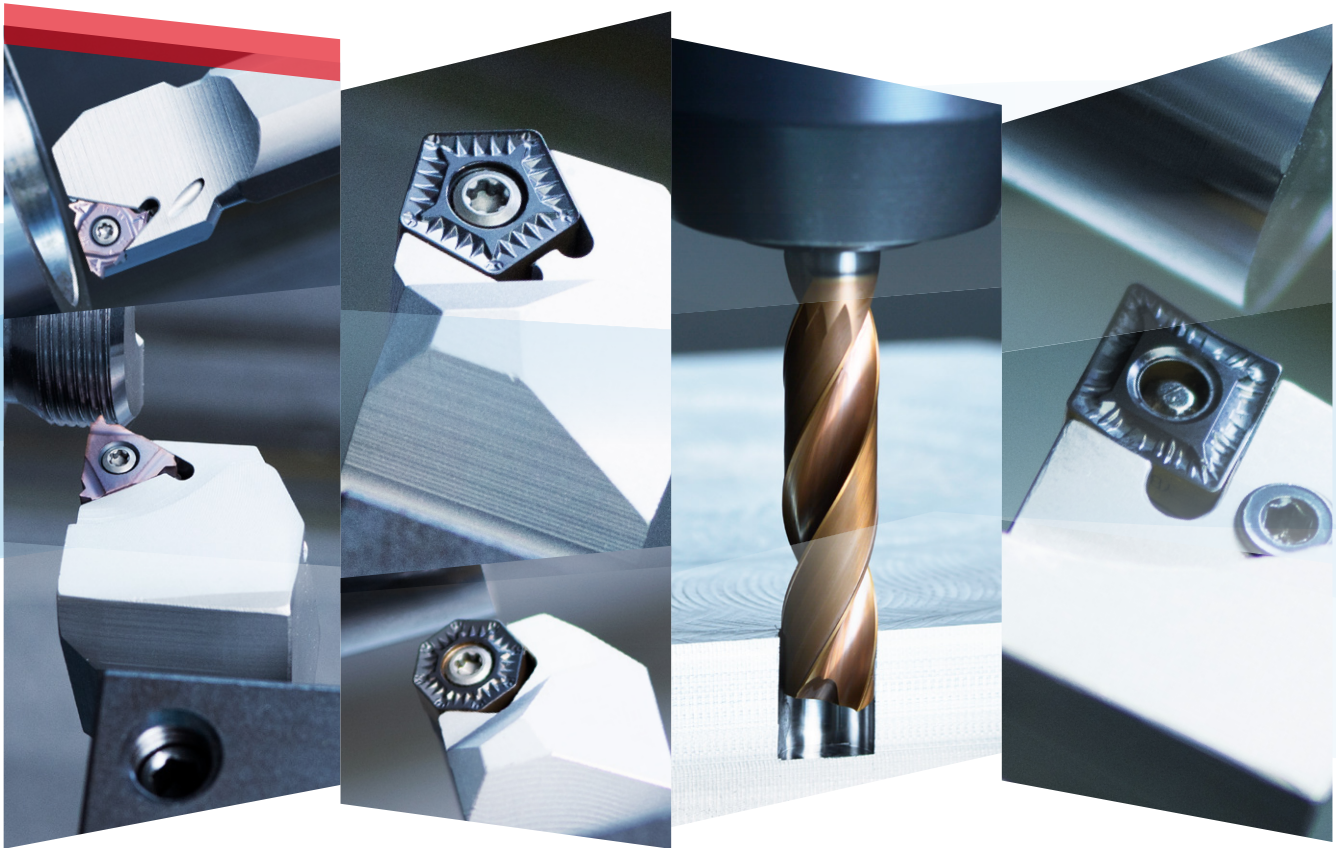




20 years in
Europe



ZCC Cutting Tools Europe GmbH

Product Innovations

09/2023

[XLR chip breaker – zType threading tool holders with internal cooling –
ONMX high feed turning system – PNMX high feed turning system – FD flat drills]

– EN –

The Company

Zhuzhou Cemented Carbide Cutting Tools Co., Ltd. (ZCC-CT), based in Zhuzhou, China, is the largest Chinese manufacturer of carbide tools. It is also a key company of China Tungsten High-Tech Material Co. Ltd. part of the China Minmetals Corporation.

Since its founding in 1953, ZCC Cutting Tools Co., Ltd. has grown to become one of the world's leading carbide manufacturers with more than 2,000 employees by using the latest technologies and employing highly skilled personnel. The company continuously modernises production technologies and expands its production capacities to enable the company's ongoing growth. As part of Minmetals Corporation, ZCC-CT is able to cover the entire value chain of modern carbide tool production itself, from raw material extraction through to the coated end product and all associated intermediate steps.

By drawing on the latest in European production technology, the company offers products that consistently meet the highest quality standards. Our extensive product range includes carbide/solid carbide, cermet, CBN, PCD and ceramic inserts, carbide tools, tool holders, milling bodies and the accompanying tool systems. All products are consistently produced to accepted international standards, including ISO, DIN, ANSI, JIS and BSI. In addition, ZCC-CT offers customised solutions and special carbide products built to individual specifications.

ZCC-CT invests heavily in research and development. The associated investments go beyond that of most competitors. ZCC Cutting Tools' excellently trained engineers, scientists and a competent, international team, research the necessary fundamentals. These form the basis for the ongoing development of new products and the improvement of existing ones.

The company continuously introduces improvements in quality to meet the customers' ever-increasing demands for new and innovative products and to maximise the benefit of each individual

customer. Both production and administration in China are subject to the ISO 9001:2008 standard, while environmental management is subject to the requirements set out in ISO 14001:2004.

The foundation of the European headquarters of ZCC-CT, ZCC Cutting Tools Europe GmbH and the European central warehouse, both located in Düsseldorf (Germany), dates back to 2003. Today, all European countries as well as the adjacent markets are served from there.

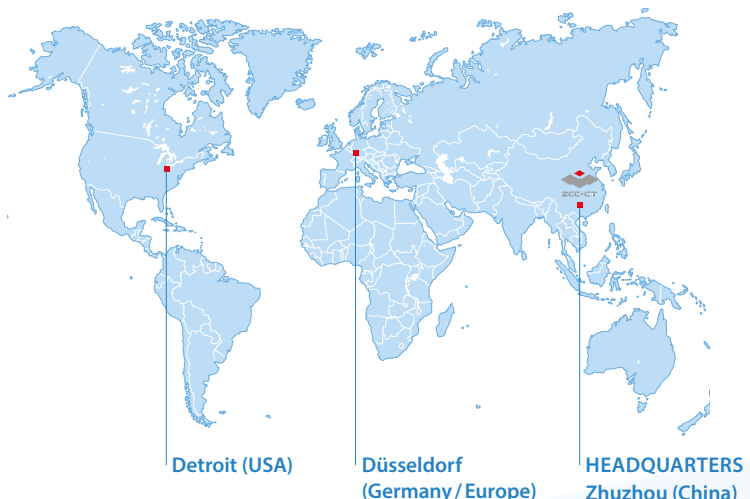
The quality management system of ZCC Cutting Tools Europe GmbH is certified in the area of 'distribution and logistics of metal-working tools' in accordance with ISO 9001:2008.

The Test and Demonstration Centre is available for optimizing customer processes according to individual requirements.

External sales staff and distribution partners in Europe work hand in hand to support customers across the region. Our friendly ZCC-CT application engineers are also available to support you with their expertise and experience by phone, e-mail or in person at your production facility.

The entire field and office sales force is available to answer enquiries from clients across Europe in their native language. Together with employees from the logistics team and with the help of a sophisticated service system, they ensure that all orders are delivered as quickly as possible to you. Branch offices in France and Great Britain add to additional regional proximity to customers.

ZCC Cutting Tools Europe GmbH and all of our employees are there for you and have your back as a competent partner for all matters concerning machining production. This is how we define 'your partner – your value'.



This brochure will be presenting the following new products:

Product Innovations 09 / 2023

GENERAL TURNING

Page



XLR chip breaker – Roughing made easy

A11



ONMX high feed turning system – New Octa insert and tool holder series for efficient turning applications

A16



PNMX high feed turning system – New Penta insert and tool holder series for efficient turning applications

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THREADING

Page



zType threading tool holders with internal cooling – New series for high-quality results in threading operations

A28

SOLID CARBIDE DRILLING

Page



FD flat drills – 180° solid carbide drills for any application

C38



A glimpse inside: Highlights from previous Product Innovations brochures

Product Innovations 03 / 2023

GENERAL TURNING

YBG205H grade – The perfect choice for high-temperature turning applications

PARTING & GROOVING

MU chip breaker – Universal tool that delivers optimum chip control

INDEXABLE MILLING

FME17 face milling system – Highly efficient universal tool for machining end faces and contours

EMP05 plunge milling system – Universal tool for any machining application

FMR06 round insert milling cutter – Maximum cutting performance

CSX1000 grade – High-performance grade for superalloys

APL chip breaker – Universal geometry



[Go to PDF online](#)

Product Innovations 09 / 2022

GENERAL TURNING

XMH chip breaker – Semi-finishing made easy

THREADING

zType threading inserts – New series for high-quality results in threading operations

INDEXABLE MILLING

FMA12 face milling system – Now available in new ONHU09T5 insert size

EMP14 aluminium milling system – Precisely 90° for shoulder milling operations

FMR11 round insert milling cutter – Maximum cutting performance

SOLID CARBIDE MILLING

VPM series – Now also available as a torus milling cutter/with Weldon clamping surface



[Go to PDF online](#)

Product Innovations 05 / 2022

GENERAL TURNING

miniTURN – New YPG202 grade for enhanced performance

INDEXABLE MILLING

YBG205H grade – Optimal for high-temperature applications

FMP06 – High-performance hard machining with 88° approach angle

FMA17 – Versatile milling system for efficient facing operations

FMP17 – Efficient universal tool for machining end faces and contours

FMR04 – Extension: Now with new inserts and chip breakers

SOLID CARBIDE MILLING

TM series – Expanded line with compact torus milling cutters from Ø1.0 mm

VPM series – High-speed full-slot milling

SOLID CARBIDE DRILLING

UD series – Extension: Now available in diameters from 1.0 mm with internal cooling



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General turning

ISO code – general turning inserts

A6–A7

ISO code – external tool holders

A8–A9

XLR chip breaker

A10–A15

ONMX high feed turning system

A16–A19

PNMX high feed turning system

A20–A24

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















E

Index










ISO standard

T N M G 22 04 08 (N) – DM

1 2 3 4 5 6 7 8 9

| Insert shape | | |
|--|---|---|
| A  | B  | C  |
| D  | E  | H  |
| K  | L  | M  |
| O  | P  | R  |
| S  | T  | V  |
| W  | Z Special | |















1

| Clearance angle | |
|--|---|
| A  | B  |
| C  | D  |
| E  | F  |
| G  | N  |
| P  | O Special |









2

| Tolerance class | | | |
|-----------------|------------|------------|--------|
| Code | I.C [mm] | m [mm] | S [mm] |
| A | ±0,025 | ±0,005 | ±0,025 |
| C | ±0,025 | ±0,013 | ±0,025 |
| E | ±0,025 | ±0,025 | ±0,025 |
| F | ±0,013 | ±0,005 | ±0,025 |
| G | ±0,025 | ±0,025 | ±0,130 |
| H | ±0,013 | ±0,013 | ±0,025 |
| J | ±0,05–0,15 | ±0,005 | ±0,025 |
| K | ±0,05–0,15 | ±0,013 | ±0,025 |
| L | ±0,05–0,15 | ±0,025 | ±0,025 |
| M | ±0,05–0,15 | ±0,08–0,20 | ±0,130 |
| N | ±0,05–0,15 | ±0,08–0,20 | ±0,025 |
| U | ±0,08–0,25 | ±0,13–0,38 | ±0,130 |

3

| Fastening features (metric) | |
|---|---|
| Insert shape | |
| A  | B  |
| C  | F  |
| G  | H  |
| J  | M  |
| N  | Q  |
| R  | T  |
| U  | W  |
| X Special | |

4

| Cutting edge length l [mm] | | | | | | | | |
|----------------------------|---|---|--|---|---|---|---|---|
| I.C [mm] | Insert shape | | | | | | | |
| |  |  |  |  |  |  |  |  |
| 3,97 | 06 | | | | | | | |
| 5,0 | 05 | | | | | | | |
| 5,56 | 09 | | | | | | | |
| 6,0 | 06 | | | | | | | |
| 6,35 | 06 | 07 | 11 | | | 11 | | |
| 8,0 | 08 | | | | | | | |
| 9,525 | 09 | 11 | 09 | 09 | 16 | 16 | 06 | 16 |
| 10,0 | 10 | | | | | | | |
| 12,0 | 12 | | | | | | | |
| 12,7 | 12 | 15 | 12 | 12 | 22 | 22 | 08 | |
| 15,875 | 16 | | 15 | 15 | 27 | | | |
| 16,0 | 16 | | | | | | | |
| 19,05 | 19 | | 19 | 19 | 33 | | | |
| 20,0 | 20 | | | | | | | |
| 25,0 | 25 | 25 | 25 | | | | | |
| 25,4 | 25 | | | | | | | |
| 31,75 | 31 | | | | | | | |
| 32 | 32 | | | | | | | |

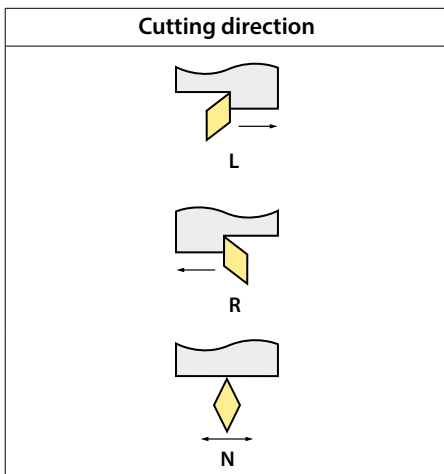
5

| Insert thickness S [mm] | | | |
|-------------------------|------|------|-------|
| | | | |
| Code | S | Code | S |
| 00 | 0,79 | T5 | 5,95 |
| T0 | 0,99 | 06 | 6,35 |
| 01 | 1,59 | T6 | 6,75 |
| T1 | 1,98 | 07 | 7,94 |
| 02 | 2,38 | 09 | 9,52 |
| T2 | 2,58 | T9 | 9,72 |
| 03 | 3,18 | 11 | 11,11 |
| T3 | 3,97 | 12 | 12,70 |
| 04 | 4,76 | | |
| T4 | 4,96 | | |
| 05 | 5,56 | | |

6

| Nose radius r [mm] | |
|--------------------|---------------|
| | |
| Code | r |
| 00 | – |
| 02 | 0,2 |
| 04 | 0,4 |
| 08 | 0,8 |
| 12 | 1,2 |
| 16 | 1,6 |
| 20 | 2,0 |
| 24 | 2,4 |
| 32 | 3,2 |
| X | Special |
| MO | Round inserts |

7



8



9

ANSI standard



| Inner circle | | |
|--------------|--------|-------|
| Code | [mm] | Pouce |
| 2 | 6.35 | 0.250 |
| 3 | 9.525 | 0.375 |
| 4 | 12.7 | 0.500 |
| 5 | 15.875 | 0.625 |
| 6 | 19.05 | 0.750 |
| 8 | 25.4 | 1.000 |

5

| Insert thickness | | |
|------------------|------|-------|
| Code | [mm] | Pouce |
| 2 | 3.18 | 0.125 |
| 3 | 4.76 | 0.187 |
| 4 | 6.35 | 0.250 |
| 5 | 7.94 | 0.313 |
| 6 | 9.52 | 0.375 |

6

| Nose radius | | |
|-------------|------|-------|
| Code | [mm] | Pouce |
| 0 | 0.2 | 0.008 |
| 1 | 0.4 | 0.016 |
| 2 | 0.8 | 0.031 |
| 3 | 1.2 | 0.047 |
| 4 | 1.6 | 0.063 |
| 5 | 2.0 | 0.079 |
| 6 | 2.4 | 0.094 |

7

P C L N L 25 25 M 12

1 2 3 4 5 6 7 8 9

A

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| Clamping system | | |
|-----------------|-------------------------|--|
| Code | Description | |
| P | Lever lock clamping | |
| M | Wedge/pin lock clamping | |
| S | Screw-on clamping | |
| C/J | Wedge clamping | |
| D | Duel wedge clamping | |

| Insert shape | |
|--------------|--|
| C | |
| D | |
| R | |
| S | |
| T | |
| V | |
| W | |

1

2

| Tool holder type and entering angle | | | | |
|-------------------------------------|----------|----------|----------|----------|
| | | | | |
| A | B | C | D | E |
| | | | | |
| F | G | H | J | K |
| | | | | |
| L | M | N | O | P |
| | | | | |
| Q | R | S | T | U |
| | | | | |
| V | W | X | | |

3

| Clearance angle | |
|-----------------|----------|
| | |
| B | C |
| | |
| D | E |
| | |
| N | P |

4

| Cutting direction | |
|-------------------|--|
| | |
| | |
| | |
| 5 | |

| Shank height h [mm] | |
|---------------------|----|
| | |
| Code | h |
| 12 | 12 |
| 16 | 16 |
| 20 | 20 |
| 25 | 25 |
| 32 | 32 |
| 40 | 40 |
| 50 | 50 |
| 6 | |

| Shank width b [mm] | |
|--------------------|----|
| | |
| Code | b |
| 12 | 12 |
| 16 | 16 |
| 20 | 20 |
| 25 | 25 |
| 32 | 32 |
| 40 | 40 |
| 50 | 50 |
| 7 | |

| Holder length L [mm] | |
|----------------------|-----|
| | |
| Code | L |
| H | 100 |
| K | 125 |
| M | 150 |
| P | 170 |
| Q | 180 |
| R | 200 |
| S | 250 |
| T | 300 |
| 8 | |

| Cutting edge length l [mm] | | | | | | | | |
|----------------------------|--------------|----|----|----|----|----|----|--|
| I.C [mm] | Insert shape | | | | | | | |
| | | | | | | | | |
| | C | D | R | S | T | V | W | |
| 5,56 | 09 | | | | | | | |
| 6,35 | 06 | 07 | | | | | 11 | |
| 9,525 | 09 | 11 | 09 | 09 | 16 | 16 | 06 | |
| 12,7 | 12 | 15 | 12 | 12 | 22 | 22 | 08 | |
| 15,875 | 16 | 19 | 15 | 15 | 27 | | | |
| 19,05 | 19 | 19 | | 19 | 33 | | | |
| 25,4 | 25 | 25 | | 25 | 44 | | | |
| 32 | 32 | | | | | | | |
| 9 | | | | | | | | |

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XLR chip breaker

Roughing made easy

YOUR BENEFITS

- Positive geometry **for low cutting forces at high feed rates** and cutting depths
- Recommended for low-power machines
- Excellent chip control even at maximum material removal rates thanks to optimum positioning of chip-forming elements

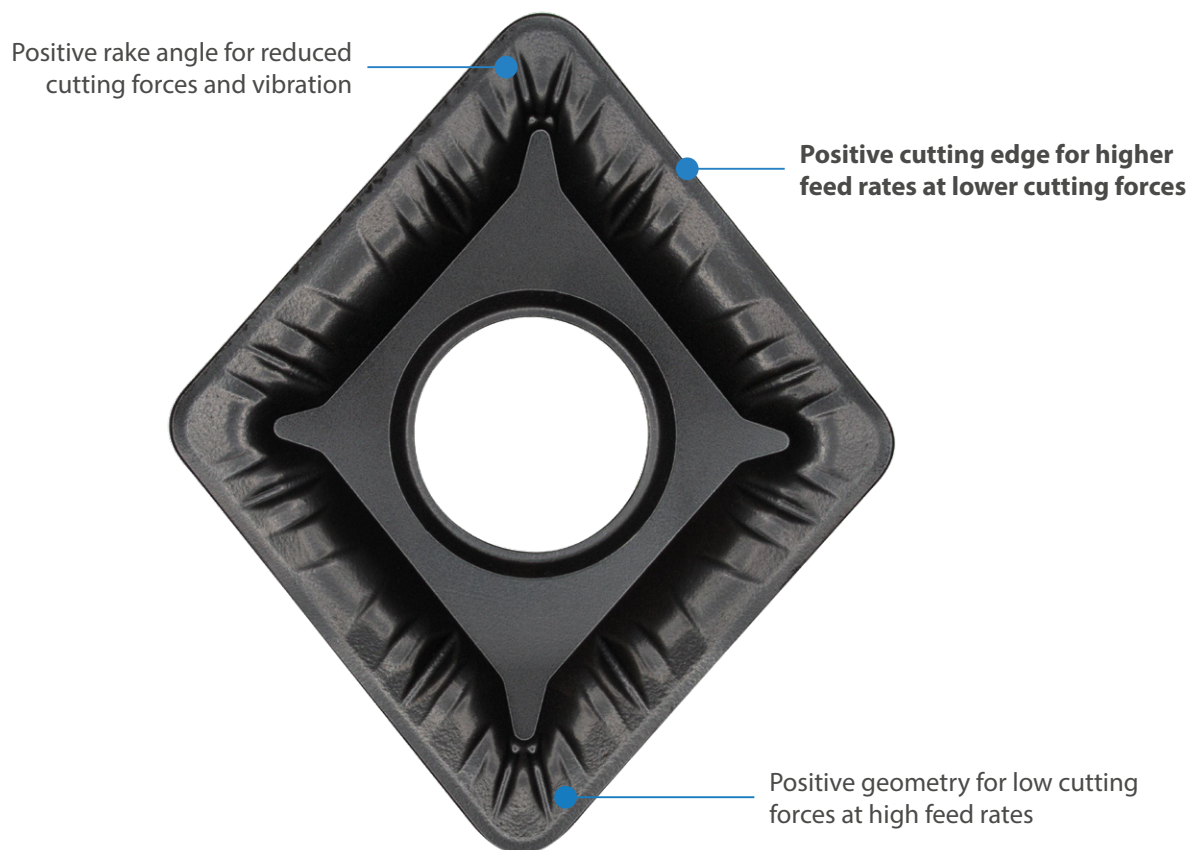


Fig.: CNMG120408-XLR YBC103

| CN** | L | I.C | S | d |
|-------|------|--------|------|------|
| 12 04 | 12,9 | 12,7 | 4,76 | 5,16 |
| 16 06 | 16,1 | 15,875 | 6,35 | 6,35 |
| 19 06 | 19,3 | 19,05 | 6,35 | 7,94 |

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

Turning inserts

| CN** negative insert | | | | HC ¹ (CVD) | | | | | | | | HC ¹ (PVD) | | | HT | HC ² | HW | | | | | | | | | | |
|----------------------|----------------|----------------|----------|-----------------------|--------|--------|--------|--------|--------|--------|--------|-----------------------|--------|--------|---------|-----------------|--------|--------|--------|--------|--------|--------|--------|--------|---------|-------|-------|
| | | | | P | M | K | N | S | H | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ISO | r | a _p | f | YBC103 | YB6315 | YBC152 | YBC203 | YBC252 | YBC352 | YBM153 | YBM253 | YBD102 | YB7315 | YBD152 | YBD152C | YBG101 | YBG102 | YBG105 | YBG205 | YB9320 | YPD201 | YBS103 | YNG151 | YNT251 | YNG151C | YD101 | YD201 |
| XLR Roughing | CNMG120408-XLR | 0.8 | 1.5-6.0 | 0.2-0.40 | ● | ● | | | | | | | | | | | | | | | | | | | | | |
| | CNMG120412-XLR | 1.2 | 1.5-6.0 | 0.2-0.50 | ● | ● | | | | | | | | | | | | | | | | | | | | | |
| | CNMG120416-XLR | 1.6 | 1.5-6.0 | 0.2-0.55 | ● | ● | | | | | | | | | | | | | | | | | | | | | |
| | CNMG160608-XLR | 0.8 | 1.5-7.0 | 0.2-0.40 | ● | ● | | | | | | | | | | | | | | | | | | | | | |
| | CNMG160612-XLR | 1.2 | 1.5-7.0 | 0.2-0.50 | ● | ● | | | | | | | | | | | | | | | | | | | | | |
| | CNMG160616-XLR | 1.6 | 1.5-7.0 | 0.2-0.55 | ● | ● | | | | | | | | | | | | | | | | | | | | | |
| | CNMG190612-XLR | 1.2 | 2.5-7.8 | 0.2-0.55 | ● | ● | | | | | | | | | | | | | | | | | | | | | |
| | CNMG190616-XLR | 1.6 | 2.5-7.8 | 0.2-0.60 | ● | ● | | | | | | ● | | | | | | | | | | | | | | | |
| | CNMG190624-XLR | 2.4 | 2.5-7.8 | 0.20-0.65 | ○ | ● | | | | | | | | | | | | | | | | | | | | | |
| XLR Roughing | CNMM120408-XLR | 0.8 | 1.5-6.0 | 0.2-0.4 | ● | ● | | | | | | | | | | | | | | | | | | | | | |
| | CNMM120412-XLR | 1.2 | 1.5-6.0 | 0.2-0.5 | ● | ● | | | | | ○ | | | | | | | | | | | | | | | | |
| | CNMM120416-XLR | 1.6 | 1.5-6.0 | 0.2-0.55 | ● | ● | | | | | | | | | | | | | | | | | | | | | |
| | CNMM160608-XLR | 0.8 | 1.5-7.0 | 0.2-0.4 | ● | ● | | | | | | | | | | | | | | | | | | | | | |
| | CNMM160612-XLR | 1.2 | 1.5-7.0 | 0.2-0.55 | ● | ● | | | | | | | | | | | | | | | | | | | | | |
| | CNMM160616-XLR | 1.6 | 1.5-7.0 | 0.2-0.60 | ● | ● | | | | | | | | | | | | | | | | | | | | | |
| | CNMM160624-XLR | 2.4 | 1.5-7.0 | 0.2-0.65 | ● | ● | | | | | | | | | | | | | | | | | | | | | |
| | CNMM190612-XLR | 1.2 | 2.0-7.8 | 0.2-0.55 | ● | ● | | | | | | | | | | | | | | | | | | | | | |
| | CNMM190616-XLR | 1.6 | 2.0-7.8 | 0.2-0.6 | ● | ● | | | | | | | | | | | | | | | | | | | | | |
| CNMM190624-XLR | 2.4 | 2.0-7.8 | 0.2-0.65 | ● | ● | | | | | | | | | | | | | | | | | | | | | | |

● Ex stock ○ On demand

HC¹ Coated carbide
 HT Uncoated cermet
 HC² Coated cermet
 HW Uncoated carbide

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Turning

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊛ Unfavourable machining conditions

| | | | | |
|-------|------|------|------|------|
| DNMG | L | I.C | S | d |
| 15 06 | 15,5 | 12,7 | 6,35 | 5,16 |

Turning inserts

| DN** negative insert | | | | HC ¹ (CVD) | | | | | | HC ¹ (PVD) | | HT | HC ² | HW | | |
|----------------------|----------|---|---|-----------------------|---|---|---|---|---|-----------------------|---|----|-----------------|----|---|---|
| | P | ○ | ○ | ○ | ⊗ | ⊗ | ⊗ | | | | ⊗ | ⊗ | ○ | | | |
| | M | | | | | | | ○ | ⊗ | | ○ | ○ | ⊗ | ⊗ | ○ | |
| | K | | | | | | | | | | | | | | | |
| | N | | | | | | | | | ○ | ○ | | | | ○ | ⊗ |
| | S | | | | | | | | | | ○ | ○ | ⊗ | ⊗ | ○ | ⊗ |
| | H | | | | | | | | | | | | | | | |

B

Milling

| | | ISO | r | a _p | f | YBC103 | YB6315 | YBC152 | YBC203 | YBC252 | YBC352 | YBM153 | YBM253 | YBD102 | YB7315 | YBD152 | YBD152C | YBG101 | YBG102 | YBG105 | YBG205 | YB9320 | YPD201 | YBS103 | YNG151 | YNT251 | YNG151C | YD101 | YD201 | | |
|--|----------|-----------------------|-----|----------------|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|-------|-------|--|--|
| | XLR | DNMG150608-XLR | 0.8 | 1.5-4.8 | 0.2-0.48 | ● | | ● | | | | | | | | | | | | | | | | | | | | | | | |
| | | DNMG150612-XLR | 1.2 | 1.5-4.8 | 0.2-0.45 | ● | | ● | | | | | | | | | | | | | | | | | | | | | | | |
| | | DNMG150616-XLR | 1.6 | 1.5-4.8 | 0.2-0.50 | ● | | ● | | | | | | | | | | | | | | | | | | | | | | | |
| | Roughing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

● Ex stock ○ On demand

HC¹ Coated carbide
 HT Uncoated cermet
 HC² Coated cermet
 HW Uncoated carbide

C

Drilling

D

Technical Information

E

Index

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

| | | | | |
|-------|------|------|-------|------|
| SNMM | L | I.C | S | d |
| 25 09 | 25.4 | 25.4 | 9.525 | 9.12 |

Turning inserts

| SN** negative insert | | | | | HC ¹ (CVD) | | | | | | | | HC ¹ (PVD) | | | HT | HC ² | HW | | | | | | | | | | | | | |
|----------------------|-----------------------|--|--|--|-----------------------|----------------|----------|--------|--------|--------|--------|--------|-----------------------|--------|--------|--------|-----------------|--------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|-------|-------|
| | | | | | P | M | K | N | S | H | | | | | | | | | | | | | | | | | | | | | |
| | | | | | ● | ● | ● | ● | ● | ⊗ | | | | | | | | | | ● | ⊗ | ● | | | | | | | | | |
| | | | | | | ● | | | | ⊗ | | ● | ● | ● | ● | ● | ● | ● | ● | ⊗ | ● | | | | | | | | | | |
| | | | | | | | ⊗ | ⊗ | ⊗ | ⊗ | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | ● | ● | | | | | | | | | | ● | ⊗ | | | | | | | | |
| | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | | | | | ● | ⊗ | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ISO | | | | | r | a _p | f | YBC103 | YB6315 | YBC152 | YBC203 | YBC252 | YBC352 | YBM153 | YBM253 | YBD102 | YB7315 | YBD152 | YBD152C | YBG101 | YBG102 | YBG105 | YBG205 | YB9320 | YPD201 | YBS103 | YNG151 | YNT251 | YNG151C | YD101 | YD201 |
| XLR | SNMM250924-XLR | | | | 2,4 | 2,0-7,8 | 0,2-0,65 | ○ | | | | | | ○ | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Roughing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

● Ex stock ○ On demand

HC¹ Coated carbide
 HT Uncoated cermet
 HC² Coated cermet
 HW Uncoated carbide

| | |
|---|-----------------------|
| A | Turning |
| B | Milling |
| C | Drilling |
| D | Technical Information |
| E | Index |

General turning Negative inserts

A

Turning

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

| | | | | |
|-------|------|-------|------|------|
| TNMG | L | I.C | S | d |
| 16 04 | 16,5 | 9,525 | 4,76 | 3,81 |

Turning inserts

| TN** negative insert | | | | HC ¹ (CVD) | | | | | | | | | | HC ¹ (PVD) | | HT | HC ² | HW | | | | | | | | | | | |
|----------------------|-----------------------|-----|----------------|-----------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-----------------------|--------|---------|-----------------|--------|--------|--------|--------|--------|--------|--------|--------|---------|-------|-------|--|
| | | | | P | ○ | ○ | ○ | ⊗ | ⊗ | ⊗ | | | | | | | | ○ | ⊗ | ○ | | | | | | | | | |
| | | | | M | | | | | | | | | | | | | | | | ○ | | | | | | | | | |
| | | | | K | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | N | | | | | | | | | | | | | | | | | ○ | ⊗ | | | | | | | |
| | | | | S | | | | | | | | | | | | | | | | | ○ | ⊗ | | | | | | | |
| | | | | H | | | | | | | | | | | | | | | | | | | | | | | | | |
| | ISO | r | a _p | f | YBC103 | YB6315 | YBC152 | YBC203 | YBC252 | YBC352 | YBM153 | YBM253 | YBD102 | YB7315 | YBD152 | YBD152C | YBG101 | YBG102 | YBG105 | YBG205 | YB9320 | YPD201 | YBS103 | YNG151 | YNT251 | YNG151C | YD101 | YD201 | |
| XLR | TNMG160408-XLR | 0.8 | 1.5-4.5 | 0.2-0.38 | ● | | ● | | | | | | | | | | | | | | | | | | | | | | |
| | TNMG160412-XLR | 1.2 | 1.5-4.5 | 0.2-0.45 | ● | | ● | | | | | | | | | | | | | | | | | | | | | | |
| Roughing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

● Ex stock ○ On demand

HC¹ Coated carbide
 HT Uncoated cermet
 HC² Coated cermet
 HW Uncoated carbide

B

Milling

C

Drilling

D

Technical Information

E

Index

A close-up photograph of a metal chip breaker tool. The tool is positioned against a rotating cylindrical workpiece. The workpiece has a polished, reflective surface. The chip breaker is a dark-colored metal component with a sharp, angled cutting edge. It is mounted on a larger, grey metal block that has several circular holes. The background is blurred, showing a workshop environment.

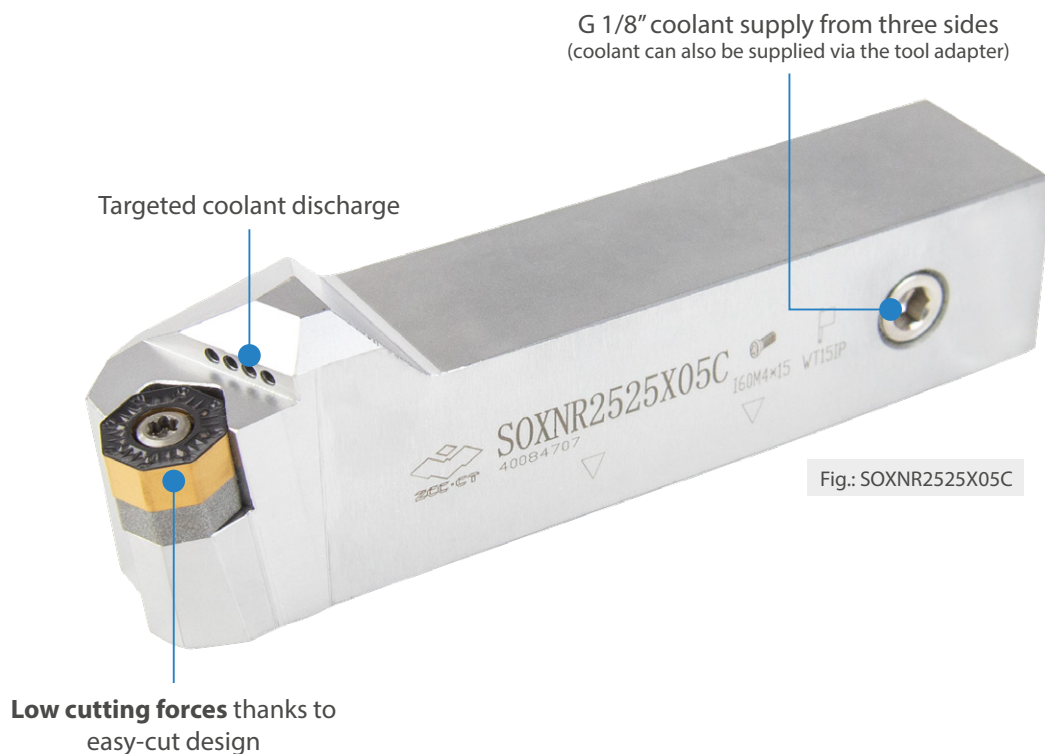
XLR chip breaker

ONMX high-feed turning system

New Octa insert and tool holder series for efficient turning applications

YOUR BENEFITS

- For applications ranging from highly efficient medium machining to roughing
- Extremely efficient, double-sided insert with **sixteen cutting edges**
- High feed leads to **shorter machining times**
- Target cooling for **improved chip removal** and a **long tool life**
- New, optimised **XH chip breaker** for **enhanced chip control**



Insert grades

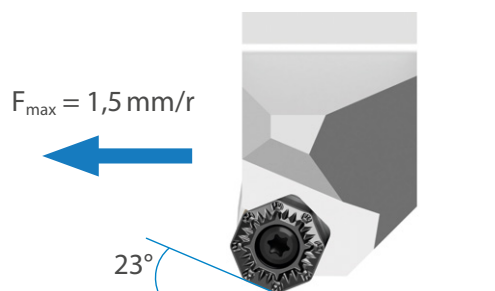
YBC103

CVD
P05–P15
M10–M20

YBC203

CVD
P15–P25
M15–M25

Application field



Chip breaker

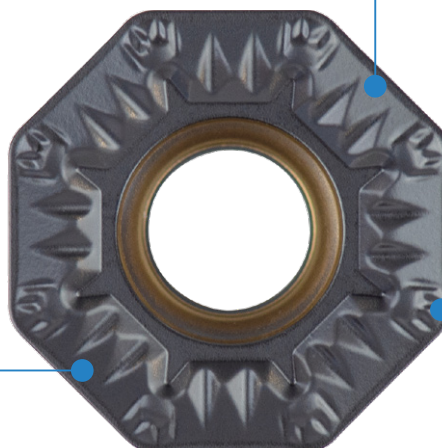
-XH



Finishing to medium machining

| a_p [mm] | f [mm/r] |
|------------|------------|
| 0,5–1,5 | 0,4–1,5 |

Controlled chip removal thanks to optimised chip-forming elements



Highly economical thanks to **sixteen cutting edges**

In combination with our **YBC103** and **YBC203** high-performance grades

Fig.: ONMX050512-XH YBC103

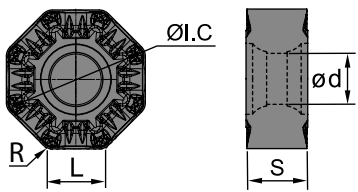
A

Turning

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊛ Unfavourable machining conditions

| | | | | |
|-------|------|------|------|------|
| ONMX | L | I.C | S | d |
| 05 05 | 5,96 | 12,7 | 5,56 | 4,64 |

Turning inserts

| ON** negative insert | | HC ¹ (CVD) | | | | | HC ¹ (PVD) | | | HT | HC ² | HW | | |
|---|----------|-----------------------|---|---|---|---|-----------------------|---|---|----|-----------------|----|---|---|
|  | P | ○ | ○ | ○ | ⊗ | ⊗ | ⊗ | | | ⊗ | ⊗ | ○ | | |
| | M | | | | | ○ | ⊗ | ○ | ○ | ⊗ | ⊗ | ○ | ○ | |
| | K | | | | | | | | | | | | | |
| | N | | | | | | | ○ | ○ | | | | ○ | ⊗ |
| | S | | | | | | | | | ○ | ○ | ⊗ | ⊗ | ○ |
| | H | | | | | | | | | | | | | |

B

Milling

| | ISO | r | a _p | f | YBC103 | YB6315 | YBC152 | YBC203 | YBC252 | YBC352 | YBM153 | YBM253 | YBD102 | YB7315 | YBD152 | YBD152C | YBG101 | YBG102 | YBG105 | YBG205 | YB9320 | YPD201 | YBS103 | YNG151 | YNT251 | YNG151C | YD101 | YD201 |
|-----------|----------------------|-----|----------------|-----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|-------|-------|
| XH | ONMX050512-XH | 1.2 | 0.5-1.5 | 0.4 - 1.5 | ● | | ● | | | | | | | | | | | | | | | | | | | | | |
| Finishing | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

● Ex stock ○ On demand

HC¹ Coated carbide
 HT Uncoated cermet
 HC² Coated cermet
 HW Uncoated carbide


C

Drilling

Tool holder

SOXNR/L

Kr: 23°



D

Technical Information

E

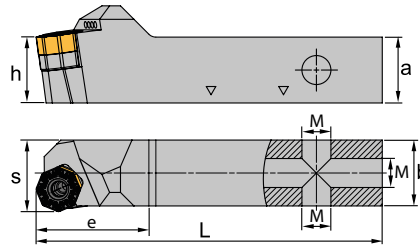
Index

ON holder (external) S-Clamping**

SOXNR/L Kr: 23°



Right hand style



| Article | * | Stock | | Dimensions [mm] | | | | | | | Inserts |
|---------------|---|-------|---|-----------------|----|-----|----|------|----|------|----------|
| | | R | L | a | b | L | h | s | e | M | |
| SOXNL2020X05C | * | ● | | 20 | 20 | 105 | 20 | 21.7 | 35 | G1/8 | ONMX0505 |
| SOXNR2020X05C | * | ● | | 20 | 20 | 105 | 20 | 21.7 | 35 | G1/8 | ONMX0505 |
| SOXNL2525X05C | * | ● | | 25 | 25 | 120 | 25 | 26.7 | 35 | G1/8 | ONMX0505 |
| SOXNR2525X05C | * | ● | | 25 | 25 | 120 | 25 | 26.7 | 35 | G1/8 | ONMX0505 |

● Ex stock ○ On demand

* With internal cooling

Spare parts

| | Insert | ONMX0505 | ONMX0505 |
|--|----------------|----------------------|----------------------|
| | h | 20 | 25 |
| | Grub screw | PT1/8×7 | PT1/8×7 |
| | Screw | I60M4×15 (3.4 Nm) | I60M4×15 (3.4 Nm) |
| | Shim | O05BM | O05BM |
| | Wrench (screw) | WT15IP | WT15IP |
| | Wrench (shim) | WH50L | WH50L |

Insert



Finishing

A

Turning

B

Milling

C

Drilling

D

Technical Information

E

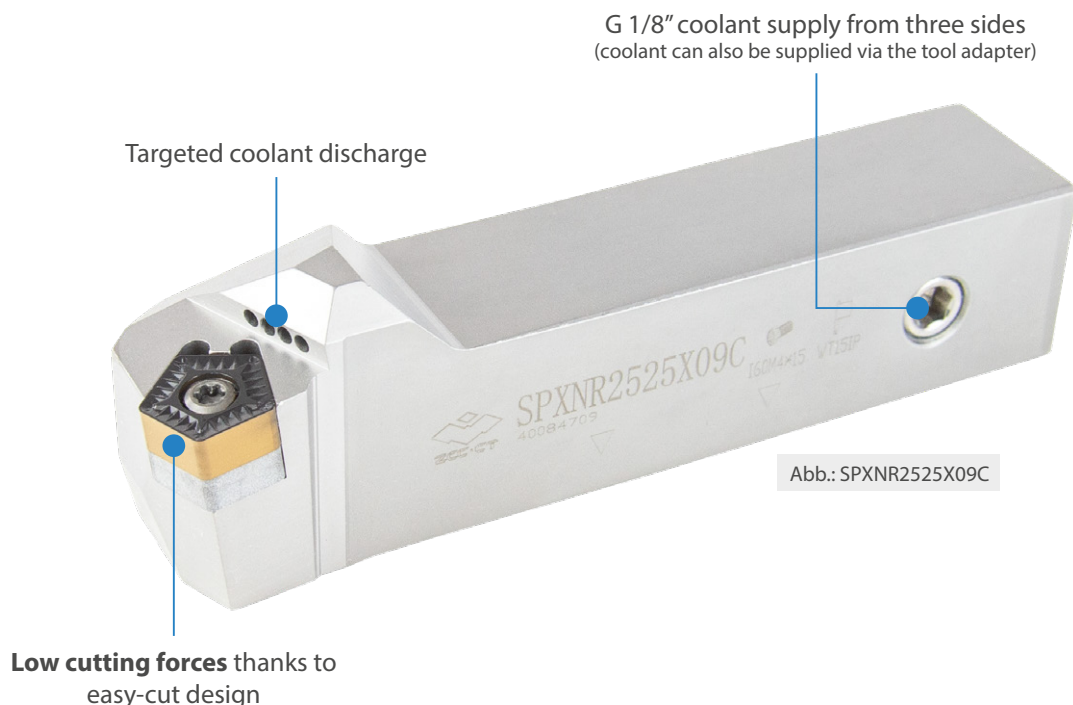
Index

PNMX high-feed turning system

New Penta insert and tool holder series for efficient turning applications

YOUR BENEFITS

- For applications ranging from highly efficient medium machining to roughing
- Efficient, double-sided insert with **ten cutting edges**
- High feed and removal rates lead to **shorter machining times**
- Target cooling for **improved chip removal** and a **long tool life**
- New, optimised **XH chip breaker** for **enhanced chip control**



Insert grades

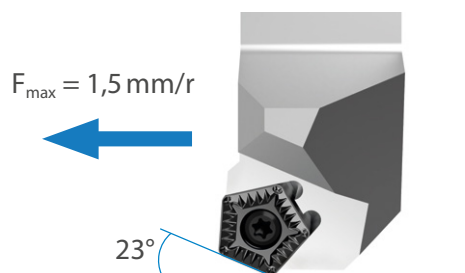
YBC103

CVD
P05–P15
M10–M20

YBC203

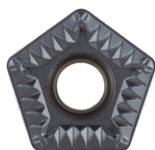
CVD
P15–P25
M15–M25

Application field



Chip breaker

-XH

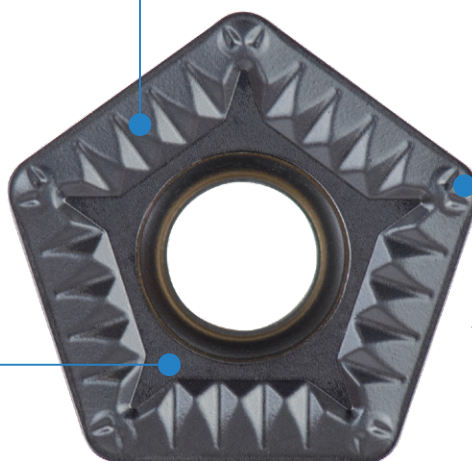


Medium machining to
roughing

| a_p [mm] | f [mm/r] |
|------------|------------|
| 1,0–3,0 | 0,4–1,5 |

Controlled chip removal thanks to
optimised chip-forming elements

In combination with our **YBC103** and
YBC203 high-performance grades



Highly economical
thanks to **ten cutting edges**

Abb.: PNMx090512-XH YBC103

General turning Negative inserts

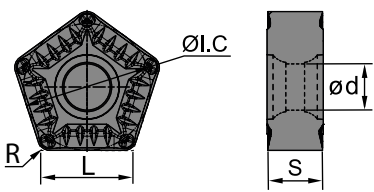
A

Turning

- Ideal machining conditions
- ⊗ Normal machining conditions
- ⊗ Unfavourable machining conditions

| | | | | |
|-------|------|------|------|------|
| PNMX | L | I.C | S | d |
| 09 05 | 9.77 | 12.7 | 5.56 | 4.64 |

Turning inserts

| PN** negative insert | | HC ¹ (CVD) | | | | | HC ¹ (PVD) | | | HT | HC ² | HW | |
|---|----------|-----------------------|---|---|---|---|-----------------------|---|---|----|-----------------|----|---|
|  | P | ● | ● | ● | ⊗ | ⊗ | | | ⊗ | ⊗ | ● | | |
| | M | | | | ● | ⊗ | | ● | ● | ⊗ | ⊗ | ● | |
| | K | | | | | | | | | | | | |
| | N | | | | | | | ● | ● | | | ● | ⊗ |
| | S | | | | | | | | ● | ● | ⊗ | ⊗ | ● |
| | H | | | | | | | | | | | | |

B

Milling

| | ISO | r | a _p | f | YBC103 | YB6315 | YBC152 | YBC203 | YBC252 | YBC352 | YBM153 | YBM253 | YBD102 | YB7315 | YBD152 | YBD152C | YBG101 | YBG102 | YBG105 | YBG205 | YB9320 | YPD201 | YBS103 | YNG151 | YNT251 | YNG151C | YD101 | YD201 |
|------------|----------------------|-----|----------------|-----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|-------|-------|
| XH | PNMX090512-XH | 1.2 | 1.0-3.0 | 0.4 - 1.5 | ● | | ● | | | | | | | | | | | | | | | | | | | | | |
| Medium Cut | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

● Ex stock ○ On demand

HC¹ Coated carbide
 HT Uncoated cermet
 HC² Coated cermet
 HW Uncoated carbide

C

Drilling

Tool holder
SPXNR/L
 Kr: 23°



D

Technical Information

E

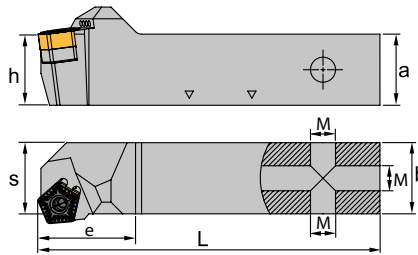
Index

PN** holder (external) S-Clamping

SPXNR/L Kr: 23°



Right hand style



| Article | * | Stock | | Dimensions [mm] | | | | | | | Inserts |
|---------------|---|-------|---|-----------------|----|-----|----|------|----|------|----------|
| | | R | L | a | b | L | h | s | e | M | |
| SPXNL2525X09C | * | ● | | 25 | 25 | 120 | 25 | 28.4 | 35 | G1/8 | PNMX0905 |
| SPXNR2525X09C | * | ● | | 25 | 25 | 120 | 25 | 28.4 | 35 | G1/8 | PNMX0905 |
| SPXNL3225X09C | * | ● | | 32 | 25 | 135 | 32 | 28.4 | 35 | G1/8 | PNMX0905 |
| SPXNR3225X09C | * | ● | | 32 | 25 | 135 | 32 | 28.4 | 35 | G1/8 | PNMX0905 |

● Ex stock ○ On demand

* With internal cooling

Spare parts

| | Insert | PNMX0905 | PNMX0905 |
|--|----------------|----------------------|----------------------|
| | h | 25 | 32 |
| | Grub screw | PT1/8x7 | PT1/8x7 |
| | Screw | I60M4x15 (3.4 Nm) | I60M4x15 (3.4 Nm) |
| | Shim | P09BM | P09BM |
| | Wrench (screw) | WT15IP | WT15IP |
| | Wrench (shim) | WH50L | WH50L |

Insert



Medium Cut

A

Turning

B

Milling

C


Drilling

D

Technical Information

E

Index



PNMX high-feed
turning system

A

Turning

B

Milling

C

Drilling

D

Technical
Information

E

Index

A

Threading

System code – threading tool holders

A26

z-Type threading tool holders with internal cooling

A28–A33

Z S E R 20 20 K 16 (C)

1

2

3

4

5

6



7

8

9

Series

Clamping system

| Code | Description |
|------|--|
| S | Screw clamping  |
| C | Top clamping  |

Application

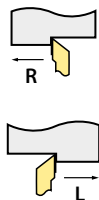
| Code | Description |
|------|-----------------------------|
| E | External thread tool holder |
| I | Internal thread tool holder |

1

2

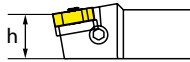
3

Cutting direction



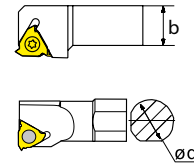
4

Shank height h [mm]



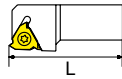
5

Shank width b / Shank diameter d [mm]



6

Shank length L [mm]



| Code | L |
|------|-----|
| F | 80 |
| H | 100 |
| K | 125 |
| M | 150 |
| P | 170 |
| Q | 180 |
| R | 200 |
| S | 250 |
| T | 300 |

7

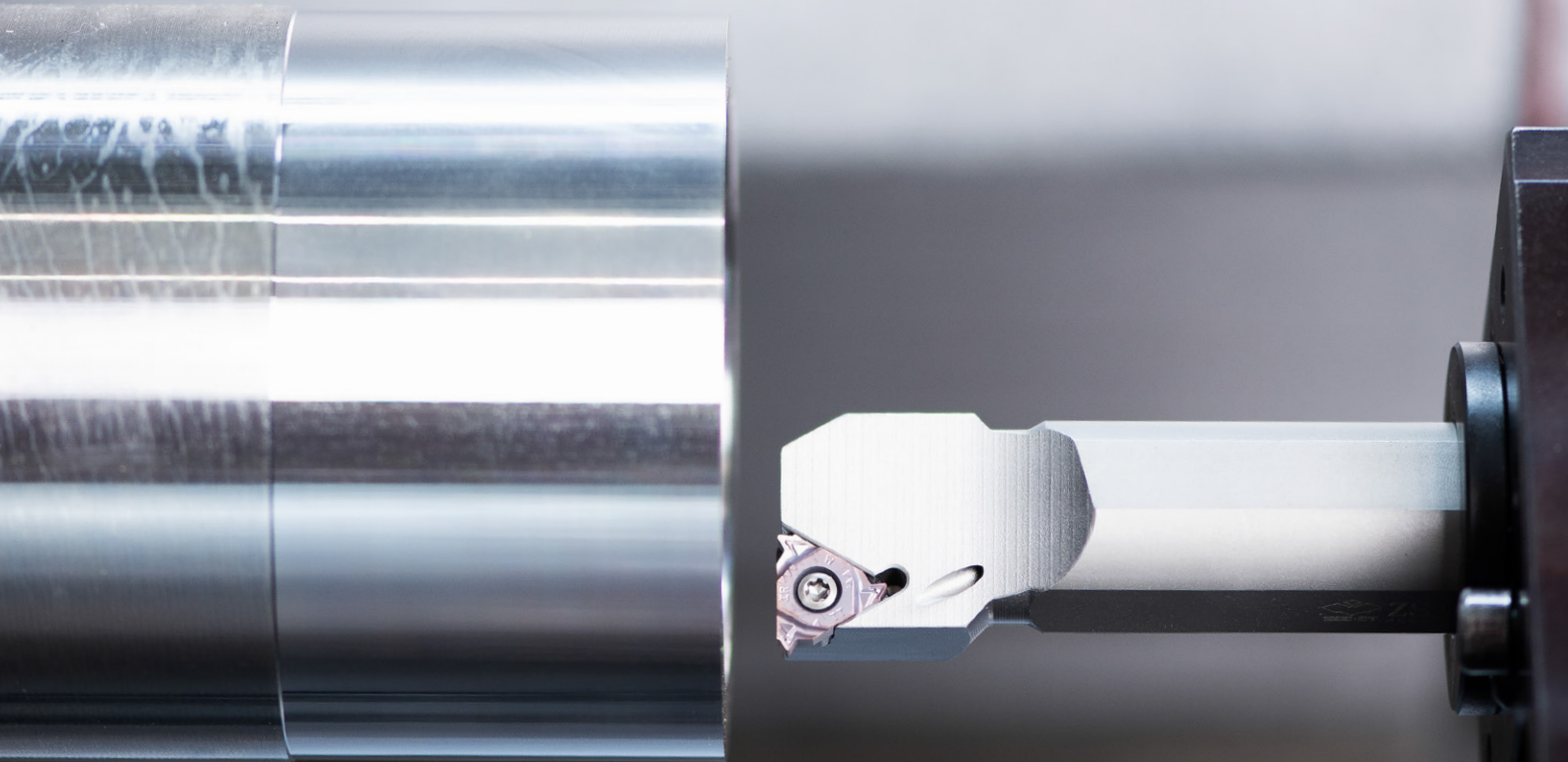
Insert size [mm]

| Code | Height |
|------|--------|
| 11 | 6,35 |
| 16 | 9,525 |
| 22 | 12,7 |

8

Internal cooling

9



zType threading tool holders

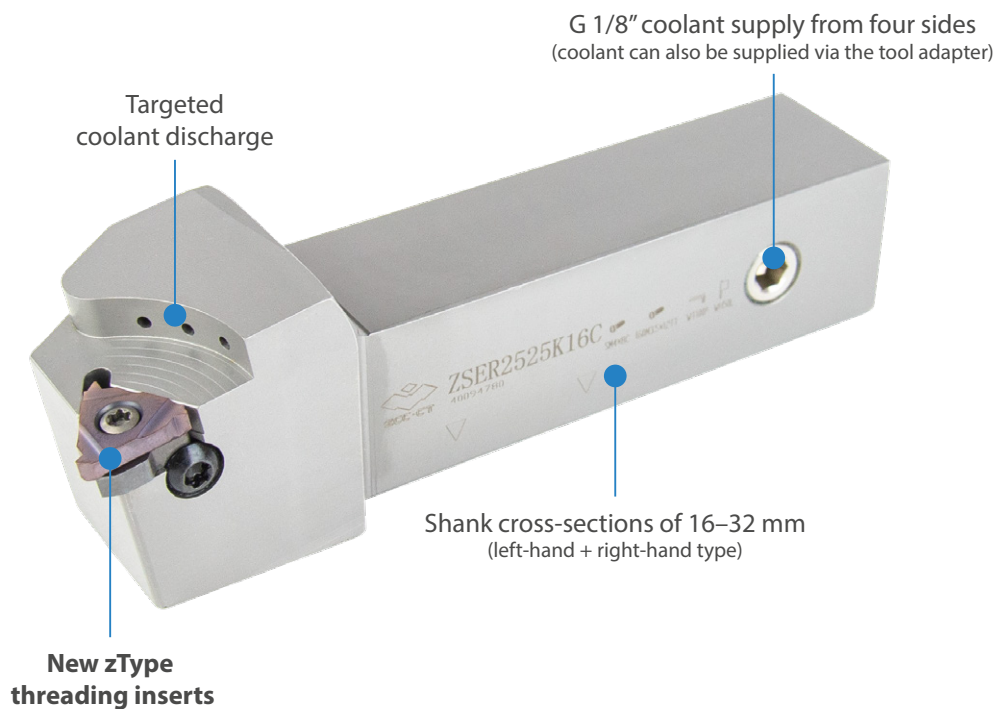
zType threading tool holders with internal cooling

New series for high-quality results in threading operations

YOUR BENEFITS

- Target cooling for **optimum chip removal** and a **long tool life**
- **Higher productivity** thanks to reduced machining temperature
- Wide assortment of zType threading inserts available

ZSER2525R16C external tool holders



Insert grades

YBG205

PVD
P15–P25
M15–M25

Inserts

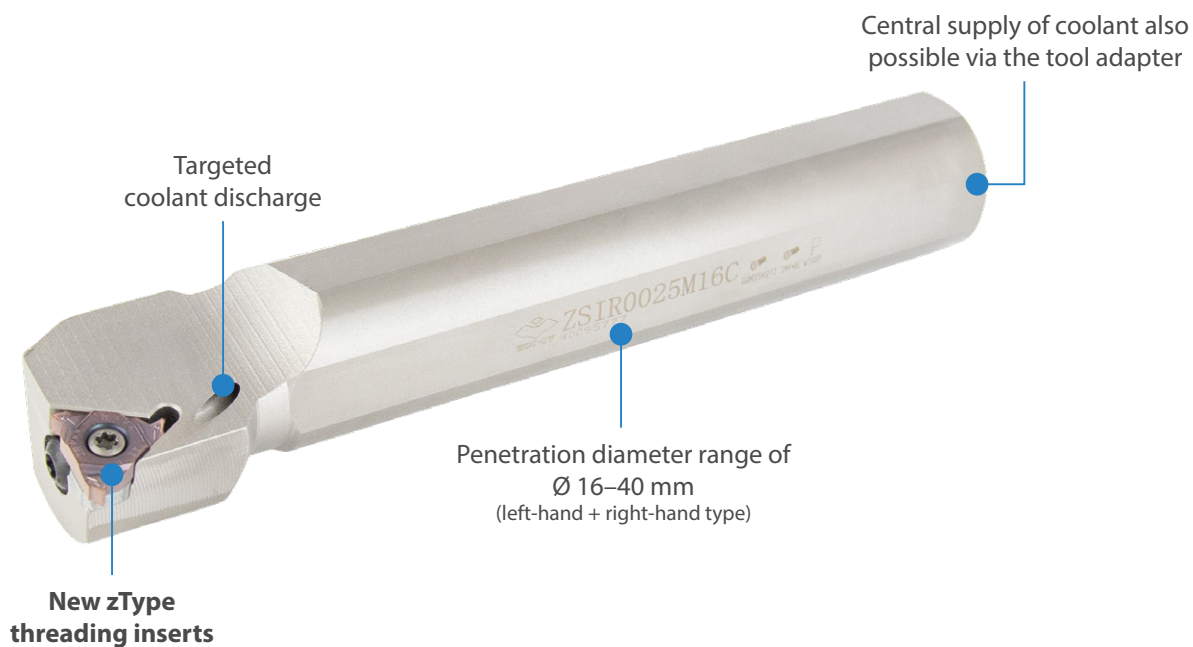
Z16IR1.5ISOPP



The accompanying **threading inserts** from the new **zType series** can be found in **Product Innovations 09/2022**. Scan the QR code to open and view the brochure.

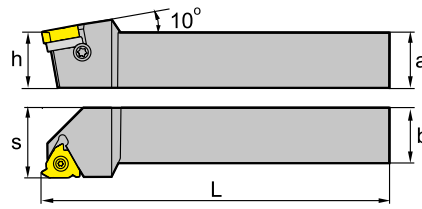


ZSIR0025M16C boring bar



Threading tool holder (external)

ZSER/L



| Article | * | Stock | Dimensions [mm] | | | | | Inserts |
|--------------|---|-------|-----------------|----|-----|----|----|---------|
| | | | a | b | L | h | s | |
| ZSER1616F16C | * | ○ | 16 | 16 | 80 | 16 | 20 | Z16ER** |
| ZSER2020H16C | * | ○ | 20 | 20 | 100 | 20 | 25 | Z16ER** |
| ZSER2525K16C | * | ○ | 25 | 25 | 125 | 25 | 32 | Z16ER** |
| ZSER3232K16C | * | ○ | 32 | 32 | 125 | 32 | 32 | Z16ER** |
| ZSER2525K22C | * | ○ | 25 | 25 | 125 | 25 | 40 | Z22ER** |
| ZSER3232K22C | * | ○ | 32 | 32 | 125 | 32 | 40 | Z22ER** |

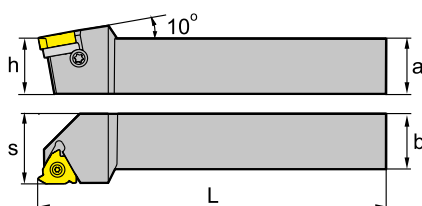
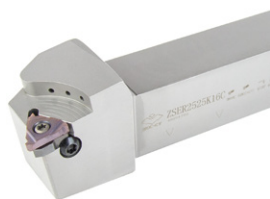
● Ex stock ○ On demand

* With internal cooling

| Spare parts | | | |
|-------------|----------------|--------------------------|----------------------|
| | Insert h | Z16ER** 16-32 | Z22ER** 25-40 |
| | Grub screw | PT1/8×4 | PT1/8×4 |
| | Screw | | I60M5×17 (6.7 Nm) |
| | Screw | I60M3.5×12TT (2.7 Nm) | |
| | Screw (shim) | SM4×8C (2.6 Nm) | SM5×8.5C (4.0 Nm) |
| | Shim | MT16-__MN | MT22-__MN |
| | Wrench (screw) | WT15IP | WT20IP |

Threading tool holder (external)

ZSER/L



| Article | * | Stock | Dimensions [mm] | | | | | Inserts |
|--------------|---|-------|-----------------|----|-----|----|----|---------|
| | | | a | b | L | h | s | |
| ZSEL1616F16C | * | ○ | 16 | 16 | 80 | 16 | 20 | Z16EL** |
| ZSEL2020H16C | * | ○ | 20 | 20 | 100 | 20 | 25 | Z16EL** |
| ZSEL2525K16C | * | ○ | 25 | 25 | 125 | 25 | 32 | Z16EL** |
| ZSEL3232K16C | * | ○ | 32 | 32 | 125 | 32 | 32 | Z16EL** |
| ZSEL2525K22C | * | ○ | 25 | 25 | 125 | 25 | 40 | Z22EL** |
| ZSEL3232K22C | * | ○ | 32 | 32 | 125 | 32 | 40 | Z22EL** |

● Ex stock ○ On demand

* With internal cooling

| Spare parts | | | |
|-------------|----------------|--------------------------|----------------------|
| | Insert h | Z16EL** 16-32 | Z22EL** 25-40 |
| | Grub screw | PT1/8×4 | PT1/8×4 |
| | Screw | | I60M5×17 (6.7 Nm) |
| | Screw | I60M3.5×12TT (2.7 Nm) | |
| | Screw (shim) | SM4×8C (2.6 Nm) | SM5×8.5C (4.0 Nm) |
| | Shim | MT16-__MN | MT22-__MN |
| | Wrench (screw) | WT15IP | WT20IP |

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Drilling

D

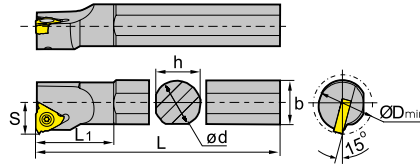
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Threading tool holder (internal)

ZSIR/L



| Article | * | Stock | Dimensions [mm] | | | | | | | | Inserts |
|--------------|---|-------|-----------------|------|-----|----|------|----------------|------------------|---------|---------|
| | | | ød | b | L | h | s | L ₁ | D _{min} | | |
| ZSIR0016K11C | * | ○ | 16 | 15.5 | 125 | 15 | 10 | 20.9 | 12 | Z11IR** | |
| ZSIR0016M11C | * | ○ | 16 | 16 | 150 | 15 | 10.5 | 25.9 | 16 | Z11IR** | |
| ZSIR0016M16C | * | ○ | 16 | 15.5 | 150 | 15 | 12 | 27 | 20 | Z16IR** | |
| ZSIR0020M16C | * | ○ | 20 | 19 | 150 | 18 | 14 | 28.7 | 25 | Z16IR** | |
| ZSIR0020Q16C | * | ○ | 20 | 19 | 180 | 18 | 14 | 34 | 25 | Z16IR** | |
| ZSIR0025M16C | * | ○ | 25 | 24 | 150 | 23 | 17 | 28.8 | 32 | Z16IR** | |
| ZSIR0032R16C | * | ○ | 32 | 31 | 200 | 30 | 22 | 30.9 | 40 | Z16IR** | |
| ZSIR0032S16C | * | ○ | 32 | 31 | 250 | 30 | 22 | 30.9 | 40 | Z16IR** | |
| ZSIR0040T16C | * | ○ | 40 | 38.5 | 300 | 37 | 27 | 31.5 | 50 | Z16IR** | |
| ZSIR0020Q22C | * | ○ | 20 | 19 | 180 | 18 | 15 | 35 | 25 | Z22IR** | |
| ZSIR0025R22C | * | ○ | 25 | 24 | 200 | 23 | 19 | 39 | 32 | Z22IR** | |
| ZSIR0032S22C | * | ○ | 32 | 31 | 250 | 30 | 22 | 36.4 | 40 | Z22IR** | |
| ZSIR0040T22C | * | ○ | 40 | 38.5 | 300 | 37 | 27 | 37.2 | 50 | Z22IR** | |

● Ex stock ○ On demand

* With internal cooling

Spare parts

| | Insert | Z11IR** | Z16IR** | Z16IR** | Z22IR** | Z22IR** | |
|--|----------------|--------------------------|--------------------------|---------|--------------------------|------------------------|-----------------------|
| | | ød | 16 | 16 | 20-50 | 20 | 25-50 |
| | Screw | I60M2,5×6,5T (1,0 Nm) | | | | I60M5×13,2 (6,7 Nm) | I60M4×15X (3,4 Nm) |
| | Screw | | I60M3,5×08TT (2,7 Nm) | | I60M3,5×12TT (2,7 Nm) | | |
| | Screw (shim) | | | | SM4×8C (2,6 Nm) | | SM5×8,5C (4,0 Nm) |
| | Shim | | | | MT16-__MN | | MT22-__MN |
| | Wrench (screw) | WT08IP | WT10IP | | WT10IP | WT15IP | WT15IP |

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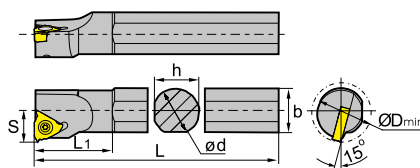
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Threading tool holder (internal)

ZSIR/L



| Article | * | Stock | Dimensions [mm] | | | | | | | | Inserts |
|--------------|---|-------|-----------------|------|-----|----|------|----------------|------------------|---------|---------|
| | | | ød | b | L | h | s | L ₁ | D _{min} | | |
| ZSIL0016K11C | * | ○ | 16 | 15.5 | 125 | 15 | 10 | 20.9 | 12 | Z11IL** | |
| ZSIL0016M11C | * | ○ | 16 | 16 | 150 | 15 | 10.5 | 25.9 | 16 | Z11IL** | |
| ZSIL0016M16C | * | ○ | 16 | 15.5 | 150 | 15 | 12 | 27 | 20 | Z16IL** | |
| ZSIL0020M16C | * | ○ | 20 | 19 | 150 | 18 | 14 | 28.7 | 25 | Z16IL** | |
| ZSIL0020Q16C | * | ○ | 20 | 19 | 180 | 18 | 14 | 34 | 25 | Z16IL** | |
| ZSIL0025M16C | * | ○ | 25 | 24 | 150 | 23 | 17 | 28.8 | 32 | Z16IL** | |
| ZSIL0032R16C | * | ○ | 32 | 31 | 200 | 30 | 22 | 30.9 | 40 | Z16IL** | |
| ZSIL0032S16C | * | ○ | 32 | 31 | 250 | 30 | 22 | 30.9 | 40 | Z16IL** | |
| ZSIL0040T16C | * | ○ | 40 | 38.5 | 300 | 37 | 27 | 31.5 | 50 | Z16IL** | |
| ZSIL0020Q22C | * | ○ | 20 | 19 | 180 | 18 | 15 | 35 | 25 | Z22IL** | |
| ZSIL0025R22C | * | ○ | 25 | 24 | 200 | 23 | 19 | 39 | 32 | Z22IL** | |
| ZSIL0032S22C | * | ○ | 32 | 31 | 250 | 30 | 22 | 36.4 | 40 | Z22IL** | |
| ZSIL0040T22C | * | ○ | 40 | 38.5 | 300 | 37 | 27 | 37.2 | 50 | Z22IL** | |

● Ex stock ○ On demand

* With internal cooling

Spare parts

| | Insert ød | Z11IR** 16 | Z16IR** 16 | Z16IR** 20-50 | Z22IR** 20 | Z22IR** 25-50 |
|--|----------------|--------------------------|--------------------------|--------------------------|------------------------|-----------------------|
| | Screw | I60M2,5×6,5T (1,0 Nm) | | | I60M5×13,2 (6,7 Nm) | I60M4×15X (3,4 Nm) |
| | Screw | | I60M3,5×08TT (2,7 Nm) | I60M3,5×12TT (2,7 Nm) | | |
| | Screw (shim) | | | SM4×8C (2,6 Nm) | | SM5×8,5C (4,0 Nm) |
| | Shim | | | MT16-__MN | | MT22-__MN |
| | Wrench (screw) | WT08IP | WT10IP | WT10IP | WT15IP | WT15IP |

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FD flat drill

Solid carbide drills

System code – solid carbide drills

C36–C37

FD flat drills

C38–C40

C

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1 5 3 6 SU 05 (C) – 0850 (S)

1

2

3

4

5

6

7

8

9

A

Turning

| Type | |
|------|-------------|
| Code | Description |
| 1 | Forets |
| | |
| | |
| | |
| | |

1

| Shank type | |
|------------|--|
| Code | Description |
| 1 | Straight shank |
| 2 | Square shank DIN 10 |
| 3 | Double flattened straight shank DIN 1809 |
| 5 | Straight shank DIN 6535 HA |
| 6 | Weldon shank DIN 6535 HB |
| 7 | Whistle Notch shank DIN 6535 HE |
| 9 | Morse taper shank |

2

B

Milling

| Drill type | |
|------------|-----------------------|
| Code | Description |
| 0 | Twist drill |
| 3 | Universal twist drill |
| 4 | NC tapping device |
| 5 | Step drill |
| 6 | Three-lips drill |
| 7 | Straight flute drill |
| 8 | Deep hole drill |
| | |
| | |

3

| Tool length | |
|-------------|------------------------|
| Code | Description |
| 1 | DIN 338 |
| 2 | DIN 1897 |
| 3 | QJ/ZZQ(TO)01.001.002 |
| 4 | DIN 6537 K |
| 5 | DIN 6539 |
| 6 | DIN 6537 L |
| 7 | Factory standard ZCC-C |
| 8 | Factory standard ZCC-D |
| 9 | Factory standard ZCC-E |

4

C

Drilling

| Application | |
|-------------|---|
| Code | Description |
| FD | Flat drills with 180° for any application |
| UD | Twist drills for tough materials |
| GD | Twist drills for high feeds |
| SU | Twist drill for general machining |
| SUK | Twist drill for cast iron |
| SL | Twist drill for deep hole drilling |
| SLK | Deep hole drill for cast iron |
| SP | Pilot drill |
| SH | Twist drill for hardened materials |
| SC | Twist drill for non-ferrous metals and cast iron |
| PA | Three-lips drill for non-ferrous metals and cast iron |
| PC | Straight flute drill for non-ferrous metals and cast iron |

5

D

Technical Information

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| L/D relation | | Angle | |
|--------------|-------------|-------------------|-------------|
| Drill | | NC tapping device | |
| Code | Description | Code | Description |
| 03 | 3xD | 90 | 90° |
| 05 | 5xD | 120 | 120° |
| 08 | 8xD | | |
| 10 | 10xD | | |
| 12 | 12xD | | |
| 15 | 15xD | | |
| 20 | 20xD | | |
| 30 | 30xD | | |

With inner cooling

6

7

| Bore diameter [mm] | |
|--------------------|-------------|
| Code | Description |
| 0200 | 2,0 |
| 0850 | 8,5 |
| 1800 | 18,0 |
| ... | |

8

| Shank diameter [mm] | |
|---------------------|-------------|
| Code | Description |
| S | 4,0 |
| | |
| | |
| | |

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a Boring



b Drilling



c Profile drilling



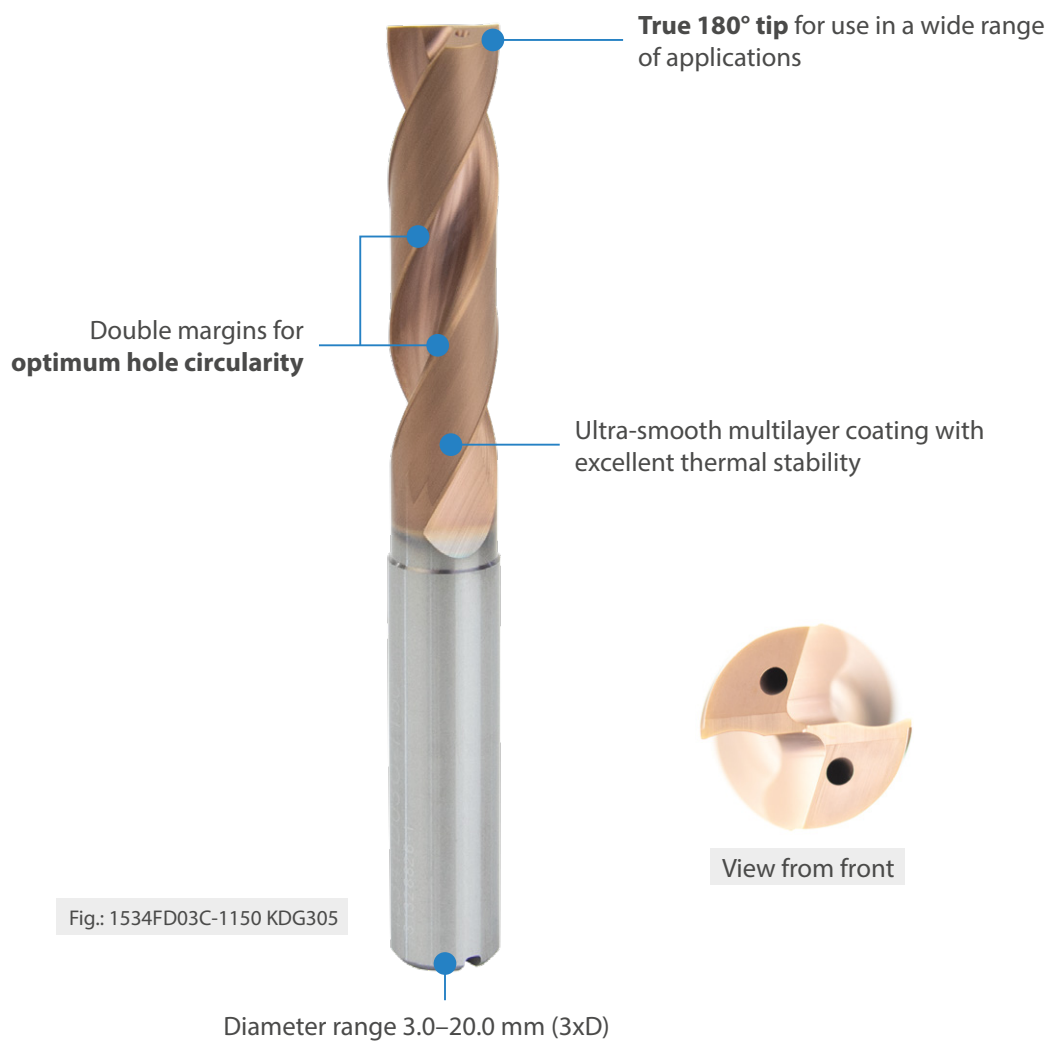
d Centering

FD flat drills

180° solid carbide drills for any application

YOUR BENEFITS

- Particularly well suited for creating spot faces efficiently
- Possible to drill holes in inclined surfaces up to 55° with no pre-milling
- **Reduced burr formation** in drilling applications involved thin components
- **Universal tool** for all materials



Feed calculator

| ISO group | Material | Cutting speed v_c (m/min) | Feed factor F_m |
|-----------|------------------|--------------------------------|----------------------|
| P | Low-alloy steel | 80 | 0,015 |
| P | High-alloy steel | 60 | 0,012 |
| K | Cast iron | 80 | 0,015 |
| K | Cast steel | 60 | 0,015 |
| M | Stainless steel | 45 | 0,01 |
| N | Aluminium | 120 | 0,02 |

Formula: feed per revolution (F_n) $D \times F_m$

Example: drill diameter (D) 10 mm
material stainless steel

$$F_n = 10 \text{ mm} \times 0,02 = 0,2 \text{ mm/r}$$

Reduce the feed rate by the following factor with inclined holes:

| Angle | Feed rate multiplier |
|---------|----------------------|
| 5°-30° | 0,75 |
| 35°-50° | 0,50 |

Formula: feed per revolution (F_n) $D \times F_m \times \text{multiplier}$

Example: drill diameter (D) 10 mm
material aluminium
drilling angle 30°

$$F_n = 10 \text{ mm} \times 0,02 \times 0,75 = 0,15 \text{ mm/r}$$

Your notes

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FD drill 3xD

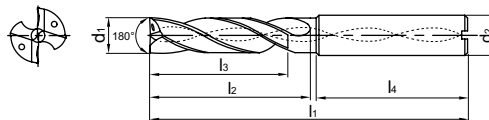
General machining



- Type of shank DIN 6535HA
- Coolant exit, axial concentric



Internal coolant



| Article | * | Dimensions [mm] | | | | | | Grade |
|----------------|---|---------------------|---------------------|----------------|----------------|----------------|----------------|--------|
| | | d ₁ (m7) | d ₂ (h6) | l ₁ | l ₂ | l ₃ | l ₄ | KDG305 |
| 1534FD03C-0300 | * | 3 | 6 | 62 | 20 | 14 | 36 | ● |
| 1534FD03C-0350 | * | 3.5 | 6 | 62 | 20 | 14 | 36 | ○ |
| 1534FD03C-0400 | * | 4 | 6 | 66 | 24 | 17 | 36 | ● |
| 1534FD03C-0450 | * | 4.5 | 6 | 66 | 24 | 17 | 36 | ○ |
| 1534FD03C-0500 | * | 5 | 6 | 66 | 28 | 20 | 36 | ● |
| 1534FD03C-0550 | * | 5.5 | 6 | 66 | 28 | 20 | 36 | ○ |
| 1534FD03C-0600 | * | 6 | 6 | 66 | 28 | 20 | 36 | ● |
| 1534FD03C-0650 | * | 6.5 | 8 | 79 | 34 | 24 | 36 | ● |
| 1534FD03C-0700 | * | 7 | 8 | 79 | 34 | 24 | 36 | ● |
| 1534FD03C-0750 | * | 7.5 | 8 | 79 | 41 | 29 | 36 | ○ |
| 1534FD03C-0800 | * | 8 | 8 | 79 | 41 | 29 | 36 | ● |
| 1534FD03C-0850 | * | 8.5 | 10 | 89 | 47 | 35 | 40 | ○ |
| 1534FD03C-0900 | * | 9 | 10 | 89 | 47 | 35 | 40 | ● |
| 1534FD03C-0950 | * | 9.5 | 10 | 89 | 47 | 35 | 40 | ○ |
| 1534FD03C-1000 | * | 10 | 10 | 89 | 47 | 35 | 40 | ● |
| 1534FD03C-1050 | * | 10.5 | 12 | 102 | 55 | 40 | 45 | ○ |
| 1534FD03C-1100 | * | 11 | 12 | 102 | 55 | 40 | 45 | ● |
| 1534FD03C-1150 | * | 11.5 | 12 | 102 | 55 | 40 | 45 | ○ |
| 1534FD03C-1200 | * | 12 | 12 | 102 | 55 | 40 | 45 | ● |
| 1534FD03C-1250 | * | 12.5 | 14 | 107 | 60 | 43 | 45 | ○ |
| 1534FD03C-1300 | * | 13 | 14 | 107 | 60 | 43 | 45 | ● |
| 1534FD03C-1350 | * | 13.5 | 14 | 107 | 60 | 43 | 45 | ○ |
| 1534FD03C-1400 | * | 14 | 14 | 107 | 60 | 43 | 45 | ● |
| 1534FD03C-1450 | * | 14.5 | 16 | 115 | 65 | 45 | 48 | ○ |
| 1534FD03C-1500 | * | 15 | 16 | 115 | 65 | 45 | 48 | ● |
| 1534FD03C-1550 | * | 15.5 | 16 | 115 | 65 | 45 | 48 | ○ |
| 1534FD03C-1600 | * | 16 | 16 | 115 | 65 | 45 | 48 | ● |
| 1534FD03C-1650 | * | 16.5 | 18 | 123 | 73 | 51 | 48 | ○ |
| 1534FD03C-1700 | * | 17 | 18 | 123 | 73 | 51 | 48 | ● |
| 1534FD03C-1750 | * | 17.5 | 18 | 123 | 73 | 51 | 48 | ○ |
| 1534FD03C-1800 | * | 18 | 18 | 123 | 73 | 51 | 48 | ● |
| 1534FD03C-1850 | * | 18.5 | 20 | 131 | 79 | 55 | 50 | ○ |
| 1534FD03C-1900 | * | 19 | 20 | 131 | 79 | 55 | 50 | ● |
| 1534FD03C-1950 | * | 19.5 | 20 | 131 | 79 | 55 | 50 | ○ |
| 1534FD03C-2000 | * | 20 | 20 | 131 | 79 | 55 | 50 | ● |

● Ex stock ○ On demand

* With internal cooling

Application field

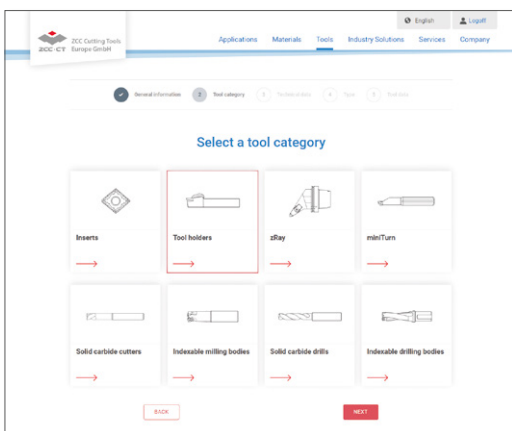
| P | M | K | N | S | H |
|---|---|---|---|---|---|
| ✓ | ✓ | ✓ | ✓ | | |

✓ Very suitable

✓ Suitable

The easy way to order your custom-made special tool

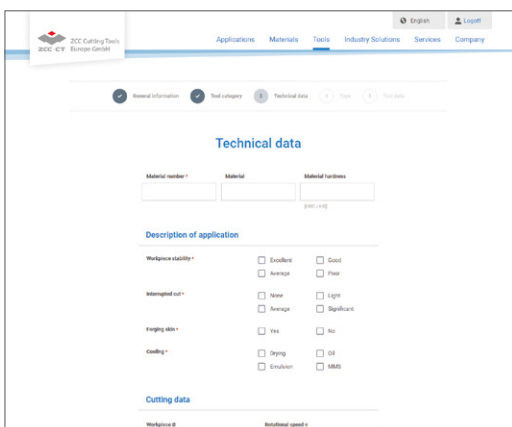
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2023 marks a special year in the success story that is ZCC Cutting Tools Europe GmbH. It all started 20 years ago in Düsseldorf when we began offering cutting tools targeted at the European market. While our business was small to begin with, we steadily expanded, with a constant focus on growth and on our customers.

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From day one, ZCC Cutting Tools Europe has shown a constant commitment to offering **premium technological products** that are tailored to the requirements of the individual target groups, **represent a strong value proposition** and improve quality, productivity and efficiency in the production environments of our customers from across a range of industrial segments. We also provide an array of **associated services** that deliver the quality our customers on the European market demand.

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