

# Turning · Drehen

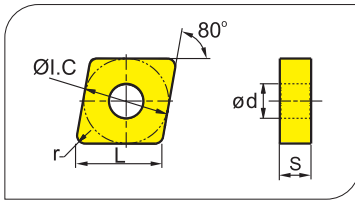
Cemented carbide and cermet Inserts · Hartmetall und Cermet WSP

## CN\*\* Negative Insert · Negative WSP

● Ideal Machining Condition  
Gute Bearbeitungsbedingungen

● Normal Machining Condition  
Normale Bearbeitungsbedingungen

● Unfavorable Machining Condition  
Ungünstige Bearbeitungsbedingungen



| Workpiece Material<br>Werkstoff         | P | M | K | N | S |
|-----------------------------------------|---|---|---|---|---|
| Steel / Stahl                           | ● | ● | ● | ● | ● |
| Stainless Steel / Rostfreier Stahl      | ● | ● | ● | ● | ● |
| Cast iron / Gusseisen                   | ● | ● | ● | ● | ● |
| Non-ferrous material / Ne Metalle       | ● | ● | ● | ● | ● |
| Heat-resistant steel / Warmfester Stahl | ● | ● | ● | ● | ● |

| Insert Shape<br>Schneid-<br>plattenform                                                                                                          | Type · Typ    | Dimension (mm)<br>Abmessung |        |      |      |     | Coated Carbide<br>Beschichtetes Hartmetall |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        | Cerm.<br>unbeschichtet | Cerm.<br>Coated<br>beschicht. Cerm. | Uncoated Carbide<br>unbeschicht.<br>Hartmetall |        |         |      |      |
|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------------------|--------|------|------|-----|--------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------------------------|-------------------------------------|------------------------------------------------|--------|---------|------|------|
|                                                                                                                                                  |               | L                           | I.C    | S    | d    | r   | YBC151                                     | YBC152 | YBC251 | YBC252 | YBC351 | YBG102 | YBG202 | YBG205 | YBG302 | YBM151 | YBM251 | YBM351 | YBD052 | YBD102 | YBD151 | YBD152 |                        |                                     | YBD252                                         | YNG151 | YNG151C | YC10 | YC40 |
| <div>DF</div> <div></div> <div>Finishing<br/>Schlichten</div>   | CNMG090304-DF | 9.7                         | 9.525  | 3.18 | 3.81 | 0.4 | ●                                          | ●      | ●      |        |        | ○      |        |        |        |        |        |        |        |        |        |        | ○                      |                                     |                                                |        |         |      |      |
|                                                                                                                                                  | CNMG090308-DF | 9.7                         | 9.525  | 3.18 | 3.81 | 0.8 | ●                                          | ●      | ●      |        |        |        |        |        |        |        |        |        |        |        |        |        |                        |                                     |                                                |        |         |      |      |
|                                                                                                                                                  | CNMG120404-DF | 12.9                        | 12.7   | 4.76 | 5.16 | 0.4 | ●                                          | ●      | ●      | ●      |        | ○      |        |        |        |        |        |        |        |        |        |        | ○                      | ○                                   |                                                |        |         |      |      |
|                                                                                                                                                  | CNMG120408-DF | 12.9                        | 12.7   | 4.76 | 5.16 | 0.8 | ○                                          | ●      | ●      | ●      |        |        |        |        |        |        |        |        |        |        |        |        |                        |                                     |                                                |        |         |      |      |
|                                                                                                                                                  | CNMG120412-DF | 12.9                        | 12.7   | 4.76 | 5.16 | 1.2 | ○                                          | ●      | ●      | ●      |        |        |        |        |        |        |        |        |        |        |        |        |                        |                                     |                                                |        |         |      |      |
| <div>WG</div> <div></div> <div>Wiper</div>                    | CNMG120404-WG | 12.9                        | 12.7   | 4.76 | 5.16 | 0.4 | ●                                          |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |                        |                                     |                                                |        |         |      |      |
|                                                                                                                                                  | CNMG120408-WG | 12.9                        | 12.7   | 4.76 | 5.16 | 0.8 | ●                                          | ●      | ○      | ●      |        |        |        |        | ○      |        |        | ●      |        |        | ●      |        |                        |                                     |                                                |        |         |      |      |
|                                                                                                                                                  | CNMG120412-WG | 12.9                        | 12.7   | 4.76 | 5.16 | 1.2 | ●                                          | ●      | ○      |        |        |        |        |        |        |        |        |        |        |        |        |        |                        |                                     |                                                |        |         |      |      |
|                                                                                                                                                  | CNMG160608-WG | 16.1                        | 15.875 | 6.35 | 6.35 | 0.8 |                                            | ○      |        |        |        |        |        |        |        |        |        |        |        |        |        |        |                        |                                     |                                                |        |         |      |      |
|                                                                                                                                                  | CNMG160612-WG | 16.1                        | 15.875 | 6.35 | 6.35 | 1.2 |                                            | ○      |        |        |        |        |        |        |        |        |        |        |        |        |        |        |                        |                                     |                                                |        |         |      |      |
| <div>SF</div> <div></div> <div>Finishing<br/>Schlichten</div> | CNMG090304-SF | 9.7                         | 9.525  | 3.18 | 3.81 | 0.4 |                                            |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |                        | ○                                   |                                                |        |         |      |      |
|                                                                                                                                                  | CNMG090308-SF | 9.7                         | 9.525  | 3.18 | 3.81 | 0.8 |                                            |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |                        |                                     | ○                                              |        |         |      |      |
|                                                                                                                                                  | CNMG120404-SF | 12.9                        | 12.7   | 4.76 | 5.16 | 0.4 |                                            |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |                        |                                     | ●                                              |        |         |      |      |
|                                                                                                                                                  | CNMG120408-SF | 12.9                        | 12.7   | 4.76 | 5.16 | 0.8 |                                            |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |                        |                                     | ●                                              |        |         |      |      |
|                                                                                                                                                  | CNMG120412-SF | 12.9                        | 12.7   | 4.76 | 5.16 | 1.2 |                                            |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |                        |                                     |                                                |        |         |      |      |
| <div>EF</div> <div></div> <div>Finishing<br/>Schlichten</div> | CNMG090304-EF | 9.7                         | 9.525  | 3.18 | 3.81 | 0.4 |                                            |        |        |        |        |        | ●      |        |        |        |        |        |        |        |        |        |                        |                                     |                                                |        |         |      |      |
|                                                                                                                                                  | CNMG090308-EF | 9.7                         | 9.525  | 3.18 | 3.81 | 0.8 |                                            |        |        |        |        |        | ○      | ●      |        |        |        |        |        |        |        |        |                        |                                     |                                                |        |         |      |      |
|                                                                                                                                                  | CNMG120404-EF | 12.9                        | 12.7   | 4.76 | 5.16 | 0.4 |                                            | ○      |        |        | ○      | ○      | ●      |        | ●      | ●      |        |        |        |        |        |        |                        |                                     |                                                |        |         |      |      |
|                                                                                                                                                  | CNMG120408-EF | 12.9                        | 12.7   | 4.76 | 5.16 | 0.8 |                                            | ○      |        |        | ○      | ●      | ●      | ○      | ●      | ●      |        |        |        |        |        |        |                        |                                     |                                                |        |         |      |      |
|                                                                                                                                                  | CNMG120412-EF | 12.9                        | 12.7   | 4.76 | 5.16 | 1.2 |                                            |        |        |        |        | ○      | ○      |        |        | ○      |        |        |        |        |        |        |                        |                                     |                                                |        |         |      |      |

### Tool holder / Klemmhalter



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

# Turning · Drehen

Recommended Grade Overview (Inserts) · Empfohlene Sorten Übersicht (WSP)

| ISO General Turning · Allgemeine Drehbearbeitung        |                       |        |        |        |                         |                       |                    |                                   | Threading<br>Gewinde | Parting and Grooving<br>Ab- und Einstechen |                       |                         |        |                                   |
|---------------------------------------------------------|-----------------------|--------|--------|--------|-------------------------|-----------------------|--------------------|-----------------------------------|----------------------|--------------------------------------------|-----------------------|-------------------------|--------|-----------------------------------|
| Code                                                    | Coating · beschichtet |        |        |        | Cermet<br>unbeschichtet | Cermet<br>beschichtet | Ceramic<br>Keramik | cemented<br>carbide<br>Hartmetall | PCBN                 | PCD                                        | Coated<br>beschichtet | Coated ·<br>beschichtet |        | cemented<br>carbide<br>Hartmetall |
|                                                         | CVD                   |        | PVD    |        |                         |                       |                    |                                   |                      |                                            | PVD                   | CVD                     | PVD    |                                   |
| <b>P</b><br>Steel · Stahl                               | 01                    |        |        |        |                         |                       |                    |                                   |                      |                                            |                       |                         |        |                                   |
|                                                         | 10                    | YBC151 | YBC152 |        |                         | YNG151                | YNG151C            | CA1000                            | YC10                 |                                            |                       | YBG201                  | YBG202 |                                   |
|                                                         | 20                    |        | YBC251 | YBC252 |                         |                       |                    |                                   | YC40                 |                                            |                       |                         | YBC251 | YBG202                            |
|                                                         | 30                    |        |        | YBC351 | YBG202                  | YBG205                |                    |                                   |                      |                                            |                       |                         |        | YBG302                            |
|                                                         | 40                    |        |        |        |                         |                       |                    |                                   |                      |                                            |                       |                         |        |                                   |
| <b>M</b><br>Stainless Steel · Rostfreier Stahl          | 01                    |        |        |        |                         |                       |                    |                                   |                      |                                            |                       |                         |        |                                   |
|                                                         | 10                    | YBM151 |        |        |                         |                       | YNG151C            |                                   |                      |                                            |                       | YBG201                  | YBG202 |                                   |
|                                                         | 20                    | YBM251 |        |        | YBG202                  | YBG205                |                    |                                   |                      |                                            |                       |                         |        |                                   |
|                                                         | 30                    |        | YBM351 |        | YBG302                  |                       |                    |                                   |                      |                                            |                       |                         | YBG202 | YBG302                            |
|                                                         | 40                    |        |        |        |                         |                       |                    |                                   |                      |                                            |                       |                         |        |                                   |
| <b>K</b><br>Cast Iron · Gussisen                        | 01                    |        |        |        |                         |                       |                    |                                   |                      |                                            |                       |                         |        |                                   |
|                                                         | 10                    | YBD052 | YBD102 | YBD152 | YBD151                  |                       |                    | CN1000                            | CA1000               |                                            |                       |                         |        |                                   |
|                                                         | 20                    |        |        |        |                         |                       |                    | CN2000                            | YD051                | YD201                                      | YCB211                | YCB011                  |        |                                   |
|                                                         | 30                    |        | YBD252 |        |                         |                       |                    |                                   |                      |                                            |                       | YBG201                  |        | YD201                             |
|                                                         | 40                    |        |        |        |                         |                       |                    |                                   |                      |                                            |                       |                         |        |                                   |
| <b>N</b><br>Non-ferrous materials<br>NE Metalle         | 01                    |        |        |        |                         |                       |                    |                                   |                      |                                            |                       |                         |        |                                   |
|                                                         | 10                    |        |        |        | YBG102                  |                       |                    |                                   |                      |                                            | YCD421                | YCD011                  |        |                                   |
|                                                         | 20                    |        |        |        |                         |                       |                    |                                   | YD101                |                                            |                       | YBG201                  |        | YD201                             |
|                                                         | 30                    |        |        |        |                         |                       |                    |                                   |                      |                                            |                       |                         |        |                                   |
|                                                         | 40                    |        |        |        |                         |                       |                    |                                   |                      |                                            |                       |                         |        |                                   |
| <b>S</b><br>Heat-resistant steel<br>Superlegierungen    | 01                    |        |        |        |                         |                       |                    |                                   |                      |                                            |                       |                         |        |                                   |
|                                                         | 10                    |        |        | YBG102 |                         | YNG151C               |                    |                                   | YD101                |                                            |                       |                         |        |                                   |
|                                                         | 20                    |        |        | YBG202 | YBG205                  |                       |                    |                                   |                      |                                            |                       | YBG201                  |        | YD201                             |
|                                                         | 30                    |        |        |        |                         |                       |                    |                                   |                      |                                            |                       |                         | YBG102 | YBG302                            |
|                                                         | 40                    |        |        |        |                         |                       |                    |                                   |                      |                                            |                       |                         |        |                                   |
| <b>H</b><br>super Hard Material<br>Gehärtete Werkstoffe | 01                    |        |        |        |                         |                       |                    |                                   |                      | YCB121                                     | YCB111                |                         |        |                                   |
|                                                         | 10                    |        |        |        |                         |                       |                    |                                   |                      |                                            | YCB012                |                         |        |                                   |
|                                                         | 20                    |        |        |        |                         |                       |                    |                                   |                      |                                            |                       |                         |        |                                   |
|                                                         | 30                    |        |        |        |                         |                       |                    |                                   |                      |                                            |                       |                         |        |                                   |
|                                                         | 40                    |        |        |        |                         |                       |                    |                                   |                      |                                            |                       |                         |        |                                   |

|          |                                    |
|----------|------------------------------------|
| <b>P</b> | Steel / Stahl                      |
| <b>M</b> | Stainless Steel / Rostfreier Stahl |
| <b>K</b> | Cast iron / Gusseisen              |

|          |                                          |
|----------|------------------------------------------|
| <b>N</b> | Non Ferrous materials · Ne Metalle       |
| <b>S</b> | Heat-resistant steel · Warmfester Stahl  |
| <b>H</b> | Hardened material · Gehärtete Werkstoffe |

### Internal grooving · Innenbearbeitung

- Follow the machining sequence as shown in the picture.  
Good for chip flow, always feed along the direction of moving from the deepest in the hole to outside.
- Bearbeitungsfolge gemäß Skizze. Bei der Bearbeitung von Sackbohrungen, sollte zur besseren Spanabfuhr von innen nach außen gearbeitet werden.



### Recommended cutting parameters · Empfohlene Schnittparameter

| Inserts Size<br>Stechplatte Größe       | Recommended feed rate (mm/rev) · Empfohlener Vorschub (mm/U) |                        |                   |                           |
|-----------------------------------------|--------------------------------------------------------------|------------------------|-------------------|---------------------------|
| Inserts width(mm)<br>Stechplatte Breite | Parting<br>Abstechen                                         | Grooving<br>Einstechen | Turning<br>Drehen | Profiling<br>Profildrehen |
| 2.5                                     | 0.05—0.15                                                    | 0.05—0.15              | 0.05—0.15         | 0.05—0.15                 |
| 3                                       | 0.05—0.15                                                    | 0.05—0.15              | 0.07—0.15         | 0.1—0.2                   |
| 4                                       | 0.05—0.2                                                     | 0.05—0.2               | 0.07—0.25         | 0.1—0.2                   |
| 5                                       | 0.07—0.2                                                     | 0.07—0.22              | 0.1—0.25          | 0.15—0.3                  |
| 6                                       | 0.1—0.3                                                      | 0.07—0.25              | 0.1—0.3           | 0.15—0.3                  |

| Workpiece Material<br>Werkstück Material | Hardness<br>Härte                                    | YBG302     | YBG202  | YBC151  | YBC251  | YD101   | YD201  | YBG102 | YC10    | YC40    |
|------------------------------------------|------------------------------------------------------|------------|---------|---------|---------|---------|--------|--------|---------|---------|
| <b>P</b>                                 | Carbon steel<br>Kohlenstoffstahl                     | 125≤HB≤170 | 120-260 | 150-280 | 140-280 | 150-280 |        |        | 130-280 | 110-260 |
|                                          | Low alloy steel<br>niedrig legierter Stahl           | 180≤HB≤275 | 80-175  | 110-200 | 100-240 | 110-200 |        |        | 90-200  | 70-175  |
|                                          | High alloy steel<br>Hoch legierter Stahl             | 180≤HB≤325 | 80-160  | 110-190 | 100-220 | 110-190 |        |        | 90-190  | 70-160  |
|                                          | Cast steel<br>Stahlguss                              | 180≤HB≤250 | 75-140  | 100-170 | 80-160  | 100-170 |        |        | 80-170  | 60-140  |
| <b>M</b>                                 | Ferrite<br>Martensite                                | 200≤HB≤300 | 70-170  | 100-200 |         | 100-200 |        |        | 80-200  | 60-170  |
|                                          | Austenite                                            | 180≤HB≤300 | 80-200  | 110-220 |         | 110-220 |        |        | 90-220  | 70-200  |
| <b>K</b>                                 | Malleable cast iron<br>Temperguss                    | 130≤HB≤230 | 100-200 | 130-220 |         |         | 90-160 |        |         |         |
|                                          | Grey cast iron<br>Grauguss                           | 180≤HB≤220 | 90-170  | 120-200 |         |         | 80-140 |        |         |         |
|                                          | Nodular cast iron                                    | 160≤HB≤250 | 80-150  | 110-180 |         |         | 60-140 |        |         |         |
| <b>N</b>                                 | Al alloy<br>Alu-Legierung                            | --         |         |         |         | 200-400 |        |        |         |         |
| <b>S</b>                                 | Heat resistant alloy<br>hitzebeständigen Legierungen | ≤400       |         |         |         | 20-50   |        | 30-60  |         |         |

The cutting parameters recommended are suitable for wet machining.

Die angegebenen Schnittparameter werden für die Bearbeitung mit Kühlflüssigkeit empfohlen.

Advice: internal machining and Axial machining, The cutting speed should be reduced by 30%-40%.

Hinweis: Bei Innen- und Axialstechen, sollte die Schnittgeschwindigkeit um 30%-40% reduziert werden.

### Chip breaker Overview · Spanbrecher Übersicht

Wiper

**WG**

**P M K**

ap· d.o.c. = 0.3~2(mm)  
f = 0.1~0.4(mm/r)

Excellent surface finishing and high feed rate due to wiper technology. For finishing and semi-finishing of steel, stainless steel or cast iron.

Exzellente Oberflächengüte und hohe Vorschübe durch Wipertechnologie. Geeignet zum Schlichten bis mittlere Bearbeitung von Stahl, rostfreiem Stahl und Guss.



**DM**

**P M**

ap· d.o.c. = 1.5~5(mm)  
f = 0.15~0.5(mm/r)

Main chip breaker for medium machining with continuous or interrupted cut of steel and stainless steel.

Hauptspanbrecher für die mittlere Bearbeitung mit und ohne Schnittunterbrechung von Stahl und rostfreiem Stahl.



**PM**

**P K**

ap· d.o.c. = 1.5~5(mm)  
f = 0.15~0.5(mm/r)

Universal chip breaker with stable cutting edge. Suitable for medium machining also with interrupted cut especially for cast iron and steel.

Universelle Spanbrecherform mit stabiler Schneidkante. Besonders geeignet für die mittlere Bearbeitung von Guss und Stahl auch mit Schnittunterbrechung.



Mittlere Bearbeitung  
Semi-Finishing

**NM**

**S M**

ap· d.o.c. = 1.5~5(mm)  
f = 0.15~0.5(mm/r)

Sharp cutting edge with positive multi-rakes. Special for the semifinishing of heat resistant super alloys.

Scharfe Schneidkante mit positivem Multi-Spanwinkel. Besonders geeignet für die Bearbeitung von warmfesten Superlegierungen.



**EM**

**M P S**

ap· d.o.c. = 0.5~4.0(mm)  
f = 0.1~0.5(mm/r)

Sharp and stable cutting edge for semifinishing of sticky material and austenitic stainless steel. Suitable also for interrupted cut.

Spanbrecher mit scharfer, stabiler Schneidkante für die mittlere Bearbeitung von adhäsiven Materialien und austenitischem rostfreiem Stahl. Auch für Schnittunterbrechungen geeignet.

