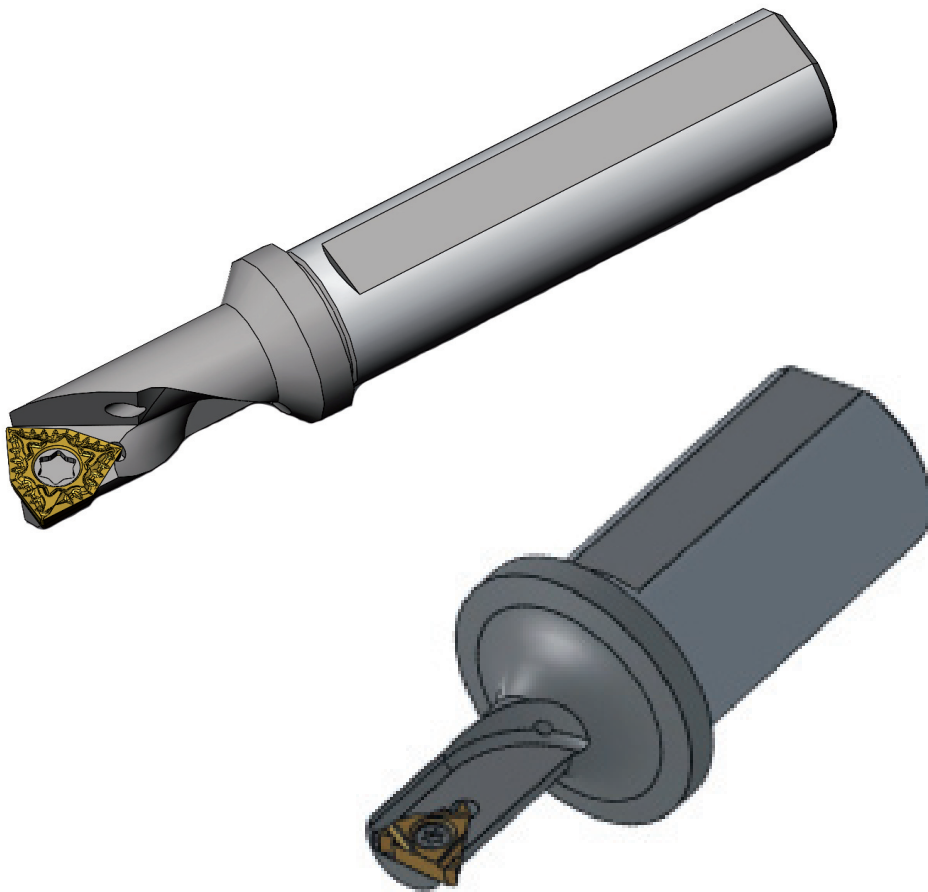


# HEAD-Master®

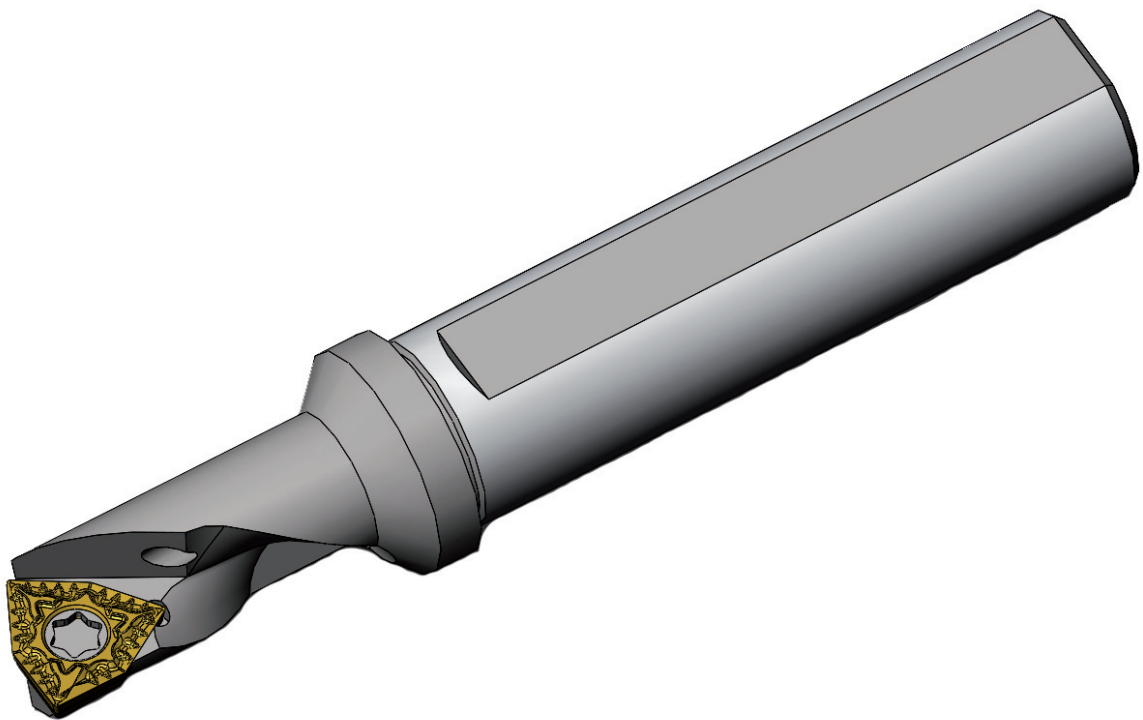


G

## HD-DREHWERKZEUGE HD-TURNING TOOLS

|         |                                                                              |                          |
|---------|------------------------------------------------------------------------------|--------------------------|
| 6081    | Multi-Turn Drill 90°                                                         | Seite / Page G-03 - G-04 |
|         | Technische Daten Multi-Turn Drill<br>Technical datas Multi-Turn Drill        | Seite / Page G-05 - G-10 |
| 6080    | HD-Turn Drill 90°                                                            | Seite / Page G-11        |
|         | HD-Turn Drill 90° Anwendungsbeispiele<br>HD-Turn Drill 90° Examples for work | Seite / Page G-12        |
| SCLCR/L | HD-TURN-Bohrstangen 95°<br>HD-TURN-Boring bars 95°                           | Seite / Page G-13        |
| SDUCR/L | HD-TURN-Bohrstangen 93°<br>HD-TURN-Boring bars 93°                           | Seite / Page G-14        |
| SDQCR/L | HD-TURN-Bohrstangen 107,5°<br>HD-TURN-Boring bars 107,5°                     | Seite / Page G-15        |
| SVUCR/L | HD-TURN-Bohrstangen 93°<br>HD-TURN-Boring bars 93°                           | Seite / Page G-16        |
| 6082    | HD-Gewindebohrstange<br>HD Threading Boring bars                             | Seite / Page G-17        |
|         | ISO-Bezeichnung Bohrstangen<br>ISO markings boring bars                      | Seite / Page G-18        |
|         | ISO-Bezeichnung Drehhalter<br>ISO markings Turning holder                    | Seite / Page G-19        |
|         | ISO-Bezeichnung Wendeplatten<br>ISO marking Inserts                          | Seite / Page G-20        |
|         | HM-Qualitäten<br>HM-Grades                                                   | Seite / Page G-21        |
|         | Technische Daten<br>Technical datas                                          | Seite / Page G-22 - G-23 |
|         | Wendeplatte<br>Inserts                                                       | Seite / Page G-24 - G-34 |

# HEAD-Master<sup>®</sup>



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## MULTI TURN DRILL

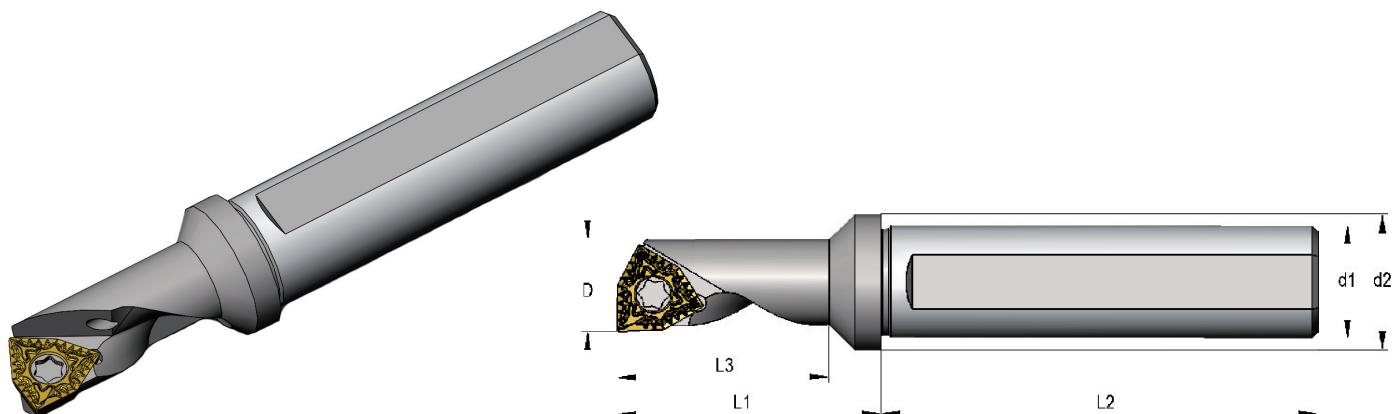
## Multi-Turn Drill

### Ausführung:

Universelles Bohr-Dreh-Werkzeug mit Innenkühlung  
Kostenreduktion auf allen Hauptwerkstoffen

### Performance:

Universal turning-drilling-tool  
Cost reduction on all main materials



Form A: 2,25 x D

Form B: 1,50 x D

| Bestell-Nr.:<br>Order Code: | Abmessungen / Dimension (mm) |    |    |      |    |       |     | Wendeplatte<br>Insert<br> |
|-----------------------------|------------------------------|----|----|------|----|-------|-----|----------------------------------------------------------------------------------------------------------------|
|                             | D                            | d1 | d2 | L1   | L2 | L3    | L4  |                                                                                                                |
| 6081A.08-2.25-04-R/L        | 8                            | 10 | 12 | 22,5 | 38 | 18,0  | -   | WCHX 0401..                                                                                                    |
| 6081B.08-1.50-04-R/L        | 8                            | 12 | 16 | -    | -  | 12,0  | 80  |                                                                                                                |
| 6081A.10-2.25-05-R/L        | 10                           | 12 | 16 | 28   | 42 | 22,5  | -   | WCHX 05T1..                                                                                                    |
| 6081B.10-1.50-05-R/L        | 10                           | 12 | 16 | -    | -  | 15,0  | 90  |                                                                                                                |
| 6081A.11-2.25-06-R/L        | 11                           | 16 | 20 | 32   | 45 | 24,75 | -   | WCHX 0602..                                                                                                    |
| 6081B.11-1.50-06-R/L        | 11                           | 16 | 20 | -    | -  | 16,5  | 100 |                                                                                                                |
| 6081A.15-2.25-07-R/L        | 15                           | 20 | 25 | 43   | 50 | 33,75 | -   | WCHX 0703..                                                                                                    |
| 6081B.15-1.50-07-R/L        | 15                           | 20 | 25 | -    | -  | 22,5  | 125 |                                                                                                                |
| 6081A.18-2.25-09-R/L        | 18                           | 25 | 32 | 53   | 56 | 40,5  | -   | WCHX 0903..                                                                                                    |
| 6081B.18-1.50-09-R/L        | 18                           | 25 | 32 | -    | -  | 27,0  | 135 |                                                                                                                |
| 6081A.20-2.25-10-R/L        | 20                           | 25 | 32 | 56   | 56 | 45,0  | -   | WCHX 10T3..                                                                                                    |
| 6081B.20-1.50-10-R/L        | 20                           | 25 | 32 | -    | -  | 30,0  | 150 |                                                                                                                |
| 6081A.26-2.25-13-R/L        | 26                           | 32 | 40 | 73   | 60 | 58,5  | -   | WCHX 1305..                                                                                                    |
| 6081B.26-1.50-13-R/L        | 26                           | 32 | 40 | -    | -  | 39,0  | 180 |                                                                                                                |

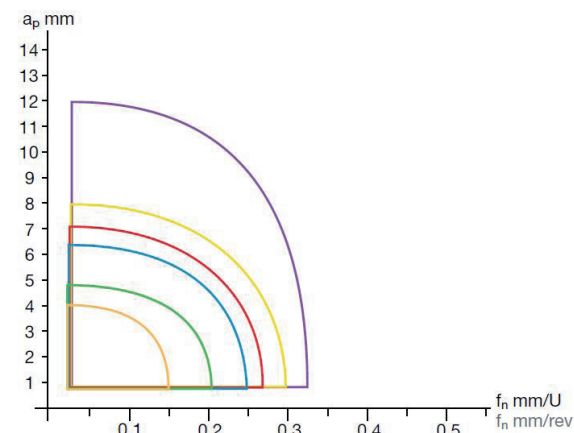
Bestellbeispiel / Orderexample: 6081A.08-2.25-04-R

| Ersatzteile:<br>Spare parts: | Schraube<br>Screw<br> | Schlüssel<br>Key<br> | Anzugsmoment<br>Torque (Ncm) |
|------------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|------------------------------|
| 6081A/B.08..R/L              | M-VT 20-3                                                                                                | M-BT 06                                                                                                  | 62                           |
| 6081A/B.10..R/L              | M-VT 25-4                                                                                                | M-BT 08                                                                                                  | 128                          |
| 6081A/B.11..R/L              | M-VT 25-5                                                                                                | M-BT 08                                                                                                  | 128                          |
| 6081A/B.15..R/L              | M-VT 30-7                                                                                                | M-BT 08                                                                                                  | 180                          |
| 6081A/B.18..R/L              | M-VT 35-8                                                                                                | M-BT 15                                                                                                  | 345                          |
| 6081A/B.20..R/L              | M-VT 50-8                                                                                                | M-BT 20                                                                                                  | 1020                         |
| 6081A/B.26..R/L              | M-VT 60-12                                                                                               | M-BT 25                                                                                                  | 1750                         |

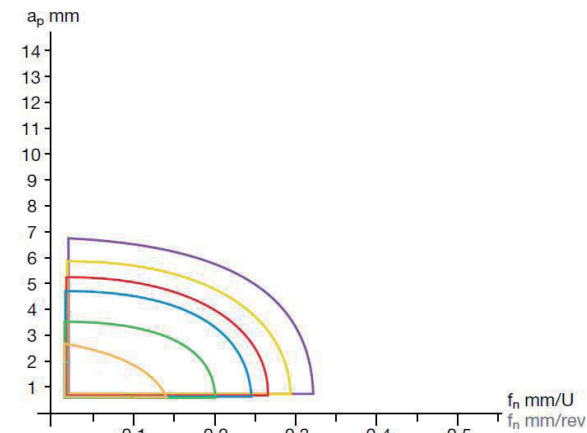
### Schnittparameter für Stahl, Rostfrei & Grauguss

### Cutting data for steel, stainless steel and grey cast iron

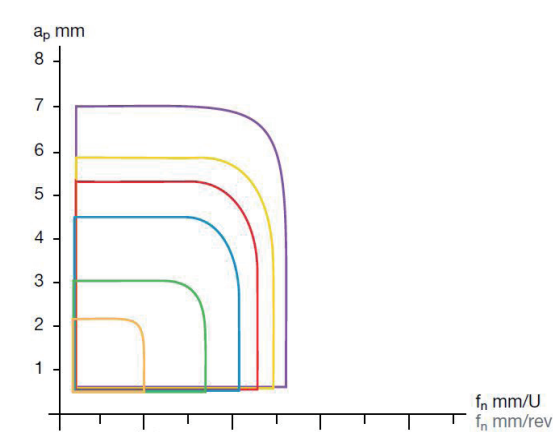
**Längsdrehen 1,50D**  
Longitudinal turning 1,50D



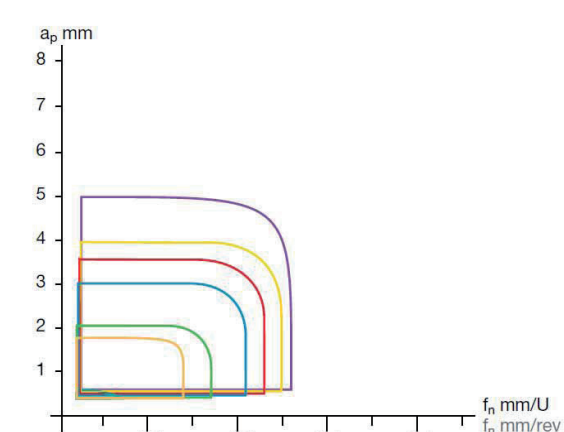
**Längsdrehen 2,25D**  
Longitudinal turning 2,25D



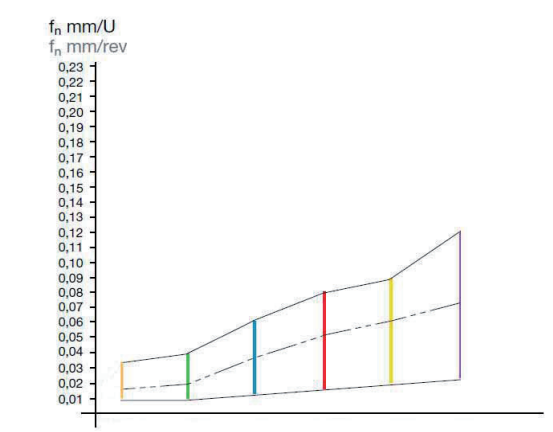
**Plandrehen 1,50D**  
Face turning 1,50D



**Plandrehen 2,25D**  
Face turning 2,25D



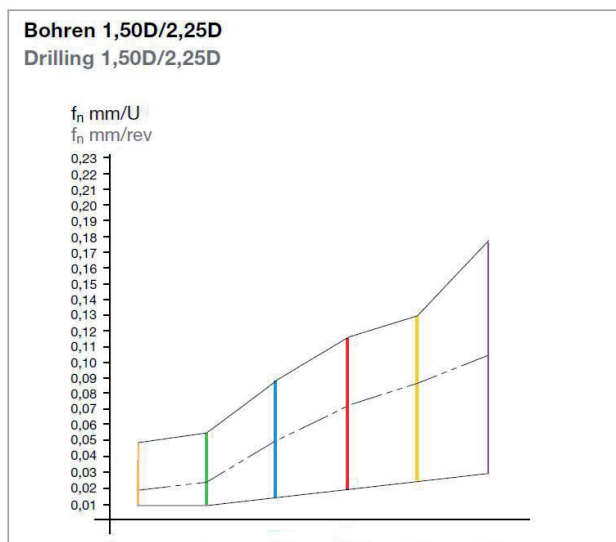
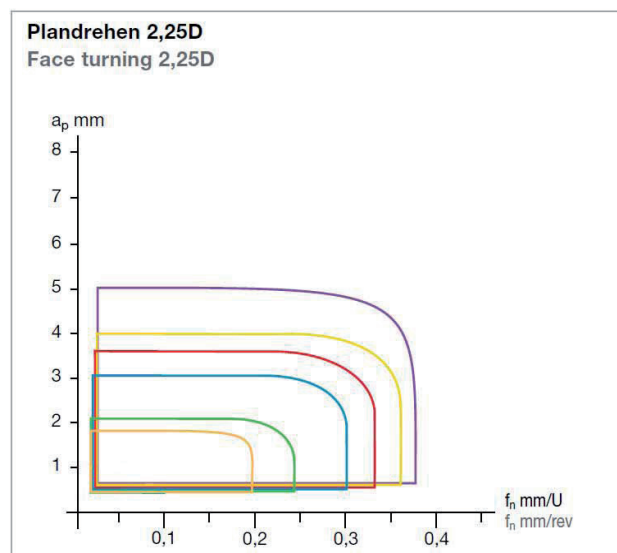
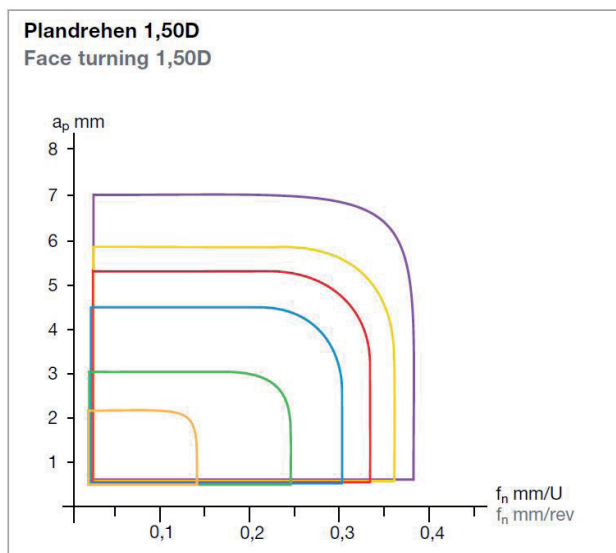
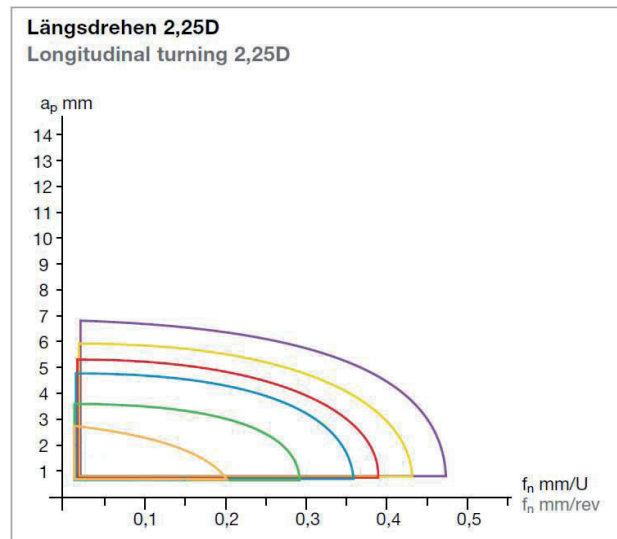
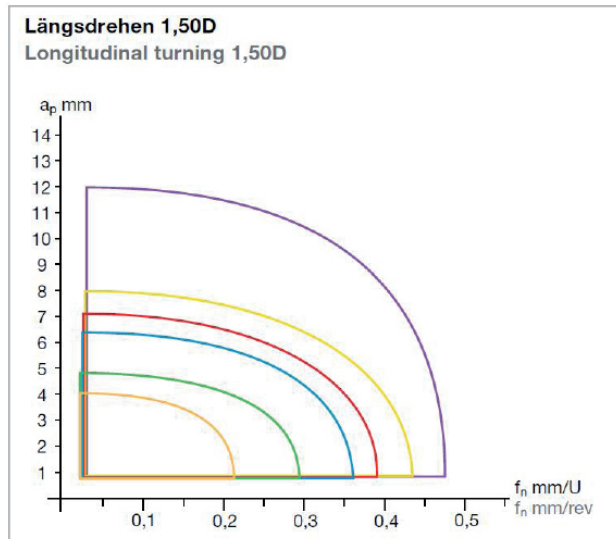
**Bohren 1,50D/2,25D**  
Drilling 1,50D/2,25D



- 6081.. - 08..
- 6081.. - 10..
- 6081.. - 11..
- 6081.. - 15..
- 6081.. - 18..
- 6081.. - 20..
- 6081.. - 26..

Verwenden Sie die Multi-Turn Drill Werkzeuge **immer mit Kühlung**.  
Use the Multi-Turn Drill tools **always with coolant**.

**Schnittparameter für Aluminium**  
**Cutting data for aluminium**



- 6081.. - 08..
- 6081.. - 10..
- 6081.. - 11..
- 6081.. - 15..
- 6081.. - 18..
- 6081.. - 20..
- 6081.. - 26..

Verwenden Sie die Multi-Turn Drill Werkzeuge **immer mit Kühlung**.  
 Use the Multi-Turn Drill tools **always with coolant**.

# Schnittdatenempfehlung Multi-Turn Drill

## Cutting data recommendations Multi-Turn Drill

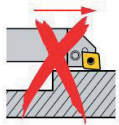
|          | Werkstoff<br>Material                                                  | Brinell Härte<br>Brinell hardness<br>(HB) | Drehen und Bohren<br>Turning and Drilling<br>vc (m/min)                           |                                                                                     |                                                                                     |
|----------|------------------------------------------------------------------------|-------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|          |                                                                        |                                           | PTV28                                                                             | PTT28                                                                               | K10 / KTE20                                                                         |
|          |                                                                        |                                           |  |  |  |
| <b>P</b> | Unlegierter Baustahl <sup>1)</sup><br>Unalloyed steel <sup>1)</sup>    | 125                                       | 170 - 300                                                                         |                                                                                     |                                                                                     |
|          |                                                                        | 190                                       | 150 - 255                                                                         |                                                                                     |                                                                                     |
|          |                                                                        | 250                                       | 100 - 200                                                                         |                                                                                     |                                                                                     |
|          |                                                                        | 270                                       | 110 - 185                                                                         |                                                                                     |                                                                                     |
|          |                                                                        | 300                                       | 90 - 160                                                                          |                                                                                     |                                                                                     |
|          | Niedrig legierter Stahl <sup>1)</sup><br>Low-alloy steel <sup>1)</sup> | 180                                       | 120 - 140                                                                         |                                                                                     |                                                                                     |
|          |                                                                        | 275                                       | 100 - 210                                                                         |                                                                                     |                                                                                     |
|          |                                                                        | 300                                       | 100 - 185                                                                         |                                                                                     |                                                                                     |
|          |                                                                        | 350                                       | 90 - 145                                                                          |                                                                                     |                                                                                     |
|          | Hochlegierter Stahl <sup>1)</sup><br>High alloy steel <sup>1)</sup>    | 200                                       | 130 - 215                                                                         |                                                                                     |                                                                                     |
|          |                                                                        | 325                                       | 80 - 140                                                                          |                                                                                     |                                                                                     |
|          | Nichtrostender Stahl <sup>1)</sup><br>Stainless steel <sup>1)</sup>    | 200                                       | 110 - 200                                                                         |                                                                                     |                                                                                     |
|          |                                                                        | 240                                       | 100 - 160                                                                         |                                                                                     |                                                                                     |
| <b>M</b> | Nichtrostender Stahl<br>Stainless Steel                                | 180                                       | 90 - 160                                                                          | 50 - 150                                                                            |                                                                                     |
| <b>K</b> | Grauguss<br>Grey cast iron                                             | 180                                       |                                                                                   |                                                                                     | 150 - 250                                                                           |
|          |                                                                        | 260                                       |                                                                                   |                                                                                     | 100 - 150                                                                           |
|          | Gusseisen mit Kugelgraphit<br>Nodular graphite cast iron               | 160                                       |                                                                                   |                                                                                     | 80 - 130                                                                            |
|          |                                                                        | 250                                       |                                                                                   |                                                                                     | 100 - 150                                                                           |
|          | Temperguss<br>Malleable cast iron                                      | 130                                       |                                                                                   |                                                                                     | 120 - 180                                                                           |
|          |                                                                        | 230                                       |                                                                                   |                                                                                     | 100 - 160                                                                           |
| <b>N</b> | Aluminium-Knetlegierungen<br>Aluminium wrought alloys                  | 60                                        |                                                                                   |                                                                                     | 400 - 2400                                                                          |
|          |                                                                        | 100                                       |                                                                                   |                                                                                     | 160 - 1600                                                                          |
|          | Aluminium-Gusslegierungen<br>Aluminium cast alloys                     | 75                                        |                                                                                   |                                                                                     | 320 - 1200                                                                          |
|          |                                                                        | 90                                        |                                                                                   |                                                                                     | 240 - 950                                                                           |
|          |                                                                        | 130                                       |                                                                                   |                                                                                     | 160 - 800                                                                           |
|          | Kupfer und Knetlegierungen<br>Cooper and copper alloys                 | 110                                       |                                                                                   |                                                                                     | 200 - 520                                                                           |
|          |                                                                        | 90                                        |                                                                                   |                                                                                     | 200 - 800                                                                           |
|          |                                                                        | 100                                       |                                                                                   |                                                                                     | 120 - 320                                                                           |
| <b>S</b> | Warmfeste Legierungen<br>Heat resistant alloys                         | 200                                       |                                                                                   | 20 - 40                                                                             |                                                                                     |
|          |                                                                        | 280                                       |                                                                                   | 20 - 40                                                                             |                                                                                     |
|          |                                                                        | 250                                       |                                                                                   | 20 - 40                                                                             |                                                                                     |
|          |                                                                        | 350                                       |                                                                                   | 10 - 30                                                                             |                                                                                     |
|          |                                                                        | 320                                       |                                                                                   | 10 - 30                                                                             |                                                                                     |
|          | Titanlegierungen<br>Titanium alloys                                    | 400 (Rm)                                  |                                                                                   | 10 - 30                                                                             |                                                                                     |
|          |                                                                        | 1050 (Rm)                                 |                                                                                   | 20 - 50                                                                             |                                                                                     |

1): und Stahlguss  
and cast iron

Rm: Zugfestigkeit in N/mm<sup>2</sup>  
Rm: Tensile strength in N/mm<sup>2</sup>

 Nassbearbeitung  
Wet machining

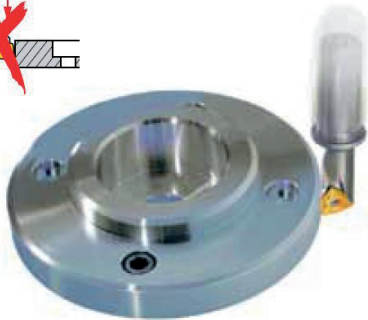
1. Plandrehen  
Face turning



4. Innenlängsdrehen  
Internal turning



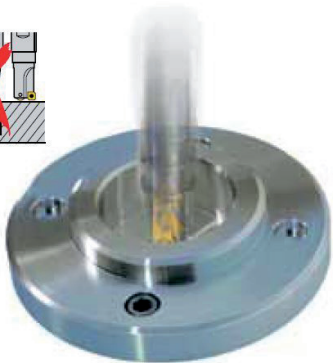
2. Längsdrehen  
External turning



5. Senken (nach DIN 74)  
Counter bore milling (to DIN 74)



3. Bohren ins Volle mit geradem Bohrgrund  
Drilling into solid with flat drilling base



### Fünf Bearbeitungsoperationen, ein Werkzeug

Das universelle Dreh-Bohr-Werkzeug ersetzt bis zu fünf ISO-Werkzeuge und reduziert die Bearbeitungszeiten um bis zu 30% durch die Einsparung von Werkzeugwechselzeiten und Werkzeugleerfahrten.

### Five machining operations, one tool

The universal turning-drilling-tool substitutes up to 5 ISO-tools and reduce machining times up to 30% through saving of tool changing times and unnecessary tool movements.



Nebenschneide einsetzbar  
Secondary cutting edge can be used

Xpos.: Versatz aus der Mitte positiv  
Offset, positiv

D: Nenndurchmesser Werkzeug  
Nominal tool diameter

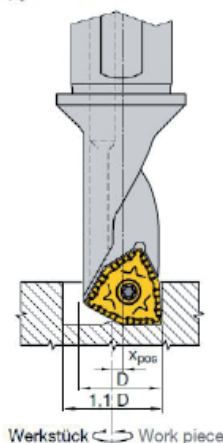
Stahl  
Steel

$$X_{pos} = \frac{(1,1 \times D) - D}{2}$$

Aluminium  
Aluminium

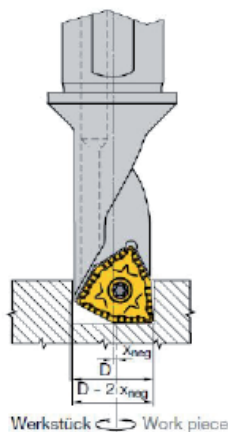
$$X_{pos} = \frac{(1,5 \times D) - D}{2}$$

**Bohren ins Volle außer der Mitte, positiver Versatz**  
Drilling off center, positive offset



| Werkzeug<br>Tool<br>1,50 x D / 2,25 x D | D     | Stahl<br>Steel |      | Aluminium<br>Aluminium |      |
|-----------------------------------------|-------|----------------|------|------------------------|------|
|                                         |       | Dmax           | Xpos | Dmax                   | Xpos |
| 6081A/B.08...-04-R/L                    | 08H13 | 8,8            | 0,40 | 12,0                   | 2,00 |
| 6081A/B.10...-05-R/L                    | 10H13 | 11,0           | 0,50 | 15,0                   | 2,50 |
| 6081A/B.11...-06-R/L                    | 11H13 | 12,1           | 0,55 | 16,5                   | 2,75 |
| 6081A/B.15...-07-R/L                    | 15H13 | 16,5           | 0,75 | 22,5                   | 3,75 |
| 6081A/B.18...-09-R/L                    | 18H13 | 19,8           | 0,90 | 27,0                   | 4,50 |
| 6081A/B.20...-10-R/L                    | 20H13 | 22,0           | 1,00 | 30,0                   | 5,00 |
| 6081A/B.26...-13-R/L                    | 26H13 | 28,6           | 1,30 | 39,0                   | 6,50 |

**Bohren ins Volle außer der Mitte, negativer Versatz**  
Drilling off center, negative offset



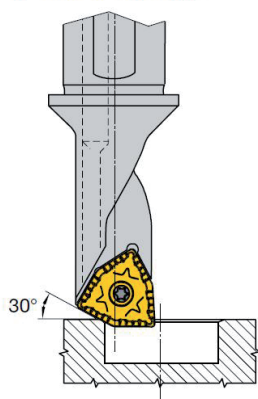
Xpos.: Versatz aus der Mitte negativ  
Offset, negative

D: Nenndurchmesser Werkzeug  
Nominal tool diameter

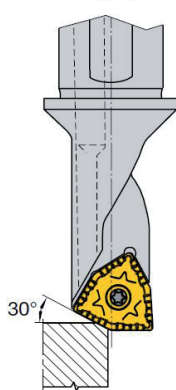
$$X_{neg} = \frac{D_{min} - D}{2}$$

| Werkzeug<br>Tool<br>1,50 x D / 2,25 x D | D     | Dmin | Xneg |
|-----------------------------------------|-------|------|------|
| 6081A/B.08...-04-R/L                    | 08H13 | 7,8  | 0,10 |
| 6081A/B.10...-05-R/L                    | 10H13 | 9,8  | 0,10 |
| 6081A/B.11...-06-R/L                    | 11H13 | 10,8 | 0,10 |
| 6081A/B.15...-07-R/L                    | 15H13 | 14,7 | 0,15 |
| 6081A/B.18...-09-R/L                    | 18H13 | 17,7 | 0,15 |
| 6081A/B.20...-10-R/L                    | 20H13 | 19,7 | 0,15 |
| 6081A/B.26...-13-R/L                    | 26H13 | 25,7 | 0,15 |

**Anfasen innen**  
Internal chamfering



**Anfasen außen**  
External chamfering



### Senkbohrung mit Multi-Turn Drill-Werkzeugen

Core drilling with HD-Turn Drill II-Tools

**Die Durchmesserreihen der Multi-Turn Drill-Werkzeugen ist so ausgelegt, dass damit Senkbohrungen nach DIN74 Form H3, J3 und K3 in einem Arbeitsgang produziert werden können.**

The diameters of the HD-Turn Drill II-Tools are designed to produce counter-bores according to DIN 74 forms H3, J3 and K3 in one operation.

Form H3 für : Zylinderschrauben nach DIN 84 und DIN 7984  
Gewindeschneidschrauben nach DIN 7513 Form B  
Gewindefurchende Schrauben nach DIN 7500 Teil 1 Form A

Form J3 für: Zylinderschrauben nach DIN 6912  
(niedriger Kopf, Schlüsselführung)

Form K3 für: Zylinderschrauben nach DIN 912

mit Federring  
nach DIN 7980

Form H3 for: cheese-head screws according to DIN 84  
socket head cap screws to DIN 7984  
cheese-head screws according to DIN 7513 Form B  
cheese-head screws according to DIN 7500 Part 1 Form A

Form J3 for: socket head cap screws according to DIN 6912  
(low screw head, key guide)

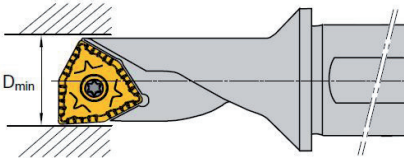
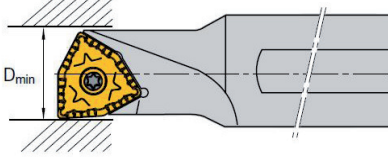
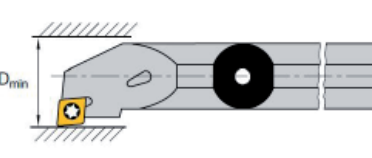
Form K3 for: socket head cap screws according to DIN 912

with lock washer  
according to DIN 7980

| Werkzeug<br>Tool<br>1,50 x D / 2,25 x D | Gewinde -<br>Nenndurchmesser<br>Thread nominal<br>diameter | D  | H13      |
|-----------------------------------------|------------------------------------------------------------|----|----------|
| 6081A/B.08..-04-R/L                     | M4                                                         | 8  | 0/+0,220 |
| 6081A/B.10..-05-R/L                     | M5                                                         | 10 | 0/+0,220 |
| 6081A/B.11..-06-R/L                     | M6                                                         | 11 | 0/+0,270 |
| 6081A/B.15..-07-R/L                     | M8                                                         | 15 | 0/+0,270 |
| 6081A/B.18..-09-R/L                     | M10                                                        | 18 | 0/+0,330 |
| 6081A/B.20..-10-R/L                     | M12                                                        | 20 | 0/+0,330 |
| 6081A/B.26..-13-R/L                     | M16                                                        | 26 | 0/+0,330 |

### Große Aufnahmedurchmesser und Plananlage

Large mounting diameter and location face

| 6081A..2,25..                                                                       | 6081B..1,50..                                                                        | ISO-Bohrstange<br>ISO-boring bar                                                      |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |
| Dmin                                                                                | 20                                                                                   | 20                                                                                    |
| d<br>Aufnahme / Shank                                                               | 25 / 32 <sup>1)</sup>                                                                | 25                                                                                    |
| Plananlage<br>Seating face                                                          | Ja<br>Yes                                                                            | Nein<br>No                                                                            |

Vorteil: Höhere Stabilität und geringere Vibrationsneigung durch größere Aufnahmedurchmesser und zusätzlicher Plananlage bei 2,25xD  
Advantage: More stability and less tendency to vibrate through larger locating diameters and the additional seating face for 2,25xD

1): Durchmesser am Bund  
Diameter on the flange

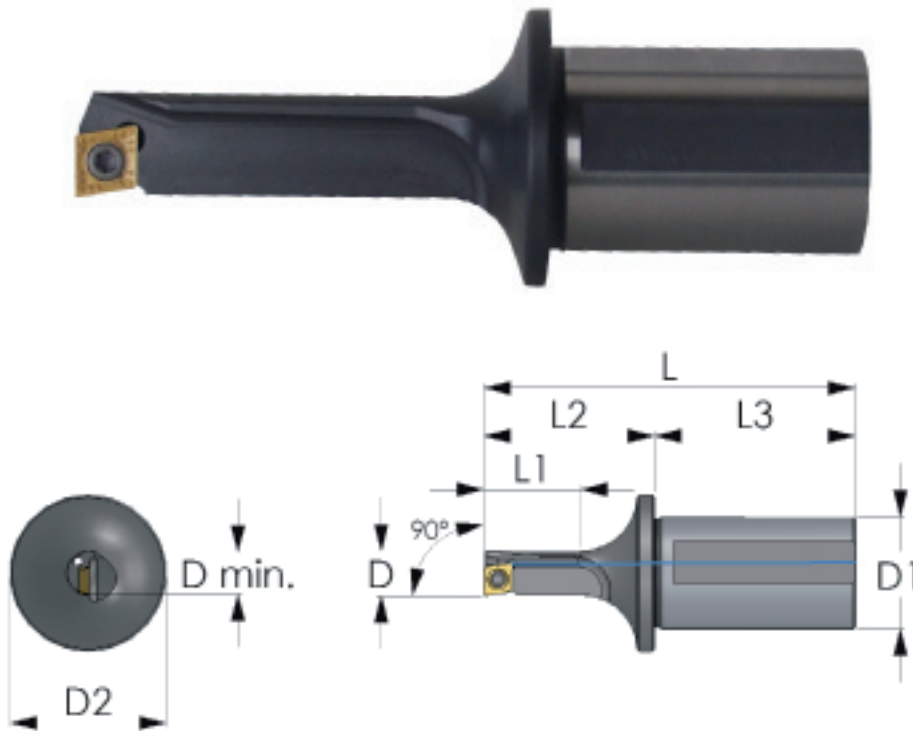
## HD-Turn-Drill 90°

### Ausführung:

- Bohrstange aus speziellem Werkzeugstahl zum Bohren und Innen- / Aussendrehen
- geschliffener Schaft
- Innenkühlung

### Execution:

- boring bars made of special tool-steel for drilling and turning
- grinded shaft
- inner coolant



| Bestell-Nr.:<br>Order Code: | Abmessungen / Dimension (mm) |    |    |     |    |    |    | Wendeplatte<br>Insert                                                                 | Schraube<br>Screw                                                                     | Schlüssel<br>Key                                                                      |
|-----------------------------|------------------------------|----|----|-----|----|----|----|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                             | D                            | D1 | D2 | L   | L1 | L2 | L3 |  |  |  |
| 6080-10-15.06-20            | 10                           | 20 | 27 | 82  | 15 | 37 | 45 | CC.. 0602..                                                                           | M-VT25                                                                                | M-BT08                                                                                |
| 6080-10-20.06-20            | 10                           | 20 | 27 | 87  | 20 | 42 | 45 |                                                                                       |                                                                                       |                                                                                       |
| 6080-10-25.06-20            | 10                           | 20 | 27 | 92  | 25 | 47 | 45 |                                                                                       |                                                                                       |                                                                                       |
| 6080-12-15.06-20            | 12                           | 20 | 27 | 82  | 15 | 37 | 45 |                                                                                       |                                                                                       |                                                                                       |
| 6080-12-20.06-20            | 12                           | 20 | 27 | 87  | 20 | 42 | 45 |                                                                                       |                                                                                       |                                                                                       |
| 6080-12-30.06-20            | 12                           | 20 | 27 | 97  | 30 | 52 | 45 |                                                                                       |                                                                                       |                                                                                       |
| 6080-10-15.06-25            | 10                           | 25 | 35 | 82  | 15 | 37 | 45 |                                                                                       |                                                                                       |                                                                                       |
| 6080-10-20.06-25            | 10                           | 25 | 35 | 97  | 20 | 42 | 45 |                                                                                       |                                                                                       |                                                                                       |
| 6080-10-25.06-25            | 10                           | 25 | 35 | 92  | 25 | 47 | 45 |                                                                                       |                                                                                       |                                                                                       |
| 6080-12-15.06-25            | 12                           | 25 | 35 | 82  | 15 | 37 | 45 |                                                                                       |                                                                                       |                                                                                       |
| 6080-12-20.06-25            | 12                           | 25 | 35 | 87  | 20 | 42 | 45 |                                                                                       |                                                                                       |                                                                                       |
| 6080-12-30.06-25            | 12                           | 25 | 35 | 97  | 30 | 52 | 45 |                                                                                       |                                                                                       |                                                                                       |
| 6080-16-25.09-25            | 16                           | 25 | 35 | 92  | 25 | 47 | 45 | CC.. 09T3..                                                                           | M-VT40                                                                                | M-BT15                                                                                |
| 6080-16-35.09-25            | 16                           | 25 | 35 | 102 | 35 | 57 | 45 |                                                                                       |                                                                                       |                                                                                       |
| 6080-16-50.09-25            | 16                           | 25 | 35 | 117 | 50 | 72 | 45 |                                                                                       |                                                                                       |                                                                                       |
| 6080-16-25.09-32            | 16                           | 32 | 43 | 95  | 25 | 47 | 48 |                                                                                       |                                                                                       |                                                                                       |
| 6080-16-35.09-32            | 16                           | 32 | 43 | 105 | 35 | 57 | 48 |                                                                                       |                                                                                       |                                                                                       |
| 6080-16-50.09-32            | 16                           | 32 | 43 | 120 | 50 | 72 | 48 |                                                                                       |                                                                                       |                                                                                       |
| 6080-25-50.12-32            | 25                           | 32 | 43 | 122 | 50 | 74 | 48 | CC.. 1204..                                                                           | M-VT41                                                                                | M-BT20                                                                                |
| 6080-25-75.12-32            | 25                           | 32 | 43 | 147 | 72 | 99 | 48 |                                                                                       |                                                                                       |                                                                                       |

Bestellbeispiel / Orderexample: 6080-10-15.06-20

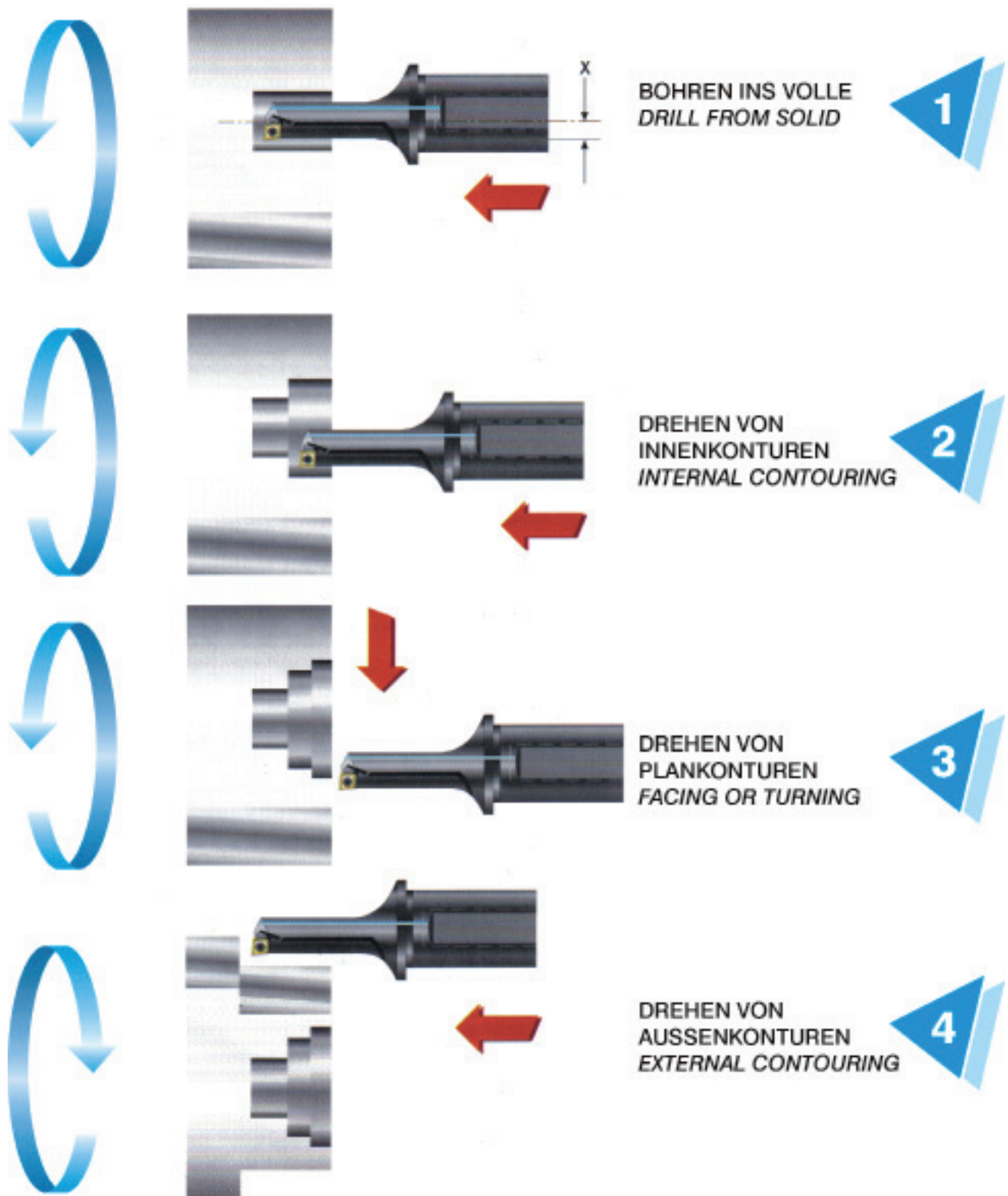
### Bohrdurchmesser / Boring diameter

6080 D.10..  $D_{min} = 11,5\text{mm}$

6080 D.12..  $D_{min} = 13,5\text{mm}$

6080 D.16..  $D_{min} = 18,5\text{mm}$

6080 D.25..  $D_{min} = 25,5\text{mm}$



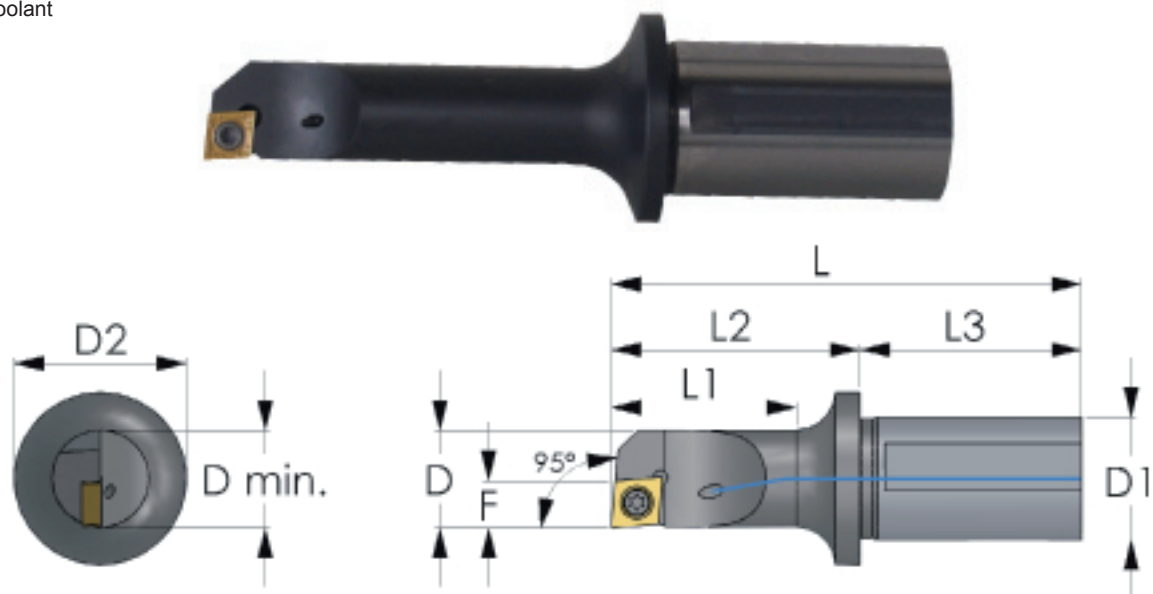
## HD-Turn Bohrstangen 95° HD-Turn-Boring bars 95°

### Ausführung:

- Bohrstange aus speziellem Werkzeugstahl
- geschliffener Schaft
- Innenkühlung

### Execution:

- boring bars made of special tool-steel
- grinded shaft
- inner coolant



| Bestell-Nr.:<br>Order Code: | Abmessungen / Dimension (mm) |      |    |    |    |     |    | Wendeplatte<br>Insert<br> | Schraube<br>Screw<br> | Schlüssel<br>Key<br> |
|-----------------------------|------------------------------|------|----|----|----|-----|----|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
|                             | D                            | F    | D1 | D2 | L1 | L2  | L3 |                                                                                                               |                                                                                                           |                                                                                                          |
| A25 SCLCR/L-0815-06         | 8                            | 4,5  | 25 | 35 | 15 | 37  | 45 | CC.. 0602..                                                                                                   | M-VT25                                                                                                    | M-BT08                                                                                                   |
| A25 SCLCR/L-0820-06         | 8                            | 4,5  | 25 | 35 | 20 | 42  | 45 |                                                                                                               |                                                                                                           |                                                                                                          |
| A25 SCLCR/L-1015-06         | 10                           | 5,5  | 25 | 35 | 15 | 37  | 45 |                                                                                                               |                                                                                                           |                                                                                                          |
| A25 SCLCR/L-1020-06         | 10                           | 5,5  | 25 | 35 | 20 | 42  | 45 |                                                                                                               |                                                                                                           |                                                                                                          |
| A25 SCLCR/L-1025-06         | 10                           | 5,5  | 25 | 35 | 25 | 47  | 45 |                                                                                                               |                                                                                                           |                                                                                                          |
| A25 SCLCR/L-1215-06         | 12                           | 6,5  | 25 | 35 | 15 | 37  | 45 |                                                                                                               |                                                                                                           |                                                                                                          |
| A25 SCLCR/L-1220-06         | 12                           | 6,5  | 25 | 35 | 20 | 42  | 45 |                                                                                                               |                                                                                                           |                                                                                                          |
| A25 SCLCR/L-1230-06         | 12                           | 6,5  | 25 | 35 | 30 | 52  | 45 |                                                                                                               |                                                                                                           |                                                                                                          |
| A25 SCLCR/L-1420-06         | 14                           | 7,5  | 25 | 35 | 20 | 42  | 45 |                                                                                                               |                                                                                                           |                                                                                                          |
| A25 SCLCR/L-1430-06         | 14                           | 7,5  | 25 | 35 | 30 | 52  | 45 |                                                                                                               |                                                                                                           |                                                                                                          |
| A25 SCLCR/L-1440-06         | 14                           | 7,5  | 25 | 35 | 40 | 62  | 45 | CC.. 09T3..                                                                                                   | M-VT40                                                                                                    | M-BT15                                                                                                   |
| A25 SCLCR/L-1625-09         | 16                           | 8,5  | 25 | 35 | 25 | 47  | 45 |                                                                                                               |                                                                                                           |                                                                                                          |
| A25 SCLCR/L-1635-09         | 16                           | 8,5  | 25 | 35 | 35 | 57  | 45 |                                                                                                               |                                                                                                           |                                                                                                          |
| A25 SCLCR/L-1650-09         | 16                           | 8,5  | 25 | 35 | 50 | 72  | 45 |                                                                                                               |                                                                                                           |                                                                                                          |
| A25 SCLCR/L-2030-09         | 20                           | 10,5 | 25 | 35 | 30 | 52  | 45 |                                                                                                               |                                                                                                           |                                                                                                          |
| A25 SCLCR/L-2040-09         | 20                           | 10,5 | 25 | 35 | 40 | 62  | 45 |                                                                                                               |                                                                                                           |                                                                                                          |
| A25 SCLCR/L-2060-09         | 20                           | 10,5 | 25 | 35 | 60 | 82  | 45 |                                                                                                               |                                                                                                           |                                                                                                          |
| A25 SCLCR/L-2550-09         | 25                           | 13,5 | 25 | 35 | 50 | 72  | 45 |                                                                                                               |                                                                                                           |                                                                                                          |
| A25 SCLCR/L-2570-09         | 25                           | 13,5 | 25 | 35 | 70 | 92  | 45 |                                                                                                               |                                                                                                           |                                                                                                          |
| A32 SCLCR/L-1030-06         | 10                           | 5,5  | 32 | 43 | 30 | 52  | 58 | CC.. 0602..                                                                                                   | M-VT25                                                                                                    | M-BT08                                                                                                   |
| A32 SCLCR/L-1040-06         | 10                           | 5,5  | 32 | 43 | 40 | 62  | 58 |                                                                                                               |                                                                                                           |                                                                                                          |
| A32 SCLCR/L-1240-06         | 12                           | 6,5  | 32 | 43 | 40 | 62  | 58 |                                                                                                               |                                                                                                           |                                                                                                          |
| A32 SCLCR/L-1250-06         | 12                           | 6,5  | 32 | 43 | 50 | 72  | 58 |                                                                                                               |                                                                                                           |                                                                                                          |
| A32 SCLCR/L-1450-06         | 14                           | 7,5  | 32 | 43 | 50 | 72  | 58 |                                                                                                               |                                                                                                           |                                                                                                          |
| A32 SCLCR/L-1460-06         | 14                           | 7,5  | 32 | 43 | 60 | 82  | 58 | CC.. 09T3..                                                                                                   | M-VT40                                                                                                    | M-BT15                                                                                                   |
| A32 SCLCR/L-1660-09         | 16                           | 8,5  | 32 | 43 | 60 | 82  | 58 |                                                                                                               |                                                                                                           |                                                                                                          |
| A32 SCLCR/L-1670-09         | 16                           | 8,5  | 32 | 43 | 70 | 92  | 58 |                                                                                                               |                                                                                                           |                                                                                                          |
| A32 SCLCR/L-2070-09         | 20                           | 10,5 | 32 | 43 | 70 | 92  | 58 |                                                                                                               |                                                                                                           |                                                                                                          |
| A32 SCLCR/L-2080-09         | 20                           | 10,5 | 32 | 43 | 80 | 102 | 58 |                                                                                                               |                                                                                                           |                                                                                                          |
| A32 SCLCR/L-2580-09         | 25                           | 13,5 | 32 | 43 | 80 | 102 | 58 |                                                                                                               |                                                                                                           |                                                                                                          |
| A32 SCLCR/L-2590-09         | 25                           | 13,5 | 32 | 43 | 90 | 112 | 58 |                                                                                                               |                                                                                                           |                                                                                                          |

Bestellbeispiel / Orderexample: A25 SCLCR-0815-06



# HD-Turn Bohrstangen 93°

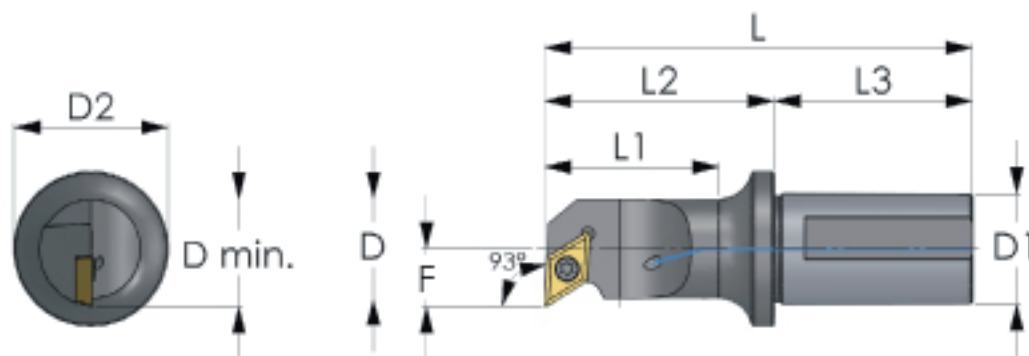
## HD-Turn-Boring bars 93°

### Ausführung:

- Bohrstange aus speziellem Werkzeugstahl
- geschliffener Schaft
- Innenkühlung

### Execution:

- boring bars made of special tool-steel
- grinded shaft
- inner coolant



| Bestell-Nr.:<br>Order Code: | Abmessungen / Dimension (mm) |    |    |    |    |     |    | Wendeplatte<br>Insert                                                                 | Schraube<br>Screw                                                                     | Schlüssel<br>Key                                                                      |
|-----------------------------|------------------------------|----|----|----|----|-----|----|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                             | D                            | F  | D1 | D2 | L1 | L2  | L3 |  |  |  |
| A25 SDUCR/L-1015-07         | 10                           | 7  | 25 | 35 | 15 | 37  | 45 | DC.. 0702..                                                                           | M-VT25                                                                                | M-BT08                                                                                |
| A25 SDUCR/L-1020-07         | 10                           | 7  | 25 | 35 | 20 | 42  | 45 |                                                                                       |                                                                                       |                                                                                       |
| A25 SDUCR/L-1030-07         | 10                           | 7  | 25 | 35 | 30 | 52  | 45 |                                                                                       |                                                                                       |                                                                                       |
| A25 SDUCR/L-1215-07         | 12                           | 9  | 25 | 35 | 15 | 37  | 45 |                                                                                       |                                                                                       |                                                                                       |
| A25 SDUCR/L-1220-07         | 12                           | 9  | 25 | 35 | 20 | 42  | 45 |                                                                                       |                                                                                       |                                                                                       |
| A25 SDUCR/L-1230-07         | 12                           | 9  | 25 | 35 | 30 | 52  | 45 |                                                                                       |                                                                                       |                                                                                       |
| A25 SDUCR/L-1625-07         | 16                           | 11 | 25 | 35 | 25 | 47  | 45 |                                                                                       |                                                                                       |                                                                                       |
| A25 SDUCR/L-1635-07         | 16                           | 11 | 25 | 35 | 35 | 57  | 45 |                                                                                       |                                                                                       |                                                                                       |
| A25 SDUCR/L-1650-07         | 16                           | 11 | 25 | 35 | 50 | 72  | 45 |                                                                                       |                                                                                       |                                                                                       |
| A25 SDUCR/L-2030-11         | 20                           | 13 | 25 | 35 | 30 | 52  | 45 | DC.. 11T3..                                                                           | M-VT40                                                                                | M-BT15                                                                                |
| A25 SDUCR/L-2040-11         | 20                           | 13 | 25 | 35 | 40 | 62  | 45 |                                                                                       |                                                                                       |                                                                                       |
| A25 SDUCR/L-2060-11         | 20                           | 13 | 25 | 35 | 60 | 82  | 45 |                                                                                       |                                                                                       |                                                                                       |
| A25 SDUCR/L-2550-11         | 25                           | 17 | 25 | 35 | 50 | 72  | 45 |                                                                                       |                                                                                       |                                                                                       |
| A25 SDUCR/L-2570-11         | 25                           | 17 | 25 | 35 | 70 | 92  | 45 |                                                                                       |                                                                                       |                                                                                       |
| A32 SDUCR/L-1040-07         | 10                           | 7  | 32 | 43 | 40 | 62  | 58 | DC..0702..                                                                            | M-VT25                                                                                | M-BT08                                                                                |
| A32 SDUCR/L-1245-07         | 12                           | 9  | 32 | 43 | 45 | 67  | 58 |                                                                                       |                                                                                       |                                                                                       |
| A32 SDUCR/L-1660-07         | 16                           | 11 | 32 | 43 | 60 | 82  | 58 |                                                                                       |                                                                                       |                                                                                       |
| A32 SDUCR/L-2070-11         | 20                           | 13 | 32 | 43 | 70 | 92  | 58 | DC.. 11T3..                                                                           | M-VT40                                                                                | M-BT15                                                                                |
| A32 SDUCR/L-2580-11         | 25                           | 17 | 32 | 43 | 80 | 102 | 58 |                                                                                       |                                                                                       |                                                                                       |

Bestellbeispiel / Orderexample: A25 SDUCR-1015-07

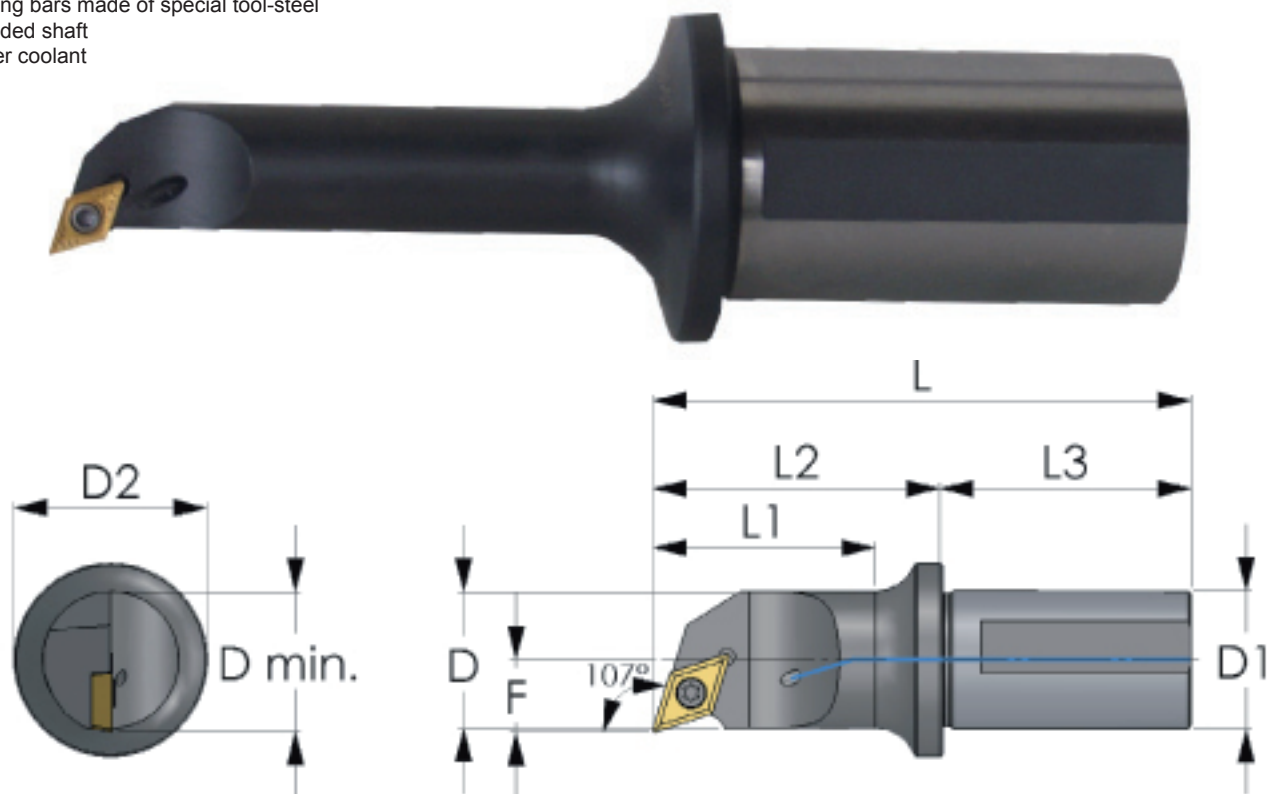
# HD-Turn Bohrstangen 107,5° HD-Turn-Boring bars 107,5°

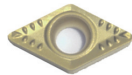
## Ausführung:

- Bohrstange aus speziellem Werkzeugstahl
- geschliffener Schaft
- Innenkühlung

## Execution:

- boring bars made of special tool-steel
- grinded shaft
- inner coolant



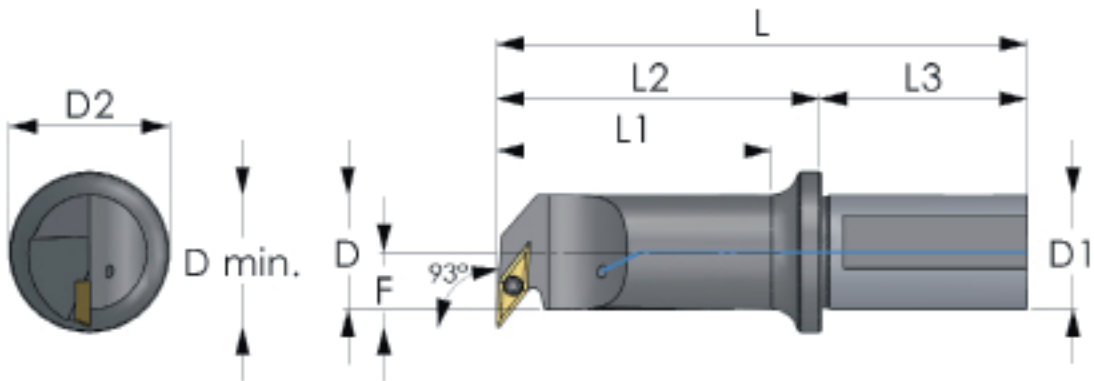
| Bestell-Nr.:<br>Order Code: | Abmessungen / Dimension (mm) |    |    |    |    |     |    | Wendeplatte<br>Insert  | Schraube<br>Screw  | Schlüssel<br>Key  |
|-----------------------------|------------------------------|----|----|----|----|-----|----|-------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
|                             | D                            | F  | D1 | D2 | L1 | L2  | L3 |                                                                                                             |                                                                                                         |                                                                                                        |
| A25 SDQCR/L-1015-07         | 10                           | 7  | 25 | 35 | 15 | 37  | 45 | DC.. 0702..                                                                                                 | M-VT25                                                                                                  | M-BT08                                                                                                 |
| A25 SDQCR/L-1020-07         | 10                           | 7  | 25 | 35 | 20 | 42  | 45 |                                                                                                             |                                                                                                         |                                                                                                        |
| A25 SDQCR/L-1030-07         | 10                           | 7  | 25 | 35 | 30 | 52  | 45 |                                                                                                             |                                                                                                         |                                                                                                        |
| A25 SDQCR/L-1215-07         | 12                           | 9  | 25 | 35 | 15 | 37  | 45 |                                                                                                             |                                                                                                         |                                                                                                        |
| A25 SDUCR/L-1220-07         | 12                           | 9  | 25 | 35 | 20 | 42  | 45 |                                                                                                             |                                                                                                         |                                                                                                        |
| A25 SDQCR/L-1230-07         | 12                           | 9  | 25 | 35 | 30 | 52  | 45 |                                                                                                             |                                                                                                         |                                                                                                        |
| A25 SDUCR/L-1625-07         | 16                           | 11 | 25 | 35 | 25 | 47  | 45 |                                                                                                             |                                                                                                         |                                                                                                        |
| A25 SDQCR/L-1635-07         | 16                           | 11 | 25 | 35 | 35 | 57  | 45 |                                                                                                             |                                                                                                         |                                                                                                        |
| A25 SDUCR/L-1650-07         | 16                           | 11 | 25 | 35 | 50 | 72  | 45 | DC.. 11T3..                                                                                                 | M-VT40                                                                                                  | M-BT15                                                                                                 |
| A25 SDQCR/L-2030-11         | 20                           | 13 | 25 | 35 | 30 | 52  | 45 |                                                                                                             |                                                                                                         |                                                                                                        |
| A25 SDUCR/L-2040-11         | 20                           | 13 | 25 | 35 | 40 | 62  | 45 |                                                                                                             |                                                                                                         |                                                                                                        |
| A25 SDQCR/L-2060-11         | 20                           | 13 | 25 | 35 | 60 | 82  | 45 |                                                                                                             |                                                                                                         |                                                                                                        |
| A25 SDUCR/L-2550-11         | 25                           | 17 | 25 | 35 | 50 | 72  | 45 |                                                                                                             |                                                                                                         |                                                                                                        |
| A25 SDQCR/L-2570-11         | 25                           | 17 | 25 | 35 | 70 | 92  | 45 | DC.. 0702..                                                                                                 | M-VT25                                                                                                  | M-BT08                                                                                                 |
| A32 SDUCR/L-1040-07         | 10                           | 7  | 32 | 43 | 40 | 62  | 58 |                                                                                                             |                                                                                                         |                                                                                                        |
| A32 SDQCR/L-1245-07         | 12                           | 9  | 32 | 43 | 45 | 67  | 58 |                                                                                                             |                                                                                                         |                                                                                                        |
| A32 SDUCR/L-1660-07         | 16                           | 11 | 32 | 43 | 60 | 82  | 58 |                                                                                                             |                                                                                                         |                                                                                                        |
| A32 SDQCR/L-2070-11         | 20                           | 13 | 32 | 43 | 70 | 92  | 58 | DC.. 11T3..                                                                                                 | M-VT40                                                                                                  | M-BT15                                                                                                 |
| A32 SDQCR/L-2580-11         | 25                           | 17 | 32 | 43 | 80 | 102 | 58 |                                                                                                             |                                                                                                         |                                                                                                        |

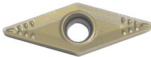
Bestellbeispiel / Orderexample: A25 SDQCR-1015-07

# HD-Turn Bohrstangen 93° HD-Turn-Boring bars 93°

- Ausführung:**
- Bohrstange aus speziellem Werkzeugstahl
  - geschliffener Schaft
  - Innenkühlung

- Execution:**
- boring bars made of special tool-steel
  - grinded shaft
  - inner coolant



| Bestell-Nr.:<br>Order Code: | Abmessungen / Dimension (mm) |    |    |    |    |     |    | Wendeplatte<br>Insert<br> | Schraube<br>Screw<br> | Schlüssel<br>Key<br> |
|-----------------------------|------------------------------|----|----|----|----|-----|----|----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
|                             | D                            | F  | D1 | D2 | L1 | L2  | L3 |                                                                                                                |                                                                                                            |                                                                                                           |
| A25 SVUCR/L-1635-11         | 16                           | 11 | 25 | 35 | 35 | 57  | 45 | VC.. 1103..                                                                                                    | M-VT25                                                                                                     | M-BT08                                                                                                    |
| A25 SVUCR/L-1650-11         | 16                           | 11 | 25 | 35 | 50 | 72  | 45 |                                                                                                                |                                                                                                            |                                                                                                           |
| A25 SVUCR/L-2040-11         | 20                           | 13 | 25 | 35 | 40 | 62  | 45 |                                                                                                                |                                                                                                            |                                                                                                           |
| A25 SVUCR/L-2060-11         | 20                           | 13 | 25 | 35 | 60 | 82  | 45 |                                                                                                                |                                                                                                            |                                                                                                           |
| A25 SVUCR/L-2550-11         | 25                           | 17 | 25 | 35 | 50 | 72  | 45 |                                                                                                                |                                                                                                            |                                                                                                           |
| A25 SVUCR/L-2570-11         | 25                           | 17 | 25 | 35 | 70 | 92  | 45 |                                                                                                                |                                                                                                            |                                                                                                           |
| A32 SVUCR/L-1660-11         | 16                           | 11 | 32 | 43 | 60 | 82  | 58 |                                                                                                                |                                                                                                            |                                                                                                           |
| A32 SVUCR/L-2070-11         | 20                           | 13 | 32 | 43 | 70 | 92  | 58 |                                                                                                                |                                                                                                            |                                                                                                           |
| A32 SVUCR/L-2580-11         | 25                           | 17 | 32 | 43 | 80 | 102 | 58 |                                                                                                                |                                                                                                            |                                                                                                           |

Bestellbeispiel / Orderexample: A25 SVUCR-1635-11



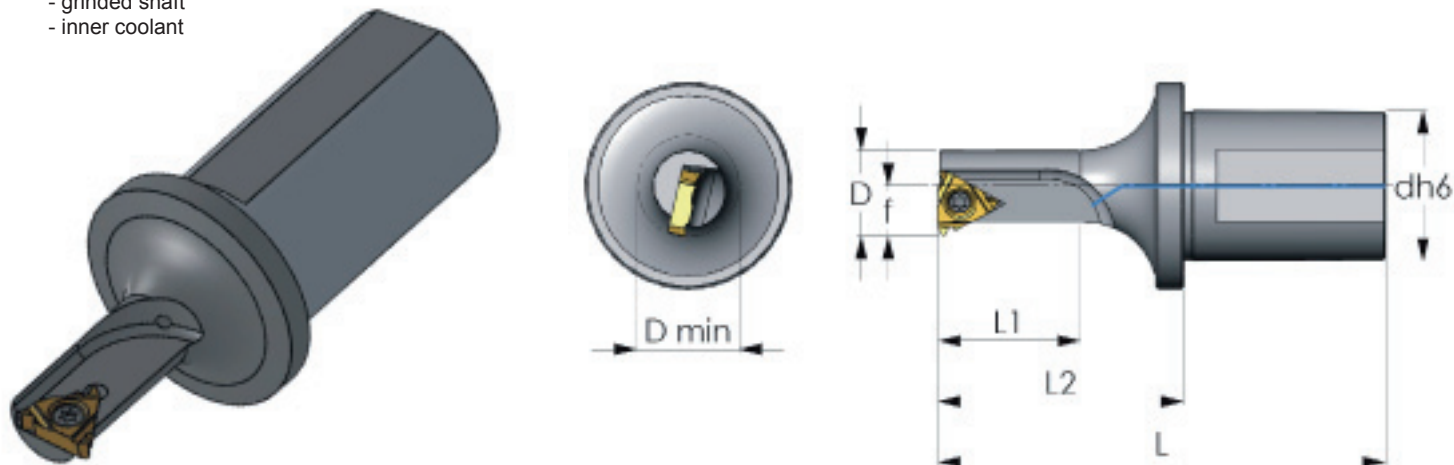
# HD-Gewindebohrstange HD-Threading Boring bars

## Ausführung:

- Bohrstange aus speziellem Werkzeugstahl
- geschliffener Schaft
- Innenkühlung

## Execution:

- boring bars made of special tool-steel
- grinded shaft
- inner coolant



| Bestell-Nr.:<br>Order Code: | Abmessungen / Dimension (mm) |     |    |    |    |    | Wendeplatte<br>Insert  | Schraube<br>Screw  | Schlüssel<br>Key  |
|-----------------------------|------------------------------|-----|----|----|----|----|-----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
|                             | D                            | dh6 | f  | L  | L1 | L2 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-10-15.11-25R/L         | 10                           | 25  | 11 | 82 | 15 | 37 | 11IR..<br>11IL..<br>11ER..<br>11EL..                                                                      | M-VT30                                                                                                | M-BT08                                                                                               |
| 6082-10-20.11-25R/L         | 10                           | 25  | 11 | 87 | 20 | 42 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-10-25.11-25R/L         | 10                           | 25  | 11 | 92 | 25 | 47 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-10-15.11-32R/L         | 10                           | 32  | 11 | 85 | 15 | 37 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-10-20.11-32R/L         | 10                           | 32  | 11 | 90 | 20 | 42 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-10-25.11-32R/L         | 10                           | 32  | 11 | 95 | 25 | 47 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-12-15.11-25R/L         | 12                           | 25  | 14 | 82 | 15 | 37 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-12-20.11-25R/L         | 12                           | 25  | 14 | 87 | 20 | 42 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-12-25.11-25R/L         | 12                           | 25  | 14 | 92 | 25 | 47 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-12-15.11-32R/L         | 12                           | 32  | 14 | 85 | 15 | 37 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-12-20.11-32R/L         | 12                           | 32  | 14 | 90 | 20 | 42 | 16IR..<br>16IL..<br>16ER..<br>16EL..                                                                      | M-VT35                                                                                                | M-BT15                                                                                               |
| 6082-12-25.11-32R/L         | 12                           | 32  | 14 | 95 | 25 | 47 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-16-20.11-25R/L         | 16                           | 25  | 1  | 82 | 20 | 42 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-16-25.11-25R/L         | 16                           | 25  | 17 | 87 | 25 | 47 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-16-30.11-25R/L         | 16                           | 25  | 17 | 92 | 30 | 52 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-16-20.11-32R/L         | 16                           | 32  | 17 | 85 | 20 | 42 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-16-25.11-32R/L         | 16                           | 32  | 17 | 90 | 25 | 47 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-16-30.11-32R/L         | 16                           | 32  | 17 | 95 | 30 | 52 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-16-20.16-25R/L         | 16                           | 25  | 17 | 82 | 20 | 42 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-16-25.16-25R/L         | 16                           | 25  | 17 | 87 | 25 | 47 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-16-30.16-25R/L         | 16                           | 25  | 17 | 92 | 30 | 52 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-16-20.16-32R/L         | 16                           | 32  | 17 | 85 | 20 | 42 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-16-25.16-32R/L         | 16                           | 32  | 17 | 90 | 25 | 47 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-16-30.16-32R/L         | 16                           | 32  | 17 | 95 | 30 | 52 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-20-20.16-25R/L         | 20                           | 25  | 21 | 82 | 20 | 42 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-20-25.16-25R/L         | 20                           | 25  | 21 | 87 | 25 | 47 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-20-30.16-25R/L         | 20                           | 25  | 21 | 92 | 30 | 52 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-20-20.16-32R/L         | 20                           | 32  | 21 | 85 | 20 | 42 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-20-25.16-32R/L         | 20                           | 32  | 21 | 90 | 25 | 47 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-20-30.16-32R/L         | 20                           | 32  | 21 | 95 | 30 | 52 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-25-20.16-25R/L         | 25                           | 25  | 26 | 82 | 20 | 42 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-25-25.16-25R/L         | 25                           | 25  | 26 | 87 | 25 | 47 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-25-30.16-25R/L         | 25                           | 25  | 26 | 92 | 30 | 52 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-25-20.16-32R/L         | 25                           | 32  | 26 | 85 | 20 | 42 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-25-25.16-32R/L         | 25                           | 32  | 26 | 90 | 25 | 47 |                                                                                                           |                                                                                                       |                                                                                                      |
| 6082-25-30.16-32R/L         | 25                           | 32  | 26 | 95 | 30 | 52 |                                                                                                           |                                                                                                       |                                                                                                      |

Bestellbeispiel / Orderexample: 6082-10-15.11-25R

|          |           |          |          |          |          |          |          |           |    |
|----------|-----------|----------|----------|----------|----------|----------|----------|-----------|----|
| <b>A</b> | <b>25</b> | <b>T</b> | <b>S</b> | <b>D</b> | <b>U</b> | <b>C</b> | <b>R</b> | <b>11</b> |    |
| 1        | 2         | 3        | 4        | 5        | 6        | 7        | 8        | 9         | 10 |

1.

**A** Bohrstange aus Stahl mit Kühlmittelzuführung  
*Steel-boringbars with inner coolant*

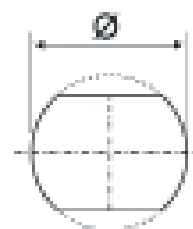
**H** Bohrstange mit schwingungsgedämpftem Schaft  
*Boringbars with vibrationreduced shaft*

**J** Bohrstange mit Kühlmittelzufuhr und schwingungsgedämpftem Schaft  
*Boringbars with inner coolant and vibrationreduced shaft*

**S** Standard-Bohrstange aus Stahl  
*Standard boringbars out of steel*

2.

Durchmesser der Bohrstange in mm  
*Diameter of Boringbars in mm*



3.

Werkzeuglänge, mm  
*Length of Boringbars, mm*

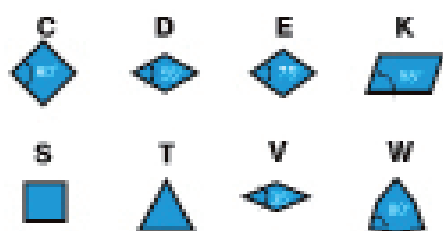


|          |     |          |     |          |         |
|----------|-----|----------|-----|----------|---------|
| <b>K</b> | 125 | <b>R</b> | 200 | <b>V</b> | 400     |
| <b>L</b> | 140 | <b>S</b> | 250 | <b>W</b> | 450     |
| <b>M</b> | 150 | <b>T</b> | 300 | <b>Y</b> | 500     |
| <b>Q</b> | 180 | <b>U</b> | 350 |          | Special |

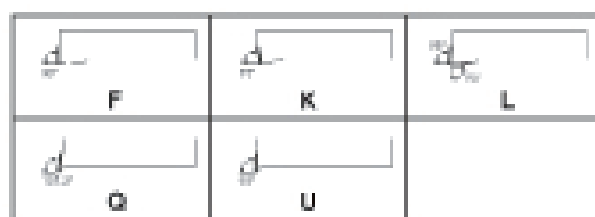
4.



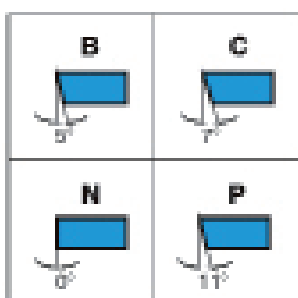
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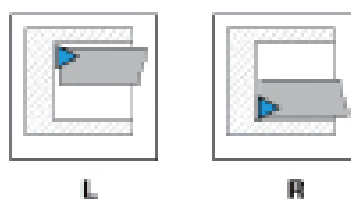
6.



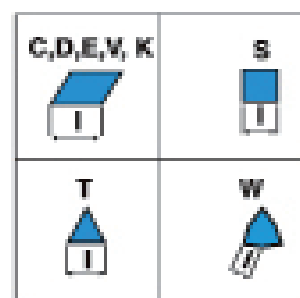
7.



8.

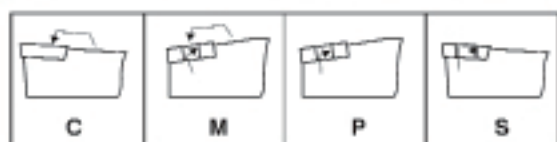


9.

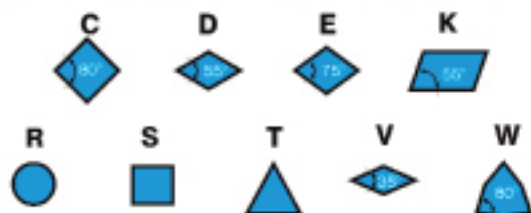


|          |          |          |          |          |           |           |          |           |    |
|----------|----------|----------|----------|----------|-----------|-----------|----------|-----------|----|
| <b>S</b> | <b>C</b> | <b>L</b> | <b>C</b> | <b>R</b> | <b>25</b> | <b>25</b> | <b>M</b> | <b>12</b> |    |
| 1        | 2        | 3        | 4        | 5        | 6         | 7         | 8        | 9         | 10 |

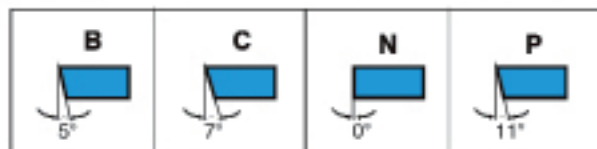
1.



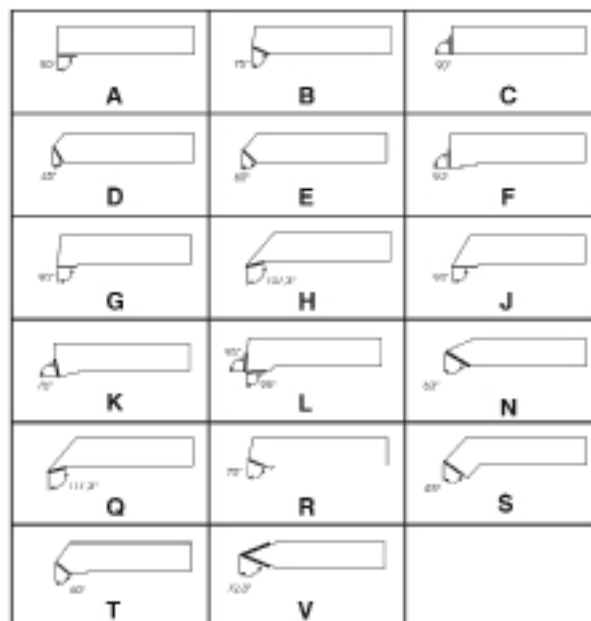
2.



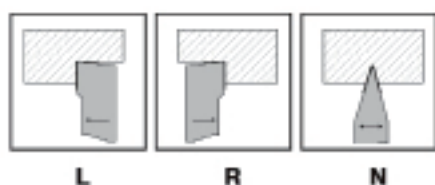
4.



3.



5.



6.

Schafthöhe, mm  
High of shaft, mm



7.

Schaftbreite, mm  
Wide of shaft, mm



8.

Werkzeuglänge, mm - Length of boring bars, mm



|       |       |       |
|-------|-------|-------|
| D 60  | L 140 | T 300 |
| E 70  | M 150 | U 350 |
| F 80  | P 170 | V 400 |
| H 100 | R 200 |       |
| K 125 | S 250 |       |

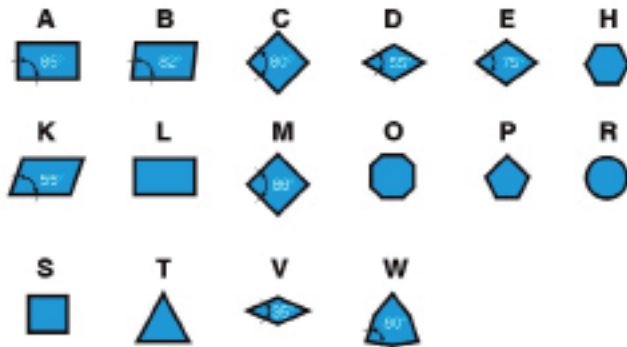
9.

Schneidkantenlänge, mm - Cutting length of insert, mm

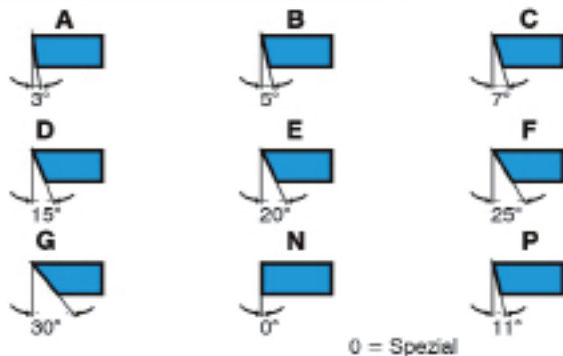


|          |          |          |          |           |           |           |   |   |    |
|----------|----------|----------|----------|-----------|-----------|-----------|---|---|----|
| <b>C</b> | <b>N</b> | <b>M</b> | <b>G</b> | <b>12</b> | <b>04</b> | <b>08</b> |   |   |    |
| 1        | 2        | 3        | 4        | 5         | 6         | 7         | 8 | 9 | 10 |

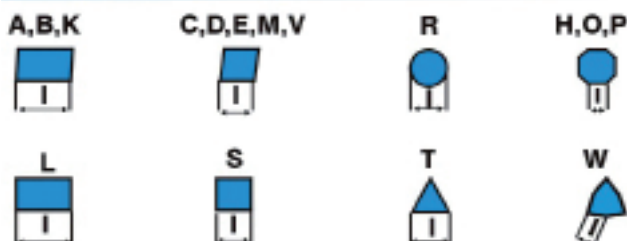
## 1. Form



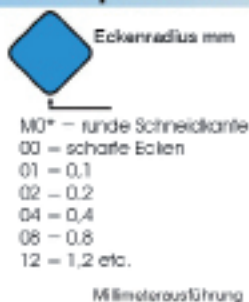
## 2. Freiwinkel



## 5. Schneidkantenlänge



## 7. Wendeschneidpl. m. Eckradius



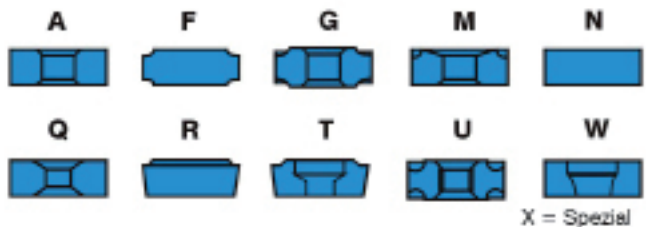
## 3. Toleranzen

Zulässige Abweichung in mm für:

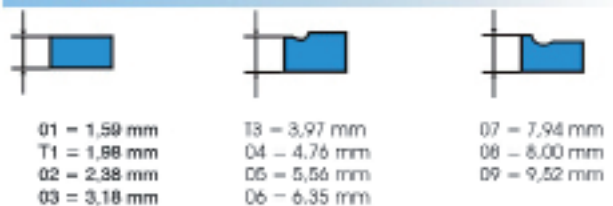
|                | d                 | m                 | S           |
|----------------|-------------------|-------------------|-------------|
| A              | $\pm 0,025$       | $\pm 0,005$       | $\pm 0,025$ |
| C              | $\pm 0,025$       | $\pm 0,013$       | $\pm 0,025$ |
| E              | $\pm 0,025$       | $\pm 0,025$       | $\pm 0,025$ |
| F              | $\pm 0,013$       | $\pm 0,005$       | $\pm 0,025$ |
| G              | $\pm 0,025$       | $\pm 0,025$       | $\pm 0,130$ |
| H              | $\pm 0,013$       | $\pm 0,013$       | $\pm 0,025$ |
| J <sup>1</sup> | $\pm 0,05-0,15$   | $\pm 0,005$       | $\pm 0,025$ |
| K <sup>1</sup> | $\pm 0,05-0,15^2$ | $\pm 0,013$       | $\pm 0,025$ |
| L <sup>1</sup> | $\pm 0,05-0,15^2$ | $\pm 0,025$       | $\pm 0,025$ |
| M              | $\pm 0,05-0,15^2$ | $\pm 0,08-0,20^2$ | $\pm 0,130$ |
| N              | $\pm 0,05-0,15^2$ | $\pm 0,08-0,20^2$ | $\pm 0,025$ |
| U              | $\pm 0,08-0,25^2$ | $\pm 0,13-0,38^2$ | $\pm 0,130$ |

<sup>1</sup> Platten mit geschliffenen Planschnitten  
<sup>2</sup> je nach Plattendicke (siehe ISO-Norm 1832)

## 4. Wendeschneidplattentyp



## 6. Dicke s



- P** unlegierte & legierte Stähle / unalloyed & alloyed steel
- M** Rostfreie Stähle / Stainless steel
- K** Guss / Cast iron
- N** Aluminium - Nichteisenmetalle / Aluminium alloys
- S** Inconel, Nimonic, Stellite, Ti-Legierungen

← Schnittgeschwindigkeit - Verschleissfestigkeit / cutting speed - wear resistance  
Vorschub - Zähigkeit / advance-toughness →

| P     |    |       |       |       |       |    |    |  |  | M     |    |    |    |  | K     |    |    |    |    | N     |    |    |    |    | S  |       |    |
|-------|----|-------|-------|-------|-------|----|----|--|--|-------|----|----|----|--|-------|----|----|----|----|-------|----|----|----|----|----|-------|----|
| 10    | 15 | 20    | 25    | 30    | 35    | 45 | 50 |  |  | 20    | 30 | 40 | 50 |  | 05    | 10 | 15 | 20 | 25 | 05    | 10 | 15 | 20 | 25 | 10 | 20    | 30 |
| CT28  |    |       |       |       |       |    |    |  |  | PTT20 |    |    |    |  | K10   |    |    |    |    | K10   |    |    |    |    |    |       |    |
| MTM10 |    |       |       |       |       |    |    |  |  | PTT28 |    |    |    |  | MTM10 |    |    |    |    |       |    |    |    |    |    | PTT28 |    |
|       |    | PTE20 |       |       |       |    |    |  |  | PAP28 |    |    |    |  | KTE20 |    |    |    |    | KTE20 |    |    |    |    |    | PAP28 |    |
|       |    | PTT20 |       |       |       |    |    |  |  | PTV28 |    |    |    |  | PTC30 |    |    |    |    |       |    |    |    |    |    | PTV28 |    |
|       |    |       | PTT28 |       |       |    |    |  |  | PTC30 |    |    |    |  | PTV28 |    |    |    |    |       |    |    |    |    |    | PTC30 |    |
|       |    |       | PAP28 |       |       |    |    |  |  | PTE35 |    |    |    |  | PTT28 |    |    |    |    |       |    |    |    |    |    | PTE35 |    |
|       |    |       | PTV28 |       |       |    |    |  |  | PTT35 |    |    |    |  | PAP28 |    |    |    |    |       |    |    |    |    |    | PTT35 |    |
|       |    |       | PTC30 |       |       |    |    |  |  | INOX  |    |    |    |  | PTT35 |    |    |    |    |       |    |    |    |    |    | INOX  |    |
|       |    |       |       | PTE35 |       |    |    |  |  |       |    |    |    |  |       |    |    |    |    |       |    |    |    |    |    |       |    |
|       |    |       |       |       | PTT35 |    |    |  |  |       |    |    |    |  |       |    |    |    |    |       |    |    |    |    |    |       |    |

**P**

CT28, MTM10, PTE20, PTV28, PTE35, PTC30, PTT20, PTT28, PAP28, PTT35

**M**

PTV28, PTC30, PTT20, PTT28, PAP28, PTT35, INOX

**K**

GG: K10, KTE20, MTM10

GGG: PTV28, PTC30, PTT28, PAP28, PTT35

**N**

K10, KTE20

**S**

PTV28, PTE35, PTC30, PTT28, PAP28, PTT35, INOX

CT28

Cermet unbeschichtet / uncoated

K10

unbeschichtet / uncoated

KTE20

TiAlN-beschichtet / TiAlN-coated

MTM10

Aluminiumoxydbeschichtet / aluminiumoxydcoated

PTE20

TiAlN-beschichtet / TiAlN-coated

PTV28

TiAlN-beschichtet / TiAlN-coated

PTE35

TiAlN-beschichtet / TiAlN-coated

PTC30

TiAlN-beschichtet / TiAlN-coated

INOX

ALTIN-beschichtet / ALTIN-coated

PTT20

Aluminiumoxydbeschichtet / aluminiumoxydcoated

PTT28

Aluminiumoxydbeschichtet / aluminiumoxydcoated

PAP28

TiAlN/TiSiN-beschichtet / TiAlN/TiSiN-coated

PTT35

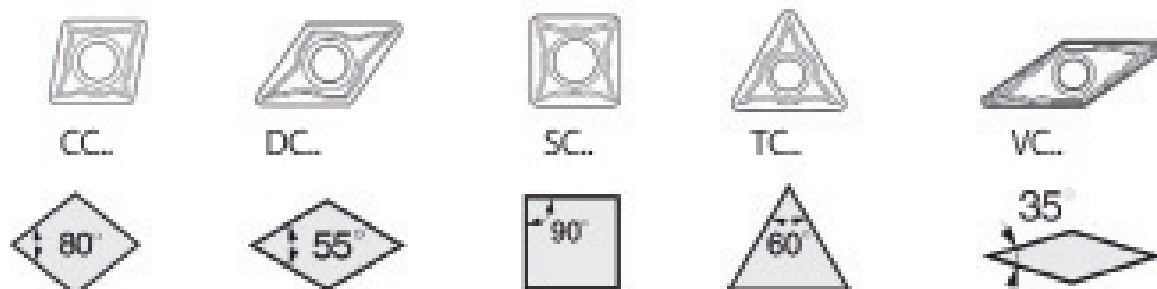
Aluminiumoxydbeschichtet / aluminiumoxydcoated

für Naßbearbeitung geeignet / for wetworking suitably

## Technische Daten / Technical Informations

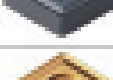
| Geometrie<br>Geometry | Anwendung<br>Features                                                                                                                       | Anwendungsbereich / Application range |      |      |          |         |         |      |     |     |     |      |      |    | Schnittgeschwindigkeit (m/min)<br>Cutting speed (m/min)                |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|------|------|----------|---------|---------|------|-----|-----|-----|------|------|----|------------------------------------------------------------------------|
|                       |                                                                                                                                             | Vorschub / Feed rate (mm/min)         |      |      |          |         |         |      |     |     |     |      |      |    |                                                                        |
|                       |                                                                                                                                             | 0.04                                  | 0.05 | 0.08 | 0.15     | 0.25    | 0.4     | 0.63 | 1.0 | 1.6 | 2.5 | 4.0  | 6.3  |    |                                                                        |
|                       |                                                                                                                                             | Schnitttiefe / Depth of cut (mm)      |      |      |          |         |         |      |     |     |     |      |      |    |                                                                        |
|                       |                                                                                                                                             | 0.1                                   | 0.16 | 0.25 | 0.4      | 0.63    | 1.0     | 1.6  | 2.5 | 4.0 | 6.3 | 10.0 | 16.0 | 25 |                                                                        |
| CC                    | <br>Schlichtbearbeitung<br>Finishing                       | 0.05-0.25                             |      |      |          | 0.1-1.5 |         |      |     |     |     |      |      |    | P 230-340 m/min<br>M 230-350 m/min<br>K 38-80 m/min<br>S 38-80 m/min   |
| CCFF                  | <br>Schlichtbearbeitung<br>Finishing                       | 0.05-0.25                             |      |      |          | 0.1-1.5 |         |      |     |     |     |      |      |    | P 230-340 m/min<br>M 230-350 m/min<br>K 38-80 m/min<br>S 38-80 m/min   |
| CCM                   | <br>Mittlere Bearbeitung<br>Medium cutting                 |                                       |      |      | 0.1-0.5  |         | 0.5-3.5 |      |     |     |     |      |      |    | P 280-350 m/min<br>M 190-350 m/min<br>K 280-350 m/min<br>S 38-80 m/min |
| CCMM                  | <br>Mittlere Bearbeitung<br>Medium cutting                 |                                       |      |      | 0.1-0.5  |         | 0.5-3.5 |      |     |     |     |      |      |    | P 280-350 m/min<br>M 190-350 m/min<br>K 280-350 m/min<br>S 38-80 m/min |
| XM                    | <br>Mittlere Bearbeitung<br>Medium cutting                 |                                       |      |      | 0.1-0.40 |         | 1.0-3.5 |      |     |     |     |      |      |    | P 180-350 m/min<br>M 130-350 m/min<br>K 280-350 m/min<br>S 38-80 m/min |
| ALU-M                 | <br>Mittlere Alu-Bearbeitung<br>Medium/Maximum cutting    | 0.08-0.4                              |      |      |          | 0.1-4.8 |         |      |     |     |     |      |      |    | P<br>M<br>K 580-1080 m/min<br>S                                        |
| ALU-R                 | <br>Schrupp-Alu-Bearbeitung<br>Roughing Aluminum cutting | 0.85-6.5                              |      |      |          | 0.5-4.8 |         |      |     |     |     |      |      |    | P<br>M<br>K 580-1080 m/min<br>S                                        |

Wandplattengeometrien sind für folgende Wandplattentypen verfügbar:  
Insert geometry are for following insert types available:





## Technische Daten / Technical Informations

| Geometrie<br>Geometry | Anwendung<br>Features                                                               | Anwendungsbereich / Application range               |           |      |      |      |          |     |     |     |     |      |      |    |  |  |  |                                                                                                  | Schnittgeschwindigkeit (m/min)<br>Cutting speed (m/min) |
|-----------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------|-----------|------|------|------|----------|-----|-----|-----|-----|------|------|----|--|--|--|--------------------------------------------------------------------------------------------------|---------------------------------------------------------|
|                       |                                                                                     | Vorschub / feed rate (mm/min)                       |           |      |      |      |          |     |     |     |     |      |      |    |  |  |  |                                                                                                  |                                                         |
|                       |                                                                                     | Schnitttiefe / depth of cut (mm)                    |           |      |      |      |          |     |     |     |     |      |      |    |  |  |  |                                                                                                  |                                                         |
|                       |                                                                                     | 0.04                                                | 0.07      | 0.10 | 0.15 | 0.25 | 0.4      | 0.6 | 1.0 | 1.5 | 2.0 | 4.0  | 6.0  |    |  |  |  |                                                                                                  |                                                         |
|                       |                                                                                     | 0.1                                                 | 0.16      | 0.21 | 0.4  | 0.65 | 1.0      | 1.5 | 2.0 | 4.0 | 6.0 | 10.0 | 16.0 | 11 |  |  |  |                                                                                                  |                                                         |
| WF                    |    | Schlichtbearbeitung<br>Finishing                    | 0.05-0.35 |      |      |      | 0.5-2.0  |     |     |     |     |      |      |    |  |  |  | P 110-220 m/min<br>M 120-250 m/min<br>K 130-260 m/min<br>N 140-270 m/min<br>S 150-280 m/min      |                                                         |
| WFF                   |    | Schlichtbearbeitung<br>Finishing                    | 0.05-0.35 |      |      |      | 0.5-2.0  |     |     |     |     |      |      |    |  |  |  | P 110-220 m/min<br>M 120-250 m/min<br>K 130-260 m/min<br>N 140-270 m/min<br>S 150-280 m/min      |                                                         |
| WM                    |    | Mittlere Bearbeitung<br>Medium cutting              | 0.1-0.5   |      |      |      | 1.0-5.0  |     |     |     |     |      |      |    |  |  |  | P 280-320 m/min<br>M 120-250 m/min<br>K 280-350 m/min<br>N 30-80 m/min<br>S 280-320 m/min        |                                                         |
| WMH                   |    | Mittlere Bearbeitung<br>Medium cutting              | 0.1-0.5   |      |      |      | 1.0-5.0  |     |     |     |     |      |      |    |  |  |  | P 280-320 m/min<br>M 120-250 m/min<br>K 280-350 m/min<br>N 30-80 m/min<br>S 280-320 m/min        |                                                         |
| WGF                   |    | Mittlere<br>Schlichtbearbeitung<br>Medium Finishing | 0.10-0.40 |      |      |      | 0.50-4.5 |     |     |     |     |      |      |    |  |  |  | P 120-350 m/min<br>M 130-360 m/min<br>K 140-370 m/min<br>N 150-380 m/min<br>S 160-390 m/min      |                                                         |
| WGM                   |   | Mittlere Bearbeitung<br>Medium machining            | 0.13-0.5  |      |      |      | 0.50-5.0 |     |     |     |     |      |      |    |  |  |  | P 120-350 m/min<br>M 130-360 m/min<br>K 140-370 m/min<br>N 150-380 m/min<br>S 160-390 m/min      |                                                         |
| VM                    |  | Mittlere Bearbeitung<br>Medium machining            | 0.13-0.5  |      |      |      | 0.50-5.0 |     |     |     |     |      |      |    |  |  |  | P 120-350 m/min<br>M 130-360 m/min<br>K 140-370 m/min<br>N 150-380 m/min<br>S 160-390 m/min      |                                                         |
| BM                    |  | Mittlere Bearbeitung<br>Medium cutting              | 0.1-0.35  |      |      |      | 1.0-3.0  |     |     |     |     |      |      |    |  |  |  | P 280-320 m/min<br>M 120-250 m/min<br>K 180-240 m/min<br>N 30-80 m/min<br>S 280-320 m/min        |                                                         |
| WR                    |  | Schraubbearbeitung<br>Borethring                    | 0.25-0.85 |      |      |      | 2.5-7.0  |     |     |     |     |      |      |    |  |  |  | P 180-170 m/min<br>M 280-350 m/min<br>K 300-370 m/min<br>N 320-390 m/min<br>S 340-410 m/min      |                                                         |
| ALU                   |  | Mittlere/Als Bearbeitung<br>Medium/Aluminum cutting | 0.03-0.4  |      |      |      | 0.1-5.0  |     |     |     |     |      |      |    |  |  |  | P 580-1000 m/min<br>M 600-1100 m/min<br>K 620-1150 m/min<br>N 640-1180 m/min<br>S 660-1200 m/min |                                                         |

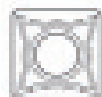
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Insert geometry are for following insert types available:



CN..



DN..



SN..



TN..



VN..



WN..



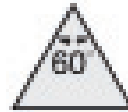
80°



55°



90°



60°

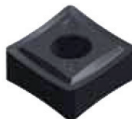
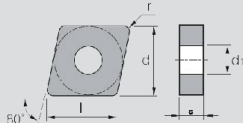
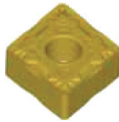
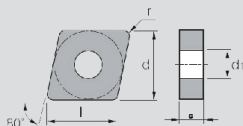
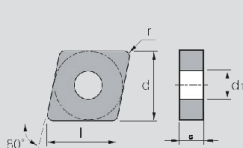
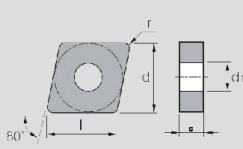
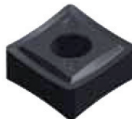
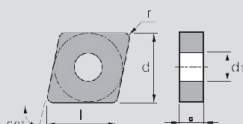
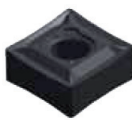
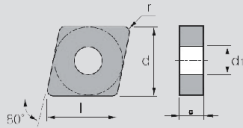
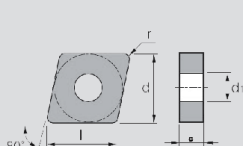
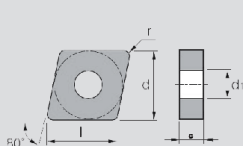


35°

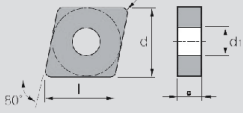
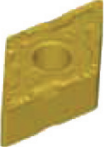
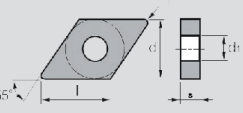
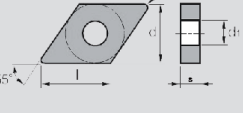
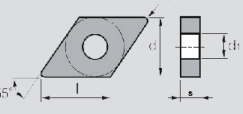
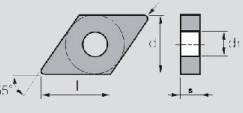
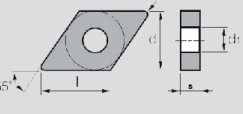
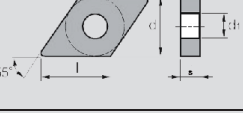
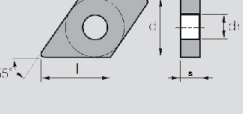
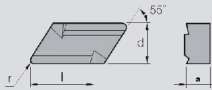


80°

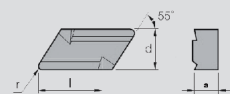
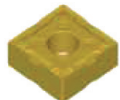
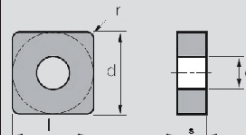
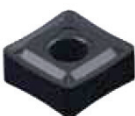
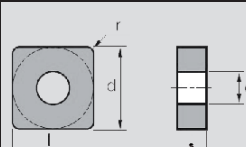
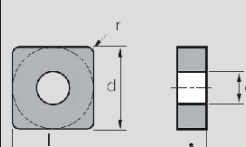
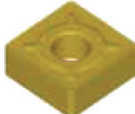
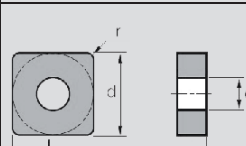
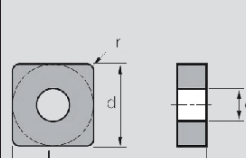
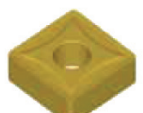
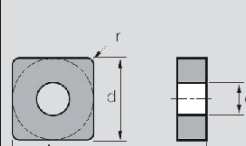
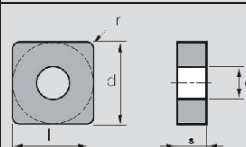
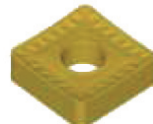
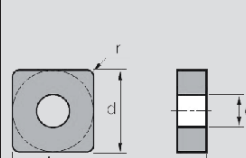
# Drehen negativ Turning negativ

|                                                                                                    | Form<br>Figure                                                                      | Abmessungen<br>Dimensions                                                             |                                                                                        |                                                                              |    |                                                                    | Bezeichnung<br>Designation                                                                                                                                                       | Unbeschichtet Sorten<br>Uncoated grades |     | Beschichtet Sorten<br>coated grades |       |       |       |       |       |      |       |       |       |   |
|----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------|----|--------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|-----|-------------------------------------|-------|-------|-------|-------|-------|------|-------|-------|-------|---|
|                                                                                                    |                                                                                     | l                                                                                     | d                                                                                      | s                                                                            | d1 | r                                                                  |                                                                                                                                                                                  | CT28                                    | K10 |                                     | KTE20 | MTM10 | PTV28 | PTV35 | PTC30 | INOX | PTT20 | PTT28 | PTT35 |   |
| <br>CNMG .. VA    |    | 12,60<br>12,40<br>12,00                                                               | 12,70<br>12,70<br>12,70                                                                | 4,76<br>4,76<br>4,76                                                         |    | 0,2<br>0,4<br>0,8                                                  | CNMG 120402 VA<br>CNMG 120404 VA<br>CNMG 120408 VA                                                                                                                               |                                         |     |                                     |       |       |       |       |       |      | ■     |       |       |   |
| <br>CNMG .. WF    |    | 9,20<br>8,80<br>12,40<br>12,00                                                        | 9,52<br>9,52<br>12,70<br>12,70                                                         | 3,18<br>3,18<br>4,76<br>4,76                                                 |    | 0,4<br>0,8<br>0,4<br>0,8                                           | CNMG 090304 WF<br>CNMG 090308 WF<br>CNMG 120404 WF<br>CNMG 120408 WF                                                                                                             |                                         |     |                                     |       | ■     |       |       |       |      |       | ■     |       | ■ |
| <br>CNMG .. WM    |    | 9,20<br>8,80<br>12,40<br>12,00<br>11,60<br>11,20<br>15,30<br>14,80                    | 9,52<br>9,52<br>12,70<br>12,70<br>12,70<br>12,70<br>15,90<br>15,90                     | 3,18<br>3,18<br>4,76<br>4,76<br>4,76<br>4,76<br>6,35<br>6,35                 |    | 0,4<br>0,8<br>0,4<br>0,8<br>1,2<br>1,6<br>0,8<br>1,2               | CNMG 090304 WM<br>CNMG 090308 WM<br>CNMG 120404 WM<br>CNMG 120408 WM<br>CNMG 120412 WM<br>CNMG 120416 WM<br>CNMG 160608 WM<br>CNMG 160612 WM                                     | ■                                       | ■   |                                     |       | ■     |       |       |       |      | ■     | ■     | ■     |   |
| <br>CNMG .. XM   |   | 12,40<br>12,00<br>11,60<br>15,30<br>14,80<br>18,90<br>18,50<br>18,10<br>17,70         | 12,70<br>12,70<br>12,70<br>15,90<br>15,90<br>19,05<br>19,05<br>19,05<br>19,05          | 4,76<br>4,76<br>4,76<br>6,35<br>6,35<br>6,35<br>6,35<br>6,35<br>6,35         |    | 0,4<br>0,8<br>1,2<br>0,8<br>1,2<br>0,4<br>0,8<br>1,2<br>1,6        | CNMG 120404 XM<br>CNMG 120408 XM<br>CNMG 120412 XM<br>CNMG 160608 XM<br>CNMG 160612 XM<br>CNMG 190604 XM<br>CNMG 190608 XM<br>CNMG 190612 XM<br>CNMG 190616 XM                   | ■                                       | ■   |                                     | ■     | ■     |       |       |       | ■    | ■     | ■     | ■     |   |
| <br>CNMG .. WGF |  | 12,40<br>12,00                                                                        | 12,70<br>12,70                                                                         | 4,76<br>4,76                                                                 |    | 0,4<br>0,8                                                         | CNMG 120404 WGF<br>CNMG 120408 WGF                                                                                                                                               |                                         |     |                                     |       |       |       |       |       | ■    |       | ■     |       |   |
| <br>CNMG .. WGM |  | 12,40<br>12,00<br>11,60                                                               | 12,70<br>12,70<br>12,70                                                                | 4,76<br>4,76<br>4,76                                                         |    | 0,4<br>0,8<br>1,2                                                  | CNMG 120404 WGM<br>CNMG 120408 WGM<br>CNMG 120412 WGM                                                                                                                            |                                         |     |                                     |       |       |       |       |       | ■    |       | ■     |       |   |
| <br>CNMG .. WR  |  | 12,00<br>11,60<br>11,20<br>15,30<br>14,80<br>14,40<br>18,50<br>18,10<br>17,70<br>23,3 | 12,70<br>12,70<br>12,70<br>15,90<br>15,90<br>15,90<br>19,05<br>19,05<br>19,05<br>25,40 | 4,76<br>4,76<br>4,76<br>6,35<br>6,35<br>6,35<br>6,35<br>6,35<br>6,35<br>9,52 |    | 0,8<br>1,2<br>1,6<br>0,8<br>1,2<br>1,2<br>0,8<br>1,2<br>1,6<br>2,4 | CNMG 120408 WR<br>CNMG 120412 WR<br>CNMG 120416 WR<br>CNMG 160608 WR<br>CNMG 160612 WR<br>CNMG 160616 WR<br>CNMG 190608 WR<br>CNMG 190612 WR<br>CNMG 190616 WR<br>CNMG 250924 WR |                                         |     |                                     | ■     | ■     |       |       |       |      | ■     | ■     | ■     |   |
| <br>CNMG .. ALU |  | 12,40<br>12,00                                                                        | 12,70<br>12,70                                                                         | 4,76<br>4,76                                                                 |    | 0,4<br>0,8                                                         | CNMG 120404 ALU<br>CNMG 120408 ALU                                                                                                                                               |                                         | ■   |                                     | ■     |       |       |       |       |      |       |       |       |   |

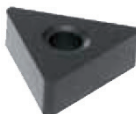
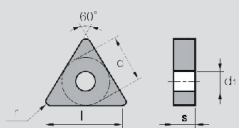
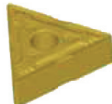
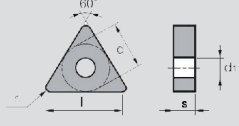
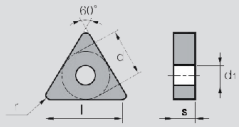
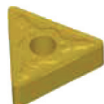
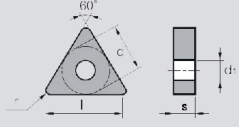
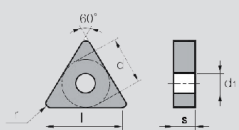
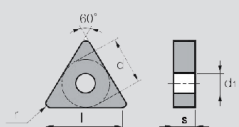
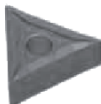
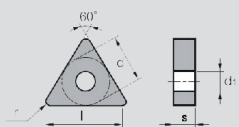
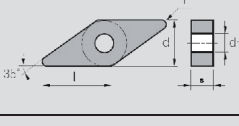
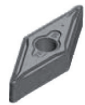
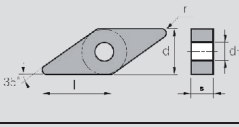
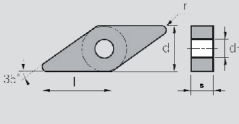
# Drehen negativ Turning negativ

|                                                                                                    | Form<br>Figure                                                                      | Abmessungen<br>Dimensions |       |      |    |     | Bezeichnung<br>Designation | Unbeschichtet Sorten<br>Uncoated grades |     | Beschichtet Sorten<br>coated grades |       |      |       |      |       |      |       |       |       |
|----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------|-------|------|----|-----|----------------------------|-----------------------------------------|-----|-------------------------------------|-------|------|-------|------|-------|------|-------|-------|-------|
|                                                                                                    |                                                                                     | l                         | d     | s    | d1 | r   |                            | CT28                                    | K10 | KT20                                | MTM10 | PT20 | PTV28 | PT35 | PTC30 | INOX | PTT20 | PTT28 | PTT35 |
| <br>CNMM .. WR    |    | 12,00                     | 12,70 | 4,76 |    | 0,8 | CNMM 120408 WR             |                                         |     |                                     |       |      |       |      |       |      |       |       |       |
|                                                                                                    |                                                                                     | 11,60                     | 12,70 | 4,76 |    | 1,2 | CNMM 120412 WR             |                                         |     |                                     |       |      |       |      |       |      | ■     | ■     |       |
|                                                                                                    |                                                                                     | 14,80                     | 15,90 | 6,35 |    | 0,8 | CNMM 160612 WR             |                                         |     |                                     |       |      |       |      |       |      |       | ■     | ■     |
|                                                                                                    |                                                                                     | 18,50                     | 19,05 | 6,35 |    | 0,8 | CNMM 190608 WR             |                                         |     |                                     |       |      |       |      |       |      |       | ■     | ■     |
|                                                                                                    |                                                                                     | 18,10                     | 19,05 | 6,35 |    | 1,2 | CNMM 190612 WR             |                                         |     |                                     | ■     |      |       |      |       |      |       | ■     | ■     |
|                                                                                                    |                                                                                     | 17,70                     | 19,05 | 6,35 |    | 1,6 | CNMM 190616 WR             |                                         |     |                                     | ■     |      |       |      |       |      |       | ■     | ■     |
|                                                                                                    |                                                                                     | 16,80                     | 19,05 | 6,35 |    | 2,4 | CNMM 190624 WR             |                                         |     |                                     | ■     |      |       |      |       |      |       | ■     | ■     |
|                                                                                                    |                                                                                     | 23,3                      | 25,40 | 7,94 |    | 2,4 | CNMM 250724 WR             |                                         |     |                                     | ■     |      |       |      |       |      |       | ■     | ■     |
|                                                                                                    |                                                                                     | 23,3                      | 25,40 | 9,52 |    | 2,4 | CNMM 250924 WR             |                                         |     |                                     | ■     |      |       |      |       |      |       | ■     | ■     |
| <br>DNMG .. WF    |    | 11,20                     | 9,52  | 4,76 |    | 0,4 | DNMG 110404 WF             |                                         |     |                                     |       |      |       |      |       |      |       | ■     | ■     |
|                                                                                                    |                                                                                     | 15,10                     | 12,70 | 4,76 |    | 0,4 | DNMG 150404 WF             |                                         |     |                                     |       |      |       |      |       |      |       | ■     | ■     |
|                                                                                                    |                                                                                     | 14,70                     | 12,70 | 4,76 |    | 0,8 | DNMG 150408 WF             |                                         |     |                                     |       |      |       |      |       |      |       | ■     | ■     |
|                                                                                                    |                                                                                     | 15,10                     | 12,70 | 6,35 |    | 0,8 | DNMG 150604 WF             |                                         |     |                                     | ■     |      |       |      |       |      |       | ■     | ■     |
|                                                                                                    |                                                                                     | 14,70                     | 12,70 | 6,35 |    | 0,8 | DNMG 150608 WF             |                                         |     |                                     | ■     |      |       |      |       |      |       | ■     | ■     |
|                                                                                                    |                                                                                     | 14,40                     | 12,70 | 6,35 |    | 1,2 | DNMG 150612 WF             |                                         |     |                                     |       |      |       |      |       |      |       | ■     | ■     |
| <br>DNGG .. VA    |    | 15,10                     | 12,70 | 4,76 |    | 0,4 | DNGG 150404 VA             |                                         |     |                                     |       |      |       |      |       |      | ■     | ■     |       |
|                                                                                                    |                                                                                     | 14,70                     | 12,70 | 4,76 |    | 0,8 | DNGG 150408 VA             |                                         |     |                                     |       |      |       |      |       |      | ■     | ■     |       |
|                                                                                                    |                                                                                     | 15,10                     | 12,70 | 6,35 |    | 0,4 | DNGG 150604 VA             |                                         |     |                                     |       |      |       |      |       |      | ■     | ■     |       |
|                                                                                                    |                                                                                     | 14,70                     | 12,70 | 6,35 |    | 0,8 | DNGG 150608 VA             |                                         |     |                                     |       |      |       |      |       |      | ■     | ■     |       |
| <br>DNMG .. WM   |  | 11,20                     | 9,52  | 4,76 |    | 0,4 | DNMG 110404 WM             | ■                                       |     |                                     |       |      |       |      |       |      |       | ■     | ■     |
|                                                                                                    |                                                                                     | 10,80                     | 9,52  | 4,76 |    | 0,8 | DNMG 110408 WM             |                                         |     |                                     | ■     |      |       |      |       |      |       | ■     | ■     |
|                                                                                                    |                                                                                     | 15,10                     | 12,70 | 4,76 |    | 0,4 | DNMG 150404 WM             |                                         |     |                                     | ■     |      |       |      |       |      |       | ■     | ■     |
|                                                                                                    |                                                                                     | 14,70                     | 12,70 | 4,76 |    | 0,8 | DNMG 150408 WM             |                                         |     |                                     | ■     |      |       |      |       |      |       | ■     | ■     |
|                                                                                                    |                                                                                     | 15,10                     | 12,70 | 6,35 |    | 0,4 | DNMG 150604 WM             | ■                                       |     |                                     | ■     |      |       |      |       |      |       | ■     | ■     |
|                                                                                                    |                                                                                     | 14,70                     | 12,70 | 6,35 |    | 0,8 | DNMG 150608 WM             | ■                                       |     |                                     | ■     |      |       |      |       |      |       | ■     | ■     |
|                                                                                                    |                                                                                     | 14,40                     | 12,70 | 6,35 |    | 1,2 | DNMG 150612 WM             | ■                                       |     |                                     | ■     |      |       |      |       |      |       | ■     | ■     |
|                                                                                                    |                                                                                     |                           |       |      |    |     |                            |                                         |     |                                     |       |      |       |      |       |      |       |       |       |
| <br>DNMG .. XM  |  | 15,10                     | 12,70 | 4,76 |    | 0,4 | DNMG 150404 XM             |                                         |     |                                     |       |      |       |      |       |      |       | ■     | ■     |
|                                                                                                    |                                                                                     | 14,70                     | 12,70 | 4,76 |    | 0,8 | DNMG 150408 XM             |                                         |     |                                     |       |      |       |      |       |      |       | ■     | ■     |
|                                                                                                    |                                                                                     | 15,10                     | 12,70 | 6,35 |    | 0,4 | DNMG 150604 XM             | ■                                       |     |                                     | ■     |      |       |      |       |      |       | ■     | ■     |
|                                                                                                    |                                                                                     | 14,70                     | 12,70 | 6,35 |    | 0,8 | DNMG 150608 XM             | ■                                       |     |                                     | ■     |      |       |      |       |      |       | ■     | ■     |
|                                                                                                    |                                                                                     | 14,40                     | 12,70 | 6,35 |    | 1,2 | DNMG 150612 XM             | ■                                       |     |                                     | ■     |      |       |      |       |      |       | ■     | ■     |
| <br>DNMG .. WR  |  | 14,70                     | 12,70 | 4,76 |    | 0,8 | DNMG 150408 WR             |                                         |     |                                     | ■     |      |       |      |       |      |       | ■     | ■     |
|                                                                                                    |                                                                                     | 14,40                     | 12,70 | 4,76 |    | 1,2 | DNMG 150412 WR             |                                         |     |                                     | ■     |      |       |      |       |      |       | ■     | ■     |
|                                                                                                    |                                                                                     | 14,70                     | 12,70 | 6,35 |    | 0,8 | DNMG 150608 WR             |                                         |     |                                     | ■     |      |       |      |       |      |       | ■     | ■     |
|                                                                                                    |                                                                                     | 14,40                     | 12,70 | 6,35 |    | 1,2 | DNMG 150612 WR             |                                         |     |                                     | ■     |      |       |      |       |      |       | ■     | ■     |
|                                                                                                    |                                                                                     | 14,00                     | 12,70 | 6,35 |    | 1,6 | DNMG 150616 WR             |                                         |     |                                     |       |      |       |      |       |      |       | ■     | ■     |
|                                                                                                    |                                                                                     |                           |       |      |    |     |                            |                                         |     |                                     |       |      |       |      |       |      |       |       |       |
| <br>DNMG .. ALU |  | 15,10                     | 12,70 | 4,76 |    | 0,4 | DNMG 150404 ALU            |                                         | ■   |                                     | ■     |      |       |      |       |      |       |       |       |
|                                                                                                    |                                                                                     | 14,70                     | 12,70 | 4,76 |    | 0,8 | DNMG 150408 ALU            |                                         | ■   |                                     | ■     |      |       |      |       |      |       |       |       |
|                                                                                                    |                                                                                     | 15,10                     | 12,70 | 6,35 |    | 0,4 | DNMG 150604 ALU            |                                         | ■   |                                     | ■     |      |       |      |       |      |       |       |       |
|                                                                                                    |                                                                                     | 14,70                     | 12,70 | 6,35 |    | 0,8 | DNMG 150608 ALU            |                                         | ■   |                                     | ■     |      |       |      |       |      |       |       |       |
| <br>DNMA .. WR  |  | 14,70                     | 12,70 | 4,76 |    | 0,8 | DNMA 150408 WR             |                                         |     |                                     | ■     |      |       |      |       |      |       |       |       |
|                                                                                                    |                                                                                     | 14,40                     | 12,70 | 4,76 |    | 1,2 | DNMA 150412 WR             |                                         |     |                                     | ■     |      |       |      |       |      |       |       |       |
|                                                                                                    |                                                                                     | 14,70                     | 12,70 | 6,35 |    | 0,8 | DNMA 150608 WR             |                                         |     |                                     | ■     |      |       |      |       |      |       |       |       |
|                                                                                                    |                                                                                     | 14,40                     | 12,70 | 6,35 |    | 1,2 | DNMA 150612 WR             |                                         |     |                                     | ■     |      |       |      |       |      |       |       |       |
| <br>KNUX .. WM  |  | 19,20                     | 9,52  | 4,76 |    | 0,5 | KNUX 160405-EL-11          |                                         |     |                                     |       |      |       |      |       |      |       | ■     | ■     |
|                                                                                                    |                                                                                     | 18,80                     | 9,52  | 4,76 |    | 1,0 | KNUX 160410-EL-11          |                                         |     |                                     |       |      |       |      |       |      |       | ■     | ■     |
|                                                                                                    |                                                                                     | 19,20                     | 9,52  | 4,76 |    | 0,5 | KNUX 160405-ER-11          |                                         |     |                                     |       |      |       |      |       |      |       | ■     | ■     |
|                                                                                                    |                                                                                     | 18,80                     | 9,52  | 4,76 |    | 1,0 | KNUX 160410-ER-11          |                                         |     |                                     |       |      |       |      |       |      |       | ■     | ■     |

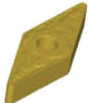
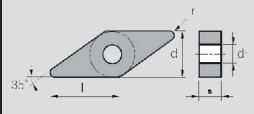
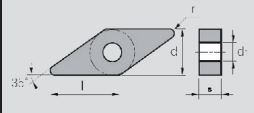
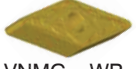
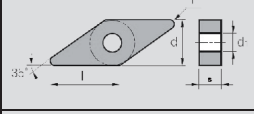
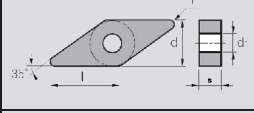
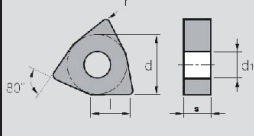
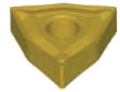
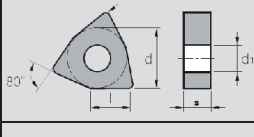
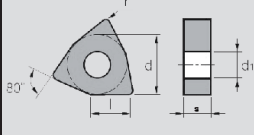
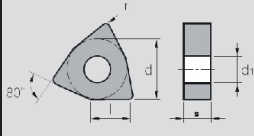
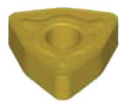
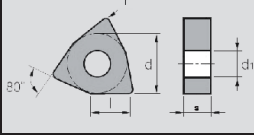
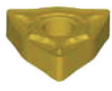
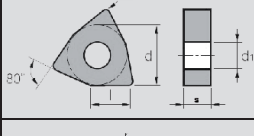
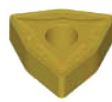
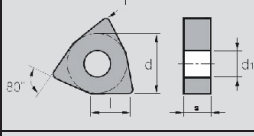
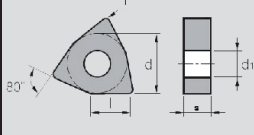
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|                                                                                                    | Form<br>Figure                                                                      | Abmessungen<br>Dimensions                                                                                |                                                                                                          |                                                                                              |    |                                                                                  | Bezeichnung<br>Designation                                                                                                                                                                                           | Unbeschichtet Sorten<br>Uncoated grades |     | Beschichtet Sorten<br>coated grades |       |       |       |       |      |       |       |       |   |
|----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|----|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|-----|-------------------------------------|-------|-------|-------|-------|------|-------|-------|-------|---|
|                                                                                                    |                                                                                     | l                                                                                                        | d                                                                                                        | s                                                                                            | d1 | r                                                                                |                                                                                                                                                                                                                      | CT28                                    | K10 | KTE20                               | MTM10 | PTV28 | PTC35 | PTC30 | INOX | PTT20 | PTT28 | PTT35 |   |
| <br>KNUX .. WR    |    | 19,20<br>18,80<br>19,20<br>18,80                                                                         | 9,52<br>9,52<br>9,52<br>9,52                                                                             | 4,76<br>4,76<br>4,76<br>4,76                                                                 |    | 0,5<br>1,0<br>0,5<br>1,0                                                         | KNUX 160405-EL-12<br>KNUX 160410-EL-12<br>KNUX 160405-ER-12<br>KNUX 160410-ER-12                                                                                                                                     |                                         |     |                                     |       |       |       |       |      |       | ■     | ■     | ■ |
| <br>SNMG .. WFF   |    | 8,70<br>12,30<br>11,90                                                                                   | 9,52<br>12,70<br>12,70                                                                                   | 3,18<br>4,76<br>4,76                                                                         |    | 0,8<br>0,4<br>0,8                                                                | SNMG 090308 WFF<br>SNMG 120404 WFF<br>SNMG 120408 WFF                                                                                                                                                                |                                         |     |                                     |       | ■     |       |       |      |       | ■     | ■     | ■ |
| <br>SNMG .. VA    |    | 12,30<br>11,90<br>11,50                                                                                  | 12,70<br>12,70<br>12,70                                                                                  | 4,76<br>4,76<br>4,76                                                                         |    | 0,4<br>0,8<br>1,2                                                                | SNMG 120404 VA<br>SNMG 120408 VA<br>SNMG 120412 VA                                                                                                                                                                   |                                         |     |                                     |       |       |       |       |      | ■     | ■     | ■     | ■ |
| <br>SNMG .. WM    |    | 12,70<br>12,70                                                                                           | 12,70<br>12,70                                                                                           | 4,76<br>4,76                                                                                 |    | 0,4<br>0,8                                                                       | SNMG 120404 WM<br>SNMG 120408 WM                                                                                                                                                                                     |                                         |     |                                     |       | ■     |       |       |      |       | ■     | ■     | ■ |
| <br>SNMG .. WMM |  | 8,70<br>12,30<br>11,90<br>11,50                                                                          | 9,52<br>12,70<br>12,70<br>12,70                                                                          | 3,18<br>4,76<br>4,76<br>4,76                                                                 |    | 0,8<br>0,4<br>0,8<br>1,2                                                         | SNMG 090308 WMM<br>SNMG 120404 WMM<br>SNMG 120408 WMM<br>SNMG 120412 WMM                                                                                                                                             | ■                                       |     |                                     |       | ■     |       |       |      | ■     | ■     | ■     | ■ |
| <br>SNMG .. XM  |  | 12,30<br>11,90<br>11,50<br>11,10<br>15,00<br>14,60<br>14,20<br>18,20<br>17,80<br>17,40<br>23,80<br>23,00 | 12,70<br>12,70<br>12,70<br>12,70<br>15,87<br>15,87<br>15,87<br>19,05<br>19,05<br>19,05<br>25,40<br>25,40 | 4,76<br>4,76<br>4,76<br>4,76<br>6,35<br>6,35<br>6,35<br>6,35<br>6,35<br>6,35<br>7,94<br>7,94 |    | 0,4<br>0,8<br>1,2<br>1,6<br>0,8<br>1,2<br>1,6<br>0,8<br>1,2<br>1,6<br>1,6<br>2,4 | SNMG 120404 XM<br>SNMG 120408 XM<br>SNMG 120412 XM<br>SNMG 120416 XM<br>SNMG 150608 XM<br>SNMG 150612 XM<br>SNMG 150616 XM<br>SNMG 190608 XM<br>SNMG 190612 XM<br>SNMG 190616 XM<br>SNMG 250716 XM<br>SNMG 250724 XM | ■                                       |     |                                     |       | ■     |       |       |      | ■     | ■     | ■     |   |
| <br>SNMG .. WR  |  | 11,90<br>11,50<br>15,00<br>14,60<br>18,20<br>17,80<br>17,40<br>23,00<br>23,00                            | 12,70<br>12,70<br>15,87<br>15,87<br>19,05<br>19,05<br>19,05<br>25,40<br>25,40                            | 4,76<br>4,76<br>6,35<br>6,35<br>6,35<br>6,35<br>6,35<br>7,94<br>9,52                         |    | 0,8<br>1,2<br>0,8<br>1,2<br>0,8<br>1,2<br>1,6<br>2,4<br>2,4                      | SNMG 120408 WR<br>SNMG 120412 WR<br>SNMG 150608 WR<br>SNMG 150612 WR<br>SNMG 190608 WR<br>SNMG 190612 WR<br>SNMG 190616 WR<br>SNMG 250724 WR<br>SNMG 250924 WR                                                       |                                         |     |                                     | ■     | ■     |       |       |      | ■     | ■     | ■     |   |
| <br>SNMG .. ALU |  | 12,30<br>11,90                                                                                           | 12,70<br>12,70                                                                                           | 4,76<br>4,76                                                                                 |    | 0,4<br>0,8                                                                       | SNMG 120404 ALU<br>SNMG 120408 ALU                                                                                                                                                                                   |                                         | ■   | ■                                   |       | ■     |       |       |      |       |       |       |   |
| <br>SNMM .. WR  |  | 11,90<br>11,50<br>14,60<br>17,80<br>17,40<br>16,60<br>23,00<br>23,00                                     | 12,70<br>12,70<br>15,87<br>19,05<br>19,05<br>19,05<br>25,04<br>25,04                                     | 4,76<br>4,76<br>6,35<br>6,35<br>6,35<br>6,35<br>7,94<br>9,52                                 |    | 0,8<br>1,2<br>1,2<br>1,2<br>1,6<br>2,4<br>2,4<br>2,4                             | SNMM 120408 WR<br>SNMM 120412 WR<br>SNMM 150612 WR<br>SNMM 190612 WR<br>SNMM 190616 WR<br>SNMM 190624 WR<br>SNMM 250724 WR<br>SNMM 250924 WR                                                                         |                                         |     |                                     |       | ■     |       |       |      | ■     | ■     | ■     |   |

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|                                                                                                    | Form<br>Figure                                                                      | Abmessungen<br>Dimensions                                                                                |                                                                                                     |                                                                                              |    |                                                                                  | Bezeichnung<br>Designation                                                                                                                                                                                           | Unbeschichtet Sorten<br>Uncoated grades |        | Beschichtet Sorten<br>coated grades |               |                       |        |      |      |        |                                                          |             |        |
|----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|----|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|--------|-------------------------------------|---------------|-----------------------|--------|------|------|--------|----------------------------------------------------------|-------------|--------|
|                                                                                                    |                                                                                     | l                                                                                                        | d                                                                                                   | s                                                                                            | d1 | r                                                                                |                                                                                                                                                                                                                      | CT28                                    | K10    | KTE20                               | coated grades |                       |        |      |      |        |                                                          |             |        |
|                                                                                                    |                                                                                     |                                                                                                          |                                                                                                     |                                                                                              |    |                                                                                  |                                                                                                                                                                                                                      |                                         |        |                                     | MTM10         | PT20                  | PT28   | PT35 | INOX | PTT20  | PTT28                                                    | PTT35       |        |
| <br>TNMA .. WR    |    | 15,50<br>14,50<br>13,50<br>20,00<br>19,00                                                                | 9,52<br>9,52<br>9,52<br>12,70<br>12,70                                                              | 4,76<br>4,76<br>4,76<br>4,76<br>4,76                                                         |    | 0,4<br>0,8<br>1,2<br>0,8<br>1,2                                                  | TNMA 160404 WR<br>TNMA 160408 WR<br>TNMA 160412 WR<br>TNMA 220408 WR<br>TNMA 220412 WR                                                                                                                               |                                         |        |                                     |               | ■<br>■<br>■<br>■<br>■ |        |      |      |        |                                                          |             |        |
| <br>TNMG .. WFF   |    | 10,00<br>15,50<br>14,50<br>13,50<br>21,00                                                                | 6,35<br>9,52<br>9,52<br>9,52<br>12,70                                                               | 3,18<br>4,76<br>4,76<br>4,76<br>4,76                                                         |    | 0,4<br>0,4<br>0,8<br>1,2<br>0,4                                                  | TNMG 110304 WFF<br>TNMG 160404 WFF<br>TNMG 160408 WFF<br>TNMG 160412 WFF<br>TNMG 220404 WFF                                                                                                                          | ■<br>■                                  |        |                                     |               |                       | ■      |      |      |        |                                                          | ■<br>■      | ■<br>■ |
| <br>TNMG .. VA    |    | 15,50<br>14,50                                                                                           | 9,52<br>9,52                                                                                        | 4,76<br>4,76                                                                                 |    | 0,4<br>0,8                                                                       | TNMG 160404 VA<br>TNMG 160408 VA                                                                                                                                                                                     |                                         |        |                                     |               |                       |        |      |      |        | ■<br>■                                                   |             |        |
| <br>TNMG .. WMM   |    | 15,50<br>14,50<br>21,00<br>20,00<br>19,00                                                                | 9,52<br>9,52<br>12,70<br>12,70<br>12,70                                                             | 4,76<br>4,76<br>4,76<br>4,76<br>4,76                                                         |    | 0,4<br>0,8<br>0,4<br>0,8<br>1,2                                                  | TNMG 160404 WMM<br>TNMG 160408 WMM<br>TNMG 220404 WMM<br>TNMG 220408 WMM<br>TNMG 220412 WMM                                                                                                                          | ■<br>■                                  |        |                                     |               | ■<br>■<br>■           |        |      |      |        |                                                          | ■<br>■<br>■ |        |
| <br>TNMG .. XM   |  | 14,50<br>15,50<br>14,50<br>13,50<br>12,50<br>21,00<br>20,00<br>19,00<br>18,20<br>25,50<br>24,50<br>29,00 | 9,52<br>9,52<br>9,52<br>9,52<br>9,52<br>12,70<br>12,70<br>12,70<br>12,70<br>15,87<br>15,87<br>19,05 | 3,18<br>4,76<br>4,76<br>4,76<br>4,76<br>4,76<br>4,76<br>4,76<br>4,76<br>6,35<br>6,35<br>7,94 |    | 0,8<br>0,4<br>0,8<br>1,2<br>1,6<br>0,4<br>0,8<br>1,2<br>1,6<br>0,8<br>1,2<br>1,6 | TNMG 160308 XM<br>TNMG 160404 XM<br>TNMG 160408 XM<br>TNMG 160412 XM<br>TNMG 160416 XM<br>TNMG 220404 XM<br>TNMG 220408 XM<br>TNMG 220412 XM<br>TNMG 220416 XM<br>TNMG 270608 XM<br>TNMG 270612 XM<br>TNMG 330716 XM | ■<br>■                                  |        |                                     |               | ■<br>■<br>■<br>■      |        |      |      |        | ■<br>■<br>■<br>■<br>■<br>■<br>■<br>■<br>■<br>■<br>■<br>■ |             |        |
| <br>TNMG .. WR  |  | 14,50<br>13,50<br>20,00<br>19,00<br>18,20<br>25,50<br>24,50<br>23,50<br>27,10                            | 9,52<br>9,52<br>12,70<br>12,70<br>12,70<br>15,87<br>15,87<br>15,87<br>19,05                         | 4,76<br>4,76<br>4,76<br>4,76<br>4,76<br>6,35<br>6,35<br>6,35<br>9,52                         |    | 0,8<br>1,2<br>0,8<br>1,2<br>1,6<br>0,8<br>1,2<br>1,6<br>2,4                      | TNMG 160408 WR<br>TNMG 160412 WR<br>TNMG 220408 WR<br>TNMG 220412 WR<br>TNMG 220416 WR<br>TNMG 270608 WR<br>TNMG 270612 WR<br>TNMG 270616 WR<br>TNMG 330924 WR                                                       |                                         |        |                                     |               | ■<br>■                |        |      |      |        | ■<br>■<br>■<br>■<br>■<br>■<br>■<br>■<br>■                |             |        |
| <br>TNMG .. ALU |  | 15,50<br>14,50                                                                                           | 9,52<br>9,52                                                                                        | 4,76<br>4,76                                                                                 |    | 0,4<br>0,8                                                                       | TNMG 160404 ALU<br>TNMG 160408 ALU                                                                                                                                                                                   |                                         | ■<br>■ |                                     | ■<br>■        |                       |        |      |      |        |                                                          |             |        |
| <br>VNMG .. WFF |  | 16,10<br>15,60<br>14,60                                                                                  | 9,52<br>9,52<br>9,52                                                                                | 4,76<br>4,76<br>4,76                                                                         |    | 0,2<br>0,4<br>0,8                                                                | VNMG 160402 WFF<br>VNMG 160404 WFF<br>VNMG 160408 WFF                                                                                                                                                                | ■<br>■                                  |        |                                     |               |                       | ■      |      |      |        |                                                          | ■<br>■      |        |
| <br>VNMG .. VA  |  | 15,60<br>14,60                                                                                           | 9,52<br>9,52                                                                                        | 4,76<br>4,76                                                                                 |    | 0,4<br>0,8                                                                       | VNMG 160404 VA<br>VNMG 160408 VA                                                                                                                                                                                     |                                         |        |                                     |               |                       |        |      |      | ■<br>■ |                                                          |             |        |
| <br>VNMG .. WM  |  | 15,60<br>14,60                                                                                           | 9,52<br>9,52                                                                                        | 4,76<br>4,76                                                                                 |    | 0,4<br>0,8                                                                       | VNMG 160404 WM<br>VNMG 160408 WM                                                                                                                                                                                     |                                         |        |                                     |               |                       | ■<br>■ |      |      |        | ■<br>■                                                   | ■<br>■      |        |

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|                                                                                                    | Form<br>Figure                                                                      | Abmessungen<br>Dimensions            |                                         |                                      |    |                                 | Bezeichnung<br>Designation                                                                  | Unbeschichtet Sorten<br>Uncoated grades |     | Beschichtet Sorten<br>coated grades |       |       |       |       |       |      |       |       |       |
|----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------|-----------------------------------------|--------------------------------------|----|---------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------|-----|-------------------------------------|-------|-------|-------|-------|-------|------|-------|-------|-------|
|                                                                                                    |                                                                                     | l                                    | d                                       | s                                    | d1 | r                               |                                                                                             | GT28                                    | K10 | KTE20                               | MTM10 | PTe20 | PTV28 | PTe35 | PTC30 | INOX | PTT20 | PTT28 | PTT35 |
| <br>VNMG .. WMM   |    | 15,60<br>14,60<br>13,60              | 9,52<br>9,52<br>9,52                    | 4,76<br>4,76<br>4,76                 |    | 0,4<br>0,8<br>1,2               | VNMG 160404 WMM<br>VNMG 160408 WMM<br>VNMG 160412 WMM                                       | ■                                       | ■   |                                     |       | ■     |       |       |       | ■    | ■     | ■     | ■     |
| <br>VNMG .. XM    |    | 15,60<br>14,60                       | 9,52<br>9,52                            | 4,76<br>4,76                         |    | 0,4<br>0,8                      | VNMG 160404 XM<br>VNMG 160408 XM                                                            | ■                                       | ■   |                                     |       |       |       |       |       |      |       | ■     | ■     |
| <br>VNMG .. WR    |    | 14,60                                | 9,52                                    | 4,76                                 |    | 0,8                             | VNMG 160408 WR                                                                              |                                         |     |                                     |       |       |       |       |       |      |       |       | ■     |
| <br>VNMG .. ALU   |    | 15,60                                | 9,52                                    | 4,76                                 |    | 0,4                             | VNMG 160404 ALU                                                                             |                                         | ■   | ■                                   |       |       |       |       |       |      |       |       |       |
| <br>WNMA .. WR   |   | 6,10<br>8,30<br>8,20                 | 9,52<br>12,70<br>12,70                  | 4,76<br>4,76<br>4,76                 |    | 0,8<br>0,8<br>1,2               | WNMA 060408 WR<br>WNMA 080408 WR<br>WNMA 080412 WR                                          |                                         |     |                                     | ■     | ■     | ■     |       |       |      | ■     |       |       |
| <br>WNMG .. WFF |  | 6,20<br>6,10<br>8,40<br>8,30         | 9,52<br>9,52<br>12,70<br>12,70          | 4,76<br>4,76<br>4,76<br>4,76         |    | 0,4<br>0,8<br>0,4<br>0,8        | WNMG 060404 WFF<br>WNMG 060408 WFF<br>WNMG 080404 WFF<br>WNMG 080408 WFF                    | ■                                       |     |                                     | ■     | ■     | ■     |       |       |      | ■     | ■     | ■     |
| <br>WNMG .. VA  |  | 8,40<br>8,30<br>8,20                 | 12,70<br>12,70<br>12,70                 | 4,76<br>4,76<br>4,76                 |    | 0,4<br>0,8<br>1,2               | WNMG 080404 VA<br>WNMG 080408 VA<br>WNMG 080412 VA                                          |                                         |     |                                     |       |       |       |       | ■     | ■    | ■     |       |       |
| <br>WNMG .. WM  |  | 6,20<br>6,10<br>8,40<br>8,30         | 9,52<br>9,52<br>12,70<br>12,70          | 4,76<br>4,76<br>4,76<br>4,76         |    | 0,4<br>0,8<br>0,4<br>0,8        | WNMG 060404 WM<br>WNMG 060408 WM<br>WNMG 080404 WM<br>WNMG 080408 WM                        |                                         |     |                                     | ■     | ■     | ■     |       |       |      | ■     | ■     | ■     |
| <br>WNMG .. WMM |  | 6,20<br>6,10<br>8,40<br>8,30<br>8,20 | 9,52<br>9,52<br>12,70<br>12,70<br>12,70 | 4,76<br>4,76<br>4,76<br>4,76<br>4,76 |    | 0,4<br>0,8<br>0,4<br>0,8<br>1,2 | WNMG 060404 WMM<br>WNMG 060408 WMM<br>WNMG 080404 WMM<br>WNMG 080408 WMM<br>WNMG 080412 WMM |                                         |     | ■                                   | ■     | ■     | ■     |       | ■     |      | ■     | ■     | ■     |
| <br>WNMG .. XM  |  | 8,30                                 | 12,70                                   | 4,76                                 |    | 0,8                             | WNMG 080408 XM                                                                              |                                         |     | ■                                   | ■     |       |       |       |       |      | ■     |       | ■     |
| <br>WNMG .. WR  |  | 8,30<br>8,20                         | 12,70<br>12,70                          | 4,76<br>4,76                         |    | 0,8<br>1,2                      | WNMG 080408 WR<br>WNMG 080412 WR                                                            |                                         |     |                                     | ■     | ■     |       |       |       |      | ■     |       | ■     |
| <br>WNMG .. ALU |  | 6,20<br>6,10<br>8,40<br>8,30         | 9,52<br>9,52<br>12,70<br>12,70          | 4,76<br>4,76<br>4,76<br>4,76         |    | 0,4<br>0,8<br>0,4<br>0,8        | WNMG 060404 ALU<br>WNMG 060408 ALU<br>WNMG 080404 ALU<br>WNMG 080408 ALU                    |                                         | ■   | ■                                   | ■     | ■     |       |       |       |      |       |       |       |

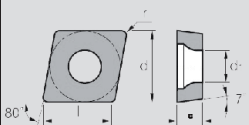
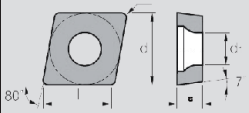
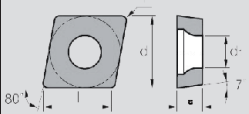
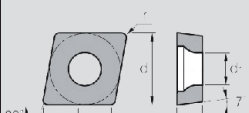
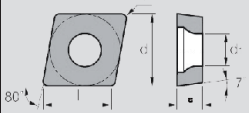
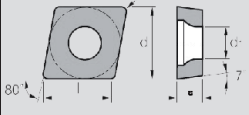
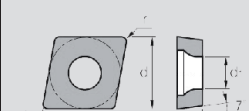
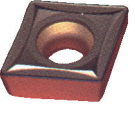
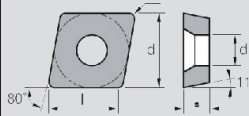
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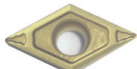
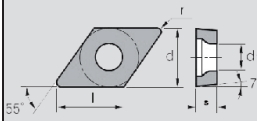
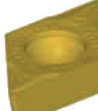
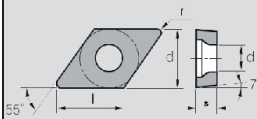
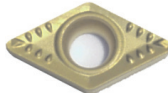
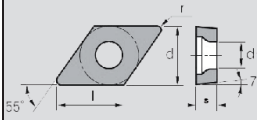
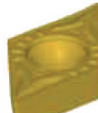
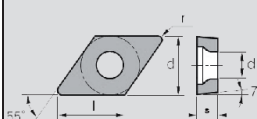
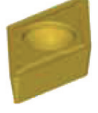
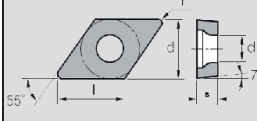
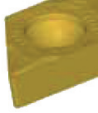
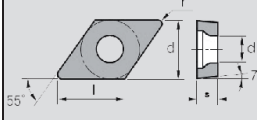
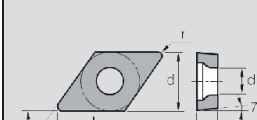
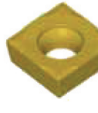
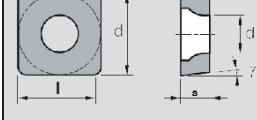
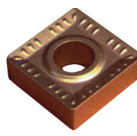
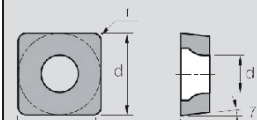


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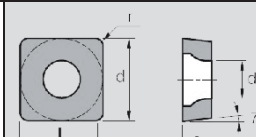
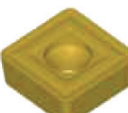
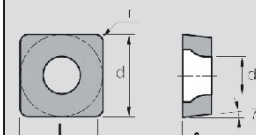
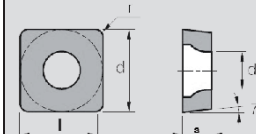
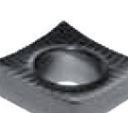
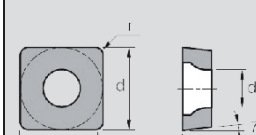
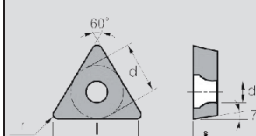
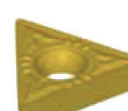
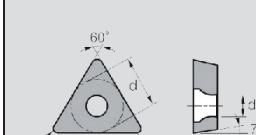
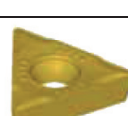
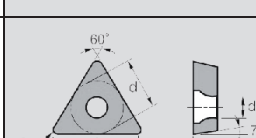
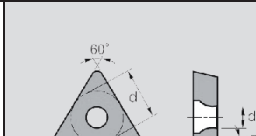
|                                                                                                      | Form<br>Figure                                                                      | Abmessungen<br>Dimensions                                       |                                                                 |                                                              |    |                                                      | Bezeichnung<br>Designation                                                                                                                                           | Unbeschichtet Sorten<br>Uncoated grades |     | Beschichtet Sorten<br>coated grades |  |       |       |       |       |       |      |       |       |
|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------|----|------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|-----|-------------------------------------|--|-------|-------|-------|-------|-------|------|-------|-------|
|                                                                                                      |                                                                                     | l                                                               | d                                                               | s                                                            | d1 | r                                                    |                                                                                                                                                                      | CT28                                    | K10 |                                     |  | KTE20 | MTM10 | PTV28 | PTV35 | PTC30 | INOX | PTT20 | PTT28 |
| <br>CCMT .. WF      |    | 6,45<br>9,67                                                    | 6,35<br>9,52                                                    | 2,38<br>3,97                                                 |    | 0,2<br>0,2                                           | CCMT 060202 WF<br>CCMT 09T302 WF                                                                                                                                     |                                         |     |                                     |  |       |       |       |       |       |      |       |       |
| <br>CCMT .. WFF     |    | 6,20<br>6,00<br>9,40<br>9,20<br>8,80                            | 6,35<br>6,35<br>9,52<br>9,52<br>9,52                            | 2,38<br>2,38<br>3,97<br>3,97<br>3,97                         |    | 0,2<br>0,4<br>0,2<br>0,4<br>0,8                      | CCMT 060202 WFF<br>CCMT 060204 WFF<br>CCMT 09T302 WFF<br>CCMT 09T304 WFF<br>CCMT 09T308 WFF                                                                          |                                         |     |                                     |  |       |       |       |       |       |      |       |       |
| <br>CCMT .. WM      |    | 6,45<br>6,45<br>9,67<br>9,67<br>12,90<br>12,90                  | 6,35<br>6,35<br>9,52<br>9,52<br>12,70<br>12,70                  | 2,38<br>2,38<br>3,97<br>3,97<br>4,76<br>4,76                 |    | 0,4<br>0,8<br>0,4<br>0,8<br>0,4<br>0,8               | CCMT 060204 WM<br>CCMT 060208 WM<br>CCMT 09T304 WM<br>CCMT 09T308 WM<br>CCMT 120404 WM<br>CCMT 120408 WM                                                             |                                         |     |                                     |  |       |       |       |       |       |      |       |       |
| <br>CCMT .. WMM    |   | 6,20<br>6,00<br>5,60<br>9,40<br>9,20<br>8,80<br>12,40<br>12,00  | 6,35<br>6,35<br>6,35<br>9,52<br>9,52<br>9,52<br>12,70<br>12,70  | 2,38<br>2,38<br>2,38<br>3,97<br>3,97<br>3,97<br>4,76<br>4,76 |    | 0,2<br>0,4<br>0,8<br>0,2<br>0,4<br>0,8<br>0,4<br>0,8 | CCMT 060202 WMM<br>CCMT 060204 WMM<br>CCMT 060208 WMM<br>CCMT 09T302 WMM<br>CCMT 09T304 WMM<br>CCMT 09T308 WMM<br>CCMT 120404 WMM<br>CCMT 120408 WMM                 |                                         |     |                                     |  |       |       |       |       |       |      |       |       |
| <br>CCMT .. XM    |  | 6,20<br>6,00<br>5,60<br>9,20<br>8,80<br>12,40<br>12,00<br>11,60 | 6,35<br>6,35<br>6,35<br>9,52<br>9,52<br>12,70<br>12,70<br>12,70 | 2,38<br>2,38<br>2,38<br>3,97<br>3,97<br>4,76<br>4,76<br>4,76 |    | 0,2<br>0,4<br>0,8<br>0,4<br>0,8<br>0,4<br>0,8<br>1,2 | CCMT 060202 XM<br>CCMT 060204 XM<br>CCMT 060208 XM<br>CCMT 09T304 XM<br>CCMT 09T308 XM<br>CCMT 120404 XM<br>CCMT 120408 XM<br>CCMT 120412 XM                         |                                         |     |                                     |  |       |       |       |       |       |      |       |       |
| <br>CCGT .. WFF   |  | 6,20<br>6,00<br>9,20<br>8,80                                    | 6,35<br>6,35<br>9,52<br>9,52                                    | 2,38<br>2,38<br>3,97<br>3,97                                 |    | 0,2<br>0,4<br>0,4<br>0,8                             | CCGT 060202 WFF<br>CCGT 060204 WFF<br>CCGT 09T304 WFF<br>CCGT 09T308 WFF                                                                                             |                                         |     |                                     |  |       |       |       |       |       |      |       |       |
| <br>CCGT .. ALU-M |  | 6,20<br>6,00<br>9,40<br>9,20<br>8,80<br>12,60<br>12,40<br>12,00 | 6,35<br>6,35<br>9,52<br>9,52<br>9,52<br>12,70<br>12,70<br>12,70 | 2,38<br>2,38<br>3,97<br>3,97<br>3,97<br>4,76<br>4,76<br>4,76 |    | 0,2<br>0,4<br>0,2<br>0,4<br>0,8<br>0,2<br>0,4<br>0,8 | CCGT 060202 ALU-M<br>CCGT 060204 ALU-M<br>CCGT 09T302 ALU-M<br>CCGT 09T304 ALU-M<br>CCGT 09T308 ALU-M<br>CCGT 120402 ALU-M<br>CCGT 120404 ALU-M<br>CCGT 120408 ALU-M |                                         |     |                                     |  |       |       |       |       |       |      |       |       |
| <br>CPMT ..       |  | 5,60<br>5,60                                                    | 5,60<br>5,60                                                    | 2,00<br>2,00                                                 |    | 0,2<br>0,4                                           | CPMT 05T102<br>CPMT 05T104                                                                                                                                           |                                         |     |                                     |  |       |       |       |       |       |      |       |       |
|                                                                                                      |                                                                                     |                                                                 |                                                                 |                                                              |    |                                                      |                                                                                                                                                                      |                                         |     |                                     |  |       |       |       |       |       |      |       |       |



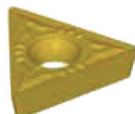
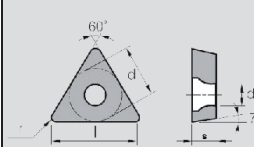
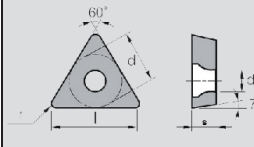
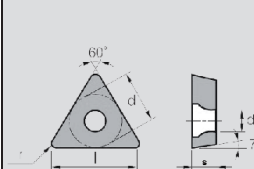
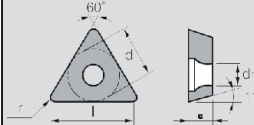
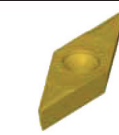
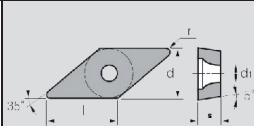
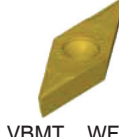
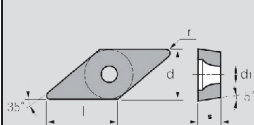
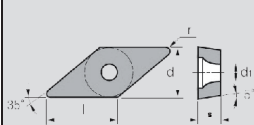
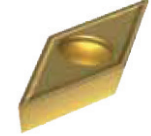
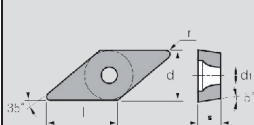
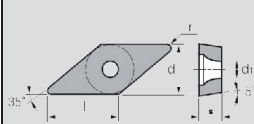
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|                                                                                                      | Form<br>Figure                                                                      | Abmessungen<br>Dimensions                                |                                                      |                                                      |    |                                               | Bezeichnung<br>Designation                                                                                                                      | Unbeschichtet Sorten<br>Uncoated grades |                                 | Beschichtet Sorten<br>coated grades |                            |        |       |       |        |       |      |       |       |
|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|----|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|---------------------------------|-------------------------------------|----------------------------|--------|-------|-------|--------|-------|------|-------|-------|
|                                                                                                      |                                                                                     | l                                                        | d                                                    | s                                                    | d1 | r                                             |                                                                                                                                                 | CT28                                    | K10                             |                                     |                            | KTE20  | MTM10 | PTV28 | PTES35 | PTC30 | INOX | PTT20 | PTT28 |
| <br>DCMT .. WF      |    | 7,75<br>11,60                                            | 6,35<br>9,52                                         | 2,38<br>3,97                                         |    | 0,2<br>0,2                                    | DCMT 070202 WF<br>DCMT 11T302 WF                                                                                                                |                                         |                                 |                                     |                            |        |       |       |        |       |      |       |       |
| <br>DCMT .. WFF     |    | 7,50<br>7,30<br>11,40<br>11,20<br>10,80                  | 6,35<br>6,35<br>9,52<br>9,52<br>9,52                 | 2,38<br>2,38<br>3,97<br>3,97<br>3,97                 |    | 0,2<br>0,4<br>0,2<br>0,4<br>0,8               | DCMT 070202 WFF<br>DCMT 070204 WFF<br>DCMT 11T302 WFF<br>DCMT 11T304 WFF<br>DCMT 11T308 WFF                                                     | ■<br>■<br>■<br>■<br>■                   |                                 |                                     |                            |        |       |       |        |       |      |       |       |
| <br>DCMT .. WM      |    | 7,30<br>6,80<br>11,20<br>10,80                           | 6,35<br>6,35<br>9,52<br>9,52                         | 2,38<br>2,38<br>3,97<br>3,97                         |    | 0,4<br>0,8<br>0,4<br>0,8                      | DCMT 070204 WM<br>DCMT 070208 WM<br>DCMT 11T304 WM<br>DCMT 11T308 WM                                                                            |                                         |                                 |                                     | ■<br>■<br>■<br>■           |        |       |       |        |       |      |       |       |
| <br>DCMT .. WMM     |    | 7,50<br>7,30<br>6,80<br>11,40<br>11,20<br>10,80          | 6,35<br>6,35<br>6,35<br>9,52<br>9,52<br>9,52         | 2,38<br>2,38<br>2,38<br>3,97<br>3,97<br>3,97         |    | 0,2<br>0,4<br>0,8<br>0,2<br>0,4<br>0,8        | DCMT 070202 WMM<br>DCMT 070204 WMM<br>DCMT 070208 WMM<br>DCMT 11T302 WMM<br>DCMT 11T304 WMM<br>DCMT 11T308 WMM                                  | ■<br>■<br>■<br>■<br>■<br>■              |                                 |                                     | ■<br>■<br>■<br>■<br>■<br>■ |        |       |       |        |       |      |       |       |
| <br>DCMT .. XM    |  | 7,50<br>7,30<br>6,80<br>11,40<br>11,20<br>10,80          | 6,35<br>6,35<br>6,35<br>9,52<br>9,52<br>9,52         | 2,38<br>2,38<br>2,38<br>3,97<br>3,97<br>3,97         |    | 0,2<br>0,4<br>0,8<br>0,2<br>0,4<br>0,8        | DCMT 070202 XM<br>DCMT 070204 XM<br>DCMT 070208 XM<br>DCMT 11T302 XM<br>DCMT 11T304 XM<br>DCMT 11T308 XM                                        | ■<br>■<br>■<br>■<br>■<br>■              |                                 |                                     |                            | ■<br>■ |       |       |        |       |      |       |       |
| <br>DCGT .. WFF   |  | 11,40<br>11,20<br>10,80                                  | 9,52<br>9,52<br>9,52                                 | 3,97<br>3,97<br>3,97                                 |    | 0,2<br>0,4<br>0,8                             | DCGT 11T302 WFF<br>DCGT 11T304 WFF<br>DCGT 11T308 WFF                                                                                           | ■<br>■<br>■                             |                                 |                                     |                            | ■      |       |       |        |       |      |       |       |
| <br>DCGT .. ALU-M |  | 7,50<br>7,30<br>6,80<br>11,40<br>11,20<br>10,80<br>10,40 | 6,35<br>6,35<br>6,35<br>9,52<br>9,52<br>9,52<br>9,52 | 2,38<br>2,38<br>2,38<br>3,97<br>3,97<br>3,97<br>3,97 |    | 0,2<br>0,4<br>0,4<br>0,2<br>0,4<br>0,8<br>1,2 | DCGT 070202 ALU-M<br>DCGT 070204 ALU-M<br>DCGT 070208 ALU-M<br>DCGT 11T302 ALU-M<br>DCGT 11T304 ALU-M<br>DCGT 11T308 ALU-M<br>DCGT 11T312 ALU-M |                                         | ■<br>■<br>■<br>■<br>■<br>■<br>■ | ■<br>■<br>■<br>■<br>■<br>■<br>■     |                            |        |       |       |        |       |      |       |       |
| <br>SCMT .. WFF   |  | 9,10                                                     | 9,52                                                 | 3,97                                                 |    | 0,4                                           | SCMT 09T304 WFF                                                                                                                                 | ■                                       |                                 |                                     | ■                          |        |       |       |        |       |      |       |       |
| <br>SCMT .. WM    |  | 9,10<br>8,70<br>12,30<br>11,90                           | 9,52<br>9,52<br>12,70<br>12,70                       | 3,97<br>3,97<br>4,76<br>4,76                         |    | 0,4<br>0,8<br>0,4<br>0,8                      | SCMT 09T304 WM<br>SCMT 09T308 WM<br>SCMT 120404 WM<br>SCMT 120408 WM                                                                            |                                         |                                 |                                     |                            |        |       |       |        |       |      |       |       |
|                                                                                                      |                                                                                     |                                                          |                                                      |                                                      |    |                                               |                                                                                                                                                 |                                         |                                 |                                     |                            |        |       |       |        |       |      |       |       |

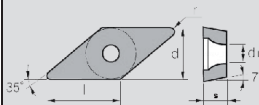
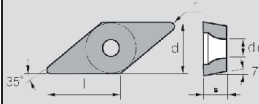
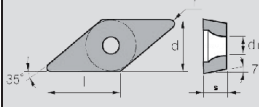
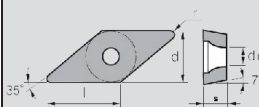
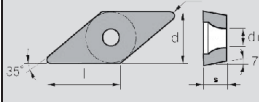
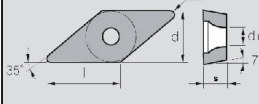
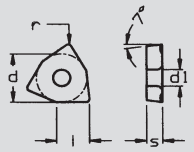
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|                                                                                                    | Form<br>Figure                                                                      | Abmessungen<br>Dimensions              |                                        |                                      |    |                                 | Bezeichnung<br>Designation                                                             | Unbeschichtet Sorten<br>Uncoated grades |                  | Beschichtet Sorten<br>coated grades |  |                  |       |       |       |       |                  |                       |                       |
|----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------|----------------------------------------|--------------------------------------|----|---------------------------------|----------------------------------------------------------------------------------------|-----------------------------------------|------------------|-------------------------------------|--|------------------|-------|-------|-------|-------|------------------|-----------------------|-----------------------|
|                                                                                                    |                                                                                     | l                                      | d                                      | s                                    | d1 | r                               |                                                                                        | CT28                                    | K10              |                                     |  | KTE20            | MTM10 | PTV28 | PTV35 | PTC30 | INOX             | PTT20                 | PTT28                 |
| <br>SCMT .. WMM   |    | 9,10<br>8,70<br>12,30<br>11,90         | 9,52<br>9,52<br>12,70<br>12,70         | 3,97<br>3,97<br>4,76<br>4,76         |    | 0,4<br>0,8<br>0,4<br>0,8        | SCMT 09T304 WMM<br>SCMT 09T308 WMM<br>SCMT 120404 WMM<br>SCMT 120408 WMM               | ■                                       |                  |                                     |  | ■<br>■<br>■<br>■ |       |       |       |       |                  | ■<br>■<br>■<br>■      | ■<br>■<br>■<br>■      |
| <br>SCMT .. XM    |    | 5,90<br>9,10<br>8,70<br>12,30<br>11,90 | 6,35<br>9,52<br>9,52<br>12,70<br>12,70 | 2,38<br>3,97<br>3,97<br>4,76<br>4,76 |    | 0,4<br>0,4<br>0,8<br>0,4<br>0,8 | SCMT 060204 XM<br>SCMT 09T304 XM<br>SCMT 09T308 XM<br>SCMT 120404 XM<br>SCMT 120408 XM | ■<br>■<br>■<br>■<br>■                   |                  |                                     |  | ■<br>■           |       |       |       |       |                  | ■<br>■<br>■<br>■<br>■ | ■<br>■<br>■<br>■<br>■ |
| <br>SCGT .. WFF   |    | 9,10                                   | 9,52                                   | 3,97                                 |    | 0,4                             | SCGT 09T304 WFF                                                                        |                                         |                  |                                     |  | ■                |       |       |       |       |                  |                       | ■                     |
| <br>SCGT .. ALU-M |    | 9,10<br>8,70<br>12,30<br>11,90         | 9,52<br>9,52<br>12,70<br>12,70         | 3,97<br>3,97<br>4,76<br>4,76         |    | 0,4<br>0,8<br>0,4<br>0,8        | SCGT 09T304 ALU-M<br>SCGT 09T308 ALU-M<br>SCGT 120404 ALU-M<br>SCGT 120408 ALU-M       |                                         | ■<br>■<br>■<br>■ | ■<br>■<br>■<br>■                    |  |                  |       |       |       |       |                  |                       |                       |
| <br>TCGT .. WFF |  | 8,60<br>10,50<br>10,00<br>15,50        | 6,35<br>6,35<br>6,35<br>9,52           | 2,38<br>2,38<br>2,38<br>3,97         |    | 0,4<br>0,2<br>0,4<br>0,4        | TCGT 090204 WFF<br>TCGT 110202 WFF<br>TCGT 110204 WFF<br>TCGT 16T304 WFF               | ■<br>■<br>■<br>■                        |                  |                                     |  |                  |       |       |       |       |                  |                       | ■<br>■<br>■<br>■      |
| <br>TCMT .. WF  |  | 7,70<br>10,50<br>15,50                 | 4,76<br>6,35<br>9,52                   | 2,38<br>2,38<br>3,97                 |    | 0,4<br>0,2<br>0,2               | TCMT 080204 WF<br>TCMT 110202 WF<br>TCMT 16T302 WF                                     |                                         |                  |                                     |  |                  |       |       |       |       | ■<br>■<br>■      | ■<br>■<br>■           |                       |
| <br>TCMT .. WFF |  | 10,50<br>10,00<br>9,00<br>15,50        | 6,35<br>6,35<br>6,35<br>9,52           | 2,38<br>2,38<br>2,38<br>3,97         |    | 0,2<br>0,4<br>0,8<br>0,4        | TCMT 110202 WFF<br>TCMT 110204 WFF<br>TCMT 110208 WFF<br>TCMT 16T304 WFF               | ■<br>■<br>■<br>■                        |                  |                                     |  |                  |       |       |       |       |                  |                       | ■<br>■<br>■<br>■      |
| <br>TCMT .. WM  |  | 11,00<br>11,00<br>16,50<br>16,50       | 6,35<br>6,35<br>9,52<br>9,52           | 2,38<br>2,38<br>3,97<br>3,97         |    | 0,4<br>0,8<br>0,4<br>0,8        | TCMT 110204 WM<br>TCMT 110208 WM<br>TCMT 16T304 WM<br>TCMT 16T308 WM                   |                                         |                  |                                     |  |                  |       |       |       |       | ■<br>■<br>■<br>■ | ■<br>■<br>■<br>■      |                       |
|                                                                                                    |                                                                                     |                                        |                                        |                                      |    |                                 |                                                                                        |                                         |                  |                                     |  |                  |       |       |       |       |                  |                       |                       |

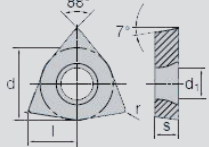
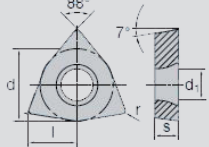
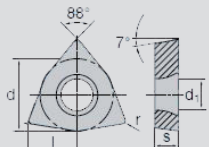
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|                                                                                                      | Form<br>Figure                                                                      | Abmessungen<br>Dimensions                                                           |                                                                              |                                                                              |    |                                                                    | Bezeichnung<br>Designation                                                                                                                                                                                     | Unbeschichtet Sorten<br>Uncoated grades        |                                                | Beschichtet Sorten<br>coated grades |                                                |                                 |       |       |       |                  |        |                                                |                                 |                                 |
|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------|------------------------------------------------------------------------------|----|--------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|------------------------------------------------|-------------------------------------|------------------------------------------------|---------------------------------|-------|-------|-------|------------------|--------|------------------------------------------------|---------------------------------|---------------------------------|
|                                                                                                      |                                                                                     | l                                                                                   | d                                                                            | s                                                                            | d1 | r                                                                  |                                                                                                                                                                                                                | CT28                                           | K10                                            |                                     |                                                | KTE20                           | MTM10 | PTe20 | PTV28 | PTe35            | PTC30  | INOX                                           | PTT20                           | PTT28                           |
| <br>TCMT .. WMM     |    | 7,60<br>10,00<br>9,00<br>15,50<br>14,50                                             | 5,56<br>6,35<br>6,35<br>9,52<br>9,52                                         | 2,38<br>2,38<br>2,38<br>3,97<br>3,97                                         |    | 0,8<br>0,4<br>0,8<br>0,4<br>0,8                                    | TCMT 090208 WMM<br>TCMT 110204 WMM<br>TCMT 110208 WMM<br>TCMT 16T304 WMM<br>TCMT 16T308 WMM                                                                                                                    | ■<br>■<br>■<br>■<br>■                          |                                                |                                     | ■                                              | ■<br>■<br>■<br>■<br>■           |       |       |       | ■                |        | ■<br>■<br>■<br>■<br>■                          | ■<br>■<br>■<br>■<br>■           | ■<br>■<br>■<br>■<br>■           |
| <br>TCMT .. XM      |    | 8,60<br>7,60<br>10,50<br>10,00<br>9,00<br>15,50<br>14,50                            | 5,56<br>5,56<br>6,35<br>6,35<br>6,35<br>9,52<br>9,52                         | 2,38<br>2,38<br>2,38<br>2,38<br>2,38<br>3,97<br>3,97                         |    | 0,4<br>0,8<br>0,2<br>0,4<br>0,8<br>0,4<br>0,8                      | TCMT 090204 XM<br>TCMT 090208 XM<br>TCMT 110202 XM<br>TCMT 110204 XM<br>TCMT 110208 XM<br>TCMT 16T304 XM<br>TCMT 16T308 XM                                                                                     | ■<br>■<br>■<br>■<br>■<br>■<br>■                |                                                |                                     |                                                | ■<br>■<br>■<br>■<br>■<br>■<br>■ |       |       |       | ■<br>■<br>■<br>■ |        | ■<br>■<br>■<br>■<br>■<br>■<br>■                | ■<br>■<br>■<br>■<br>■<br>■<br>■ | ■<br>■<br>■<br>■<br>■<br>■<br>■ |
| <br>TCGT .. ALU-M   |    | 9,10<br>8,60<br>10,50<br>10,00<br>9,00<br>15,50<br>15,00<br>14,50<br>13,50<br>12,50 | 5,56<br>5,56<br>6,35<br>6,35<br>6,35<br>9,52<br>9,52<br>9,52<br>9,52<br>9,52 | 2,38<br>2,38<br>2,38<br>2,38<br>2,38<br>3,97<br>3,97<br>3,97<br>3,97<br>3,97 |    | 0,2<br>0,4<br>0,2<br>0,4<br>0,8<br>0,2<br>0,4<br>0,8<br>1,2<br>1,6 | TCGT 090202 ALU-M<br>TCGT 090204 ALU-M<br>TCGT 110202 ALU-M<br>TCGT 110204 ALU-M<br>TCGT 110208 ALU-M<br>TCGT 16T302 ALU-M<br>TCGT 16T304 ALU-M<br>TCGT 16T308 ALU-M<br>TCGT 16T312 ALU-M<br>TCGT 16T316 ALU-M | ■<br>■<br>■<br>■<br>■<br>■<br>■<br>■<br>■<br>■ | ■<br>■<br>■<br>■<br>■<br>■<br>■<br>■<br>■<br>■ |                                     | ■<br>■<br>■<br>■<br>■<br>■<br>■<br>■<br>■<br>■ |                                 |       |       |       |                  |        | ■<br>■<br>■<br>■<br>■<br>■<br>■<br>■<br>■<br>■ |                                 |                                 |
| <br>TPGX..        |  | 6,40<br>5,80<br>8,00<br>8,00                                                        | 3,97<br>3,97<br>4,76<br>4,76                                                 | 1,59<br>1,59<br>2,18<br>2,18                                                 |    | 0,2<br>0,4<br>0,2<br>0,4                                           | TPGX 060102 L<br>TPGX 060104 L<br>TPGX 080202 L<br>TPGX 080204 L                                                                                                                                               | ■<br>■<br>■<br>■                               |                                                |                                     |                                                |                                 |       |       |       |                  |        |                                                | ■                               |                                 |
| <br>VBGT .. WFF   |  | 11,00<br>14,60                                                                      | 6,35<br>9,52                                                                 | 3,18<br>4,76                                                                 |    | 0,4<br>0,8                                                         | VBGT 110301 WFF<br>VBGT 160408 WFF                                                                                                                                                                             |                                                |                                                |                                     |                                                |                                 |       |       |       |                  |        | ■<br>■                                         |                                 |                                 |
| <br>VBMT .. WFF   |  | 15,60<br>14,60                                                                      | 9,52<br>9,52                                                                 | 4,76<br>4,76                                                                 |    | 0,4<br>0,8                                                         | VBMT 160404 WFF<br>VBMT 160408 WFF                                                                                                                                                                             |                                                |                                                |                                     |                                                | ■<br>■                          |       |       |       |                  |        | ■<br>■                                         | ■<br>■                          | ■<br>■                          |
| <br>VBMT .. WMM   |  | 10,00<br>10,00<br>9,00<br>15,60<br>14,60                                            | 6,35<br>6,35<br>6,35<br>9,52<br>9,52                                         | 2,38<br>3,18<br>3,18<br>4,76<br>4,76                                         |    | 0,4<br>0,4<br>0,8<br>0,4<br>0,8                                    | VBMT 110204 WMM<br>VBMT 110304 WMM<br>VBMT 110308 WMM<br>VBMT 160404 WMM<br>VBMT 160408 WMM                                                                                                                    | ■<br>■<br>■<br>■<br>■                          |                                                |                                     |                                                | ■<br>■<br>■<br>■<br>■           |       |       |       | ■                |        | ■<br>■<br>■<br>■<br>■                          | ■<br>■<br>■<br>■<br>■           | ■<br>■<br>■<br>■<br>■           |
| <br>VBMT .. XM    |  | 15,60<br>14,60                                                                      | 9,52<br>9,52                                                                 | 4,76<br>4,76                                                                 |    | 0,4<br>0,8                                                         | VBMT 160404 XM<br>VBMT 160408 XM                                                                                                                                                                               | ■<br>■                                         |                                                |                                     | ■<br>■                                         | ■<br>■                          |       |       |       |                  | ■<br>■ | ■<br>■                                         | ■<br>■                          | ■<br>■                          |
| <br>VBGT .. ALU-M |  | 10,50<br>10,00<br>15,60<br>14,00                                                    | 6,35<br>6,35<br>9,52<br>9,52                                                 | 3,18<br>3,18<br>4,76<br>4,76                                                 |    | 0,2<br>0,4<br>0,4<br>0,8                                           | VBGT 110302 ALU-M<br>VBGT 110304 ALU-M<br>VBGT 160404 ALU-M<br>VBGT 160408 ALU-M                                                                                                                               |                                                |                                                | ■<br>■<br>■<br>■                    | ■<br>■<br>■<br>■                               |                                 |       |       |       |                  |        | ■<br>■<br>■<br>■                               | ■<br>■<br>■<br>■                | ■<br>■<br>■<br>■                |

# Drehen positiv Turning positiv

|                                                                                                      | Form<br>Figure                                                                      | Abmessungen<br>Dimensions                                                             |                                                                               |                                                                              |      |                                                                    | Bezeichnung<br>Designation                                                                                                                                                                                     | Unbeschichtet Sorten<br>Uncoated grades |     | Beschichtet Sorten<br>coated grades |  |       |       |       |       |       |      |       |       |
|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|------------------------------------------------------------------------------|------|--------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|-----|-------------------------------------|--|-------|-------|-------|-------|-------|------|-------|-------|
|                                                                                                      |                                                                                     | l                                                                                     | d                                                                             | s                                                                            | d1   | r                                                                  |                                                                                                                                                                                                                | CT28                                    | K10 |                                     |  | KTE20 | MTM10 | PTV28 | PTV35 | PTC30 | INOX | PTT20 | PTT28 |
| <br>VCMT .. WFF     |    | 10,00<br>15,60<br>14,60                                                               | 6,35<br>9,52<br>9,52                                                          | 3,18<br>4,76<br>4,76                                                         |      | 0,4<br>0,4<br>0,8                                                  | VCMT 110304 WFF<br>VCMT 160404 WFF<br>VCMT 160408 WFF                                                                                                                                                          |                                         |     |                                     |  |       |       |       |       |       |      |       |       |
| <br>VCMT .. WF      |    | 11,00                                                                                 | 6,35                                                                          | 3,18                                                                         |      | 0,2                                                                | VCMT 110302 WF                                                                                                                                                                                                 |                                         |     |                                     |  |       |       |       |       |       |      |       |       |
| <br>VCMT .. WFF     |    | 10,50<br>10,00<br>9,00<br>15,60<br>14,60                                              | 6,35<br>6,35<br>6,35<br>9,52<br>9,52                                          | 3,18<br>3,18<br>3,18<br>4,76<br>4,76                                         |      | 0,2<br>0,4<br>0,8<br>0,4<br>0,8                                    | VCMT 110302 WFF<br>VCMT 110304 WFF<br>VCMT 110308 WFF<br>VCMT 160404 WFF<br>VCMT 160408 WFF                                                                                                                    |                                         |     |                                     |  |       |       |       |       |       |      |       |       |
| <br>VCMT .. WM      |    | 11,00<br>11,00<br>16,00<br>16,00                                                      | 6,35<br>6,35<br>9,52<br>9,52                                                  | 3,18<br>3,18<br>4,76<br>4,76                                                 |      | 0,4<br>0,8<br>0,4<br>0,8                                           | VCMT 110304 WM<br>VCMT 110308 WM<br>VCMT 160404 WM<br>VCMT 160408 WM                                                                                                                                           |                                         |     |                                     |  |       |       |       |       |       |      |       |       |
| <br>VCMT .. WMM    |   | 15,60<br>14,60                                                                        | 9,52<br>9,52                                                                  | 4,76<br>4,76                                                                 |      | 0,4<br>0,8                                                         | VCMT 160404 WMM<br>VCMT 160408 WMM                                                                                                                                                                             |                                         |     |                                     |  |       |       |       |       |       |      |       |       |
| <br>VCGT .. ALU-M |  | 10,50<br>10,00<br>9,00<br>12,50<br>12,00<br>16,10<br>15,60<br>14,00<br>13,60<br>14,30 | 6,35<br>6,35<br>6,35<br>7,94<br>7,94<br>9,52<br>9,52<br>9,52<br>9,52<br>12,70 | 3,18<br>3,18<br>3,18<br>3,18<br>3,18<br>4,76<br>4,76<br>4,76<br>4,76<br>5,56 |      | 0,2<br>0,4<br>0,8<br>0,2<br>0,4<br>0,2<br>0,4<br>0,8<br>1,2<br>3,0 | VCGT 110302 ALU-M<br>VCGT 110304 ALU-M<br>VCGT 110308 ALU-M<br>VCGT 130302 ALU-M<br>VCGT 130304 ALU-M<br>VCGT 160402 ALU-M<br>VCGT 160404 ALU-M<br>VCGT 160408 ALU-M<br>VCGT 160412 ALU-M<br>VCGT 220530 ALU-M |                                         |     |                                     |  |       |       |       |       |       |      |       |       |
| <br>WCGT .. WF    |  | 2,62                                                                                  | 3,97                                                                          | 1,59                                                                         | 2,30 | 0,2                                                                | WCGT 020102 WF                                                                                                                                                                                                 |                                         |     |                                     |  |       |       |       |       |       |      |       |       |
|                                                                                                      |                                                                                     |                                                                                       |                                                                               |                                                                              |      |                                                                    |                                                                                                                                                                                                                |                                         |     |                                     |  |       |       |       |       |       |      |       |       |

# Wendeplatten Multi-Turn Drill Inserts Multi-Turn Drill

|                                                                                                       | Form<br>Figure                                                                      | Abmessungen<br>Dimensions |      |      |                   |     | Bezeichnung<br>Designation | Beschichtet Sorten<br>coated grades     |       |       |       |
|-------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------|------|------|-------------------|-----|----------------------------|-----------------------------------------|-------|-------|-------|
|                                                                                                       |                                                                                     | l                         | d    | s    | d1                | r   |                            | Unbeschichtet Sorten<br>Uncoated grades | KTE20 | PTV28 | PTT28 |
| <br>WCHX ... PTV28   |    | 4,0                       | 6,35 | 1,59 | 2,25              | 0,2 | WCHX 040102..              |                                         |       | ■     |       |
| 4,0                                                                                                   | 6,35                                                                                | 1,59                      | 2,25 | 0,4  | WCHX 040104..     | ■   |                            |                                         |       |       |       |
| 5,0                                                                                                   | 7,93                                                                                | 1,98                      | 2,80 | 0,2  | WCHX 05T102..     | ■   |                            |                                         |       |       |       |
| 5,0                                                                                                   | 7,93                                                                                | 1,98                      | 2,80 | 0,4  | WCHX 05T104..     | ■   |                            |                                         |       |       |       |
| 5,5                                                                                                   | 8,93                                                                                | 2,38                      | 2,80 | 0,2  | WCHX 060202..     | ■   |                            |                                         |       |       |       |
| 5,5                                                                                                   | 8,93                                                                                | 2,38                      | 2,80 | 0,4  | WCHX 060204..     | ■   |                            |                                         |       |       |       |
| 7,5                                                                                                   | 12,00                                                                               | 3,18                      | 3,40 | 0,4  | WCHX 070304..     | ■   |                            |                                         |       |       |       |
| 7,5                                                                                                   | 12,00                                                                               | 3,18                      | 3,40 | 0,8  | WCHX 070308..     | ■   |                            |                                         |       |       |       |
| 9,0                                                                                                   | 14,29                                                                               | 3,18                      | 4,40 | 0,4  | WCHX 090304..     | ■   |                            |                                         |       |       |       |
| 9,0                                                                                                   | 14,29                                                                               | 3,18                      | 4,40 | 0,8  | WCHX 090308..     | ■   |                            |                                         |       |       |       |
| 10,0                                                                                                  | 15,87                                                                               | 3,97                      | 5,90 | 0,4  | WCHX 10T304..     | ■   |                            |                                         |       |       |       |
| 10,0                                                                                                  | 15,87                                                                               | 3,97                      | 5,90 | 0,8  | WCHX 10T308..     | ■   |                            |                                         |       |       |       |
| 13,0                                                                                                  | 21,00                                                                               | 5,56                      | 7,00 | 0,8  | WCHX 130508..     | ■   |                            |                                         |       |       |       |
| <br>WCHX ... PTT28   |    | 4,0                       | 6,35 | 1,59 | 2,25              | 0,2 | WCHX 040102..              |                                         |       | ■     |       |
| 4,0                                                                                                   | 6,35                                                                                | 1,59                      | 2,25 | 0,4  | WCHX 040104..     | ■   |                            |                                         |       |       |       |
| 5,0                                                                                                   | 7,93                                                                                | 1,98                      | 2,80 | 0,2  | WCHX 05T102..     | ■   |                            |                                         |       |       |       |
| 5,0                                                                                                   | 7,93                                                                                | 1,98                      | 2,80 | 0,4  | WCHX 05T104..     | ■   |                            |                                         |       |       |       |
| 5,5                                                                                                   | 8,93                                                                                | 2,38                      | 2,80 | 0,2  | WCHX 060202..     | ■   |                            |                                         |       |       |       |
| 5,5                                                                                                   | 8,93                                                                                | 2,38                      | 2,80 | 0,4  | WCHX 060204..     | ■   |                            |                                         |       |       |       |
| 7,5                                                                                                   | 12,00                                                                               | 3,18                      | 3,40 | 0,4  | WCHX 070304..     | ■   |                            |                                         |       |       |       |
| 7,5                                                                                                   | 12,00                                                                               | 3,18                      | 3,40 | 0,8  | WCHX 070308..     | ■   |                            |                                         |       |       |       |
| 9,0                                                                                                   | 14,29                                                                               | 3,18                      | 4,40 | 0,4  | WCHX 090304..     | ■   |                            |                                         |       |       |       |
| 9,0                                                                                                   | 14,29                                                                               | 3,18                      | 4,40 | 0,8  | WCHX 090308..     | ■   |                            |                                         |       |       |       |
| 10,0                                                                                                  | 15,87                                                                               | 3,97                      | 5,90 | 0,4  | WCHX 10T304..     | ■   |                            |                                         |       |       |       |
| 10,0                                                                                                  | 15,87                                                                               | 3,97                      | 5,90 | 0,8  | WCHX 10T308..     | ■   |                            |                                         |       |       |       |
| 13,0                                                                                                  | 21,00                                                                               | 5,56                      | 7,00 | 0,8  | WCHX 130508..     | ■   |                            |                                         |       |       |       |
| <br>WCHX ... ALU.. |  | 4,0                       | 6,35 | 1,59 | 2,25              | 0,2 | WCHX 040102 ALU..          | ■                                       | ■     |       |       |
| 4,0                                                                                                   | 6,35                                                                                | 1,59                      | 2,25 | 0,4  | WCHX 040104 ALU.. | ■   | ■                          |                                         |       |       |       |
| 5,0                                                                                                   | 7,93                                                                                | 1,98                      | 2,80 | 0,2  | WCHX 05T102 ALU.. | ■   | ■                          |                                         |       |       |       |
| 5,0                                                                                                   | 7,93                                                                                | 1,98                      | 2,80 | 0,4  | WCHX 05T104 ALU.. | ■   | ■                          |                                         |       |       |       |
| 5,5                                                                                                   | 8,93                                                                                | 2,38                      | 2,80 | 0,2  | WCHX 060202 ALU.. | ■   | ■                          |                                         |       |       |       |
| 5,5                                                                                                   | 8,93                                                                                | 2,38                      | 2,80 | 0,4  | WCHX 060204 ALU.. | ■   | ■                          |                                         |       |       |       |
| 7,5                                                                                                   | 12,00                                                                               | 3,18                      | 3,40 | 0,4  | WCHX 070304 ALU.. | ■   | ■                          |                                         |       |       |       |
| 7,5                                                                                                   | 12,00                                                                               | 3,18                      | 3,40 | 0,8  | WCHX 070308 ALU.. | ■   | ■                          |                                         |       |       |       |
| 9,0                                                                                                   | 14,29                                                                               | 3,18                      | 4,40 | 0,4  | WCHX 090304 ALU.. | ■   | ■                          |                                         |       |       |       |
| 9,0                                                                                                   | 14,29                                                                               | 3,18                      | 4,40 | 0,8  | WCHX 090308 ALU.. | ■   | ■                          |                                         |       |       |       |
| 10,0                                                                                                  | 15,87                                                                               | 3,97                      | 5,90 | 0,4  | WCHX 10T304 ALU.. | ■   | ■                          |                                         |       |       |       |
| 10,0                                                                                                  | 15,87                                                                               | 3,97                      | 5,90 | 0,8  | WCHX 10T308 ALU.. | ■   | ■                          |                                         |       |       |       |
| 13,0                                                                                                  | 21,00                                                                               | 5,56                      | 7,00 | 0,8  | WCHX 130508 ALU.. | ■   | ■                          |                                         |       |       |       |

■ auf Lager  
on stock

□ auf Anfrage  
on request

| Sorte<br>Grade | ISO | Anwendungsbereich<br>Application range | Werkstoffgruppe<br>Material group |                       |                            |                                 |                                  |                                     | Bearbeitungsverfahren<br>Application |                   |                    |                                 |                        |                      |
|----------------|-----|----------------------------------------|-----------------------------------|-----------------------|----------------------------|---------------------------------|----------------------------------|-------------------------------------|--------------------------------------|-------------------|--------------------|---------------------------------|------------------------|----------------------|
|                |     |                                        | P                                 | M                     | K                          | N                               | S                                | H                                   |                                      |                   |                    |                                 |                        |                      |
|                |     |                                        | Stahl<br>Steel                    | Rostfrei<br>Stainless | Grauguss<br>Grey cast iron | NE-Metalle<br>Nonferrous metals | Hochwarmfest<br>High temperature | Harte Materialien<br>Hard materials | Drehen<br>Turning                    | Fräsen<br>Milling | Bohren<br>Drilling | Gewindebearbeitung<br>Threading | Einstechen<br>Grooving | Abstechen<br>Parting |
| PTV28          | P25 | P15 - P35                              | ■                                 |                       |                            |                                 |                                  |                                     | ●                                    |                   | ●                  |                                 |                        |                      |
|                | M25 | M15 - M35                              |                                   | ■                     |                            |                                 | ■                                |                                     | ●                                    |                   | ●                  |                                 |                        |                      |
| PTT28          | M40 | M20 - M40                              |                                   | ■                     |                            |                                 |                                  |                                     | ●                                    |                   | ●                  |                                 |                        |                      |
|                | P40 | P30 - P45                              | ■                                 |                       |                            |                                 |                                  |                                     | ●                                    |                   | ●                  |                                 |                        |                      |
| K10 / KTE20    | K10 | K05 - K15                              |                                   |                       | ■                          | ■                               |                                  |                                     | ●                                    |                   | ●                  |                                 |                        |                      |

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