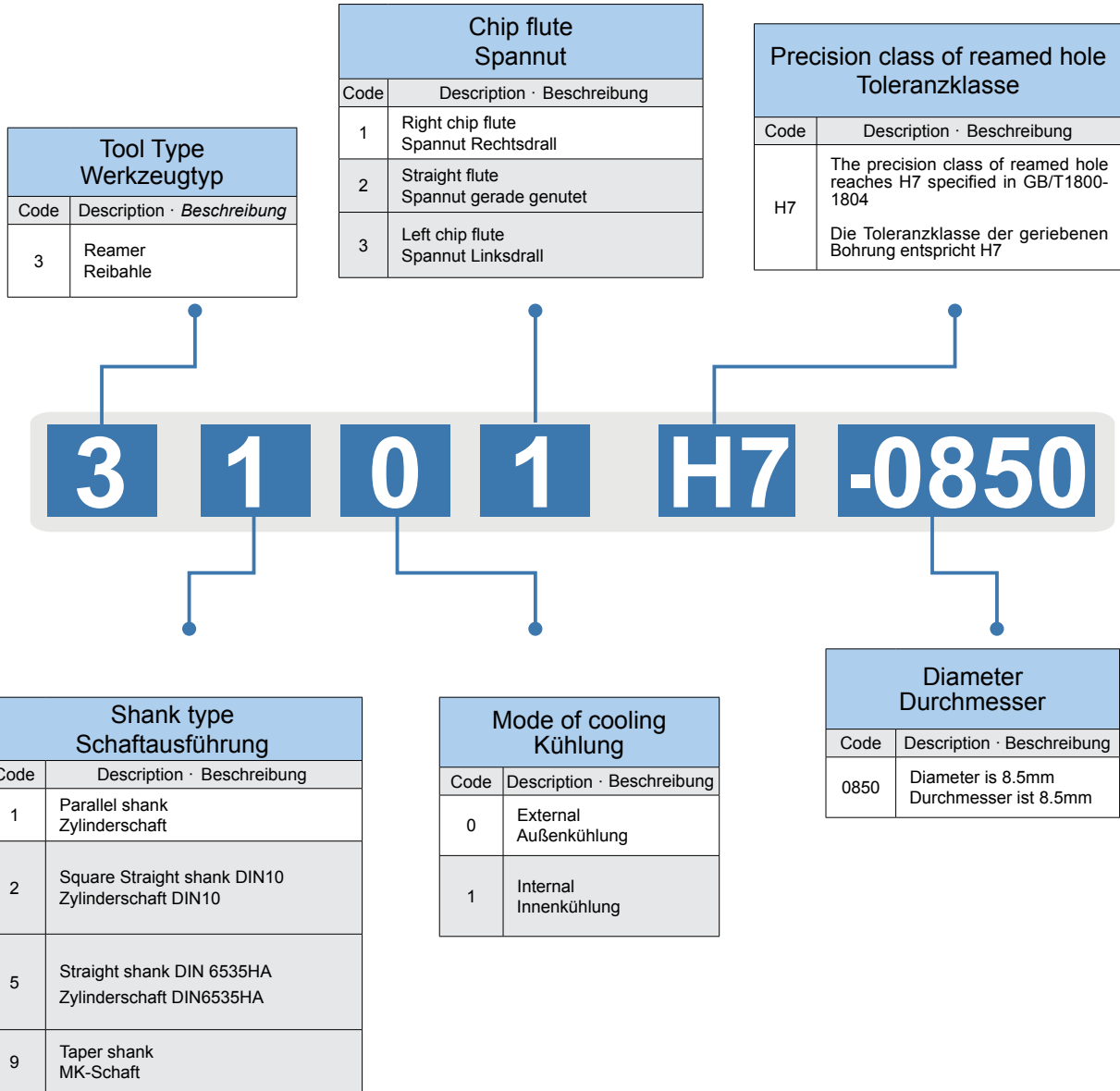
The precision class of reamed hole reaches H7 specified in GB/T1800-1804  
Toleranzklasse H7 angegeben in GB/T1800-1804

### Shank · Schaft



Straight shank  
Zylinderschaft

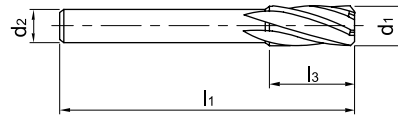
### Solid carbide reamer Code Key · VHM Reibahlen ISO Kennzeichnung



# Reaming · Reiben

Solid carbide reamers · Vollhartmetall-Reibahlen

## 3101H7 with straight shank and right helical flute mit Zylinderschaft und rechtsgedrallter Spannute



H7



| Type<br>Typ | Basic dimension(mm) · Basis Abmessungen |                                  |                |                | Number of teeth<br>Zähnezahl | Grade · Sorte<br>YK10F |
|-------------|-----------------------------------------|----------------------------------|----------------|----------------|------------------------------|------------------------|
|             | d <sub>1</sub>                          | d <sub>2</sub> (h <sub>6</sub> ) | l <sub>1</sub> | l <sub>3</sub> |                              |                        |
| 3101H7-0400 | 4.0                                     | 3.55                             | 56             | 20             | 4                            | ○                      |
| 3101H7-0450 | 4.5                                     | 4.00                             | 63             | 22             | 6                            | ○                      |
| 3101H7-0500 | 5.0                                     | 4.00                             | 63             | 22             | 6                            | ●                      |
| 3101H7-0550 | 5.5                                     | 5.00                             | 63             | 22             | 6                            | ○                      |
| 3101H7-0600 | 6.0                                     | 5.00                             | 63             | 22             | 6                            | ●                      |
| 3101H7-0650 | 6.5                                     | 5.00                             | 63             | 22             | 6                            | ○                      |
| 3101H7-0700 | 7.0                                     | 6.30                             | 71             | 25             | 6                            | ●                      |
| 3101H7-0750 | 7.5                                     | 6.30                             | 71             | 25             | 6                            | ○                      |
| 3101H7-0800 | 8.0                                     | 6.30                             | 71             | 25             | 6                            | ●                      |
| 3101H7-0850 | 8.5                                     | 8.00                             | 71             | 25             | 6                            | ○                      |
| 3101H7-0900 | 9.0                                     | 8.00                             | 71             | 25             | 6                            | ○                      |
| 3101H7-0950 | 9.5                                     | 8.00                             | 71             | 25             | 6                            | ○                      |
| 3101H7-1000 | 10.0                                    | 8.00                             | 71             | 25             | 6                            | ●                      |
| 3101H7-1050 | 10.5                                    | 8.00                             | 71             | 25             | 6                            | ○                      |
| 3101H7-1100 | 11.0                                    | 10.00                            | 80             | 28             | 6                            | ○                      |
| 3101H7-1150 | 11.5                                    | 10.00                            | 80             | 28             | 6                            | ○                      |
| 3101H7-1200 | 12.0                                    | 10.00                            | 80             | 28             | 6                            | ●                      |
| 3101H7-1250 | 12.5                                    | 10.00                            | 80             | 28             | 6                            | ○                      |
| 3101H7-1300 | 13.0                                    | 10.00                            | 80             | 28             | 6                            | ○                      |
| 3101H7-1350 | 13.5                                    | 12.5                             | 90             | 32             | 6                            | ○                      |
| 3101H7-1400 | 14.0                                    | 12.5                             | 90             | 32             | 6                            | ○                      |
| 3101H7-1450 | 14.5                                    | 12.5                             | 90             | 32             | 6                            | ●                      |
| 3101H7-1500 | 15.0                                    | 12.5                             | 90             | 32             | 6                            | ○                      |
| 3101H7-1550 | 15.5                                    | 12.5                             | 90             | 32             | 6                            | ○                      |
| 3101H7-1600 | 16.0                                    | 12.5                             | 90             | 32             | 6                            | ●                      |
| 3101H7-1700 | 17.0                                    | 12.5                             | 90             | 32             | 6                            | ○                      |
| 3101H7-1800 | 18.0                                    | 16.00                            | 100            | 36             | 6                            | ○                      |
| 3101H7-1900 | 19.0                                    | 16.00                            | 100            | 36             | 6                            | ○                      |
| 3101H7-2000 | 20.0                                    | 16.00                            | 100            | 36             | 6                            | ○                      |

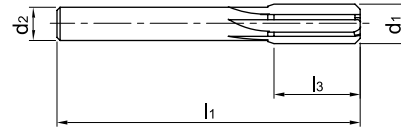
### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Grade<br>Sorte | Workpiece material · Werkstückstoff |                                                                   |                                   |        |        |                                           |                        |                                                      |                              |                              |                                            |
|----------------|-------------------------------------|-------------------------------------------------------------------|-----------------------------------|--------|--------|-------------------------------------------|------------------------|------------------------------------------------------|------------------------------|------------------------------|--------------------------------------------|
|                | Mild steel<br>Baustahl<br>HB≤180    | Carbon steel<br>Alloy Steel<br>Kohlenstoff-<br>Legierter<br>Stahl | Hardened steel · Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron<br>Gusseisen | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg | Heat resist.<br>alloy<br>Warmfeste<br>Leg. |
|                |                                     |                                                                   | ~40HRC                            | ~50HRC | ~60HRC |                                           |                        |                                                      |                              |                              |                                            |
| YK10F          |                                     |                                                                   |                                   |        |        |                                           | ✓                      | ✓                                                    | ✓                            | ✓                            |                                            |

● Ex Stock / ab Lager ○ On demand / auf Anfrage

### 3102H7 with straight shank and flute · mit Zylinderschaft und gerader Spannute



H7



| Type<br>Typ | Basic dimension(mm) · Basis Abmessungen |        |     |    | Number of teeth<br>Zähnezahl | Grade · Sorte<br>YK10F |
|-------------|-----------------------------------------|--------|-----|----|------------------------------|------------------------|
|             | d1                                      | d2(h6) | l1  | l3 |                              |                        |
| 3102H7-0400 | 4.0                                     | 3.55   | 56  | 20 | 4                            | ○                      |
| 3102H7-0450 | 4.5                                     | 4.00   | 63  | 22 | 6                            | ○                      |
| 3102H7-0500 | 5.0                                     | 4.00   | 63  | 22 | 6                            | ●                      |
| 3102H7-0550 | 5.5                                     | 5.00   | 63  | 22 | 6                            | ○                      |
| 3102H7-0600 | 6.0                                     | 5.00   | 63  | 22 | 6                            | ●                      |
| 3102H7-0650 | 6.5                                     | 5.00   | 63  | 22 | 6                            | ○                      |
| 3102H7-0700 | 7.0                                     | 6.30   | 71  | 25 | 6                            | ○                      |
| 3102H7-0750 | 7.5                                     | 6.30   | 71  | 25 | 6                            | ○                      |
| 3102H7-0800 | 8.0                                     | 6.30   | 71  | 25 | 6                            | ○                      |
| 3102H7-0850 | 8.5                                     | 8.00   | 71  | 25 | 6                            | ○                      |
| 3102H7-0900 | 9.0                                     | 8.00   | 71  | 25 | 6                            | ○                      |
| 3102H7-0950 | 9.5                                     | 8.00   | 71  | 25 | 6                            | ○                      |
| 3102H7-1000 | 10.0                                    | 8.00   | 71  | 25 | 6                            | ●                      |
| 3102H7-1050 | 10.5                                    | 8.00   | 71  | 25 | 6                            | ●                      |
| 3102H7-1100 | 11.0                                    | 10.00  | 80  | 28 | 6                            | ○                      |
| 3102H7-1150 | 11.5                                    | 10.00  | 80  | 28 | 6                            | ○                      |
| 3102H7-1200 | 12.0                                    | 10.00  | 80  | 28 | 6                            | ○                      |
| 3102H7-1250 | 12.5                                    | 10.00  | 80  | 28 | 6                            | ○                      |
| 3102H7-1300 | 13.0                                    | 10.00  | 80  | 28 | 6                            | ●                      |
| 3102H7-1350 | 13.5                                    | 12.5   | 90  | 32 | 6                            | ○                      |
| 3102H7-1400 | 14.0                                    | 12.5   | 90  | 32 | 6                            | ○                      |
| 3102H7-1450 | 14.5                                    | 12.5   | 90  | 32 | 6                            | ●                      |
| 3102H7-1500 | 15.0                                    | 12.5   | 90  | 32 | 6                            | ○                      |
| 3102H7-1550 | 15.5                                    | 12.5   | 90  | 32 | 6                            | ○                      |
| 3102H7-1600 | 16.0                                    | 12.5   | 90  | 32 | 6                            | ○                      |
| 3102H7-1700 | 17.0                                    | 12.5   | 90  | 32 | 6                            | ○                      |
| 3102H7-1800 | 18.0                                    | 16.00  | 100 | 36 | 6                            | ○                      |
| 3102H7-1900 | 19.0                                    | 16.00  | 100 | 36 | 6                            | ○                      |
| 3102H7-2000 | 20.0                                    | 16.00  | 100 | 36 | 6                            | ○                      |

#### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
 ✓ = Suitable · Empfohlen

| Grade<br>Sorte | Workpiece material · Werkstückstoff |                                                                    |                                   |        |        |                                           |                        |                                                      |                              |                               |                                            |
|----------------|-------------------------------------|--------------------------------------------------------------------|-----------------------------------|--------|--------|-------------------------------------------|------------------------|------------------------------------------------------|------------------------------|-------------------------------|--------------------------------------------|
|                | Mild steel<br>Baustahl<br>HB≤180    | Carbon steel<br>Alloy Steel<br>Kohlenstoff-,<br>Legierter<br>Stahl | Hardened steel · Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron<br>Gusseisen | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Warmfeste<br>Leg. |
|                |                                     |                                                                    | ~40HRC                            | ~50HRC | ~60HRC |                                           |                        |                                                      |                              |                               |                                            |
| YK10F          |                                     |                                                                    |                                   |        |        |                                           | ✓                      | ✓                                                    | ✓                            | ✓                             |                                            |

Code key C143  
ISO Kennzeichen

Cutting data C148  
Schnittdaten

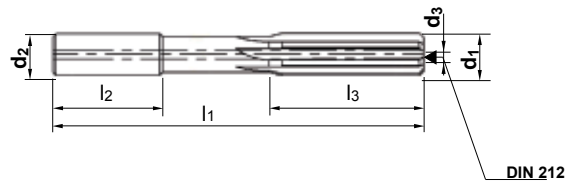
Technical Information C149-151  
Technische Information.

Non-standart tailor made C152  
Bestellformular für Sonderwerkzeuge

# Reaming · Reiben

Solid carbide reamers · Vollhartmetall-Reibahlen

## 3112H7 with straight shank and flute · mit Zylinderschaft und gerader Spannute



H7



| Type<br>Typ | Basic dimension(mm) · Basis Abmessungen |        |     |     |    |    | Number of teeth<br>Zähnezahl | Grade · Sorte<br>KRG102 |
|-------------|-----------------------------------------|--------|-----|-----|----|----|------------------------------|-------------------------|
|             | d1<br>DIN 1420                          | d2(h6) | d3  | l1  | l3 | l2 |                              |                         |
| 3112H7-0400 | 4.0                                     | 4.0    | 0.6 | 70  | 20 | 28 | 6                            | ●                       |
| 3112H7-0500 | 5.0                                     | 5.0    | 1.0 | 70  | 22 | 28 | 6                            | ●                       |
| 3112H7-0600 | 6.0                                     | 6.00   | 1.0 | 100 | 22 | 36 | 6                            | ●                       |
| 3112H7-0700 | 7.0                                     | 8.00   | 1.3 | 110 | 25 | 42 | 6                            | ●                       |
| 3112H7-0800 | 8.0                                     | 8.00   | 1.3 | 110 | 25 | 42 | 6                            | ●                       |
| 3112H7-0900 | 9.0                                     | 10.00  | 2.0 | 110 | 25 | 42 | 6                            | ●                       |
| 3112H7-1000 | 10.0                                    | 10.00  | 2.0 | 110 | 25 | 38 | 6                            | ●                       |
| 3112H7-1100 | 11.0                                    | 12.00  | 2.0 | 110 | 28 | 38 | 6                            | ●                       |
| 3112H7-1200 | 12.0                                    | 12.00  | 2.0 | 110 | 28 | 38 | 6                            | ●                       |
| 3112H7-1300 | 13.0                                    | 14.00  | 2.0 | 110 | 28 | 38 | 6                            | ●                       |
| 3112H7-1400 | 14.0                                    | 14.00  | 2.0 | 110 | 32 | 38 | 6                            | ●                       |
| 3112H7-1500 | 15.0                                    | 16.00  | 2.0 | 110 | 32 | 38 | 6                            | ●                       |
| 3112H7-1600 | 16.0                                    | 16.00  | 2.0 | 150 | 32 | 52 | 6                            | ●                       |
| 3112H7-1800 | 18.0                                    | 18.00  | 3.0 | 150 | 36 | 52 | 6                            | ●                       |
| 3112H7-2000 | 20.0                                    | 20.00  | 3.0 | 150 | 36 | 50 | 6                            | ●                       |

C

Solid carbide reamers  
Vollhartmetall Reibahlen

### Material Overview · Material Übersicht

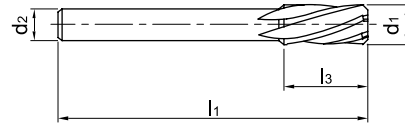
✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Grade<br>Sorte | Workpiece material · Werkstückstoff |                                                                    |                                   |        |        |                                           |                        |                                                 |                              |                               |                                            |
|----------------|-------------------------------------|--------------------------------------------------------------------|-----------------------------------|--------|--------|-------------------------------------------|------------------------|-------------------------------------------------|------------------------------|-------------------------------|--------------------------------------------|
|                | Mild steel<br>Baustahl<br>HB≤180    | Carbon steel<br>Alloy Steel<br>Kohlenstoff-,<br>Legierter<br>Stahl | Hardened steel · Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron<br>Gusseisen | Nodular<br>cast iron<br>GGG<br>Kugelgraphitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Wärmfeste<br>Leg. |
|                |                                     |                                                                    | ~40HRC                            | ~50HRC | ~60HRC |                                           |                        |                                                 |                              |                               |                                            |
| KRG102         |                                     | ✓                                                                  | ✓                                 |        |        |                                           | ✓                      | ✓                                               |                              |                               |                                            |

● Ex Stock / ab Lager ○ On demand / auf Anfrage



### 3103H7 with straight shank and left helical flute mit Zylinderschaft und linksgedrallter Spannute



| Type<br>Typ | Basic dimension(mm) · Basis Abmessungen |        |     |    | Number of teeth<br>Zähnezahl | Grade · Sorte<br>YK10F |
|-------------|-----------------------------------------|--------|-----|----|------------------------------|------------------------|
|             | d1                                      | d2(h6) | l1  | l3 |                              |                        |
| 3103H7-0400 | 4.0                                     | 3.55   | 56  | 20 | 4                            | ●                      |
| 3103H7-0450 | 4.5                                     | 4.00   | 63  | 22 | 6                            | ○                      |
| 3103H7-0500 | 5.0                                     | 4.00   | 63  | 22 | 6                            | ●                      |
| 3103H7-0550 | 5.5                                     | 5.00   | 63  | 22 | 6                            | ○                      |
| 3103H7-0600 | 6.0                                     | 5.00   | 63  | 22 | 6                            | ●                      |
| 3103H7-0650 | 6.5                                     | 5.00   | 63  | 22 | 6                            | ○                      |
| 3103H7-0700 | 7.0                                     | 6.30   | 71  | 25 | 6                            | ○                      |
| 3103H7-0750 | 7.5                                     | 6.30   | 71  | 25 | 6                            | ○                      |
| 3103H7-0800 | 8.0                                     | 6.30   | 71  | 25 | 6                            | ●                      |
| 3103H7-0850 | 8.5                                     | 8.00   | 71  | 25 | 6                            | ○                      |
| 3103H7-0900 | 9.0                                     | 8.00   | 71  | 25 | 6                            | ○                      |
| 3103H7-0950 | 9.5                                     | 8.00   | 71  | 25 | 6                            | ○                      |
| 3103H7-1000 | 10.0                                    | 8.00   | 71  | 25 | 6                            | ●                      |
| 3103H7-1050 | 10.5                                    | 8.00   | 71  | 25 | 6                            | ○                      |
| 3103H7-1100 | 11.0                                    | 10.00  | 80  | 28 | 6                            | ○                      |
| 3103H7-1150 | 11.5                                    | 10.00  | 80  | 28 | 6                            | ●                      |
| 3103H7-1200 | 12.0                                    | 10.00  | 80  | 28 | 6                            | ○                      |
| 3103H7-1250 | 12.5                                    | 10.00  | 80  | 28 | 6                            | ○                      |
| 3103H7-1300 | 13.0                                    | 10.00  | 80  | 28 | 6                            | ○                      |
| 3103H7-1350 | 13.5                                    | 12.5   | 90  | 32 | 6                            | ○                      |
| 3103H7-1400 | 14.0                                    | 12.5   | 90  | 32 | 6                            | ○                      |
| 3103H7-1450 | 14.5                                    | 12.5   | 90  | 32 | 6                            | ○                      |
| 3103H7-1500 | 15.0                                    | 12.5   | 90  | 32 | 6                            | ●                      |
| 3103H7-1550 | 15.5                                    | 12.5   | 90  | 32 | 6                            | ○                      |
| 3103H7-1600 | 16.0                                    | 12.5   | 90  | 32 | 6                            | ○                      |
| 3103H7-1700 | 17.0                                    | 12.5   | 90  | 32 | 6                            | ○                      |
| 3103H7-1800 | 18.0                                    | 16.00  | 100 | 36 | 6                            | ○                      |
| 3103H7-1900 | 19.0                                    | 16.00  | 100 | 36 | 6                            | ○                      |
| 3103H7-2000 | 20.0                                    | 16.00  | 100 | 36 | 6                            | ○                      |

#### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Grade<br>Sorte | Workpiece material · Werkstückstoff |                                                                    |                                   |        |        |                                           |                        |                                                      |                              |                               |                                            |
|----------------|-------------------------------------|--------------------------------------------------------------------|-----------------------------------|--------|--------|-------------------------------------------|------------------------|------------------------------------------------------|------------------------------|-------------------------------|--------------------------------------------|
|                | Mild steel<br>Baustahl<br>HB≤180    | Carbon steel<br>Alloy Steel<br>Kohlenstoff-,<br>Legierter<br>Stahl | Hardened steel · Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron<br>Gusseisen | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Wärmfeste<br>Leg. |
|                |                                     |                                                                    | ~40HRC                            | ~50HRC | ~60HRC |                                           |                        |                                                      |                              |                               |                                            |
| YK10F          |                                     |                                                                    |                                   |        |        |                                           | ✓                      | ✓                                                    | ✓                            | ✓                             |                                            |

Code key C143  
ISO Kennzeichen

Cutting data C148  
Schnittdaten

Technical Information C149-151  
Technische Information.

Non-standart tailor made C152  
Bestellformular für Sonderwerkzeuge

# Reaming · Reiben

Solid carbide reamers · Vollhartmetall-Reibahlen

3101H7 / 3102H7 / 3103H7

| Workpiece material<br>Werkstück-stoff | Cast iron<br>Nodular cast iron<br>GGG<br>Gusseisen, Kugelgraphitguss |             |                               | Copper alloy<br>Kupferlegierungen |             |                               | Aluminium alloy<br>Alulegierungen |             |                               |
|---------------------------------------|----------------------------------------------------------------------|-------------|-------------------------------|-----------------------------------|-------------|-------------------------------|-----------------------------------|-------------|-------------------------------|
| Vc                                    | 8~16m/min                                                            |             |                               | 10~25m/min                        |             |                               | 15~30 m/min                       |             |                               |
| Ø<br>(mm)                             | n<br>(min <sup>-1</sup> )                                            | f<br>(mm/r) | Tolerance<br>Toleranz<br>(mm) | n<br>(min <sup>-1</sup> )         | f<br>(mm/r) | Tolerance<br>Toleranz<br>(mm) | n<br>(min <sup>-1</sup> )         | f<br>(mm/r) | Tolerance<br>Toleranz<br>(mm) |
| 4                                     | 950                                                                  | 0.04~0.06   | 0.1~0.2                       | 1600                              | 0.04~0.06   | 0.1~0.2                       | 2000                              | 0.04~0.06   | 0.1~0.2                       |
| 5                                     | 760                                                                  | 0.05~0.09   | 0.1~0.2                       | 1300                              | 0.05~0.09   | 0.1~0.2                       | 1600                              | 0.05~0.09   | 0.1~0.2                       |
| 6                                     | 640                                                                  | 0.06~0.12   | 0.1~0.2                       | 1050                              | 0.06~0.12   | 0.1~0.2                       | 1300                              | 0.06~0.12   | 0.1~0.2                       |
| 7                                     | 550                                                                  | 0.07~0.14   | 0.1~0.2                       | 910                               | 0.07~0.14   | 0.1~0.2                       | 1150                              | 0.07~0.14   | 0.1~0.2                       |
| 8                                     | 480                                                                  | 0.08~0.16   | 0.1~0.2                       | 800                               | 0.08~0.16   | 0.1~0.2                       | 1000                              | 0.08~0.16   | 0.1~0.2                       |
| 9                                     | 430                                                                  | 0.09~0.18   | 0.1~0.2                       | 710                               | 0.09~0.18   | 0.1~0.2                       | 890                               | 0.09~0.18   | 0.1~0.2                       |
| 10                                    | 380                                                                  | 0.10~0.20   | 0.1~0.2                       | 640                               | 0.10~0.20   | 0.1~0.2                       | 800                               | 0.10~0.20   | 0.1~0.2                       |
| 11                                    | 350                                                                  | 0.11~0.22   | 0.1~0.2                       | 580                               | 0.11~0.22   | 0.1~0.2                       | 720                               | 0.11~0.22   | 0.1~0.2                       |
| 12                                    | 320                                                                  | 0.12~0.24   | 0.1~0.2                       | 530                               | 0.12~0.24   | 0.1~0.2                       | 660                               | 0.12~0.24   | 0.1~0.2                       |
| 13                                    | 290                                                                  | 0.13~0.26   | 0.1~0.2                       | 490                               | 0.13~0.26   | 0.1~0.2                       | 610                               | 0.13~0.26   | 0.1~0.2                       |
| 14                                    | 270                                                                  | 0.14~0.28   | 0.1~0.2                       | 460                               | 0.14~0.28   | 0.1~0.2                       | 570                               | 0.14~0.28   | 0.1~0.2                       |
| 15                                    | 250                                                                  | 0.15~0.30   | 0.1~0.2                       | 430                               | 0.15~0.30   | 0.1~0.2                       | 530                               | 0.15~0.30   | 0.1~0.2                       |
| 16                                    | 240                                                                  | 0.16~0.32   | 0.1~0.2                       | 400                               | 0.16~0.32   | 0.1~0.2                       | 500                               | 0.16~0.32   | 0.1~0.2                       |
| 17                                    | 225                                                                  | 0.18~0.34   | 0.1~0.2                       | 380                               | 0.18~0.34   | 0.1~0.2                       | 470                               | 0.18~0.34   | 0.1~0.2                       |
| 18                                    | 210                                                                  | 0.20~0.36   | 0.1~0.2                       | 350                               | 0.20~0.36   | 0.1~0.2                       | 440                               | 0.20~0.36   | 0.1~0.2                       |
| 19                                    | 200                                                                  | 0.22~0.38   | 0.1~0.2                       | 340                               | 0.22~0.38   | 0.1~0.2                       | 420                               | 0.22~0.38   | 0.1~0.2                       |
| 20                                    | 190                                                                  | 0.24~0.40   | 0.1~0.2                       | 320                               | 0.24~0.40   | 0.1~0.2                       | 400                               | 0.24~0.40   | 0.1~0.2                       |

1. Please select the holder with high rigidity and precision.
2. Make sure supply sufficient coolant.
3. Please adjust cutting parameters according to workpiece and machine rigidity.

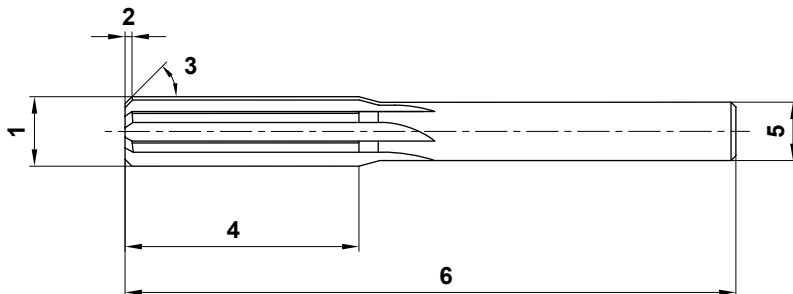
1. Bitte wählen Sie einen Halter mit hoher Stabilität und Genauigkeit.
2. Stellen Sie sicher, dass ausreichend Kühlmittel bereit gestellt wird.
3. Bitte stimmen Sie die Schnittdaten mit dem Werkstück und der Stabilität der Maschine ab.

C

Solid carbide reamers  
Vollhartmetall Reibahlen

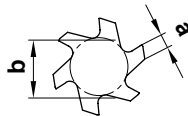
### Terminology of reamer · Terminology von Reibahlen

#### ● Version · Ausführung



1. Cutting diameter
2. Cutting chamfer length
3. Approach angle
4. Cutting edge length
5. Shank diameter
6. Overall length

1. Schneidendurchmesser
2. Schneidenfasenlänge
3. Einstellwinkel
4. Schneidenlänge
5. Schaftdurchmesser
6. Gesamtlänge



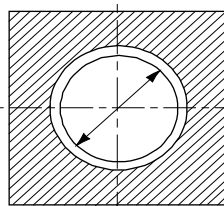
- a. Margin width
- b. Core diameter

- a. Schneidenstärke
- b. Kerndurchmesser

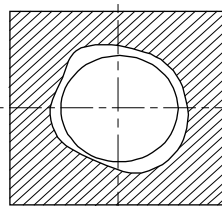
Reaming is the semi-finishing and finishing of an existing hole to achieve precise size, high surface quality, perfect roundness and cylindricity etc.

In order to achieve precise hole in reaming process, it must to determine the reamer diameter correctly. Therefore, it is need to consider allowance determined by workpiece material and machining conditions. In addition, it is also need to select the cutting conditions correctly except using high precision reamer to achieve good surface quality.

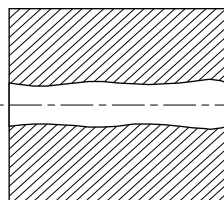
The reaming precision is mainly decided by diameter and radial run-out. With respect to cutting condition, it is better to select low speed cutting considering to improve machining precision, but it also must take upper limit of machining efficiency into consideration.



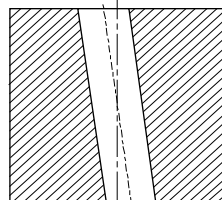
**Enlarge allowance**  
Ø Toleranz / Aufmaß



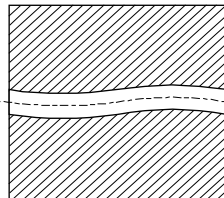
**Roundness**  
Rundheit



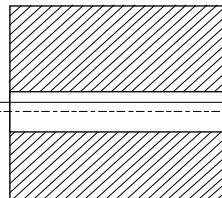
**Cylindricity**  
Zylindrizität



**Verticality**  
vertikale Abweichung



**Straightness**  
Geradheit



**Off-centre**  
Zentrumabweichung

Als Reiben bezeichnet man die Vor- oder Fertigbearbeitung einer vorhandenen Bohrung innerhalb einer engen Toleranz, mit hoher Oberflächenqualität, perfekter Rundheit, Zylindrizität etc.

Um eine exakte Bohrung durch Reiben zu erzielen, kommt es auf die Auswahl der Reibahle und des Reibahldurchmessers an.

Zusätzlich sind die Bohrungstoleranzen, die Werkstückstoffe und die Maschinenbedingungen zu berücksichtigen.

Die Bohrungsqualität wird darüber hinaus stark von dem Rundlauf des Werkzeugs beeinflusst. Die Schnittdaten sollten zur Erzielung einer präzisen Bohrung eher etwas niedriger gewählt werden, ohne allerdings die Wirtschaftlichkeit unberücksichtigt zu lassen.

# Reaming - Reiben

Solid carbide reamers ▪ Vollhartmetall-Reibahlen

| Common problems<br>Fehler                                        | Solutions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Lösungen                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Oversize holes<br>Bohrung zu groß                                | <ol style="list-style-type: none"> <li>1. Reduce diameter of reamer.</li> <li>2. The center of reamer is not in alignment with hole center, adjust the concentricity of hole and reamer.</li> <li>3. Large radial run-out of reamer, good radial run-out is a Key Keil to successful reaming</li> <li>4. Scratches on reamer shank.</li> <li>5. Select a suitable coolant.</li> <li>6. Adjust cutting parameters.</li> </ol>                                                                                                                                                                                                                                                                       | <ol style="list-style-type: none"> <li>1. Reibahlundurchmesser reduzieren.</li> <li>2. Zentrität von Reibahle und Bohrung prüfen.</li> <li>3. Rundlaufgenauigkeit der Reibahle prüfen.</li> <li>4. Reibahlenschaft auf Kratzer oder Verletzungen prüfen.</li> <li>5. Richtiges Kühlmittel verwenden.</li> <li>6. Schnittdaten anpassen.</li> </ol>                                                                                                                                                                                                                                                                                                                                                         |
| Smaller holes<br>Bohrung zu klein                                | <ol style="list-style-type: none"> <li>1. Increase diameter of reamer.</li> <li>2. Reduce rotating speed.</li> <li>3. Reduce the margin width.</li> <li>4. Excessive tool wear, please conduct cutting after regrinding.</li> <li>5. Thermal expansion coefficient of workpiece is too large, please keep it cooled enough.</li> </ol>                                                                                                                                                                                                                                                                                                                                                             | <ol style="list-style-type: none"> <li>1. Reibahlundurchmesser erhöhen.</li> <li>2. Schnittgeschwindigkeit reduzieren.</li> <li>3. Aufmaß reduzieren.</li> <li>4. zu großer Werkzeugverschleiß. (Reibahle nachschleifen oder neu)</li> <li>5. Der thermische Ausdehnungskoeffizient des Werkstückstoffs ist zu groß. Für ausreichende Kühlung sorgen.</li> </ol>                                                                                                                                                                                                                                                                                                                                           |
| Poor hole roundness & straightness<br>Bohrung unrund & verlaufen | <ol style="list-style-type: none"> <li>1. Ensure better roundness of reamer chamfer.</li> <li>2. Low rigidity make the overhang as short as possible if no inference.</li> <li>3. Check radial run-out after clamping reamer.</li> <li>4. Adjust the concentricity of hole and reamer.</li> <li>5. Ensure reaming allowance equality.</li> </ol>                                                                                                                                                                                                                                                                                                                                                   | <ol style="list-style-type: none"> <li>1. Rundlaufgenauigkeit der Reibahlenfase sicherstellen.</li> <li>2. Geringe Stabilität, Überhang reduzieren.</li> <li>3. Rundlaufgenauigkeit der Reibahle im geklemmten Zustand prüfen.</li> <li>4. Konzentrität zwischen Reibahle und Bohrung justieren.</li> <li>5. Bohrergeometrie prüfen und sicherstellen.</li> </ol>                                                                                                                                                                                                                                                                                                                                          |
| Poor hole surface quality<br>schlechte Oberflächenqualität       | <ol style="list-style-type: none"> <li>1. The hole surface roughness of entering part is bad.</li> <li>2. Reduce rotating speed.</li> <li>3. Ensure correct reaming allowance, too large or too small both will result bad surface roughness.</li> <li>4. Select the reamer with large chip pocket, avoid chip jamming.</li> <li>5. Increase clearance angle of reamer entering part .</li> <li>6. Check whether there are built-up on chamfer and margin land.</li> <li>7. Increase the rigidity of machine, holder and reamer .</li> <li>8. Ensure whether the type of reamer head is suitable for the workpiece.</li> <li>9. Increase the margin width and land width appropriately.</li> </ol> | <ol style="list-style-type: none"> <li>1. Die Oberflächenqualität im Anschnittbereich prüfen und gegebenenfalls verbessern.</li> <li>2. Schnittgeschwindigkeit reduzieren.</li> <li>3. Richtiges Reibaufmaß sicher stellen. Zu gering oder zu groß bringen schlechte Oberflächen.</li> <li>4. Reibahlen mit ausreichend großem Spanraum verwenden.</li> <li>5. Freiwinkel im Anschnitt der Reibahle vergrößern.</li> <li>6. Anschnittfase der Reibahle auf Verschleiß oder Aufbauschneide prüfen.</li> <li>7. Stabilität der Maschine, Aufnahme und Reibahle gewährleisten.</li> <li>8. Richtige Auswahl der Reibahle für den entsprechenden Einsatz prüfen.</li> <li>9. Bohrungsaufmaß prüfen.</li> </ol> |
| Hole precision is worse<br>Geringe Bohrungsqualität              | <ol style="list-style-type: none"> <li>1. In return pass, the reamer should be pulled out of hole when rotating at the same direction as before. Opposite rotation must be prohibited.</li> <li>2. Reduce rotating speed.</li> <li>3. Select the reamer with more lips.</li> <li>4. Increase the margin width appropriately, enhance its guiding performance and extrusion effect.</li> <li>5. Improve reamer lubricating property by surface treatment.</li> <li>6. Select a suitable coolant.</li> </ol>                                                                                                                                                                                         | <ol style="list-style-type: none"> <li>1. Reibahle in Schnittrichtung zurück ziehen.</li> <li>2. Schnittgeschwindigkeit reduzieren</li> <li>3. Reibahlen mit mehr Schneiden einsetzen.</li> <li>4. Schneidenausführung, Rundlauffase und Bohrerführung verbessern. Auf Zentrität und Rundlauf prüfen.</li> <li>5. Kühlmittelzuführung verbessern.</li> <li>6. Auswahl des optimalen Kühlmittelschmierstoffs.</li> </ol>                                                                                                                                                                                                                                                                                    |

| Common problems<br>Fehler                                                  | Solutions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Lösungen                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reamer breakage, thermal damage<br>Reibahlenbruch und termische Verformung | <ol style="list-style-type: none"> <li>1. The guiding hole is defective before reaming, check drill and linearity.</li> <li>2. Adjust machining allowance to avoid tool breakage caused by too large allowance.</li> <li>3. If the chip removal is not fluent, select a reamer with larger chip pocket.</li> <li>4. Ensure supply insufficient coolant.</li> <li>5. Adjust rotating speed and feed rate appropriately.</li> <li>6. Increase the rigidity of machine, holder and reamer .</li> <li>7. Improve the sharpness of reamer, make cutting light and fast.</li> <li>8. Excessive wear on cutting edge, reach or surpass tool life, recommend to change tool or regrind.</li> </ol> | <ol style="list-style-type: none"> <li>1. Die Führungsbohrung ist qualitativ unzureichend. Bohrer und Bohrungsachse prüfen.</li> <li>2. Bearbeitungsaufmaß nicht zu groß wählen.</li> <li>3. Reibahlen mit ausreichend großen Spanraum wählen.</li> <li>4. Ausreichende Kühlmittelmenge sicherstellen.</li> <li>5. Richtige Schnittgeschwindigkeit und Vorschübe einstellen.</li> <li>6. Stabilität der Maschine, Aufnahme und Werkzeug verbessern.</li> <li>7. Schneidenschärfe der Reibahle verbessern.</li> <li>8. Bei zu hohem Schneidenschleiß das Werkzeug wechseln oder Nachschleifen.</li> </ol> |
| Damage on reamer shank<br>Reibahlenschacht Beschädigung                    | <ol style="list-style-type: none"> <li>1. Check whether the shank hardness is enough, too low hardness will cause deformation, too high hardness may cause breakage.</li> <li>2. Check the conjunction of holder and bush, don't use the defective holder.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                      | <ol style="list-style-type: none"> <li>1. Die vorgegebene Härte des Schaftes prüfen.</li> <li>2. Spannhülse und Halter auf Beschädigung prüfen.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Short tool life<br>Kurze Standzeit                                         | <ol style="list-style-type: none"> <li>1. Enhance reamer's cutting edge hardness.</li> <li>2. Check the coolant.</li> <li>3. Change the straight flute to helical flute.</li> <li>4. Check all factors affecting machining precision.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                           | <ol style="list-style-type: none"> <li>1. Reibahlen mit verschleißfesteren Schneiden wählen.</li> <li>2. Kühlmittelzufuhr prüfen.</li> <li>3. Wechsel von gerade- zu spiralgenuteten Reibahlen.</li> <li>4. Prüfen Sie die Faktoren, die die Bearbeitungspräzision beeinflussen.</li> </ol>                                                                                                                                                                                                                                                                                                              |
| Scratches on hole surface<br>Zerkratzte Bohrungsoberfläche                 | <ol style="list-style-type: none"> <li>1. Check no built-up on reamer surface.</li> <li>2. Improve workpiece holding.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <ol style="list-style-type: none"> <li>1. Schneide auf Aufbauschneidenbildung untersuchen und gegebenenfalls Schnittdaten korrigieren.</li> <li>2. Werkstückspannung verbessern.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                              |
| Trumpet-shaped entry hole<br>Bohrungseintrittsbereich zu groß              | <ol style="list-style-type: none"> <li>1. Improve workpiece holding.</li> <li>2. Check radial run-out after clamping reamer.</li> <li>3. The center of reamer is not in alignment with hole center, adjust the concentricity of hole and reamer.</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                | <ol style="list-style-type: none"> <li>1. Werkstückspannung verbessern.</li> <li>2. Rundlauf der Reibahle im geklemmten Zustand prüfen.</li> <li>3. Das Zentrum des Werkzeuges stimmt nicht mit dem Zentrum der Bohrung überein. Zentrität justieren.</li> </ol>                                                                                                                                                                                                                                                                                                                                         |

# Reaming · Reiben

Solid carbide reamers · Vollhartmetall-Reibahlen

## Non-standard Taylor made · Sonderwerkzeuge

Name:

Company / Firma:

Fax:

Tel:

E-mail:



**Trade Technology**

RUSSIA, Moscow, Ordzhonikidze str. 11 build 11

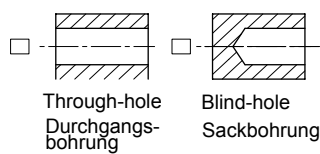
Tel.: +7(499)650-50-31

www.zcc-ct.ru

E-mail: info@zcc-ct.ru

### Machining information and Workpiece Material · Bearbeitungsinfo und Werkstückstoff

Machined hole  
Bohrung



Size of machined hole  
Lochdurchmesser

Tolerance of machined hole  
Toleranz der Bohrung

Depth of machined hole  
Bohrtiefe

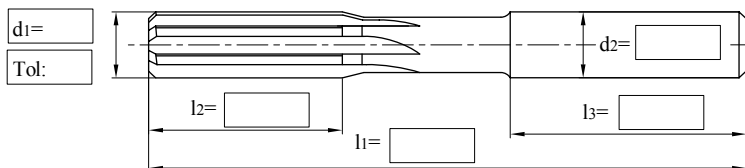
- ☐ Grey cast iron  
Grauguss
- ☐ Nodular cast iron GGG  
Kugelgraphitguss
- ☐ Aluminium alloy  
Alulegierung
- ☐ Si Al alloy Si<10%  
Si-Alulegierung.
- ☐ Si Al alloy Si 10%  
Si-Alulegierung.

Machined material trademark  
Spezieller Werkstückstoff

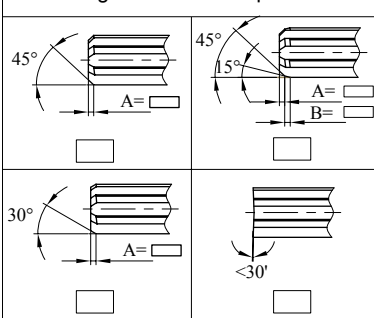
Tensile Strength · Zugfestigkeit

Hardness · Härte

### Tool information · Werkzeug-Informationen



Approach angle  
Winkelangabe an der Hauptschneide



### Cutter rotating direction · Drehrichtung

|                                  |  |
|----------------------------------|--|
| Right rotating<br>rechts gedreht |  |
| Straight flute<br>gerade genutet |  |
| Left rotating<br>links gedreht   |  |

### Cooling / Kühlung

- ☐ External  
Extern
- ☐ Internal  
Intern

### Coating Beschichtung

- ☐ Yes / Ja
- ☐ No / Nein

### Shank · Schaft

- ☐ Form HA
- ☐ Form HB
- ☐ Form HE

Remarks:

Bemerkungen:

Order quantity: pieces  
Auftragsmenge: Stücke

Expected delivery date:  
Gewünschtes Lieferdatum:

Date · Datum:

Confirmation · Unterschrift:



# Threading · Gewinde

## Threading tools · Gewindewerkzeuge

**Threading tools overview C154 Übersicht Gewindewerkzeuge**

**Graphics identification C154 Graphische Werkzeugbeschreibung**

**Threading tools code key C155 ISO Kennzeichnung**

### **Detail information C153-C173 Detaillierte Informationen**

**Solid carbide threading tools C156-C167 VHM Gewindeformer und Gewindebohrer**

**Solid carbide threading end mills C169-C170 VHM Gewindefräser**

**Recommended cutting data C171 Empfohlene Schnittdaten**

### **Technical information C172 Technische Information**

**Order form for non-standard products C173 Bestellformular für Sonderwerkzeuge**



# Threading · Gewindebearbeitung

Solid carbide taps and cutter · Vollhartmetall-Gewindebohrer, -fräser

## Threading tool overview · Übersicht VHM-Gewindebohrer, -fräser

| Name                                    | Type<br>Typ | Shape<br>Ausführung                                                                 | Diameter<br>range<br>Durchmesser<br>bereich<br>Ø | Workpiece material<br>Werkstückstoff |   |   |   |   |   |  |  | Page<br>Seite |      |
|-----------------------------------------|-------------|-------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------------------|---|---|---|---|---|--|--|---------------|------|
|                                         |             |                                                                                     |                                                  | P                                    | M | K | N | S | H |  |  |               |      |
| Thread forming<br>tap<br>Gewindeformer  | 4122A       |    | M1-M2.5                                          |                                      |   |   |   |   |   |  |  | C156          | C171 |
|                                         | 4222A       |    | M3-M16                                           |                                      |   |   |   |   |   |  |  | C157          |      |
|                                         | 4122M       |    | M1-M2.5                                          | ✓                                    |   | ✓ |   | ✓ |   |  |  | C158          |      |
|                                         | 4222M       |    | M3-M16                                           | ✓                                    |   | ✓ |   | ✓ |   |  |  | C158          |      |
| Helical-flute tap<br>Spiral genutet     | 4201C       |  | M3-M16                                           |                                      |   |   | ✓ |   |   |  |  | C160          |      |
|                                         | 4201A       |                                                                                     |                                                  |                                      |   |   |   | ✓ |   |  |  | C164          |      |
| Straight-flute tap<br>Gerade genutet    | 4202C       |  | M3-M16                                           |                                      |   |   | ✓ |   |   |  |  | C162          |      |
|                                         | 4202A       |                                                                                     |                                                  |                                      |   |   |   | ✓ |   |  |  | C166          |      |
| Threading end<br>mills<br>Gewindefräser | 4111        |  | M3-M20                                           | ✓                                    | ✓ |   | ✓ | ✓ |   |  |  | C169          |      |

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

## Graphics identification · Graphische Werkzeugbeschreibung

### Shank · Schaft



Straight shank  
Zylinderschaft



Square Straight shank as per DIN10  
DIN 10 Schaft

### Thread profile angle of tap Winkel des Gewindeprofils



60°

### Tolerance class of screw thread Toleranzklasse des Gewindes



6H



6HX

# Threading · Gewindebearbeitung

Solid carbide taps and cutter · Vollhartmetall-Gewindebohrer, -fräser

## Threading taps and cutter Code Key · ISO Kennzeichnung Gewindefräser, -bohrer

| Tool Type<br>Werkzeugtyp |                                                       |
|--------------------------|-------------------------------------------------------|
| Code                     | Description · Beschreibung                            |
| 4                        | Threading cutter<br>Gewinde-Bearbeitungs-<br>Werkzeug |

| Chip flute<br>Spannut |                                        |
|-----------------------|----------------------------------------|
| Code                  | Description · Beschreibung             |
| 1                     | Right chip flute · Spannut Rechtsdrall |
| 2                     | Straight flute · Spannut gerade        |
| 3                     | Left chip flute · Spannut Linksdrall   |

| Material<br>Material |                                      |
|----------------------|--------------------------------------|
| Code                 | Description · Beschreibung           |
| A                    | Aluminum alloy<br>Aluminumlegierung  |
| C                    | Cast iron<br>Grauguss                |
| M                    | Stainless steel<br>Rostfreier Stahl  |
| P                    | Carbon steel<br>Kohlenstoff - Stahl  |
| H                    | High hard. steel<br>gehärteter Stahl |

**4 2 0 1 A C S -M5x0.5 -6H**

| Shank<br>Schaftausführung |                                                               |
|---------------------------|---------------------------------------------------------------|
| Code                      | Description · Beschreibung                                    |
| 1                         | Straight shank / Zylinderschaft                               |
| 2                         | Square Straight shank as per DIN10<br>Zylinderschaft DIN10    |
| 5                         | Straight shank as per DIN 6535HA<br>Zylinderschaft DIN 6535HA |
| 9                         | Tapered shank<br>Konischer Schaft                             |

| Cooling<br>Kühlung  |                            |
|---------------------|----------------------------|
| Code                | Description · Beschreibung |
| Default<br>Standard | External · Extern          |
| C                   | Internal · Intern          |

| Specification<br>Spezifikation |                                                                                                  |
|--------------------------------|--------------------------------------------------------------------------------------------------|
| Code                           | Description · Beschreibung                                                                       |
| M5                             | Nominal diameter of standard<br>threading cutters is M5<br>Der angegebene Durchmesser<br>ist M 5 |
| 0.5                            | Pitch<br>Steigung                                                                                |

| Typ of function<br>Art der Bearbeitung |                                        |
|----------------------------------------|----------------------------------------|
| Code                                   | Description · Beschreibung             |
| 0                                      | Tap<br>Gewindebohrer                   |
| 1                                      | Thread milling cutter<br>Gewindefräser |
| 2                                      | Thread forming tap<br>Gewindeformer    |

| Hole shape<br>Bohrungsausführung |                                   |
|----------------------------------|-----------------------------------|
| Code                             | Description · Beschreibung        |
| Default<br>Standard              | Through-hole<br>Durchgangsbohrung |
| S                                | Blind-hole<br>Sackbohrung         |

| Precision class<br>Präzisionsklasse |                                                 |
|-------------------------------------|-------------------------------------------------|
| Code                                | Description · Beschreibung                      |
| 6H                                  | ISO metric thread<br>ISO metrische Gewinde      |
| 6HX                                 | General pitch thread<br>"General pitch" Gewinde |

**C**

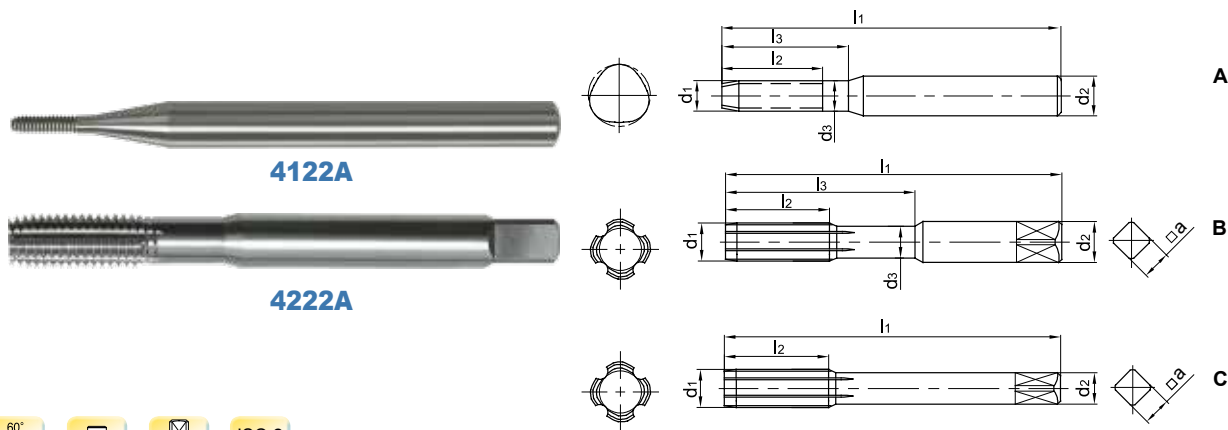
Solid carbide drills  
Vollhartmetallbohrer

# Threading - Gewindebearbeitung

Solid carbide taps and cutter ▪ Vollhartmetall-Gewindebohrer, -fräser

**4122A**  
**4222A**

Thread forming tap for aluminum alloy machining  
Gewindeformer zur Bearbeitung von Aluminiumlegierungen



| Type<br>Typ         | Cooling<br>Kühlung | Basic dimension(mm)<br>Basis Abmessungen |      |      |     |     |    |    |    |       |                                          |                        | Number<br>of teeth<br>Zähne-<br>anzahl | Grade<br>Sorte<br><br>YK40F | Coredrill<br>Kernbohrer<br><br>d |
|---------------------|--------------------|------------------------------------------|------|------|-----|-----|----|----|----|-------|------------------------------------------|------------------------|----------------------------------------|-----------------------------|----------------------------------|
|                     |                    | Taper<br>length<br>Anschlitt-<br>länge   | d1   | P    | d2  | d3  | l1 | l2 | l3 | a x a | Thread-<br>profile<br>Gewinde-<br>profil | Geometry<br>Ausführung |                                        |                             |                                  |
| 4122A-M1*0.25-6H    | Extern             | 3P                                       | M1   | 0.25 | 3   |     | 40 | 5  |    |       | 60°                                      | A                      | 3                                      | ●                           | 0.9                              |
| 4122AS-M1*0.25-6H   | Extern             | 1.5P                                     | M1   | 0.25 | 3   |     | 40 | 5  |    |       | 60°                                      | A                      | 3                                      | ●                           | 0.9                              |
| 4122A-M1.2*0.25-6H  | Extern             | 3P                                       | M1.2 | 0.25 | 3   |     | 40 | 5  |    |       | 60°                                      | A                      | 3                                      | ●                           | 1.1                              |
| 4122AS-M1.2*0.25-6H | Extern             | 1.5P                                     | M1.2 | 0.25 | 3   |     | 40 | 5  |    |       | 60°                                      | A                      | 3                                      | ●                           | 1.1                              |
| 4122A-M1.6*0.35-6H  | Extern             | 3P                                       | M1.6 | 0.35 | 3   | 1.1 | 40 | 5  | 11 |       | 60°                                      | A                      | 3                                      | ●                           | 1.47                             |
| 4122AS-M1.6*0.35-6H | Extern             | 1.5P                                     | M1.6 | 0.35 | 3   | 1.1 | 40 | 5  | 11 |       | 60°                                      | A                      | 3                                      | ●                           | 1.47                             |
| 4122A-M2*0.4-6H     | Extern             | 3P                                       | M2   | 0.4  | 3   | 1.5 | 45 | 6  | 12 |       | 60°                                      | A                      | 3                                      | ●                           | 1.85                             |
| 4122AS-M2*0.4-6H    | Extern             | 1.5P                                     | M2   | 0.4  | 3   | 1.5 | 45 | 6  | 12 |       | 60°                                      | A                      | 3                                      | ●                           | 1.85                             |
| 4122A-M2.5*0.45-6H  | Extern             | 3P                                       | M2.5 | 0.45 | 3   | 1.9 | 50 | 6  | 14 |       | 60°                                      | A                      | 3                                      | ●                           | 2.33                             |
| 4122AS-M2.5*0.45-6H | Extern             | 1.5P                                     | M2.5 | 0.45 | 3   | 1.9 | 50 | 6  | 14 |       | 60°                                      | A                      | 3                                      | ●                           | 2.33                             |
| 4222A-M3*0.5-6H     | Extern             | 3P                                       | M3   | 0.5  | 3.5 | 2.3 | 56 | 6  | 18 | 2.7   | 60°                                      | B                      | 4                                      | ○                           | 2.8                              |
| 4222AS-M3*0.5-6H    | Extern             | 1.5P                                     |      |      |     |     |    |    |    |       |                                          |                        |                                        | ○                           |                                  |
| 4222A-M4*0.5-6H     | Extern             | 3P                                       | M4   | 0.5  | 4.5 | 3.1 | 63 | 8  | 21 | 3.4   | 60°                                      | B                      | 4                                      | ●                           | 3.8                              |
| 4222AS-M4*0.5-6H    | Extern             | 1.5P                                     |      |      |     |     |    |    |    |       |                                          |                        |                                        | ●                           |                                  |
| 4222A-M4*0.7-6H     | Extern             | 3P                                       | M4   | 0.7  | 4.5 | 3.1 | 63 | 8  | 21 | 3.4   | 60°                                      | B                      | 4                                      | ○                           | 3.7                              |
| 4222AS-M4*0.7-6H    | Extern             | 1.5P                                     |      |      |     |     |    |    |    |       |                                          |                        |                                        | ○                           |                                  |
| 4222A-M5*0.5-6H     | Extern             | 3P                                       | M5   | 0.5  | 6   | 4.3 | 70 | 10 | 25 | 4.9   | 60°                                      | B                      | 4                                      | ●                           | 4.8                              |
| 4222AS-M5*0.5-6H    | Extern             | 1.5P                                     |      |      |     |     |    |    |    |       |                                          |                        |                                        | ●                           |                                  |
| 4222A-M5*0.8-6H     | Extern             | 3P                                       | M5   | 0.8  | 6   | 4   | 70 | 10 | 25 | 4.9   | 60°                                      | B                      | 4                                      | ○                           | 4.65                             |
| 4222AS-M5*0.8-6H    | Extern             | 1.5P                                     |      |      |     |     |    |    |    |       |                                          |                        |                                        | ○                           |                                  |
| 4222A-M6*0.75-6H    | Extern             | 3P                                       | M6   | 0.75 | 6   | 5   | 80 | 12 | 30 | 4.9   | 60°                                      | B                      | 4                                      | ●                           | 5.7                              |
| 4222AS-M6*0.75-6H   | Extern             | 1.5P                                     |      |      |     |     |    |    |    |       |                                          |                        |                                        | ●                           |                                  |
| 4222A-M6*1-6H       | Extern             | 3P                                       | M6   | 1    | 6   | 4.7 | 80 | 12 | 30 | 4.9   | 60°                                      | B                      | 4                                      | ○                           | 5.6                              |
| 4222AS-M6*1-6H      | Extern             | 1.5P                                     |      |      |     |     |    |    |    |       |                                          |                        |                                        | ○                           |                                  |
| 4222A-M7*1-6H       | Extern             | 3P                                       | M7   | 1    | 7   | 5.7 | 80 | 14 | 30 | 5.5   | 60°                                      | B                      | 4                                      | ●                           | 6.6                              |
| 4222AS-M7*1-6H      | Extern             | 1.5P                                     |      |      |     |     |    |    |    |       |                                          |                        |                                        | ●                           |                                  |

● Ex Stock / ab Lager ○ On demand / auf Anfrage

# Threading · Gewindebearbeitung

Solid carbide taps and cutter · Vollhartmetall-Gewindebohrer, -fräser

| Type<br>Typ         | Cooling<br>Kühlung | Basic dimension(mm)<br>Basis Abmessungen |                |      |                |                |                |                |                |     |                                          |                        | Number<br>of teeth<br>Zähne-<br>anzahl | Grade<br>Sorte<br><br>YK40F | Coredrill<br>Kernbohrer<br><br>d |
|---------------------|--------------------|------------------------------------------|----------------|------|----------------|----------------|----------------|----------------|----------------|-----|------------------------------------------|------------------------|----------------------------------------|-----------------------------|----------------------------------|
|                     |                    | Taper<br>length<br>Anschnitt-<br>länge   | d <sub>1</sub> | P    | d <sub>2</sub> | d <sub>3</sub> | l <sub>1</sub> | l <sub>2</sub> | l <sub>3</sub> | a×a | Thread-<br>profile<br>Gewinde-<br>profil | Geometry<br>Ausführung |                                        |                             |                                  |
| 4222A-M8*1-6H       | Extern             | 3P                                       | M8             | 1    | 8              | 6.7            | 90             | 16             | 35             | 6.2 | 60°                                      | B                      | 4                                      | ●                           | 7.6                              |
| 4222AS-M8*1-6H      | Extern             | 1.5P                                     | M8             | 1    | 8              | 6.7            | 90             | 16             | 35             | 6.2 | 60°                                      | B                      | 4                                      | ●                           | 7.6                              |
| 4222A-M8*1.25-6H    | Extern             | 3P                                       | M8             | 1.25 | 8              | 6.4            | 90             | 16             | 35             | 6.2 | 60°                                      | B                      | 4                                      | ○                           | 7.45                             |
| 4222AS-M8*1.25-6H   | Extern             | 1.5P                                     | M8             | 1.25 | 8              | 6.4            | 90             | 16             | 35             | 6.2 | 60°                                      | B                      | 4                                      | ○                           | 7.45                             |
| 4222A-M10*1-6H      | Extern             | 3P                                       | M10            | 1    | 10             | 8.7            | 100            | 20             | 39             | 8   | 60°                                      | B                      | 5                                      | ●                           | 9.6                              |
| 4222AS-M10*1-6H     | Extern             | 1.5P                                     | M10            | 1    | 10             | 8.7            | 100            | 20             | 39             | 8   | 60°                                      | B                      | 5                                      | ●                           | 9.6                              |
| 4222A-M10*1.25-6H   | Extern             | 3P                                       | M10            | 1.25 | 10             | 8.4            | 100            | 20             | 39             | 8   | 60°                                      | B                      | 5                                      | ●                           | 9.45                             |
| 4222AS-M10*1.25-6H  | Extern             | 1.5P                                     | M10            | 1.25 | 10             | 8.4            | 100            | 20             | 39             | 8   | 60°                                      | B                      | 5                                      | ●                           | 9.45                             |
| 4222A-M10*1.5-6H    | Extern             | 3P                                       | M10            | 1.5  | 10             | 8.1            | 100            | 20             | 39             | 8   | 60°                                      | B                      | 5                                      | ○                           | 9.35                             |
| 4222AS-M10*1.5-6H   | Extern             | 1.5P                                     | M10            | 1.5  | 10             | 8.1            | 100            | 20             | 39             | 8   | 60°                                      | B                      | 5                                      | ○                           | 9.35                             |
| 4222AC-M10*1.5-6H   | Intern             | 3P                                       | M10            | 1.5  | 10             | 8.1            | 100            | 20             | 39             | 8   | 60°                                      | B                      | 5                                      | ○                           | 9.35                             |
| 4222ACS-M10*1.5-6H  | Intern             | 1.5P                                     | M10            | 1.5  | 10             | 8.1            | 100            | 20             | 39             | 8   | 60°                                      | B                      | 5                                      | ○                           | 9.35                             |
| 4222A-M12*1.25-6H   | Extern             | 3P                                       | M12            | 1.25 | 9              |                | 110            | 24             |                | 7   | 60°                                      | C                      | 5                                      | ●                           | 11.45                            |
| 4222AS-M12*1.25-6H  | Extern             | 1.5P                                     | M12            | 1.25 | 9              |                | 110            | 24             |                | 7   | 60°                                      | C                      | 5                                      | ●                           | 11.45                            |
| 4222A-M12*1.5-6H    | Extern             | 3P                                       | M12            | 1.5  | 9              |                | 110            | 24             |                | 7   | 60°                                      | C                      | 5                                      | ●                           | 11.35                            |
| 4222AS-M12*1.5-6H   | Extern             | 1.5P                                     | M12            | 1.5  | 9              |                | 110            | 24             |                | 7   | 60°                                      | C                      | 5                                      | ●                           | 11.35                            |
| 4222A-M12*1.75-6H   | Extern             | 3P                                       | M12            | 1.75 | 9              |                | 110            | 24             |                | 7   | 60°                                      | C                      | 5                                      | ○                           | 11.25                            |
| 4222AS-M12*1.75-6H  | Extern             | 1.5P                                     | M12            | 1.75 | 9              |                | 110            | 24             |                | 7   | 60°                                      | C                      | 5                                      | ○                           | 11.25                            |
| 4222AC-M12*1.75-6H  | Intern             | 3P                                       | M12            | 1.75 | 9              |                | 110            | 24             |                | 7   | 60°                                      | C                      | 5                                      | ○                           | 11.25                            |
| 4222ACS-M12*1.75-6H | Intern             | 1.5P                                     | M12            | 1.75 | 9              |                | 110            | 24             |                | 7   | 60°                                      | C                      | 5                                      | ○                           | 11.25                            |
| 4222A-M14*1.5-6H    | Extern             | 3P                                       | M14            | 1.5  | 11             |                | 110            | 26             |                | 9   | 60°                                      | C                      | 6                                      | ●                           | 13.35                            |
| 4222AS-M14*1.5-6H   | Extern             | 1.5P                                     | M14            | 1.5  | 11             |                | 110            | 26             |                | 9   | 60°                                      | C                      | 6                                      | ●                           | 13.35                            |
| 4222A-M14*2-6H      | Extern             | 3P                                       | M14            | 2    | 11             |                | 110            | 26             |                | 9   | 60°                                      | C                      | 6                                      | ●                           | 13.1                             |
| 4222AS-M14*2-6H     | Extern             | 1.5P                                     | M14            | 2    | 11             |                | 110            | 26             |                | 9   | 60°                                      | C                      | 6                                      | ●                           | 13.1                             |
| 4222A-M16*1.5-6H    | Extern             | 3P                                       | M16            | 1.5  | 12             |                | 110            | 27             |                | 9   | 60°                                      | C                      | 6                                      | ●                           | 15.35                            |
| 4222AS-M16*1.5-6H   | Extern             | 1.5P                                     | M16            | 1.5  | 12             |                | 110            | 27             |                | 9   | 60°                                      | C                      | 6                                      | ●                           | 15.35                            |
| 4222A-M16*2-6H      | Extern             | 3P                                       | M16            | 2    | 12             |                | 110            | 27             |                | 9   | 60°                                      | C                      | 6                                      | ○                           | 15.1                             |
| 4222AS-M16*2-6H     | Extern             | 1.5P                                     | M16            | 2    | 12             |                | 110            | 27             |                | 9   | 60°                                      | C                      | 6                                      | ○                           | 15.1                             |
| 4222AC-M16*2-6H     | Intern             | 3P                                       | M16            | 2    | 12             |                | 110            | 27             |                | 9   | 60°                                      | C                      | 6                                      | ○                           | 15.1                             |
| 4222ACS-M16*2-6H    | Intern             | 1.5P                                     | M16            | 2    | 12             |                | 110            | 27             |                | 9   | 60°                                      | C                      | 6                                      | ○                           | 15.1                             |

## Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
 ✓ = Suitable · Empfohlen

| Grade<br>Sorte | Workpiece material · Werkstückstoff |                                                                   |                                   |        |        |                                           |                        |                                                      |                              |                               |                                            |
|----------------|-------------------------------------|-------------------------------------------------------------------|-----------------------------------|--------|--------|-------------------------------------------|------------------------|------------------------------------------------------|------------------------------|-------------------------------|--------------------------------------------|
|                | Mild steel<br>Baustahl<br>HB≤180    | Carbon steel<br>Alloy Steel<br>Kohlenstoff-<br>Legierter<br>Stahl | Hardened steel · Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron<br>Gusseisen | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Warmfeste<br>Leg. |
|                |                                     |                                                                   | ~40HRC                            | ~50HRC | ~60HRC |                                           |                        |                                                      |                              |                               |                                            |
| YK40F          |                                     |                                                                   |                                   |        |        |                                           |                        |                                                      | ✓                            |                               |                                            |

Code key C 155  
ISO Kennzeichen

Cutting data C171  
Schnittdaten

Technical Information C172-173  
Technische Information.

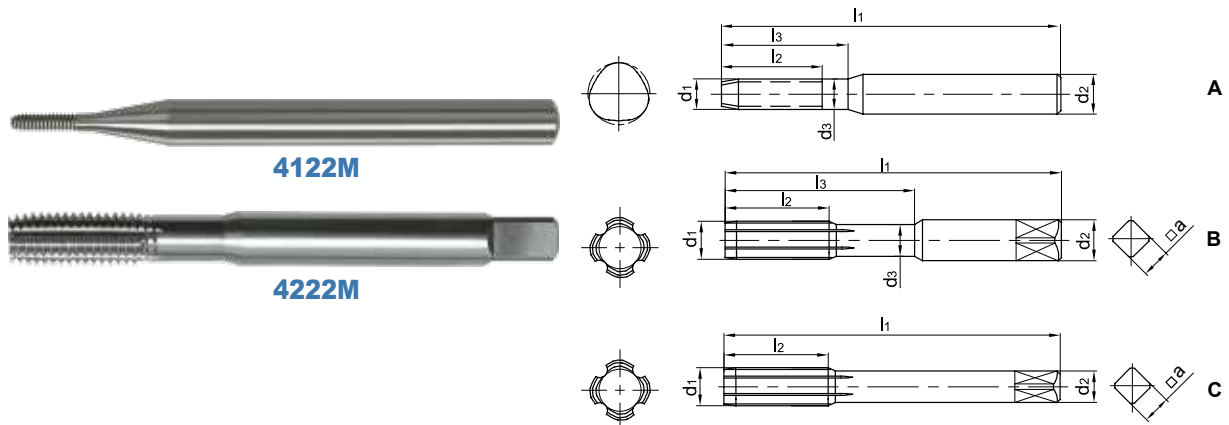
Non-standard tailor made C174  
Bestellformular für Sonderwerkzeuge

# Threading - Gewindebearbeitung

Solid carbide taps and cutter ▪ Vollhartmetall-Gewindebohrer, -fräser

**4122M**  
**4222M**

Thread forming tap for stainless steel machining  
Gewindeformer zur Bearbeitung von rostfreiem Stahl



| Type<br>Typ         | Cooling<br>Kühlung | Basic dimension(mm)<br>Basis Abmessungen |      |      |     |     |    |    |    |       |                                          |                        | Number<br>of teeth<br>Zähne-<br>anzahl | Grade<br>Sorte |       | Coredrill<br>Kernbohrer |
|---------------------|--------------------|------------------------------------------|------|------|-----|-----|----|----|----|-------|------------------------------------------|------------------------|----------------------------------------|----------------|-------|-------------------------|
|                     |                    | Taper<br>length<br>Anschnitt-<br>länge   | d1   | P    | d2  | d3  | l1 | l2 | l3 | a x a | Thread-<br>profile<br>Gewinde-<br>profil | Geometry<br>Ausführung |                                        | KTG402         | YK40F |                         |
| 4122M-M1*0.25-6H    | Extern             | 3P                                       | M1   | 0.25 | 3   |     | 40 | 5  |    |       | 60°                                      | A                      | 4                                      | ●              | ○     | 0.9                     |
| 4122MS-M1*0.25-6H   | Extern             | 2P                                       | M1   | 0.25 | 3   |     | 40 | 5  |    |       | 60°                                      | A                      | 4                                      | ●              | ○     | 0.9                     |
| 4122M-M1.2*0.25-6H  | Extern             | 3P                                       | M1.2 | 0.25 | 3   |     | 40 | 5  |    |       | 60°                                      | A                      | 4                                      | ●              | ○     | 1.1                     |
| 4122MS-M1.2*0.25-6H | Extern             | 2P                                       | M1.2 | 0.25 | 3   |     | 40 | 5  |    |       | 60°                                      | A                      | 4                                      | ●              | ○     | 1.1                     |
| 4122M-M1.6*0.35-6H  | Extern             | 3P                                       | M1.6 | 0.35 | 3   | 1.1 | 40 | 5  | 11 |       | 60°                                      | A                      | 4                                      | ●              | ○     | 1.47                    |
| 4122MS-M1.6*0.35-6H | Extern             | 2P                                       | M1.6 | 0.35 | 3   | 1.1 | 40 | 5  | 11 |       | 60°                                      | A                      | 4                                      | ●              | ○     | 1.47                    |
| 4122M-M2*0.4-6H     | Extern             | 3P                                       | M2   | 0.4  | 3   | 1.5 | 45 | 6  | 12 |       | 60°                                      | A                      | 4                                      | ●              | ○     | 1.85                    |
| 4122MS-M2*0.4-6H    | Extern             | 2P                                       | M2   | 0.4  | 3   | 1.5 | 45 | 6  | 12 |       | 60°                                      | A                      | 4                                      | ●              | ○     | 1.85                    |
| 4122M-M2.5*0.45-6H  | Extern             | 3P                                       | M2.5 | 0.45 | 3   | 1.9 | 50 | 6  | 14 |       | 60°                                      | A                      | 4                                      | ●              | ○     | 2.33                    |
| 4122MS-M2.5*0.45-6H | Extern             | 2P                                       | M2.5 | 0.45 | 3   | 1.9 | 50 | 6  | 14 |       | 60°                                      | A                      | 4                                      | ●              | ○     | 2.33                    |
| 4222M-M3*0.5-6H     | Extern             | 3P                                       | M3   | 0.5  | 3.5 | 2.3 | 56 | 6  | 18 | 2.7   | 60°                                      | B                      | 4                                      | ●              | ○     | 2.8                     |
| 4222MS-M3*0.5-6H    | Extern             | 2P                                       |      |      |     |     |    |    |    |       |                                          |                        |                                        | ○              | ○     |                         |
| 4222M-M4*0.5-6H     | Extern             | 3P                                       | M4   | 0.5  | 4.5 | 3.1 | 63 | 8  | 21 | 3.4   | 60°                                      | B                      | 4                                      | ●              | ○     | 3.8                     |
| 4222MS-M4*0.5-6H    | Extern             | 2P                                       |      |      |     |     |    |    |    |       |                                          |                        |                                        | ●              | ○     |                         |
| 4222M-M4*0.7-6H     | Extern             | 3P                                       | M4   | 0.7  | 4.5 | 3.1 | 63 | 8  | 21 | 3.4   | 60°                                      | B                      | 4                                      | ●              | ○     | 3.7                     |
| 4222MS-M4*0.7-6H    | Extern             | 2P                                       |      |      |     |     |    |    |    |       |                                          |                        |                                        | ●              | ○     |                         |
| 4222M-M5*0.5-6H     | Extern             | 3P                                       | M5   | 0.5  | 6   | 4.3 | 70 | 10 | 25 | 4.9   | 60°                                      | B                      | 4                                      | ●              | ○     | 4.8                     |
| 4222MS-M5*0.5-6H    | Extern             | 2P                                       |      |      |     |     |    |    |    |       |                                          |                        |                                        | ●              | ○     |                         |
| 4222M-M5*0.8-6H     | Extern             | 3P                                       | M5   | 0.8  | 6   | 4   | 70 | 10 | 25 | 4.9   | 60°                                      | B                      | 4                                      | ●              | ○     | 4.65                    |
| 4222MS-M5*0.8-6H    | Extern             | 2P                                       |      |      |     |     |    |    |    |       |                                          |                        |                                        | ●              | ○     |                         |
| 4222M-M6*0.75-6H    | Extern             | 3P                                       | M6   | 0.75 | 6   | 5   | 80 | 12 | 30 | 4.9   | 60°                                      | B                      | 4                                      | ●              | ○     | 5.7                     |
| 4222MS-M6*0.75-6H   | Extern             | 2P                                       |      |      |     |     |    |    |    |       |                                          |                        |                                        | ●              | ○     |                         |
| 4222M-M6*1-6H       | Extern             | 3P                                       | M6   | 1    | 6   | 4.7 | 80 | 12 | 30 | 4.9   | 60°                                      | B                      | 4                                      | ●              | ○     | 5.6                     |
| 4222MS-M6*1-6H      | Extern             | 2P                                       |      |      |     |     |    |    |    |       |                                          |                        |                                        | ●              | ○     |                         |
| 4222M-M7*1-6H       | Extern             | 3P                                       | M7   | 1    | 7   | 5.7 | 80 | 14 | 30 | 5.5   | 60°                                      | B                      | 4                                      | ●              | ○     | 6.6                     |
| 4222MS-M7*1-6H      | Extern             | 2P                                       |      |      |     |     |    |    |    |       |                                          |                        |                                        | ●              | ○     |                         |

● Ex Stock / ab Lager ○ On demand / auf Anfrage



# Threading · Gewindebearbeitung

## Solid carbide taps and cutter · Vollhartmetall-Gewindebohrer, -fräser

| Type<br>Typ         | Cooling<br>Kühlung | Basic dimension(mm)<br>Basis Abmessungen |                |      |                |                |                |                |                |     |                                          |                        | Number<br>of teeth<br>Zähne-<br>anzahl | Grade<br>Sorte |       | Coredrill<br>Kernbohrer |
|---------------------|--------------------|------------------------------------------|----------------|------|----------------|----------------|----------------|----------------|----------------|-----|------------------------------------------|------------------------|----------------------------------------|----------------|-------|-------------------------|
|                     |                    | Taper<br>length<br>Anschnitt-<br>länge   | d <sub>1</sub> | P    | d <sub>2</sub> | d <sub>3</sub> | l <sub>1</sub> | l <sub>2</sub> | l <sub>3</sub> | a×a | Thread-<br>profile<br>Gewinde-<br>profil | Geometry<br>Ausführung |                                        | KTG402         | YK40F |                         |
| 4222M-M8*1-6H       | Extern             | 3P                                       | M8             | 1    | 8              | 6.7            | 90             | 16             | 35             | 6.2 | 60°                                      | B                      | 4                                      | ●              | ○     | 7.6                     |
| 4222MS-M8*1-6H      | Extern             | 2P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              | ○     |                         |
| 4222M-M8*1.25-6H    | Extern             | 3P                                       | M8             | 1.25 | 8              | 6.4            | 90             | 16             | 35             | 6.2 | 60°                                      | B                      | 4                                      | ●              | ○     | 7.45                    |
| 4222MS-M8*1.25-6H   | Extern             | 2P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              | ○     |                         |
| 4222M-M10*1-6H      | Extern             | 3P                                       | M10            | 1    | 10             | 8.7            | 100            | 20             | 39             | 8   | 60°                                      | B                      | 5                                      | ●              | ○     | 9.6                     |
| 4222MS-M10*1-6H     | Extern             | 2P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              | ○     |                         |
| 4222M-M10*1.25-6H   | Extern             | 3P                                       | M10            | 1.25 | 10             | 8.4            | 100            | 20             | 39             | 8   | 60°                                      | B                      | 5                                      | ●              | ○     | 9.45                    |
| 4222MS-M10*1.25-6H  | Extern             | 2P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              | ○     |                         |
| 4222M-M10*1.5-6H    | Extern             | 3P                                       | M10            | 1.5  | 10             | 8.1            | 100            | 20             | 39             | 8   | 60°                                      | B                      | 5                                      | ●              | ○     | 9.35                    |
| 4222MS-M10*1.5-6H   | Extern             | 2P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              | ○     |                         |
| 4222MC-M10*1.5-6H   | Intern             | 3P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              | ○     |                         |
| 4222MCS-M10*1.5-6H  | Intern             | 2P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              | ○     |                         |
| 4222M-M12*1.25-6H   | Extern             | 3P                                       | M12            | 1.25 | 9              |                | 110            | 24             |                | 7   | 60°                                      | C                      | 5                                      | ●              | ○     | 11.45                   |
| 4222MS-M12*1.25-6H  | Extern             | 2P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              | ○     |                         |
| 4222M-M12*1.5-6H    | Extern             | 3P                                       | M12            | 1.5  | 9              |                | 110            | 24             |                | 7   | 60°                                      | C                      | 5                                      | ●              | ○     | 11.35                   |
| 4222MS-M12*1.5-6H   | Extern             | 2P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              | ○     |                         |
| 4222M-M12*1.75-6H   | Extern             | 3P                                       | M12            | 1.75 | 9              |                | 110            | 24             |                | 7   | 60°                                      | C                      | 5                                      | ●              | ○     | 11.25                   |
| 4222MS-M12*1.75-6H  | Extern             | 2P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              | ○     |                         |
| 4222MC-M12*1.75-6H  | Intern             | 3P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              | ○     |                         |
| 4222MCS-M12*1.75-6H | Intern             | 2P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              | ○     |                         |
| 4222M-M14*1.5-6H    | Extern             | 3P                                       | M14            | 1.5  | 11             |                | 110            | 26             |                | 9   | 60°                                      | C                      | 6                                      | ●              | ○     | 13.35                   |
| 4222MS-M14*1.5-6H   | Extern             | 2P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              | ○     |                         |
| 4222M-M14*2-6H      | Extern             | 3P                                       | M14            | 2    | 11             |                | 110            | 26             |                | 9   | 60°                                      | C                      | 6                                      | ●              | ○     | 13.1                    |
| 4222MS-M14*2-6H     | Extern             | 2P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              | ○     |                         |
| 4222M-M16*1.5-6H    | Extern             | 3P                                       | M16            | 1.5  | 12             |                | 110            | 27             |                | 9   | 60°                                      | C                      | 6                                      | ●              | ○     | 15.35                   |
| 4222MS-M16*1.5-6H   | Extern             | 2P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              | ○     |                         |
| 4222M-M16*2-6H      | Extern             | 3P                                       | M16            | 2    | 12             |                | 110            | 27             |                | 9   | 60°                                      | C                      | 6                                      | ○              | ○     | 15.1                    |
| 4222MS-M16*2-6H     | Extern             | 2P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              | ○     |                         |
| 4222MC-M16*2-6H     | Intern             | 3P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              | ○     |                         |
| 4222MCS-M16*2-6H    | Intern             | 2P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              | ○     |                         |

### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
 ✓ = Suitable · Empfohlen

| Grade<br>Sorte | Workpiece material · Werkstückstoff |                                                                    |                                   |        |        |                                           |                        |                                                      |                              |                               |                                            |
|----------------|-------------------------------------|--------------------------------------------------------------------|-----------------------------------|--------|--------|-------------------------------------------|------------------------|------------------------------------------------------|------------------------------|-------------------------------|--------------------------------------------|
|                | Mild steel<br>Baustahl<br>HB≤180    | Carbon steel<br>Alloy Steel<br>Kohlenstoff-,<br>Legierter<br>Stahl | Hardened steel · Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron<br>Gusseisen | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Wärmfeste<br>Leg. |
|                |                                     |                                                                    | ~40HRC                            | ~50HRC | ~60HRC |                                           |                        |                                                      |                              |                               |                                            |
| KTG402         | ✓                                   |                                                                    |                                   |        |        | ✓                                         |                        |                                                      |                              |                               |                                            |
| YK40F          | ✓                                   |                                                                    |                                   |        |        | ✓                                         |                        |                                                      | ✓                            |                               |                                            |

Code key C 155  
ISO Kennzeichen

Cutting data C171  
Schnittdaten

Technical Information C172-173  
Technische Information.

Non-standard tailor made C174  
Bestellformular für Sonderwerkzeuge

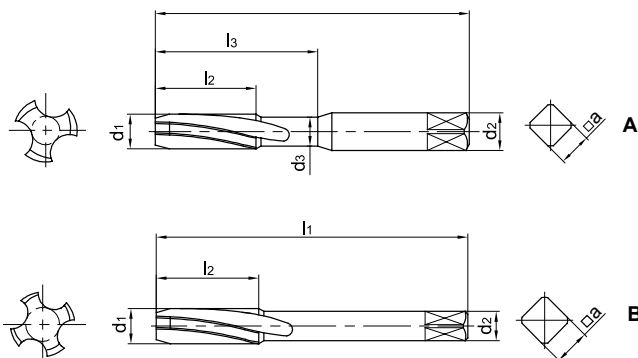
# Threading - Gewindebearbeitung

Solid carbide taps and cutter ▪ Vollhartmetall-Gewindebohrer, -fräser

## 4201C

Tap for cast iron machining

Gewindebohrer zur Bearbeitung von Grauguss



| Type<br>Typ        | Taper<br>length<br>Anschnitt-<br>länge | Basic dimension(mm)<br>Basis Abmessungen |      |     |     |    |    |    |     |                                          |                        | Number<br>of teeth<br>Zähne-<br>anzahl | Grade<br>Sorte | Coredrill<br>Kernbohrer |
|--------------------|----------------------------------------|------------------------------------------|------|-----|-----|----|----|----|-----|------------------------------------------|------------------------|----------------------------------------|----------------|-------------------------|
|                    |                                        | d1                                       | P    | d2  | d3  | l1 | l2 | l3 | a×a | Thread-<br>profile<br>Gewinde-<br>profil | Geometry<br>Ausführung |                                        | YK40F          | d                       |
| 4201C-M3*0.5-6H    | 3P                                     | M3                                       | 0.5  | 3.5 | 2.3 | 56 | 11 | 18 | 2.7 | 60°                                      | A                      | 3                                      | ●              | 2.5                     |
| 4201C-M3*0.5-6HX   | 3P                                     |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201CS-M3*0.5-6H   | 1.5P                                   |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201CS-M3*0.5-6HX  | 1.5P                                   |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201C-M4*0.7-6H    | 3P                                     | M4                                       | 0.7  | 4.5 | 3.1 | 63 | 13 | 21 | 3.4 | 60°                                      | A                      | 3                                      | ●              | 3.3                     |
| 4201C-M4*0.7-6HX   | 3P                                     |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201CS-M4*0.7-6H   | 1.5P                                   |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201CS-M4*0.7-6HX  | 1.5P                                   |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201C-M5*0.8-6H    | 3P                                     | M5                                       | 0.8  | 6   | 4   | 70 | 16 | 25 | 4.9 | 60°                                      | A                      | 3                                      | ●              | 4.2                     |
| 4201C-M5*0.8-6HX   | 3P                                     |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201CS-M5*0.8-6H   | 1.5P                                   |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201CS-M5*0.8-6HX  | 1.5P                                   |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201C-M6*0.75-6H   | 3P                                     | M6                                       | 0.75 | 6   | 5   | 80 | 19 | 30 | 4.9 | 60°                                      | A                      | 3                                      | ●              | 5.25                    |
| 4201C-M6*0.75-6HX  | 3P                                     |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201CS-M6*0.75-6H  | 1.5P                                   |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201CS-M6*0.75-6HX | 1.5P                                   |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201C-M6*1-6H      | 3P                                     | M6                                       | 1    | 6   | 4.7 | 80 | 19 | 30 | 4.9 | 60°                                      | A                      | 3                                      | ●              | 5                       |
| 4201CC-M6*1-6H     | 3P                                     |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201C-M6*1-6HX     | 3P                                     |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201CS-M6*1-6H     | 1.5P                                   |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201CCS-M6*1-6H    | 1.5P                                   |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201CS-M6*1-6HX    | 1.5P                                   |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201C-M7*1-6H      | 3P                                     | M7                                       | 1    | 7   | 5.7 | 80 | 19 | 30 | 5.5 | 60°                                      | A                      | 3                                      | ●              | 6                       |
| 4201CS-M7*1-6H     | 1.5P                                   |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201C-M8*1-6H      | 3P                                     | M8                                       | 1    | 8   | 6.7 | 90 | 20 | 35 | 6.2 | 60°                                      | A                      | 3                                      | ●              | 7                       |
| 4201CS-M8*1-6H     | 1.5P                                   |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201C-M8*1.25-6H   | 3P                                     | M8                                       | 1.25 | 8   | 6.4 | 90 | 22 | 35 | 6.2 | 60°                                      | A                      | 3                                      | ●              | 6.75                    |
| 4201CC-M8*1.25-6H  | 3P                                     |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201C-M8*1.25-6HX  | 3P                                     |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201CS-M8*1.25-6H  | 1.5P                                   |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201CCS-M8*1.25-6H | 1.5P                                   |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201CS-M8*1.25-6HX | 1.5P                                   |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |

● Ex Stock / ab Lager ○ On demand / auf Anfrage

# Threading · Gewindebearbeitung

Solid carbide taps and cutter · Vollhartmetall-Gewindebohrer, -fräser

| Type<br>Typ         | Basic dimension(mm)<br>Basis Abmessungen |                |      |                |                |                |                |                |     |                                          |                        | Number<br>of teeth<br>Zähne-<br>anzahl | Grade<br>Sorte<br>YK40F | Coredrill<br>Kernbohrer<br>d |
|---------------------|------------------------------------------|----------------|------|----------------|----------------|----------------|----------------|----------------|-----|------------------------------------------|------------------------|----------------------------------------|-------------------------|------------------------------|
|                     | Taper<br>length<br>Anschnitt-<br>länge   | d <sub>1</sub> | P    | d <sub>2</sub> | d <sub>3</sub> | l <sub>1</sub> | l <sub>2</sub> | l <sub>3</sub> | a×a | Thread-<br>profile<br>Gewinde-<br>profil | Geometry<br>Ausführung |                                        |                         |                              |
| 4201C-M10*1-6H      | 3P                                       | M10            | 1    | 10             | 8.7            | 100            | 20             | 39             | 8   | 60°                                      | A                      | 4                                      | ●                       | 9                            |
| 4201CS-M10*1-6H     | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        |                         |                              |
| 4201C-M10*1.25-6H   | 3P                                       | M10            | 1.25 | 10             | 8.4            | 100            | 24             | 39             | 8   | 60°                                      | A                      | 4                                      | ●                       | 8.75                         |
| 4201CS-M10*1.25-6H  | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        |                         |                              |
| 4201C-M10*1.5-6H    | 3P                                       | M10            | 1.5  | 10             | 8.1            | 100            | 24             | 39             | 8   | 60°                                      | A                      | 4                                      | ●                       | 8.5                          |
| 4201CC-M10*1.5-6H   | 3P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        |                         |                              |
| 4201C-M10*1.5-6HX   | 3P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        |                         |                              |
| 4201CS-M10*1.5-6H   | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        |                         |                              |
| 4201CCS-M10*1.5-6H  | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        |                         |                              |
| 4201CS-M10*1.5-6HX  | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        |                         |                              |
| 4201C-M12*1.25-6H   | 3P                                       | M12            | 1.25 | 9              |                | 110            | 29             |                | 7   | 60°                                      | B                      | 4                                      | ●                       | 10.75                        |
| 4201CS-M12*1.25-6H  | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        |                         |                              |
| 4201C-M12*1.5-6H    | 3P                                       | M12            | 1.5  | 9              |                | 110            | 29             |                | 7   | 60°                                      | B                      | 4                                      | ●                       | 10.5                         |
| 4201CS-M12*1.5-6H   | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        |                         |                              |
| 4201C-M12*1.75-6H   | 3P                                       | M12            | 1.75 | 9              |                | 110            | 29             |                | 7   | 60°                                      | B                      | 4                                      | ●                       | 10.25                        |
| 4201CC-M12*1.75-6H  | 3P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        |                         |                              |
| 4201C-M12*1.75-6HX  | 3P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        |                         |                              |
| 4201CS-M12*1.75-6H  | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        |                         |                              |
| 4201CCS-M12*1.75-6H | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        |                         |                              |
| 4201CS-M12*1.75-6HX | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        |                         |                              |
| 4201C-M14*1.5-6H    | 3P                                       | M14            | 1.5  | 11             |                | 110            | 30             |                | 9   | 60°                                      | B                      | 4                                      | ●                       | 12.5                         |
| 4201CS-M14*1.5-6H   | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        |                         |                              |
| 4201C-M14*2-6H      | 3P                                       | M14            | 2    | 11             |                | 110            | 30             |                | 9   | 60°                                      | B                      | 4                                      | ●                       | 12                           |
| 4201CS-M14*2-6H     | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        |                         |                              |
| 4201C-M16*1.5-6H    | 3P                                       | M16            | 1.5  | 12             |                | 110            | 32             |                | 9   | 60°                                      | B                      | 4                                      | ●                       | 14.5                         |
| 4201CS-M16*1.5-6H   | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        |                         |                              |
| 4201C-M16*2-6H      | 3P                                       | M16            | 2    | 12             |                | 110            | 32             |                | 9   | 60°                                      | B                      | 4                                      | ●                       | 14                           |
| 4201C-M16*2-6HX     | 3P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        |                         |                              |
| 4201CS-M16*2-6H     | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        |                         |                              |
| 4201CS-M16*2-6HX    | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        |                         |                              |

## Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
 ✓ = Suitable · Empfohlen

| Grade<br>Sorte | Workpiece material · Werkstückstoff |                                                                    |                                   |        |        |                                           |                        |                                                      |                              |                               |                                            |
|----------------|-------------------------------------|--------------------------------------------------------------------|-----------------------------------|--------|--------|-------------------------------------------|------------------------|------------------------------------------------------|------------------------------|-------------------------------|--------------------------------------------|
|                | Mild steel<br>Baustahl<br>HB≤180    | Carbon steel<br>Alloy Steel<br>Kohlenstoff-,<br>Legierter<br>Stahl | Hardened steel · Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron<br>Gusseisen | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Warmfeste<br>Leg. |
|                |                                     |                                                                    | ~40HRC                            | ~50HRC | ~60HRC |                                           |                        |                                                      |                              |                               |                                            |
| YK40F          |                                     |                                                                    |                                   |        |        |                                           | ✓                      | ✓                                                    |                              |                               |                                            |

Code key C 155  
ISO Kennzeichen

Cutting data C171  
Schnittdaten

Technical Information C172-173  
Technische Information.

Non-standard tailor made C174  
Bestellformular für Sonderwerkzeuge

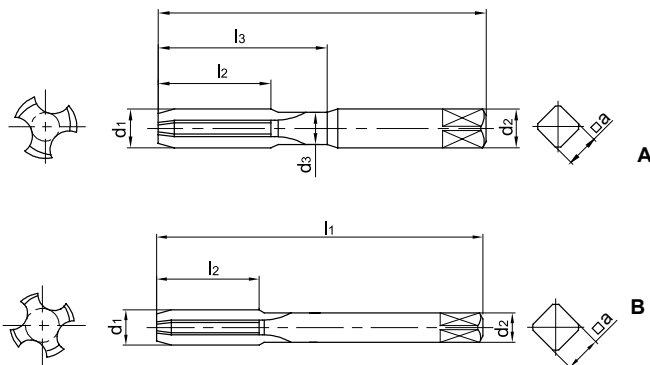
# Threading · Gewindebearbeitung

Solid carbide taps and cutter · Vollhartmetall-Gewindebohrer, -fräser

## 4202C

Tap for cast iron machining

Gewindebohrer zur Bearbeitung von Grauguss



| Type<br>Typ        | Taper<br>length<br>Anschlitt-<br>länge | Basic dimension(mm)<br>Basis Abmessungen |      |                |                |                |                |                |     |                                          |                        | Number<br>of teeth<br>Zähne-<br>anzahl | Grade<br>Sorte | Coredrill<br>Kernbohrer |
|--------------------|----------------------------------------|------------------------------------------|------|----------------|----------------|----------------|----------------|----------------|-----|------------------------------------------|------------------------|----------------------------------------|----------------|-------------------------|
|                    |                                        | d <sub>1</sub>                           | P    | d <sub>2</sub> | d <sub>3</sub> | l <sub>1</sub> | l <sub>2</sub> | l <sub>3</sub> | a×a | Thread-<br>profile<br>Gewinde-<br>profil | Geometry<br>Ausführung |                                        | YK40F          | d                       |
| 4202C-M3*0.5-6H    | 3P                                     | M3                                       | 0.5  | 3.5            | 2.3            | 56             | 11             | 18             | 2.7 | 60°                                      | A                      | 3                                      | ○              | 2.5                     |
| 4202C-M3*0.5-6HX   | 3P                                     |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202CS-M3*0.5-6H   | 1.5P                                   |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202CS-M3*0.5-6HX  | 1.5P                                   |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202C-M4*0.7-6H    | 3P                                     | M4                                       | 0.7  | 4.5            | 3.1            | 63             | 13             | 21             | 3.4 | 60°                                      | A                      | 3                                      | ●              | 3.3                     |
| 4202C-M4*0.7-6HX   | 3P                                     |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4202CS-M4*0.7-6H   | 1.5P                                   |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4202CS-M4*0.7-6HX  | 1.5P                                   |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4202C-M5*0.8-6H    | 3P                                     | M5                                       | 0.8  | 6              | 4              | 70             | 16             | 25             | 4.9 | 60°                                      | A                      | 3                                      | ●              | 4.2                     |
| 4202C-M5*0.8-6HX   | 3P                                     |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4202CS-M5*0.8-6H   | 1.5P                                   |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4202CS-M5*0.8-6HX  | 1.5P                                   |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4202C-M6*0.75-6H   | 3P                                     | M6                                       | 0.75 | 6              | 5              | 80             | 19             | 30             | 4.9 | 60°                                      | A                      | 3                                      | ○              | 5.25                    |
| 4202C-M6*0.75-6HX  | 3P                                     |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202CS-M6*0.75-6H  | 1.5P                                   |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202CS-M6*0.75-6HX | 1.5P                                   |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202C-M6*1-6H      | 3P                                     | M6                                       | 1    | 6              | 4.7            | 80             | 19             | 30             | 4.9 | 60°                                      | A                      | 3                                      | ○              | 5                       |
| 4202CC-M6*1-6H     | 3P                                     |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202C-M6*1-6HX     | 3P                                     |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202CS-M6*1-6H     | 1.5P                                   |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202CCS-M6*1-6H    | 1.5P                                   |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202CS-M6*1-6HX    | 1.5P                                   |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202C-M7*1-6H      | 3P                                     | M7                                       | 1    | 7              | 5.7            | 80             | 19             | 30             | 5.5 | 60°                                      | A                      | 3                                      | ●              | 6                       |
| 4202CS-M7*1-6H     | 1.5P                                   |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4202C-M8*1-6H      | 3P                                     | M8                                       | 1    | 8              | 6.7            | 90             | 20             | 35             | 6.2 | 60°                                      | A                      | 3                                      | ●              | 7                       |
| 4202CS-M8*1-6H     | 1.5P                                   |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4202C-M8*1.25-6H   | 3P                                     | M8                                       | 1.25 | 8              | 6.4            | 90             | 22             | 35             | 6.2 | 60°                                      | A                      | 3                                      | ○              | 6.75                    |
| 4202CC-M8*1.25-6H  | 3P                                     |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202C-M8*1.25-6HX  | 3P                                     |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202CS-M8*1.25-6H  | 1.5P                                   |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202CCS-M8*1.25-6H | 1.5P                                   |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202CS-M8*1.25-6HX | 1.5P                                   |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |

● Ex Stock / ab Lager ○ On demand / auf Anfrage

# Threading · Gewindebearbeitung

Solid carbide taps and cutter · Vollhartmetall-Gewindebohrer, -fräser

| Type<br>Typ         | Basic dimension(mm)<br>Basis Abmessungen |                |      |                |                |                |                |                |     |                                          |                        | Number<br>of teeth<br>Zähne-<br>anzahl | Grade<br>Sorte<br>YK40F | Coredrill<br>Kernbohrer<br>d |
|---------------------|------------------------------------------|----------------|------|----------------|----------------|----------------|----------------|----------------|-----|------------------------------------------|------------------------|----------------------------------------|-------------------------|------------------------------|
|                     | Taper<br>length<br>Anschnitt-<br>länge   | d <sub>1</sub> | P    | d <sub>2</sub> | d <sub>3</sub> | l <sub>1</sub> | l <sub>2</sub> | l <sub>3</sub> | a×a | Thread-<br>profile<br>Gewinde-<br>profil | Geometry<br>Ausführung |                                        |                         |                              |
| 4202C-M10*1-6H      | 3P                                       | M10            | 1    | 10             | 8.7            | 100            | 20             | 39             | 8   | 60°                                      | A                      | 4                                      | ●                       | 9                            |
| 4202CS-M10*1-6H     | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        |                         |                              |
| 4202C-M10*1.25-6H   | 3P                                       | M10            | 1.25 | 10             | 8.4            | 100            | 24             | 39             | 8   | 60°                                      | A                      | 4                                      | ●                       | 8.75                         |
| 4202CS-M10*1.25-6H  | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        |                         |                              |
| 4202C-M10*1.5-6H    | 3P                                       | M10            | 1.5  | 10             | 8.1            | 100            | 24             | 39             | 8   | 60°                                      | A                      | 4                                      | ●                       | 8.5                          |
| 4202CC-M10*1.5-6H   | 3P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●                       |                              |
| 4202C-M10*1.5-6HX   | 3P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●                       |                              |
| 4202CS-M10*1.5-6H   | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●                       |                              |
| 4202CCS-M10*1.5-6H  | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●                       |                              |
| 4202CS-M10*1.5-6HX  | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●                       |                              |
| 4202C-M12*1.25-6H   | 3P                                       | M12            | 1.25 | 9              |                | 110            | 29             |                | 7   | 60°                                      | B                      | 4                                      | ●                       | 10.75                        |
| 4202CS-M12*1.25-6H  | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●                       |                              |
| 4202C-M12*1.5-6H    | 3P                                       | M12            | 1.5  | 9              |                | 110            | 29             |                | 7   | 60°                                      | B                      | 4                                      | ●                       | 10.5                         |
| 4202CS-M12*1.5-6H   | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●                       |                              |
| 4202C-M12*1.75-6H   | 3P                                       | M12            | 1.75 | 9              |                | 110            | 29             |                | 7   | 60°                                      | B                      | 4                                      | ○                       | 10.25                        |
| 4202CC-M12*1.75-6H  | 3P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ○                       |                              |
| 4202C-M12*1.75-6HX  | 3P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ○                       |                              |
| 4202CS-M12*1.75-6H  | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ○                       |                              |
| 4202CCS-M12*1.75-6H | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ○                       |                              |
| 4202CS-M12*1.75-6HX | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ○                       |                              |
| 4202C-M14*1.5-6H    | 3P                                       | M14            | 1.5  | 11             |                | 110            | 30             |                | 9   | 60°                                      | B                      | 4                                      | ●                       | 12.5                         |
| 4202CS-M14*1.5-6H   | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●                       |                              |
| 4202C-M14*2-6H      | 3P                                       | M14            | 2    | 11             |                | 110            | 30             |                | 9   | 60°                                      | B                      | 4                                      | ●                       | 12                           |
| 4202CS-M14*2-6H     | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●                       |                              |
| 4202C-M16*1.5-6H    | 3P                                       | M16            | 1.5  | 12             |                | 110            | 32             |                | 9   | 60°                                      | B                      | 4                                      | ●                       | 14.5                         |
| 4202CS-M16*1.5-6H   | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●                       |                              |
| 4202C-M16*2-6H      | 3P                                       | M16            | 2    | 12             |                | 110            | 32             |                | 9   | 60°                                      | B                      | 4                                      | ●                       | 14                           |
| 4202C-M16*2-6HX     | 3P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●                       |                              |
| 4202CS-M16*2-6H     | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●                       |                              |
| 4202CS-M16*2-6HX    | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●                       |                              |

## Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
 ✓ = Suitable · Empfohlen

| Grade<br>Sorte | Workpiece material · Werkstückstoff |                                                                   |                                   |        |        |                                           |                        |                                                      |                              |                               |                                            |
|----------------|-------------------------------------|-------------------------------------------------------------------|-----------------------------------|--------|--------|-------------------------------------------|------------------------|------------------------------------------------------|------------------------------|-------------------------------|--------------------------------------------|
|                | Mild steel<br>Baustahl<br>HB≤180    | Carbon steel<br>Alloy Steel<br>Kohlenstoff-<br>Legierter<br>Stahl | Hardened steel · Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron<br>Gusseisen | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Warmfeste<br>Leg. |
|                |                                     |                                                                   | ~40HRC                            | ~50HRC | ~60HRC |                                           |                        |                                                      |                              |                               |                                            |
| YK40F          |                                     |                                                                   |                                   |        |        |                                           | ✓                      | ✓                                                    |                              |                               |                                            |

Code key C 155  
ISO Kennzeichen

Cutting data C171  
Schnittdaten

Technical Information C172-173  
Technische Information.

Non-standard tailor made C174  
Bestellformular für Sonderwerkzeuge

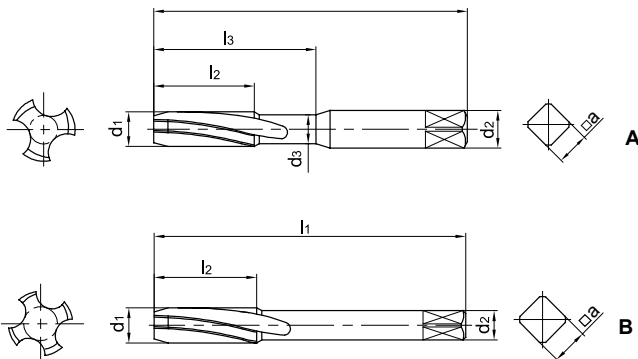
# Threading - Gewindebearbeitung

Solid carbide taps and cutter ▪ Vollhartmetall-Gewindebohrer, -fräser

## 4201A

Tap for aluminum alloy machining

Gewindebohrer zur Bearbeitung von Aluminiumlegierungen



| Type<br>Typ        | Taper<br>length<br>Anschnitt-<br>länge | Basic dimension(mm)<br>Basis Abmessungen |      |     |     |    |    |    |     |                                          |                        | Number<br>of teeth<br>Zähne-<br>anzahl | Grade<br>Sorte | Coredrill<br>Kernbohrer |
|--------------------|----------------------------------------|------------------------------------------|------|-----|-----|----|----|----|-----|------------------------------------------|------------------------|----------------------------------------|----------------|-------------------------|
|                    |                                        | d1                                       | P    | d2  | d3  | l1 | l2 | l3 | a×a | Thread-<br>profile<br>Gewinde-<br>profil | Geometry<br>Ausführung |                                        | YK40F          | d                       |
| 4201A-M3*0.5-6H    | 3P                                     | M3                                       | 0.5  | 3.5 | 2.3 | 56 | 11 | 18 | 2.7 | 60°                                      | A                      | 3                                      | ●              | 2.5                     |
| 4201A-M3*0.5-6HX   | 3P                                     |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201AS-M3*0.5-6H   | 1.5P                                   |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201AS-M3*0.5-6HX  | 1.5P                                   |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201A-M4*0.7-6H    | 3P                                     | M4                                       | 0.7  | 4.5 | 3.1 | 63 | 13 | 21 | 3.4 | 60°                                      | A                      | 3                                      | ●              | 3.3                     |
| 4201A-M4*0.7-6HX   | 3P                                     |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201AS-M4*0.7-6H   | 1.5P                                   |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201AS-M4*0.7-6HX  | 1.5P                                   |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201A-M5*0.8-6H    | 3P                                     | M5                                       | 0.8  | 6   | 4   | 70 | 16 | 25 | 4.9 | 60°                                      | A                      | 3                                      | ●              | 4.2                     |
| 4201A-M5*0.8-6HX   | 3P                                     |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201AS-M5*0.8-6H   | 1.5P                                   |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201AS-M5*0.8-6HX  | 1.5P                                   |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201A-M6*0.75-6H   | 3P                                     | M6                                       | 0.75 | 6   | 5   | 80 | 19 | 30 | 4.9 | 60°                                      | A                      | 3                                      | ●              | 5.25                    |
| 4201A-M6*0.75-6HX  | 3P                                     |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201AS-M6*0.75-6H  | 1.5P                                   |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201AS-M6*0.75-6HX | 1.5P                                   |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201A-M6*1-6H      | 3P                                     | M6                                       | 1    | 6   | 4.7 | 80 | 19 | 30 | 4.9 | 60°                                      | A                      | 3                                      | ●              | 5                       |
| 4201AC-M6*1-6H     | 3P                                     |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201A-M6*1-6HX     | 3P                                     |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201AS-M6*1-6H     | 1.5P                                   |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201ACS-M6*1-6H    | 1.5P                                   |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201AS-M6*1-6HX    | 1.5P                                   |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201A-M7*1-6H      | 3P                                     | M7                                       | 1    | 7   | 5.7 | 80 | 19 | 30 | 5.5 | 60°                                      | A                      | 3                                      | ●              | 6                       |
| 4201AS-M7*1-6H     | 1.5P                                   |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |
| 4201A-M8*1-6H      | 3P                                     | M8                                       | 1    | 8   | 6.7 | 90 | 20 | 35 | 6.2 | 60°                                      | A                      | 3                                      | ●              | 7                       |
| 4201AS-M8*1-6H     | 1.5P                                   |                                          |      |     |     |    |    |    |     |                                          |                        |                                        | ●              |                         |

● Ex Stock / ab Lager ○ On demand / auf Anfrage



# Threading · Gewindebearbeitung

Solid carbide taps and cutter · Vollhartmetall-Gewindebohrer, -fräser

| Type<br>Typ         | Basic dimension(mm)<br>Basis Abmessungen |                |      |                |                |                |                |                |     |                                          |                        | Number<br>of teeth<br>Zähne-<br>anzahl | Grade<br>Sorte | Coredrill<br>Kernbohrer |
|---------------------|------------------------------------------|----------------|------|----------------|----------------|----------------|----------------|----------------|-----|------------------------------------------|------------------------|----------------------------------------|----------------|-------------------------|
|                     | Taper<br>length<br>Anschnitt-<br>länge   | d <sub>1</sub> | P    | d <sub>2</sub> | d <sub>3</sub> | l <sub>1</sub> | l <sub>2</sub> | l <sub>3</sub> | a×a | Thread-<br>profile<br>Gewinde-<br>profil | Geometry<br>Ausführung |                                        | YK40F          | d                       |
| 4201A-M8*1.25-6H    | 3P                                       | M8             | 1.25 | 8              | 6.4            | 90             | 22             | 35             | 6.2 | 60°                                      | A                      | 3                                      | ●              | 6.75                    |
| 4201AC-M8*1.25-6H   | 3P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4201A-M8*1.25-6HX   | 3P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4201AS-M8*1.25-6H   | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4201ACS-M8*1.25-6H  | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4201AS-M8*1.25-6HX  | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4201A-M10*1-6H      | 3P                                       | M10            | 1    | 10             | 8.7            | 100            | 20             | 39             | 8   | 60°                                      | A                      | 4                                      | ●              | 9                       |
| 4201AS-M10*1-6H     | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4201A-M10*1.25-6H   | 3P                                       | M10            | 1.25 | 10             | 8.4            | 100            | 24             | 39             | 8   | 60°                                      | A                      | 4                                      | ●              | 8.75                    |
| 4201AS-M10*1.25-6H  | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4201A-M10*1.5-6H    | 3P                                       | M10            | 1.5  | 10             | 8.1            | 100            | 24             | 39             | 8   | 60°                                      | A                      | 4                                      | ●              | 8.5                     |
| 4201AC-M10*1.5-6H   | 3P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4201A-M10*1.5-6HX   | 3P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4201AS-M10*1.5-6H   | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4201ACS-M10*1.5-6H  | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4201AS-M10*1.5-6HX  | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4201A-M12*1.25-6H   | 3P                                       | M12            | 1.25 | 9              |                | 110            | 29             |                | 7   | 60°                                      | B                      | 4                                      | ●              | 10.75                   |
| 4201AS-M12*1.25-6H  | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4201A-M12*1.5-6H    | 3P                                       | M12            | 1.5  | 9              |                | 110            | 29             |                | 7   | 60°                                      | B                      | 4                                      | ●              | 10.5                    |
| 4201AS-M12*1.5-6H   | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4201A-M12*1.75-6H   | 3P                                       | M12            | 1.75 | 9              |                | 110            | 29             |                | 7   | 60°                                      | B                      | 4                                      | ●              | 10.25                   |
| 4201AC-M12*1.75-6H  | 3P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4201A-M12*1.75-6HX  | 3P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4201AS-M12*1.75-6H  | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4201ACS-M12*1.75-6H | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4201AS-M12*1.75-6HX | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4201A-M14*1.5-6H    | 3P                                       | M14            | 1.5  | 11             |                | 110            | 30             |                | 9   | 60°                                      | B                      | 4                                      | ●              | 12.5                    |
| 4201AS-M14*1.5-6H   | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4201A-M14*2-6H      | 3P                                       | M14            | 2    | 11             |                | 110            | 30             |                | 9   | 60°                                      | B                      | 4                                      | ●              | 12                      |
| 4201AS-M14*2-6H     | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4201A-M16*1.5-6H    | 3P                                       | M16            | 1.5  | 12             |                | 110            | 32             |                | 9   | 60°                                      | B                      | 4                                      | ●              | 14.5                    |
| 4201AS-M16*1.5-6H   | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4201A-M16*2-6H      | 3P                                       | M16            | 2    | 12             |                | 110            | 32             |                | 9   | 60°                                      | B                      | 4                                      | ●              | 14                      |
| 4201A-M16*2-6HX     | 3P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4201AS-M16*2-6H     | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4201AS-M16*2-6HX    | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |

## Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
 ✓ = Suitable · Empfohlen

| Grade<br>Sorte | Workpiece material · Werkstückstoff |                                                                   |                                   |        |        |                                           |                        |                                                      |                              |                               |                                            |
|----------------|-------------------------------------|-------------------------------------------------------------------|-----------------------------------|--------|--------|-------------------------------------------|------------------------|------------------------------------------------------|------------------------------|-------------------------------|--------------------------------------------|
|                | Mild steel<br>Baustahl<br>HB≤180    | Carbon steel<br>Alloy Steel<br>Kohlenstoff-<br>Legierter<br>Stahl | Hardened steel · Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron<br>Gusseisen | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Warmfeste<br>Leg. |
|                |                                     |                                                                   | ~40HRC                            | ~50HRC | ~60HRC |                                           |                        |                                                      |                              |                               |                                            |
| YK40F          |                                     |                                                                   |                                   |        |        |                                           |                        |                                                      | ✓                            |                               |                                            |

Code key C 155  
ISO Kennzeichen

Cutting data C171  
Schnittdaten

Technical Information C172-173  
Technische Information.

Non-standard tailor made C174  
Bestellformular für Sonderwerkzeuge

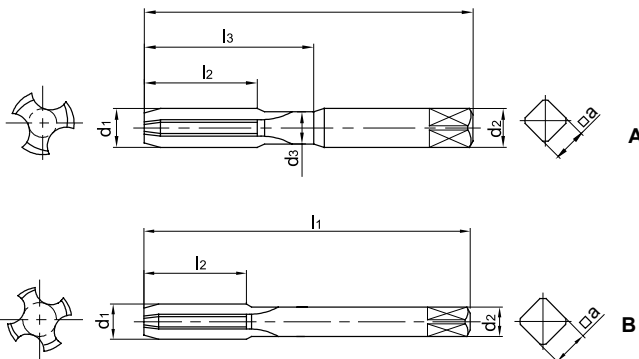
# Threading · Gewindebearbeitung

Solid carbide taps and cutter · Vollhartmetall-Gewindebohrer, -fräser

## 4202A

Tap for aluminum alloy machining

Gewindebohrer zur Bearbeitung von Aluminiumlegierungen



| Type<br>Typ        | Taper length<br>Anschnitt-<br>länge | Basic dimension(mm)<br>Basis Abmessungen |      |                |                |                |                |                |     |                                          |                        | Number<br>of teeth<br>Zähne-<br>anzahl | Grade<br>Sorte | Coredrill<br>Kernbohrer |
|--------------------|-------------------------------------|------------------------------------------|------|----------------|----------------|----------------|----------------|----------------|-----|------------------------------------------|------------------------|----------------------------------------|----------------|-------------------------|
|                    |                                     | d <sub>1</sub>                           | P    | d <sub>2</sub> | d <sub>3</sub> | l <sub>1</sub> | l <sub>2</sub> | l <sub>3</sub> | a×a | Thread-<br>profile<br>Gewinde-<br>profil | Geometry<br>Ausführung |                                        | YK40F          | d                       |
| 4202A-M3*0.5-6H    | 3P                                  | M3                                       | 0.5  | 3.5            | 2.3            | 56             | 11             | 18             | 2.7 | 60°                                      | A                      | 3                                      | ○              | 2.5                     |
| 4202A-M3*0.5-6HX   | 3P                                  |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202AS-M3*0.5-6H   | 1.5P                                |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202AS-M3*0.5-6HX  | 1.5P                                |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202A-M4*0.7-6H    | 3P                                  | M4                                       | 0.7  | 4.5            | 3.1            | 63             | 13             | 21             | 3.4 | 60°                                      | A                      | 3                                      | ○              | 3.3                     |
| 4202A-M4*0.7-6HX   | 3P                                  |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202AS-M4*0.7-6H   | 1.5P                                |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202AS-M4*0.7-6HX  | 1.5P                                |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202A-M5*0.8-6H    | 3P                                  | M5                                       | 0.8  | 6              | 4              | 70             | 16             | 25             | 4.9 | 60°                                      | A                      | 3                                      | ○              | 4.2                     |
| 4202A-M5*0.8-6HX   | 3P                                  |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202AS-M5*0.8-6H   | 1.5P                                |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202AS-M5*0.8-6HX  | 1.5P                                |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202A-M6*0.75-6H   | 3P                                  | M6                                       | 0.75 | 6              | 5              | 80             | 19             | 30             | 4.9 | 60°                                      | A                      | 3                                      | ○              | 5.25                    |
| 4202A-M6*0.75-6HX  | 3P                                  |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202AS-M6*0.75-6H  | 1.5P                                |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202AS-M6*0.75-6HX | 1.5P                                |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202A-M6*1-6H      | 3P                                  | M6                                       | 1    | 6              | 4.7            | 80             | 19             | 30             | 4.9 | 60°                                      | A                      | 3                                      | ○              | 5                       |
| 4202AC-M6*1-6H     | 3P                                  |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202A-M6*1-6HX     | 3P                                  |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202AS-M6*1-6H     | 1.5P                                |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202ACS-M6*1-6H    | 1.5P                                | M7                                       | 1    | 7              | 5.7            | 80             | 19             | 30             | 5.5 | 60°                                      | A                      | 3                                      | ●              | 6                       |
| 4202AS-M6*1-6HX    | 1.5P                                |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202A-M7*1-6H      | 3P                                  |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4202AS-M7*1-6H     | 1.5P                                |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4202A-M8*1-6H      | 3P                                  | M8                                       | 1    | 8              | 6.7            | 90             | 20             | 35             | 6.2 | 60°                                      | A                      | 3                                      | ●              | 7                       |
| 4202AS-M8*1-6H     | 1.5P                                |                                          |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |

● Ex Stock / ab Lager ○ On demand / auf Anfrage

C

Solid carbide drills  
Vollhartmetallbohrer

# Threading · Gewindebearbeitung

## Solid carbide taps and cutter · Vollhartmetall-Gewindebohrer, -fräser

| Type<br>Typ         | Basic dimension(mm)<br>Basis Abmessungen |                |      |                |                |                |                |                |     |                                          |                        | Number<br>of teeth<br>Zähne-<br>anzahl | Grade<br>Sorte | Coredrill<br>Kernbohrer |
|---------------------|------------------------------------------|----------------|------|----------------|----------------|----------------|----------------|----------------|-----|------------------------------------------|------------------------|----------------------------------------|----------------|-------------------------|
|                     | Taper<br>length<br>Anschnitt-<br>länge   | d <sub>1</sub> | P    | d <sub>2</sub> | d <sub>3</sub> | l <sub>1</sub> | l <sub>2</sub> | l <sub>3</sub> | a×a | Thread-<br>profile<br>Gewinde-<br>profil | Geometry<br>Ausführung |                                        | YK40F          | d                       |
| 4202A-M8*1.25-6H    | 3P                                       | M8             | 1.25 | 8              | 6.4            | 90             | 22             | 35             | 6.2 | 60°                                      | A                      | 3                                      | ○              | 6.75                    |
| 4202AC-M8*1.25-6H   | 3P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202A-M8*1.25-6HX   | 3P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202AS-M8*1.25-6H   | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202ACS-M8*1.25-6H  | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202AS-M8*1.25-6HX  | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ○              |                         |
| 4202A-M10*1-6H      | 3P                                       | M10            | 1    | 10             | 8.7            | 100            | 20             | 39             | 8   | 60°                                      | A                      | 4                                      | ●              | 9                       |
| 4202AS-M10*1-6H     | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4202A-M10*1.25-6H   | 3P                                       | M10            | 1.25 | 10             | 8.4            | 100            | 24             | 39             | 8   | 60°                                      | A                      | 4                                      | ●              | 8.75                    |
| 4202AS-M10*1.25-6H  | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4202A-M10*1.5-6H    | 3P                                       | M10            | 1.5  | 10             | 8.1            | 100            | 24             | 39             | 8   | 60°                                      | A                      | 4                                      | ●              | 8.5                     |
| 4202AC-M10*1.5-6H   | 3P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4202A-M10*1.5-6HX   | 3P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4202AS-M10*1.5-6H   | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4202ACS-M10*1.5-6H  | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4202AS-M10*1.5-6HX  | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4202A-M12*1.25-6H   | 3P                                       | M12            | 1.25 | 9              |                | 110            | 29             |                | 7   | 60°                                      | B                      | 4                                      | ●              | 10.75                   |
| 4202AS-M12*1.25-6H  | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4202A-M12*1.5-6H    | 3P                                       | M12            | 1.5  | 9              |                | 110            | 29             |                | 7   | 60°                                      | B                      | 4                                      | ●              | 10.5                    |
| 4202AS-M12*1.5-6H   | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4202A-M12*1.75-6H   | 3P                                       | M12            | 1.75 | 9              |                | 110            | 29             |                | 7   | 60°                                      | B                      | 4                                      | ●              | 10.25                   |
| 4202AC-M12*1.75-6H  | 3P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4202A-M12*1.75-6HX  | 3P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4202AS-M12*1.75-6H  | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4202ACS-M12*1.75-6H | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4202AS-M12*1.75-6HX | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4202A-M14*1.5-6H    | 3P                                       | M14            | 1.5  | 11             |                | 110            | 30             |                | 9   | 60°                                      | B                      | 4                                      | ●              | 12.5                    |
| 4202AS-M14*1.5-6H   | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4202A-M14*2-6H      | 3P                                       | M14            | 2    | 11             |                | 110            | 30             |                | 9   | 60°                                      | B                      | 4                                      | ●              | 12                      |
| 4202AS-M14*2-6H     | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4202A-M16*1.5-6H    | 3P                                       | M16            | 1.5  | 12             |                | 110            | 32             |                | 9   | 60°                                      | B                      | 4                                      | ●              | 14.5                    |
| 4202AS-M16*1.5-6H   | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4202A-M16*2-6H      | 3P                                       | M16            | 2    | 12             |                | 110            | 32             |                | 9   | 60°                                      | B                      | 4                                      | ●              | 14                      |
| 4202A-M16*2-6HX     | 3P                                       |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4202AS-M16*2-6H     | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |
| 4202AS-M16*2-6HX    | 1.5P                                     |                |      |                |                |                |                |                |     |                                          |                        |                                        | ●              |                         |

### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
 ✓ = Suitable · Empfohlen

| Grade<br>Sorte | Workpiece material · Werkstückstoff |                                                                    |                                   |        |        |                                           |                        |                                                      |                              |                               |                                            |
|----------------|-------------------------------------|--------------------------------------------------------------------|-----------------------------------|--------|--------|-------------------------------------------|------------------------|------------------------------------------------------|------------------------------|-------------------------------|--------------------------------------------|
|                | Mild steel<br>Baustahl<br>HB≤180    | Carbon steel<br>Alloy Steel<br>Kohlenstoff-,<br>Legierter<br>Stahl | Hardened steel · Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron<br>Gusseisen | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Warmfeste<br>Leg. |
|                |                                     |                                                                    | ~40HRC                            | ~50HRC | ~60HRC |                                           |                        |                                                      |                              |                               |                                            |
| YK40F          |                                     |                                                                    |                                   |        |        |                                           |                        |                                                      | ✓                            |                               |                                            |

Code key C 155  
ISO Kennzeichen

Cutting data C171  
Schnittdaten

Technical Information C172-173  
Technische Information.

Non-standard tailor made C174  
Bestellformular für Sonderwerkzeuge

# Thread milling Cutter VHM Gewindefräser

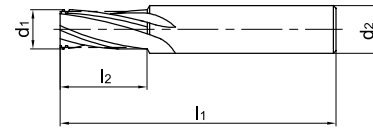


# Threading · Gewindebearbeitung

Solid carbide taps and cutter · Vollhartmetall-Gewindebohrer, -fräser

## 4111

### Thread milling cutter with straight shank Gewindefräser mit Zylinderschaft



| Type<br>Typ   | Basic dimension (mm)<br>Basis Abmessungen |                |      |                |                |                | Number of<br>teeth<br>Zähnezahl | Grade<br>Sorte |       | Coredrill<br>Kernbohrer |
|---------------|-------------------------------------------|----------------|------|----------------|----------------|----------------|---------------------------------|----------------|-------|-------------------------|
|               | D                                         | d <sub>1</sub> | P    | d <sub>2</sub> | l <sub>1</sub> | l <sub>2</sub> |                                 | KTG4015        | YK40F |                         |
| 4111-M3*0.5   | M3                                        | 2.35           | 0.5  | 4              | 50             | 6              | 3                               | ●              | ○     | 2.5                     |
| 4111-M4*0.7   | M4                                        | 3.15           | 0.7  | 4              | 50             | 8              | 3                               | ●              | ○     | 3.3                     |
| 4111-M5*0.5   | M5                                        | 4.3            | 0.5  | 6              | 50             | 10             | 3                               | ●              | ○     | 4.5                     |
| 4111-M5*0.8   | M5                                        | 4              | 0.8  | 6              | 50             | 10             | 3                               | ●              | ○     | 4.2                     |
| 4111-M6*0.75  | M6                                        | 5              | 0.75 | 6              | 60             | 12             | 4                               | ●              | ○     | 5.25                    |
| 4111-M6*1     | M6                                        | 4.75           | 1    | 6              | 60             | 12             | 4                               | ●              | ○     | 5                       |
| 4111-M8*1     | M8                                        | 6.65           | 1    | 8              | 60             | 16             | 4                               | ●              | ○     | 7                       |
| 4111-M8*1.25  | M8                                        | 6.45           | 1.25 | 8              | 60             | 16             | 4                               | ●              | ●     | 6.75                    |
| 4111-M10*1    | M10                                       | 8.55           | 1    | 10             | 75             | 20             | 4                               | ●              | ○     | 9                       |
| 4111-M10*1.5  | M10                                       | 8.1            | 1.5  | 10             | 75             | 20             | 4                               | ●              | ○     | 8.5                     |
| 4111-M12*1.25 | M12                                       | 10.25          | 1.25 | 12             | 75             | 24             | 4                               | ●              | ○     | 10.75                   |
| 4111-M12*1.75 | M12                                       | 9.75           | 1.75 | 12             | 75             | 24             | 4                               | ●              | ○     | 10.25                   |
| 4111-M14*1    | M14                                       | 12.35          | 1    | 14             | 75             | 20             | 4                               | ●              | ○     | 13                      |
| 4111-M14*1.5  | M14                                       | 11.9           | 1.5  | 14             | 75             | 28             | 4                               | ●              | ○     | 12.5                    |
| 4111-M14*2    | M14                                       | 11.4           | 2    | 14             | 75             | 28             | 4                               | ●              | ○     | 12                      |
| 4111-M16*2    | M16                                       | 13.3           | 2    | 16             | 90             | 32             | 6                               | ●              | ○     | 14                      |
| 4111-M18*1    | M18                                       | 16.15          | 1    | 18             | 90             | 20             | 6                               | ●              | ○     | 17                      |
| 4111-M18*2.5  | M18                                       | 14.75          | 2.5  | 18             | 90             | 36             | 6                               | ●              | ○     | 15.5                    |
| 4111-M20*2    | M20                                       | 17.1           | 2    | 18             | 100            | 40             | 6                               | ●              | ○     | 18                      |
| 4111-M20*2.5  | M20                                       | 16.65          | 2.5  | 18             | 100            | 40             | 6                               | ●              | ○     | 17.5                    |

● Ex Stock / ab Lager ○ On demand / auf Anfrage

#### Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen  
✓ = Suitable · Empfohlen

| Grade<br>Sorte | Workpiece material · Werkstückstoff |                                                                    |                                   |        |        |                                           |                        |                                                      |                              |                               |                                             |
|----------------|-------------------------------------|--------------------------------------------------------------------|-----------------------------------|--------|--------|-------------------------------------------|------------------------|------------------------------------------------------|------------------------------|-------------------------------|---------------------------------------------|
|                | Mild steel<br>Baustahl<br>HB≤180    | Carbon steel<br>Alloy Steel<br>Kohlenstoff-,<br>Legierter<br>Stahl | Hardened steel · Gehärteter Stahl |        |        | Stainless<br>steel<br>Rostfreier<br>Stahl | Cast iron<br>Gusseisen | Nodular<br>cast iron<br>GGG<br>Kugelgra-<br>phitguss | Aluminum<br>alloy<br>Aluleg. | Copper<br>alloy<br>Kupferleg. | Heat resist.<br>alloy<br>Wärmefeste<br>Leg. |
|                |                                     |                                                                    | ~40HRC                            | ~50HRC | ~60HRC |                                           |                        |                                                      |                              |                               |                                             |
| KTG4015        | ✓                                   | ✓                                                                  | ✓                                 |        |        |                                           | ✓                      | ✓                                                    |                              |                               |                                             |
| YK40F          |                                     |                                                                    |                                   |        |        |                                           | ✓                      |                                                      | ✓                            | ✓                             |                                             |

Code key C 155  
ISO Kennzeichen

Cutting data C171  
Schnittdaten

Technical Information C172-173  
Technische Information.

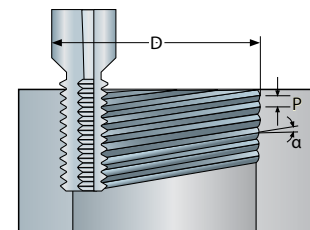
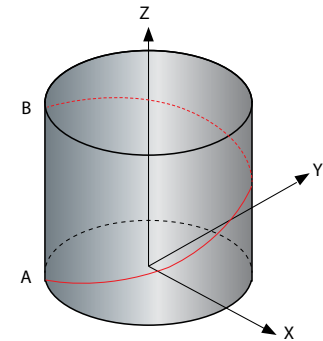
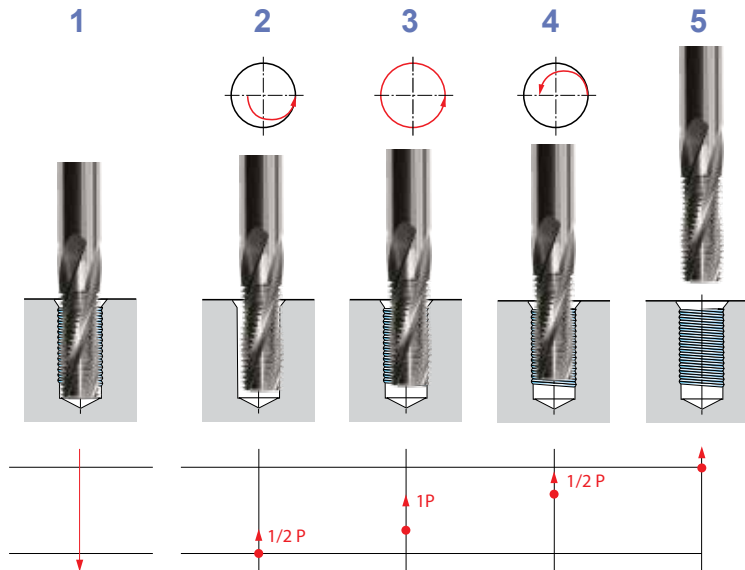
Non-standard tailor made C174  
Bestellformular für Sonderwerkzeuge

# Threading - Gewindebearbeitung

Solid carbide taps and cutter ▪ Vollhartmetall-Gewindebohrer, -fräser

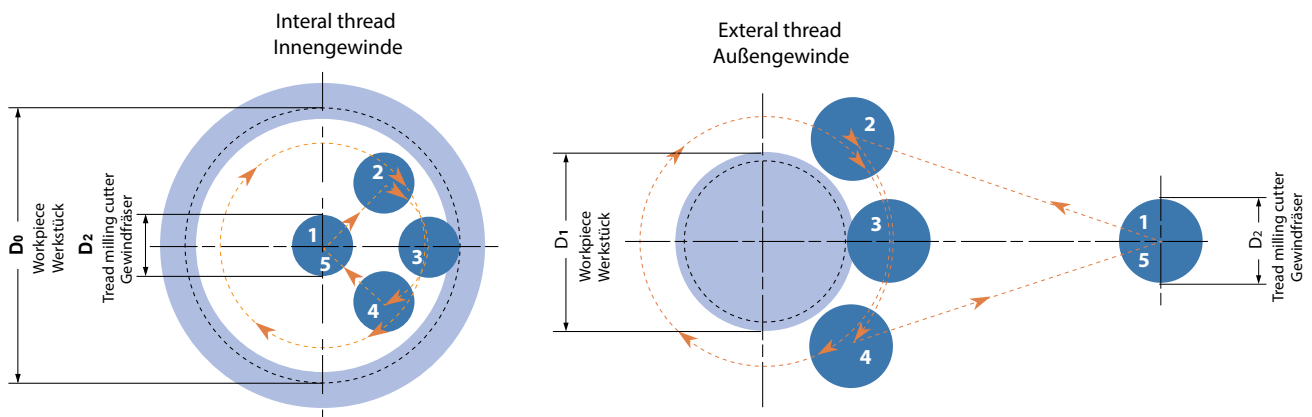
## Thread milling cutter with straight shank Gewindefräser mit Zylinderschaft

### Machine example Bearbeitungsbeispiel



$\alpha$ : helix angle  $\alpha$ : Steigungswinkel  
D: diameter D: Durchmesser  
p: pitch p: Steigung

## Thread milling with circular cutting Gewindeherstellung durch Zirkularfräsen



- 1: Positioning centered on start position
- 2: Movement to thread milling start position
- 3: 360° thread milling cycle with axial movement of the thread pitch in Z-direction
- 4: Linear withdrawal movement, end of thread milling
- 5: Return to start position

- 1: Werkzeug auf Mittelachse in die Bohrung auf Gewindetiefe einfahren
- 2: Eintauchen in die Kreisbahn über einen tangierenden Bogen
- 3: Vorschub um die Steigung mit rotierendem Werkzeug um die Mittelachse des Gewindes
- 4: Tangentiales Wegfahren aus der Kreisbahn
- 5: Rückzug auf Sicherheitsebene

C

Solid carbide drills  
Vollhartmetallbohrer



# Threading · Gewindebearbeitung

Solid carbide taps and cutter · Vollhartmetall-Gewindebohrer, -fräser

## Thread forming tap · Gewindeformer

## Tap drill · Gewindebohrer

| Workpiece material<br>Werkstückstoff                     | Cutting speed (m/min) · Schnittgeschwindigkeit |        |       |                   |
|----------------------------------------------------------|------------------------------------------------|--------|-------|-------------------|
|                                                          | 4201C                                          | 4202C  | 4201A | 4202A 4122A 4222A |
|                                                          | YK40F                                          | KTG402 | YK40F |                   |
| Grey cast iron<br>Grauguss                               | 15-20                                          | 20-30  | ---   |                   |
| Nodular cast iron GGG<br>Kugelgraphitguss                | 10-15                                          | 15-20  | ---   |                   |
| Aluminum alloy<br>Alulegierung                           | ---                                            | ---    | 20-25 |                   |
| Casting aluminium alloy ≤Si10%<br>gegossene Alulegierung | ---                                            | ---    | 15-40 |                   |
| Casting aluminium alloy ≥Si10%<br>gegossene Alulegierung | ---                                            | ---    | ---   |                   |

1. Threading is a complex machining, suitable coolant must be used. Using oil coolant is recommended for the cutting conditions above.
2. The table above is a general selecting standard, change it according to various cutting conditions.
3. Please adjust the cutting parameter appropriately according to system rigidity.

1. Beim Gewindeschneiden muss unbedingt Kühlmittel eingesetzt werden. Die obigen Schnittdaten basieren auf dem Einsatz von Öl.
2. In der obigen Tabelle sind Standarddaten angegeben.
3. Die Schnittdaten sollten entsprechend der Bearbeitung und Stabilität angepasst werden.

## 4111 Threading milling cutter · Gewindefräser

| Workpiece material<br>Werkstückstoff | carbon steel<br>Kohlenstoffstahl<br>~750N/mm <sup>2</sup> |                                                          | alloy steel<br>Leg. Stahl<br>~30HRC   |                                                          | Cast iron,<br>Nodular cast iron<br>GGG<br>Grauguss,<br>Kugelgraphitguss |                                                          | Aluminum alloy<br>Alulegierung        |                                                          | casting aluminium alloy<br>gegossene Alulegierung |                                                          |                                       |                                                          |
|--------------------------------------|-----------------------------------------------------------|----------------------------------------------------------|---------------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------|----------------------------------------------------------|---------------------------------------|----------------------------------------------------------|---------------------------------------------------|----------------------------------------------------------|---------------------------------------|----------------------------------------------------------|
|                                      |                                                           |                                                          |                                       |                                                          |                                                                         |                                                          |                                       |                                                          | ≤Si 10%                                           |                                                          | ≥Si 10%                               |                                                          |
| Cutting speed<br>Schnittgeschw.      | 40~80m/min                                                |                                                          | 20~40m/min                            |                                                          | 40~70m/min                                                              |                                                          | 40~80m/min                            |                                                          | 60~140m/min                                       |                                                          | 60~130m/min                           |                                                          |
| Diameter<br>Durchmesser<br>Ø<br>(mm) | Rotating speed<br>Drehzahl<br>(min-1)                     | Feed rate<br>per tooth<br>Vorschub<br>pro Zahn<br>(mm/z) | Rotating speed<br>Drehzahl<br>(min-1) | Feed rate<br>per tooth<br>Vorschub<br>pro Zahn<br>(mm/z) | Rotating speed<br>Drehzahl<br>(min-1)                                   | Feed rate<br>per tooth<br>Vorschub<br>pro Zahn<br>(mm/z) | Rotating speed<br>Drehzahl<br>(min-1) | Feed rate<br>per tooth<br>Vorschub<br>pro Zahn<br>(mm/z) | Rotating speed<br>Drehzahl<br>(min-1)             | Feed rate<br>per tooth<br>Vorschub<br>pro Zahn<br>(mm/z) | Rotating speed<br>Drehzahl<br>(min-1) | Feed rate<br>per tooth<br>Vorschub<br>pro Zahn<br>(mm/z) |
| <b>M5</b>                            | 5300                                                      | 0.01~0.11                                                | 2800                                  | 0.01~0.03                                                | 5300                                                                    | 0.03~0.10                                                | 5300                                  | 0.03~0.10                                                | 8400                                              | 0.03~0.13                                                | 7500                                  | 0.03~0.10                                                |
| <b>M6</b>                            | 4800                                                      | 0.01~0.11                                                | 2400                                  | 0.01~0.03                                                | 4800                                                                    | 0.03~0.10                                                | 4800                                  | 0.03~0.10                                                | 8000                                              | 0.03~0.13                                                | 7200                                  | 0.03~0.10                                                |
| <b>M8</b>                            | 3850                                                      | 0.01~0.11                                                | 1900                                  | 0.01~0.03                                                | 3850                                                                    | 0.03~0.10                                                | 3850                                  | 0.03~0.10                                                | 6400                                              | 0.03~0.13                                                | 5700                                  | 0.03~0.10                                                |
| <b>M10</b>                           | 3200                                                      | 0.01~0.11                                                | 1600                                  | 0.01~0.03                                                | 3200                                                                    | 0.03~0.10                                                | 3200                                  | 0.03~0.10                                                | 5300                                              | 0.03~0.13                                                | 4800                                  | 0.03~0.10                                                |
| <b>M12</b>                           | 2400                                                      | 0.01~0.11                                                | 1200                                  | 0.01~0.03                                                | 2400                                                                    | 0.03~0.10                                                | 2400                                  | 0.03~0.10                                                | 4000                                              | 0.03~0.13                                                | 3600                                  | 0.03~0.10                                                |
| <b>M16</b>                           | 1900                                                      | 0.01~0.11                                                | 960                                   | 0.01~0.03                                                | 1900                                                                    | 0.03~0.10                                                | 1900                                  | 0.03~0.10                                                | 3200                                              | 0.03~0.13                                                | 2900                                  | 0.03~0.10                                                |
| <b>M20</b>                           | 1600                                                      | 0.01~0.11                                                | 800                                   | 0.01~0.03                                                | 1600                                                                    | 0.03~0.10                                                | 1600                                  | 0.03~0.10                                                | 2650                                              | 0.03~0.13                                                | 2400                                  | 0.03~0.10                                                |

1. Water-soluble coolant is recommended for the cutting conditions above.
2. Please adjust the cutting parameter appropriately according to system rigidity.
3. The cutting conditions above is set on the basis of coated grade KTG4015. When use uncoated grade YK40F, please reduce the cutting speed and feed rate to the 50%~70% of speed stated above.

1. Bei den obigen Schnittdaten sollte Emulsion eingesetzt werden.
2. Die Schnittdaten sollten entsprechend der Bearbeitungsstabilität angepasst werden.
3. Die obigen Schnittdaten basieren auf dem Einsatz von VHM Gewindebohrern in der beschichteten. Sorte KTG4015. Beim Einsatz der unbeschichteten Hartmetallsorte YK40F sind die Schnittdaten, Schnittgeschwindigkeit und Vorschub um 50-70% zu reduzieren.

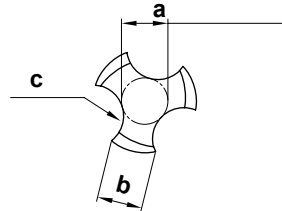
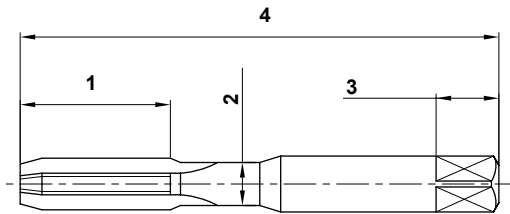
C

Solid carbide drills  
Vollhartmetallbohrer

# Threading · Gewindebearbeitung

Solid carbide taps and cutter · Vollhartmetall-Gewindebohrer, -fräser

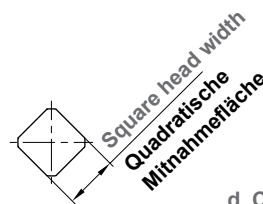
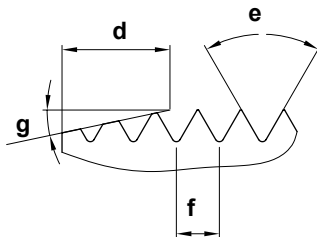
## Terminology of tap · Terminologie von Gewindebohrern



- |                   |                     |
|-------------------|---------------------|
| 1. Thread length  | 1. Gewindelänge     |
| 2. Neck diameter  | 2. Hals Durchmesser |
| 3. Square length  | 3. Schneidenlänge   |
| 4. Overall length | 4. Gesamtlänge      |

- |                  |                    |
|------------------|--------------------|
| a. Web thickness | a. Kerndurchmesser |
| b. Margin width  | b. Schneidenstärke |
| c. Chip flute    | c. Spanraum        |

Magnifying chamfer and thread profile  
Anschnitt und Gewindeprofil



- |                         |                        |
|-------------------------|------------------------|
| d. Chamfer length       | d. Anschnittlänge      |
| e. Thread profile angle | e. Gewindeprofilwinkel |
| f. Pitch                | f. Steigung            |
| g. Chamfer angle        | g. Anschnittwinkel     |

## Different tap's chip flute and features · Spanraum und Anwendung

| Type of chip flute<br>Spanraum Typ                                                                                                 | Feature<br>Eigenschaften                                                                                                                                                                                               | Application<br>Anwendung                                                                                                                                                                                                          |
|------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Helical flute tap<br/>Gedrahlte Spannut</p>  | <ul style="list-style-type: none"> <li>• Helical flute</li> <li>• Tap blind hole to its flat bottom</li> <li>• No chips remain</li> <li>• Good entering performance</li> <li>• Penetrate to pre-hole easily</li> </ul> | <ul style="list-style-type: none"> <li>• Material generating long curled chips</li> <li>• Blind hole</li> <li>• The hole with axial slot on inner wall</li> </ul>                                                                 |
| <p>Straight flute tap<br/>Gerade Spannut</p>    | <ul style="list-style-type: none"> <li>• Straight flute</li> <li>• High cutting edge strength</li> <li>• Easy to regrind</li> <li>• Easy selection of chamfer length</li> </ul>                                        | <ul style="list-style-type: none"> <li>• For machining high hardness material</li> <li>• Material generating powdered form chips</li> <li>• Tap short through and blind hole</li> <li>• Material easy to generate wear</li> </ul> |

C

Solid carbide drills  
Vollhartmetallbohrer

## What is thread forming? Was ist Gewindeformen?

The fiber orientation is not cut at the thread root but compressed. Thus, the formed threads are issued solid and have a very smooth surface. Higher speeds and feed rates compared to the cutting increase productivity.

- The thread is formed much more precise.
- The threads are stronger.
- Increased tool life increases productivity.

Reason for this is that there is no loss of material when tapping as opposed to cutting, the material instead remains fully obtained by forming.

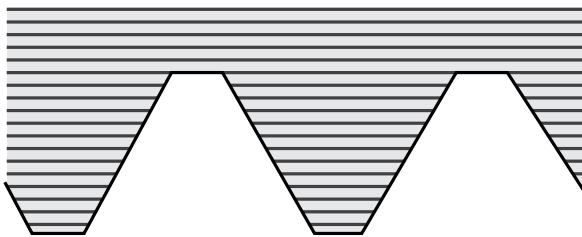
Thread forms should be used in materials with good cold formability. These are in addition to steel and stainless steel light metals and light alloys with a yield strength of 1200 N / mm<sup>2</sup>. Basically materials come into consideration, which are chipping long chips when drilling.

*Die Materialfaser wird nicht durchtrennt, sondern am Gewindegrund verdichtet. Dadurch sind die geformten Gewinde auszugsfester und hat eine sehr glatte Oberfläche. Höhere Drehzahlen und Vorschubgeschwindigkeiten gegenüber dem Schneiden erhöht die Produktivität.*

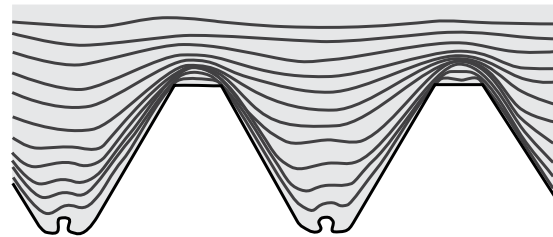
- Das Gewinde wird deutlich präziser ausgeformt.
- Die Gewinde sind belastbarer.
- Höhere Standzeit der Werkzeuge steigert die Produktivität.

*Grund dafür ist, dass beim Gewindeformen im Gegensatz zum Schneiden kein Material verloren geht, sondern durch Umformen vollständig erhalten bleibt*

*Gewindeformen sollte in Materialien mit guter Kaltverformbarkeit eingesetzt werden. Dies sind neben Stahl und Edelstahl auch Leichtmetalle und Leichtmetall Legierungen mit einer Streckgrenze von 1200 N/mm<sup>2</sup>. Grundsätzlich kommen Werkstoffe in Betracht, die beim Bohren langspanend sind.*



Fiber orientation after thread-cutting  
Faserverlauf beim Gewindeschneiden



Fiber orientation after thread-forming  
Faserverlauf beim Gewindeformen

## Advantages of the method are: Vorteile des Verfahrens sind:

- No chips
- No material loss
- Higher tool life compared to the taps
- Higher processing speed
- Smoother material surface after machining
- High precision possible.
- Keine Späne
- Kein Materialverlust
- Höhere Standzeit als beim Gewindebohrer
- Höhere Bearbeitungsgeschwindigkeit
- Glattere Materialoberfläche nach der Bearbeitung
- Hohe Präzision möglich.

## Disadvantages of the process are: Nachteile des Verfahrens sind:

- Higher requirement for the hole tolerance
- Use as a hand-tool rarely possible
- Higher heat than when drilling
- Many materials cannot be shaped
- Often the use of a release agent is needed.
- Höhere Anforderung an die Bohrlochtoleranzen
- Einsatz als Handwerkzeug schlecht möglich
- Höhere Wärmeentwicklung als beim Bohren
- Viele Materialien lassen sich nicht formen
- Oft ist der Einsatz eines Trennmittels notwendig.

The material is cold-formed and solidified in the molds. This increases the pullout strength of threads. Frequently taps are used in holes that have been produced by a thread former.

*Das Material wird beim Formen kaltverformt und verfestigt. Dies erhöht die Auszugsfestigkeit von Gewinden. Häufig werden Gewindeformer bei Bohrungen eingesetzt, die mittels eines Fließformers hergestellt wurden.*

# Threading · Gewindebearbeitung

Solid carbide taps and cutter · Vollhartmetall-Gewindebohrer, -fräser

## Non-standard Taylor made · Sonderwerkzeuge

Name:

Company / Firma:

Fax:

Tel:

E-mail:



**Trade Technology**

RUSSIA, Moscow, Ordzhonikidze str. 11 build 11

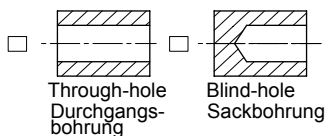
Tel.: +7(499)650-50-31

www.zcc-ct.ru

E-mail: info@zcc-ct.ru

### Machining information and Workpiece Material · Bearbeitungsinfo und Werkstückstoff

Hole shape  
Bohrungs-  
ausführung



Taper length  
Gewindelänge

mm

Hole tolerance  
Bohrungstoleranz

Status of hole  
Werkstückzustand

☐ pre-drill  
Vorbohren

☐ casting-mold hole  
Gegossene oder  
geschmiedete  
Bohrung

- ☐ Grey cast iron  
Grauguss
- ☐ Nodular cast iron GGG  
Kugelgraphitguss
- ☐ Aluminium alloy  
Alulegierung
- ☐ Si Al alloy Si<10%  
Si-Alulegierung
- ☐ Si Al alloy Si 10%  
Si-Alulegierung

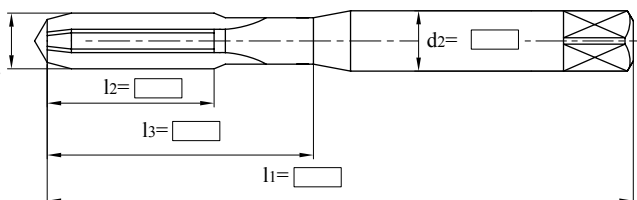
Machined material trademark  
Spezieller Werkstückstoff

Tensile Strength · Zugfestigkeit

Hardness · Härte

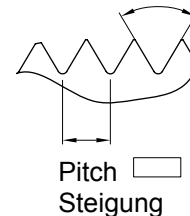
### Tool information · Werkzeug-Informationen

Nominal diameter  
Außendurchm. Ø

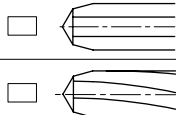


thread profil  
Gewindeprofil

Thread angle = 60°  
Gewindeginkel = 60°



Tool rotating direction  
Drehrichtung



Cooling / Kühlung

☐ External  
Extern

☐ Internal  
Intern

Coating  
Beschichtung

☐ Yes / Ja

☐ No / Nein

Remarks:  
Bemerkungen:

Order quantity: pieces  
Auftragsmenge: Stücke

Expected delivery date:  
Gewünschtes Lieferdatum:

Date · Datum:

Confirmation · Unterschrift:

C

Solid carbide drills  
Vollhartmetallbohrer