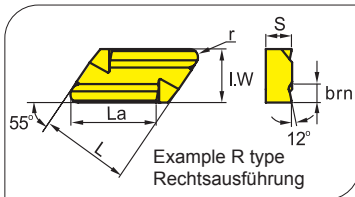


### KN\*\* Negative insert/ Negative Inserts



|                                                  |  | Ideal Machining Condition<br>Gute Bearbeitungsbedingungen |   | Normal Machining Condition<br>Normale Bearbeitungsbedingungen |   | Unfavorable Machining Condition<br>Ungünstige Bearbeitungsbedingungen |   |
|--------------------------------------------------|--|-----------------------------------------------------------|---|---------------------------------------------------------------|---|-----------------------------------------------------------------------|---|
| Workpiece Material<br>Werkstoff                  |  |                                                           |   |                                                               |   |                                                                       |   |
| <b>P</b> Steel / Stahl                           |  | ●                                                         | ● | ●                                                             | ● | ●                                                                     | ● |
| <b>M</b> Stainless Steel / Rostfreier Stahl      |  |                                                           |   | ●                                                             | ● | ●                                                                     | ● |
| <b>K</b> Cast iron / Gusseisen                   |  |                                                           |   |                                                               |   | ●                                                                     | ● |
| <b>N</b> Non-ferrous material / Ne Metalle       |  |                                                           |   |                                                               |   |                                                                       | ● |
| <b>S</b> Heat-resistant steel / Warmfester Stahl |  | ●                                                         | ● |                                                               |   |                                                                       |   |

| Insert Shape<br>Schneid-<br>plattenform                                                                                           | Type · Typ    | Dimension (mm)<br>Abmessung |       |       |      |     |     | Coated Carbide<br>Beschichtetes Hartmetall |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        | Cermet<br>unbeschichtet | Cermet<br>Coated<br>beschicht. Cermet | Uncoated Carbide<br>unbeschicht.<br>Hartmetall |        |         |      |      |       |
|-----------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------------------|-------|-------|------|-----|-----|--------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------------------------|---------------------------------------|------------------------------------------------|--------|---------|------|------|-------|
|                                                                                                                                   |               | La                          | L     | I.W   | S    | brn | r   | YBC151                                     | YBC152 | YBC251 | YBC252 | YBC351 | YBG102 | YBG202 | YBG205 | YBG302 | YBM151 | YBM251 | YBM351 | YBD052 | YBD102 | YBD151 | YBD152 |                         |                                       | YBD252                                         | YNG151 | YNG151C | YC10 | YC40 | YD101 |
| <div></div> <div>Finishing/<br/>Schlichten</div> | KNUX160405L11 | 16                          | 16.15 | 9.525 | 4.76 | 2.2 | 0.5 | ○                                          | ●      | ●      | ○      |        |        |        |        |        |        | ●      | ○      |        |        |        |        |                         |                                       |                                                |        |         |      |      |       |
|                                                                                                                                   | KNUX160410L11 | 16                          | 16.15 | 9.525 | 4.76 | 2.2 | 1.0 | ●                                          | ●      |        |        |        |        |        |        |        |        | ○      |        |        |        |        |        |                         |                                       |                                                |        |         |      |      |       |
|                                                                                                                                   | KNUX160405L12 | 16                          | 16.15 | 9.525 | 4.76 | 2.2 | 0.5 | ○                                          | ●      |        |        |        |        |        |        |        |        | ○      |        |        |        |        |        |                         |                                       |                                                |        |         |      |      |       |
|                                                                                                                                   | KNUX160410L12 | 16                          | 16.15 | 9.525 | 4.76 | 2.2 | 1.0 | ○                                          | ●      |        |        |        |        |        |        |        |        | ○      |        |        |        |        |        |                         |                                       |                                                |        |         |      |      |       |
|                                                                                                                                   | KNUX160405R11 | 16                          | 16.15 | 9.525 | 4.76 | 2.2 | 0.5 | ●                                          | ●      | ●      | ○      |        |        |        |        |        |        | ●      | ○      |        |        |        |        |                         |                                       |                                                |        |         |      |      |       |
|                                                                                                                                   | KNUX160410R11 | 16                          | 16.15 | 9.525 | 4.76 | 2.2 | 1.0 | ●                                          | ●      |        |        |        |        |        |        |        |        | ●      |        |        |        |        |        |                         |                                       |                                                |        |         |      |      |       |
|                                                                                                                                   | KNUX160405R12 | 16                          | 16.15 | 9.525 | 4.76 | 2.2 | 0.5 | ○                                          | ●      |        |        |        |        |        |        |        |        | ○      |        |        |        |        |        |                         |                                       |                                                |        |         |      |      |       |
|                                                                                                                                   | KNUX160410R12 | 16                          | 16.15 | 9.525 | 4.76 | 2.2 | 0.5 | ○                                          | ●      |        |        |        |        |        |        |        |        | ○      |        |        |        |        |        |                         |                                       |                                                |        |         |      |      |       |

### Chipbreaker / Spanbrecher

|           |                                                         |
|-----------|---------------------------------------------------------|
| <b>11</b> | Finishing - Medium<br>Schlichten - Mittlere Bearbeitung |
| <b>12</b> | Medium - Roughing<br>Mittlere Bearbeitung - Schruppen   |

### Tool holder / Klemmhalter



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A215

Insert code key  
ISO Code

A50-A51

Grade selection reference  
Sortenauswahl

A16/A37-A47

chip breaker selection reference  
Spanbrecherauswahl

A28-A36

Recommended cutting parameters  
Empfohlene Schnittparameter

A261-A263

# 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 |        |                         |                       |                    |                                   |                      |                                            |                       |                         |        |                                   |
|                                                         | 20                    |        | YBC251 | YBC252 |                         |                       | CA1000             | YC10                              |                      |                                            |                       | YBG201                  | YBG202 |                                   |
|                                                         | 30                    |        |        | YBC351 | YBG202                  | YBG205                |                    | YC40                              |                      |                                            |                       | YBC251                  | YBG202 | YBG302                            |
|                                                         | 40                    |        |        |        |                         |                       |                    |                                   |                      |                                            |                       |                         |        |                                   |
| <b>M</b><br>Stainless Steel · Rostfreier Stahl          | 01                    |        |        |        |                         |                       |                    |                                   |                      |                                            |                       |                         |        |                                   |
|                                                         | 10                    | YBM151 |        |        |                         |                       |                    |                                   |                      |                                            |                       | YBG201                  | YBG202 |                                   |
|                                                         | 20                    |        | YBM251 |        | YBG202                  | YBG205                |                    |                                   |                      |                                            |                       |                         | YBG202 |                                   |
|                                                         | 30                    |        |        | YBM351 |                         | YBG302                |                    |                                   |                      |                                            |                       |                         | YBG202 | YBG302                            |
|                                                         | 40                    |        |        |        |                         |                       |                    |                                   |                      |                                            |                       |                         |        |                                   |
| <b>K</b><br>Cast Iron · Gusseisen                       | 01                    |        |        |        |                         |                       |                    |                                   |                      |                                            |                       |                         |        |                                   |
|                                                         | 10                    | YBD052 | YBD102 | YBD152 | YBD151                  |                       | CN1000             | CA1000                            |                      |                                            |                       |                         |        |                                   |
|                                                         | 20                    |        |        |        |                         |                       |                    |                                   | YD051                | YCB211                                     | YCB011                |                         |        |                                   |
|                                                         | 30                    |        | YBD252 |        |                         |                       | CN2000             |                                   | YD201                |                                            |                       | YBG201                  |        |                                   |
|                                                         | 40                    |        |        |        |                         |                       |                    |                                   |                      |                                            |                       |                         | YBG302 | YD201                             |
| <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                  |        |                                   |
|                                                         | 30                    |        |        |        |                         |                       |                    |                                   |                      |                                            |                       |                         | YBG102 | YBG302                            |
|                                                         | 40                    |        |        |        |                         |                       |                    |                                   |                      |                                            |                       |                         |        | YD201                             |
| <b>H</b><br>super Hard Material<br>Gehärtete Werkstoffe | 01                    |        |        |        |                         |                       |                    |                                   | YCB121               | YCB111                                     |                       |                         |        |                                   |
|                                                         | 10                    |        |        |        |                         |                       |                    |                                   |                      | YCB012                                     |                       |                         |        |                                   |
|                                                         | 20                    |        |        |        |                         |                       |                    |                                   |                      |                                            |                       |                         |        |                                   |
|                                                         | 30                    |        |        |        |                         |                       |                    |                                   | YCB131               |                                            |                       |                         |        |                                   |
|                                                         | 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 Kühlfüssigkeit 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.