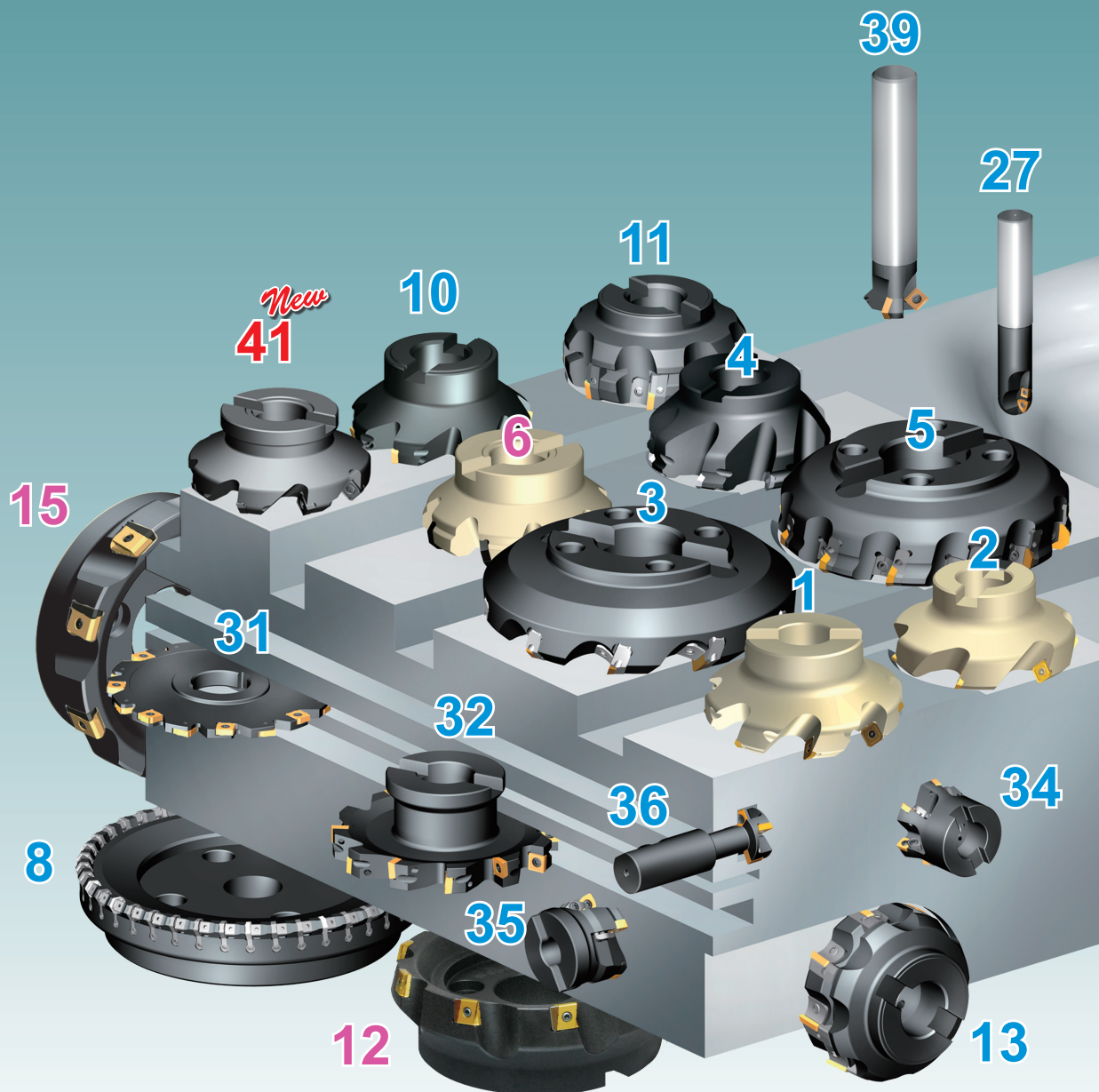


# Milling · Fräsen

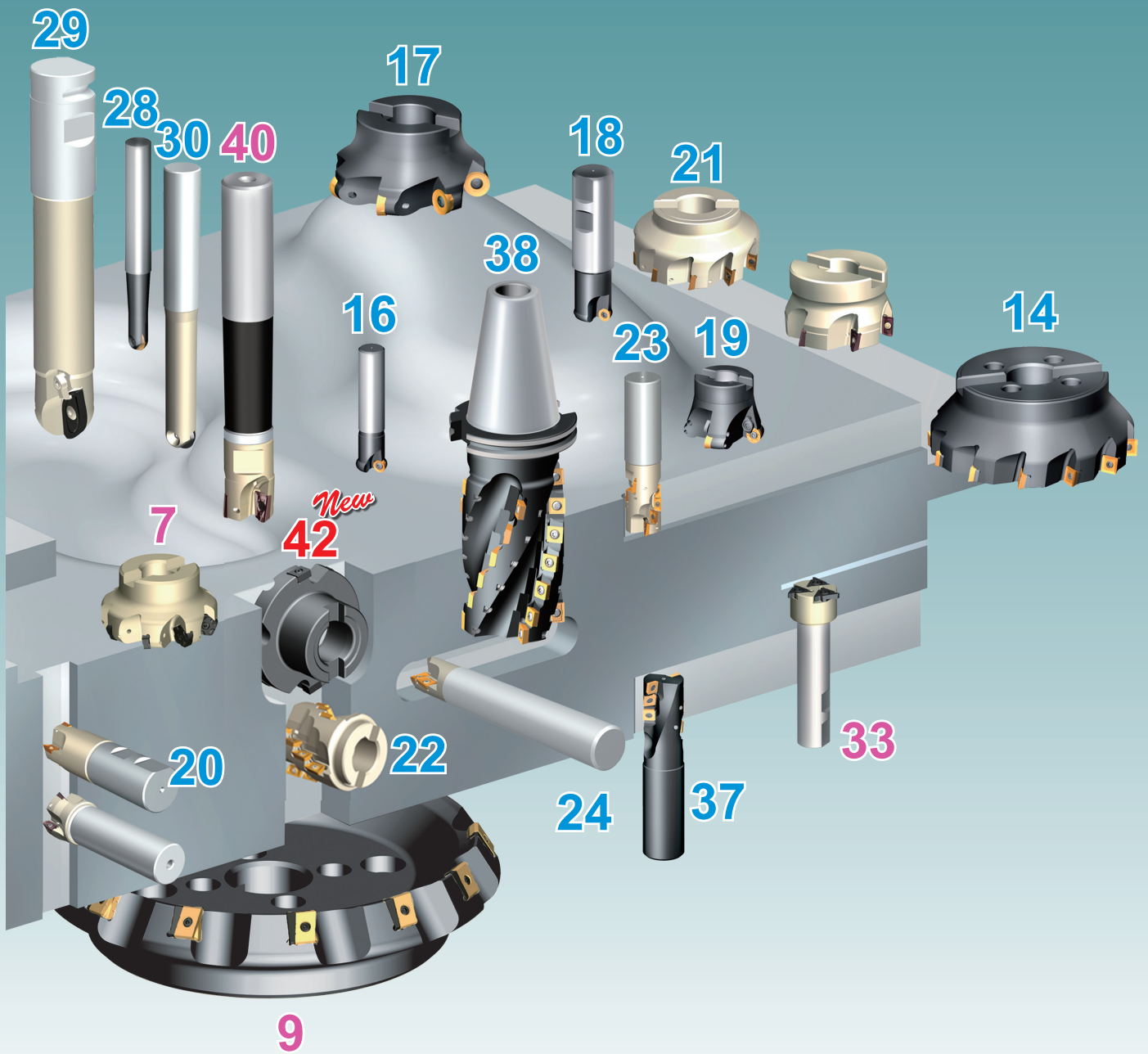
## Indexable Milling Tools · Wendeplattenfräser

|                  |  |
|------------------|--|
| <b>B8-B9</b>     | <b>Indexable milling tool family<br/>Wendeplattenfräsprogramm</b>                          |
| <b>B11-B18</b>   | <b>Indexable milling tools overview<br/>Wendeplattenfräser Übersicht</b>                   |
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| B138-B145        | Special milling (high feed)<br>Spezial Hochvorschubfräsen                                  |
| B146-B148        | Boring milling<br>Bore Fräsen  |
| B149-B150        | T-slot milling<br>T-Nuten Fräsen   |
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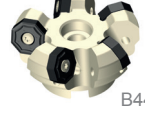

# Indexable inserts milling tool Program Wendeplatten Fräsprogramm



| No. Nr. | Tool category<br>Werkzeug Kategorie | Page<br>Seite | No. Nr. | Tool category<br>Werkzeug Kategorie | Page<br>Seite | No. Nr. | Tool category<br>Werkzeug Kategorie | Page<br>Seite |
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| 2       | FMA02                               | B29           | 10      | FME02                               | B58           | 18      | FMR03                               | B81           |
| 3       | FMA03                               | B33           | 11      | FME03                               | B60           | 19      | FMR04                               | B84           |
| 4       | FMA04(OFKT05**)                     | B36           | 12      | FME04                               | B64           | 20      | EMP01                               | B88           |
| 5       | FMA04(OFKR07**)                     | B40           | 13      | FMP01                               | B66           | 21      | EMP02                               | B95           |
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| 7       | FMD02(PN11)                         | B49           | 15      | FMP03                               | B74           | 23      | EMP04                               | B99           |
| 8       | FMD02(HN09)                         | B53           | 16      | FMR01                               | B76           | 24      | EMP05                               | B103          |



| No. Nr. | Tool category<br>Werkzeug Kategorie | Page<br>Seite | No. Nr. | Tool category<br>Werkzeug Kategorie | Page<br>Seite | No. Nr. | Tool category<br>Werkzeug Kategorie | Page<br>Seite |
|---------|-------------------------------------|---------------|---------|-------------------------------------|---------------|---------|-------------------------------------|---------------|
| 27      | BMR01                               | B105          | 35      | XMR01(WPGT**)                       | B140          | 40      | QCH                                 | B160          |
| 28      | BMR02                               | B107          | 36      | TMP01                               | B149          | 41      | FMA11                               | B46           |
| 29      | BMR03                               | B109          | 37      | HMP01(Ø40-Ø50)                      | B151          | 42      | XMP01                               | B146          |
| 30      | BMR04                               | B121          | 38      | HMP01(Ø50-Ø80)                      | B152          |         |                                     |               |
| 31      | SMP01                               | B129          |         | HMP01<br>EC(Ø50-Ø80)                | B153          |         |                                     |               |
| 32      | SMP03                               | B132          | 39      | CMA/CMD/CMZ                         | B156          |         |                                     |               |

| Serie<br>Serie  | Approach<br>Angle /<br>max. depth of<br>cut<br>Einstellwinkel/<br>max.<br>Schnitttiefe                           | Insert<br>WSP   | Application<br>Anwendung   | Features<br>Merkmale  |
|---|--|---|--|---|
| <b>FMA01</b><br><br><br><br>B28              | $K_r=45^\circ$<br>$a_{pmax}=6.0$   | SEET12T3-DF/DM/DR<br>SEET12T3-CF/CM/CR<br>SEET12T3-EF/EM<br>SEET12T3-LH<br>SEET12T3-W | General face milling of: Steel, alloy steel, stainless steel, cast iron, aluminium alloy, high temperature alloy<br><br>Allgemeines Planfräsen von: Stahl, leg. Stahl, rostfr. Stahl, Grauguss, Alu.-legierungen, hochtemperaturbeständige Legierungen | <ul style="list-style-type: none"> <li>• Diameter range Ø50-Ø315</li> <li>• Large rake angle makes cutting more light and fast</li> <li>• Wide applications by using available inserts with different chipbreaker</li> <li>• Adopting wiper inserts improve surface quality</li> <li>• Durchmesserbereich: 50 – 315 mm weichschneidende Fräser mit großer, positiver Schneidengeometrie.</li> <li>• Großes Anwendungsgebiet durch unterschiedliche Spanbrecherausführung</li> <li>• Wiper-Wendeschneidplatten für beste Oberflächenqualität</li> </ul>  |
| <b>FMA02</b><br><br><br><br>B29              | $K_r=45^\circ$<br>$a_{pmax}=6.0$   | SEET12T3-DF/DM/DR<br>SEET12T3-CF/CM/CR<br>SEET12T3-EF/EM<br>SEET12T3-LH<br>SEET12T3-W | General face milling of: Steel, alloy steel, stainless steel, cast iron, aluminum alloy, high temperature alloy<br><br>Allgemeines Planfräsen von: Stahl, leg. Stahl, rostfr. Stahl, Grauguss, Alu.-legierungen, hochtemperaturbeständige Legierungen  | <ul style="list-style-type: none"> <li>• Diameter range Ø50-Ø125</li> <li>• Large rake angle makes cutting more light and fast</li> <li>• Wide applications by using available inserts with different chipbreaker</li> <li>• Coarse and differential pitch, reduce vibration.</li> <li>• Durchmesserbereich: 50 – 125 mm weichschneidende Fräser mit großer, positiver Schneidengeometrie.</li> <li>• Großes Anwendungsgebiet durch unterschiedliche Spanbrecherausführung</li> <li>• Weite und Differential-Teilung zur Vermeidung von Vibrationen</li> </ul>  |
| <b>FMA03</b><br><br><br><br>B33             | $K_r=45^\circ$<br>$a_{pmax}=5.5$<br><br>$K_r=45^\circ$<br>$a_{pmax}=7.5$   | SEN120*3AF**<br>SE*R1203AF**<br><br>SE*N1504AF**<br>SE*R1504AF**                      | General face milling of steel, stainless steel, cast iron<br><br>Allgemeine Planfräsbear. von Stahl, rostfr. Stahl und Grauguss  | <ul style="list-style-type: none"> <li>• Diameter range Ø80-Ø315</li> <li>• Large rake angle makes cutting more light and fast</li> <li>• Top clamping reduces vibrations</li> <li>• Durchmesserbereich: 80 – 315 mm weichschneidende Fräser mit großer, positiver Schneidengeometrie.</li> <li>• Großes Anwendungsgebiet durch unterschiedliche Spanbrecherausführung</li> <li>• Topklammerung zur Vermeidung von Vibrationen</li> </ul>   |
| <b>FMA04</b><br><br><br><br>B36            | $K_r=45^\circ$<br>$a_{pmax}=3.5$   | OFKT05T3-DF/DM<br>OFKT05T3-LH   | Face milling of steel, alloy steel, cast iron, aluminum alloy<br><br>Planfräsen von Stahl, leg. Stahl Grauguss und Alu.-legierungen  | <ul style="list-style-type: none"> <li>• Diameter range Ø50-Ø160</li> <li>• High economy milling tool with 8 cutting edges</li> <li>• Screw clamping, high precision</li> <li>• Durchmesserbereich: 125 – 315 mm</li> <li>• Hochwirtschaftlicher Fräser mit 8 Schneidkanten</li> <li>• Schraubenklammerung mit hoher Präzision.</li> <li>• Topklammerung zum leichteren Plattenwechsel</li> </ul>   |
| <br><br>B40                                | $K_r=45^\circ$<br>$a_{pmax}=5.0$   | OFKR0704-DF/DM  | Face milling of steel, alloy steel and cast iron<br><br>Planfräsen von Stahl, leg. Stahl und Grauguss  | <ul style="list-style-type: none"> <li>• Diameter range Ø125-Ø315</li> <li>• High economy milling tool with 8 cutting edges</li> <li>• Top clamping is easy to assemble and disassemble</li> <li>• Durchmesserbereich: 125 – 315 mm</li> <li>• Hochwirtschaftlicher Fräser mit 8 Schneidkanten</li> <li>• Schraubenklammerung mit hoher Präzision.</li> <li>• Topklammerung zum leichteren Plattenwechsel</li> </ul>  |
| <b>FMA07</b><br><b>New!</b><br><br><br>B43 | $K_r=45^\circ$<br>$a_{pmax}=4.0$   | ONHU060408-PF/PM/W  | Face milling of steel, alloy steel, cast iron  | <ul style="list-style-type: none"> <li>• Diameter range Ø25-Ø50</li> <li>• High economy milling tool with 16 cutting edges</li> <li>• Durchmesserbereich: 25 – 50 mm</li> <li>• Hochwirtschaftliche Fräser mit 16 Schneidkanten</li> </ul>  |
| <br><br>B44                                | $K_r=45^\circ$<br>$a_{pmax}=5.0$   | ONHU08T508-PF/PM/W  | Planfräsen von Stahl und Grauguss  | <ul style="list-style-type: none"> <li>• Diameter range Ø50-Ø315</li> <li>• High economy milling tool with 16 cutting edges</li> <li>• Durchmesserbereich: 50 – 315 mm</li> <li>• Hochwirtschaftliche Fräser mit 16 Schneidkanten</li> </ul>  |
| <b>FMA11</b><br><b>New!</b><br><br><br>B46 | $K_r=45^\circ$<br>$a_{pmax}=5.5$<br><br>$K_r=45^\circ$<br>$a_{pmax}=7.0$<br><br>$K_r=45^\circ$<br>$a_{pmax}=9.0$ | SNEG 1205ANR-GM<br><br>SNEG 1506ANR-GM/GR<br><br>SNEG 1907ANR-GM                      | Face milling of steel, alloy steel and cast iron<br><br>Planfräsen von Stahl und Leg. Stahl Grauguss   | <ul style="list-style-type: none"> <li>• Diameter range Ø63-Ø315</li> <li>• 8 cutting edge</li> <li>• Inserts with big rake angle cutting lightly reducing power consumption</li> <li>• Milling cutter with double negative angle and with thicker inserts for high stability and big cutting depth.</li> <li>• Inserts with wiper cutting edge for good surface quality.</li> <li>• Durchmesserbereich: Ø60 – Ø315 mm</li> <li>• 8 Schneidkanten</li> <li>• Wandeschneidplatte mit großen Spanwinkel zur Reduzierung der Schnittkräfte</li> <li>• Doppelseitige, extra dickewandeschneidplatte für große Spanliefen bei hoher bruchssicherheit</li> <li>• Wiper Geometrie für beste Oberflächengüte</li> </ul> |

Face milling · Planfräsen

B








Milling Tools  
Fräser


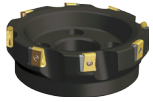




# Milling - Fräsen

## General Technical Information - Allgemeine Technische Informationen

B

Milling Tools  
Fräser

| Serie<br>Serie   | Approach<br>Angle /<br>max. depth of<br>cut<br>Einstellwinkel/<br>max.<br>Schnitttiefe | Insert<br>WSP  | Application<br>Anwendung   | Features<br>Merkmale   |
|--|--|--|--|--|
| <b>FMD02</b><br><br>B49-B52 | $K_r=67^\circ$<br>$a_{pmax}=5.0$   | PNEG110512R-CR<br>PNEG110512R-CM<br>PNEG110512R-PR<br>PNEG110512R-PM         | Face milling of<br>cast iron<br><br>Planfräsen von<br>Stahl, leg. Stahl<br>und Grauguss  | <ul style="list-style-type: none"> <li>Diameter range <math>\varnothing 50</math>-<math>\varnothing 315</math></li> <li>High economy milling tool with 10 cutting edges</li> <li>Durchmesserbereich: 50 – 315 mm</li> <li>Hochwirtschaftliche Fräser mit 10 Schneidkanten</li> </ul>   |
| <b>FMD02</b><br><br>B53     | $K_r=55^\circ$<br>$a_{pmax}=6.0$   | HNEXT090512-DF/DM<br>HNEXT090512-DR  | Face milling of<br>cast iron<br><br>Planfräsen von<br>Grauguss   | <ul style="list-style-type: none"> <li>Diameter range <math>\varnothing 80</math>-<math>\varnothing 315</math></li> <li>Top clamping is easy to assemble and disassemble</li> <li>High economy milling tool with 12 cutting edges</li> <li>Durchmesserbereich: 80 – 315 mm</li> <li>Topklemmsystem zum einfachen Wendeschneidplatten-Wechsel</li> <li>Hoch wirtschaftlich durch doppelseitige 12 Schneiden-Platte</li> </ul>   |
| <b>FMD03</b><br><br>B55    | $K_r=60^\circ$<br>$a_{pmax}=12.0$<br><br>$K_r=60^\circ$<br>$a_{pmax}=17.0$             | LNKT2007DN-ZR<br><br>LNKT2510-ZR   | Heavy-duty face<br>milling of steel,<br>alloy steel and<br>cast iron<br><br>Schwerzer-<br>spanungsfräsen<br>von Stahl,<br>leg. Stahl und<br>Grauguss | <ul style="list-style-type: none"> <li>Diameter rang <math>\varnothing 125</math>-<math>\varnothing 400</math></li> <li>Double positive rake angle reduces the cutting force</li> <li>Suitable for heavy machining with big cutting depth</li> <li>Easy to assemble and clamp inserts</li> <li>Durchmesserbereich: 125 – 400 mm</li> <li>Doppelt positive Schneidwinkel zur Reduzierung der Schnittkräfte</li> <li>Anwendung zur Schwerzerspannung bei hohen Schnitttiefen</li> <li>Einfache und stabile Wendeschneidplatten-Klemmung</li> </ul> |
| <b>FME02</b><br><br>B58   | $K_r=75^\circ$<br>$a_{pmax}=6.0$   | SPKW1204EDFR<br>SPKW1204EDSR<br>SPKT1204EDR                                  | Face milling of<br>steel, alloy of<br>steel and cast<br>iron<br><br>Planfräsen von<br>Stahl, leg. Stahl<br>und Grauguss                              | <ul style="list-style-type: none"> <li>Diameter range <math>\varnothing 50</math>-<math>\varnothing 125</math></li> <li><math>K_r 75^\circ</math>, general face milling</li> <li>Wide applications by using inserts with different chipbreakers</li> <li>Durchmesserbereich: 50 – 125 mm</li> <li>Anstellwinkel 75 Grad,</li> <li>Allgemeines Planfräsen</li> <li>Weites Anwendungsgebiet durch Einsatz von Wendeschneidplatten mit unterschiedlichen Spanbrechern</li> </ul>  |
| <b>FME03</b><br><br>B60   | $K_r=75^\circ$<br>$a_{pmax}=6.0$<br><br>$K_r=75^\circ$<br>$a_{pmax}=8.0$               | SP*N1203(1504)ED**<br>SP*R1203(1504)ED**<br><br>SP*N1504ED**<br>SP*R1504ED** | General face<br>milling of steel,<br>alloy steel and<br>cast iron<br><br>Allgemeines<br>Planfräsen von<br>Stahl, leg. Stahl<br>und Grauguss          | <ul style="list-style-type: none"> <li>Diameter range <math>\varnothing 80</math>-<math>\varnothing 315</math></li> <li><math>K_r 75^\circ</math>, general face milling</li> <li>Top clamping is easy to assemble and disassemble</li> <li>Durchmesserbereich: 80 – 315 mm</li> <li>Einstellwinkel 75 Grad zum allgemeinen Planfräsen</li> <li>Top Klemmsystem zum einfachen Wendeschneidplattenwechsel.</li> </ul>  |
| <b>FME04</b><br><br>B64   | $K_r=75^\circ$<br>$a_{pmax}=10.0$  | LNKT1506EN-ZR  | Heavy-duty face<br>milling of steel<br>and alloy steel<br><br>Schwerzer-<br>spanungsfräsen<br>von Stahl und<br>leg. Stahl                            | <ul style="list-style-type: none"> <li>Diameter rang <math>\varnothing 125</math>-<math>\varnothing 315</math></li> <li>Double positive rake angle reduces the cutting force</li> <li>Suitable for heavy machining with big cutting depth</li> <li>Durchmesserbereich: 125 – 315 mm</li> <li>Doppelt positive Schneidwinkel zur Reduzierung der Schnittkräfte</li> <li>Anwendung zur Schwerzerspannung bei hohen Schnitttiefen</li> </ul>  |
| <b>FMP01</b><br><br>B66   | $K_r=90^\circ$<br>$a_{pmax}=18.0$  | TP*N2204PD*<br>TPKN2204PDF*<br>TPKN2204PDT*                                  | Face milling of<br>steel, alloy steel<br>and cast iron<br><br>Planfräsen von<br>Stahl, leg. Stahl<br>und Grauguss                                    | <ul style="list-style-type: none"> <li>Diameter range <math>\varnothing 80</math>-<math>\varnothing 315</math></li> <li><math>K_r 90^\circ</math>, square shoulder milling</li> <li>Top clamping is easy to assemble and disassemble</li> <li>Durchmesserbereich: 80 – 315 mm</li> <li>Einstellwinkel 90 Grad zum allgemeinen Planfräsen</li> <li>Top-Klemmsystem zum einfachen Wendeschneidplattenwechsel.</li> </ul>   |



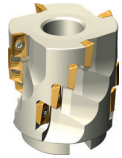


| Face milling - Planfräser  |                                   | Serie<br>Serie                          | Approach Angle /<br>max. depth of cut<br>Einstellwinkel/<br>max. Schnitttiefe                               | Insert<br>WSP  | Application<br>Anwendung  | Features<br>Merkmale  |
|--|-----------------------------------|---|---|--|---|---|
| <br>B68   | Kr=90°<br>a <sub>p</sub> max=6.7  | SEET09T308PER-PF/PM<br>SEET09T308PER-PR | Face milling<br>steel, alloy steel,<br>stainless steel<br>cast iron and Alu.                                | <ul style="list-style-type: none"> <li>• Diameter range Ø50-Ø315</li> <li>• Kr 90°, for square shoulder milling and face milling</li> <li>• Different pitch design: coarse pitch, close pitch and extra close pitch</li> <li>• High precision insert for, high surface quality</li> <li>• Optimized chipbreaker and grade, for finish machining, semi-finish machining and rough machining.</li> </ul> |   |   |
|  | Kr=90°<br>a <sub>p</sub> max=10.8 | SEET120308PER-PF/PM<br>SEET120308PER-PR |   |  | Plan- und<br>Eckfräsen von<br>Stahl, leg. Stahl,<br>rostfr. Stahl<br>Grauguss und Alu.  | <ul style="list-style-type: none"> <li>• Durchmesserbereich: 50 – 315 mm</li> <li>• Einstellwinkel 90 Grad zum Eck- und Planfräsen</li> <li>• Unterschiedliche Teilung: weit, eng und extra eng</li> <li>• Präzisionsschneidplatten zur Erzielung hoher Oberflächenqualität</li> <li>• Optimale Spanbrecher und Hartmetallsorten zum Schlichten, mittlere Bearbeitung und Schruppen.</li> </ul> |
| <br>B74   | Kr=90°<br>a <sub>p</sub> max=8    | LNKT1506EN-ZR                           | Heavy Duty face<br>milling steel, alloy<br>steel, stainless<br>steel and cast iron                          | <ul style="list-style-type: none"> <li>• Diameter range Ø125-Ø315</li> <li>• Kr 90°, for square shoulder milling and face milling with big cutting depth</li> <li>• positive rake reduces the cutting force</li> </ul>   |   |   |
|  | Kr=90°<br>a <sub>p</sub> max=12   | LNKT2007DN-ZR                           | Schwerzerspan-<br>nung von Stahl,<br>leg. Stahl,<br>rostfr. Stahl und<br>Grauguss                           |  | <ul style="list-style-type: none"> <li>• Durchmesserbereich: 125 – 315 mm</li> <li>• Einstellwinkel 90 Grad zum Schulter- und Planfräsen mit großer Schnitttiefe</li> <li>• Positiver Spanwinkel für weniger Schnittkräfte</li> </ul>                     |   |
|  | Kr=90°<br>a <sub>p</sub> max=15   | LNKT2510-ZR                             |   |  |   |   |
| <br>B76 | a <sub>p</sub> max=5.0            | RCKT10T3MO-DM                           | Cavity profile<br>milling of steel,<br>alloy steel,<br>stainless steel and<br>cast iron                     | <ul style="list-style-type: none"> <li>• Diameter range Ø25-Ø50</li> <li>• R-type inserts possess stronger cutting edges</li> <li>• Suitable for machining curved surface of mould</li> <li>• Economical milling cutters with screw clamping</li> </ul>  |   |   |
|  | a <sub>p</sub> max=6.0            | RCKT1204MO-DM/DR                        | Formfräsen von<br>Stahl, leg. Stahl,<br>rostfr. Stahl und<br>Grauguss                                       |  | <ul style="list-style-type: none"> <li>• Durchmesserbereich: 25 – 50 mm</li> <li>• Radiusfräser mit stabiler Schneidkante</li> <li>• Einsatz zur Bearbeitung von Formen und Gesenken</li> <li>• Wirtschaftliche Fräser mit Schraubenklammerung</li> </ul> |   |
| <br>B79 | a <sub>p</sub> max=6.0            | RCKT1204MO-DM/DR/ER                     | Face milling and<br>cavity profile<br>milling of steel,<br>alloy steel,<br>stainless steel and<br>cast iron | <ul style="list-style-type: none"> <li>• Diameter range Ø63-Ø200</li> <li>• R-type inserts possess stronger cutting edges</li> <li>• Suitable for machining curved surface of mould</li> <li>• Economical milling tools with screw clamping</li> </ul>   |   |   |
|  | a <sub>p</sub> max=8.0            | RCKT1606MO-DM/DR/ER                     |   |  | Plan- und<br>Formfräsen von<br>Stahl, leg. Stahl,<br>rostfreiem Stahl<br>und Grauguss   | <ul style="list-style-type: none"> <li>• Durchmesserbereich: 63 – 200 mm</li> <li>• Radiusfräser mit stabiler Schneidkante</li> <li>• Einsatz zur Bearbeitung von Formen und Gesenken</li> <li>• Wirtschaftliche Fräser mit Schraubenklammerung</li> </ul>  |
|  | a <sub>p</sub> max=10.0           | RCKT2006MO-DM/DR/ER                     |   |  |   |   |
| <br>B81 | a <sub>p</sub> max=4.0            | RDKW0702MO<br>RDKW0803MO                | Cavity profile<br>milling of steel,<br>alloy steel,<br>stainless steel and<br>cast iron                     | <ul style="list-style-type: none"> <li>• Diameter range Ø25-Ø50</li> <li>• R-type inserts possess stronger cutting edges</li> <li>• Suitable for machining curved surface of mould</li> <li>• Economical milling tools with screw clamping</li> </ul>  |   |   |
|  | a <sub>p</sub> max=5.0            | RDKW1003MO<br>RDKW10T3MO                |   |  | Formfräsen von<br>Stahl, leg. Stahl,<br>rostfreiem Stahl<br>und Grauguss  | <ul style="list-style-type: none"> <li>• Durchmesserbereich: 25 – 50 mm Radiusfräser mit stabiler Schneidkante</li> <li>• Einsatz zur Bearbeitung von Formen und Gesenken</li> <li>• Wirtschaftliche Fräser mit Schraubenklammerung</li> </ul>  |
|  | a <sub>p</sub> max=6.0            | RDKW1204MO<br>RDKW12T3MO                |   |  |   |   |
| <br>B84 | a <sub>p</sub> max=6.0            | RDKW1204MO<br>RDKW12T3MO                | Face milling and<br>cavity profile<br>milling of steel,<br>alloy steel,<br>stainless steel and<br>cast iron | <ul style="list-style-type: none"> <li>• Diameter range Ø50-Ø160</li> <li>• R-type inserts possess stronger cutting edge</li> <li>• Suitable for machining curved surface of mould</li> </ul>  |   |   |
|  | a <sub>p</sub> max=8.0            | RDKW1604MO<br>RDKW1605MO                |   |  | Plan- und<br>Formfräsen von<br>Stahl, leg. Stahl,<br>rostfreiem Stahl<br>und Grauguss   | <ul style="list-style-type: none"> <li>• Durchmesserbereich: 50 – 160 mm</li> <li>• Radiusfräser mit stabiler Schneidkante</li> <li>• Einsatz zur Bearbeitung von Formen und Gesenken</li> <li>• Wirtschaftliche Fräser mit Schraubenklammerung</li> </ul>  |
|  | a <sub>p</sub> max=10.0           | RDKW2006MO                              |   |  |   |   |









# Milling - Fräsen

## General Technical Information - Allgemeine Technische Informationen

# B

Milling Tools  
Fräser

|   | Serie<br>Serie   | Approach<br>Angle /<br>max. depth of<br>cut<br>Einstellwinkel/<br>max.<br>Schnitttiefe | Insert<br>WSP  | Application<br>Anwendung   | Features<br>Merkmale   |
|---|--|--|--|--|--|
| Square shoulder milling · Eckfräsen   | <b>EMP01</b><br><br><br><br>B88   | Kr=90°<br>a <sub>pmax</sub> =10.5  | APKT11T3**-PF/PM/<br>PR<br>APKT11T3**-LH   | Multi-function milling of<br>steel, alloy steel, stainless<br>steel, cast iron and Al alloy  | <ul style="list-style-type: none"> <li>• Two mounting modes: Straight shank and Weldon shank, Diameter range Ø12-Ø63.</li> <li>• Kr 90° , for square shoulder milling, slot milling, ramp milling etc.</li> <li>• Wiper inserts also suitable for face milling.</li> <li>• Inserts with 3D helical cutting edge, less cutting force.</li> </ul>  |
|   |  | Kr=90°<br>a <sub>pmax</sub> =15.5  | APKT160408- PF/PM/<br>PR<br>APKT160408-LH  | Universelles Fräsen von<br>Stahl, leg. Stahl, rostfr.<br>Stahl, Grauguss und leg.<br>Alu.  | <ul style="list-style-type: none"> <li>• Zwei Aufnahmeversionen: Zylinderschaft u. Weldon.</li> <li>• Durchmesserbereich: 12 – 63 mm.</li> <li>• Einstellwinkel 90 Grad, zum Eck-, Nuten-, Tauchfräsen etc.</li> <li>• Wiper-Schneidplatten zum Planfräsen.</li> <li>• Schneidplatte mit 3-D Spiral-Schneide zur Reduzierung der Zerspanungskräfte.</li> </ul>   |
|   | <b>EMP02</b><br><br><br><br>B95   | Kr=90°<br>a <sub>pmax</sub> =10.5  | APKT11T3**- PF/PM/<br>PR<br>APKT11T3**-LH  | Face milling of steel, alloy<br>steel, stainless steel, cast<br>iron and Al alloy  | <ul style="list-style-type: none"> <li>• Diameter range Ø50-Ø100.</li> <li>• Kr 90° , for square shoulder milling.</li> <li>• Wiper inserts also suitable for face milling.</li> <li>• Inserts with 3D helical cutting edge, less cutting force.</li> </ul>  |
|   |  | Kr=90°<br>a <sub>pmax</sub> =15.5  | APKT160408- PF/PM/<br>PR<br>APKT160408-LH  | Universelles Fräsen von<br>Stahl, leg. Stahl, rostfr.<br>Stahl, Grauguss und leg.<br>Alu.  | <ul style="list-style-type: none"> <li>• Durchmesserbereich: 50 – 100 mm.</li> <li>• Einstellwinkel 90 Grad zum Eckfräsen.</li> <li>• Wiper-Schneidplatten zum Planfräsen Schneidplatte im 3-D Design.</li> <li>• Zirkularschneide zur Reduzierung der Zerspanungskräfte.</li> </ul>   |
|   | <b>EMP03</b><br><br><br><br>B98 | Kr=90°<br>a <sub>pmax</sub> =39.0  | APKT11T3**-PF/PM/<br>PR<br>APKT11T3**-LH   | Adopting large cutting<br>depth, for milling of steel,<br>alloy steel, stainless steel,<br>cast iron and Al alloy<br><br>Fräsen mit großen<br>Schnitttiefen von Stahl,<br>leg. Stahl, rostfr. Stahl,<br>Grauguss und leg. Alu.   | <ul style="list-style-type: none"> <li>• Diameter range Ø50-Ø100</li> <li>• End milling tools with positive helical angle, good chip removal.</li> <li>• For side face milling and slot machining</li> <li>• Close pitch, high machining efficiency.</li> <li>• Durchmesserbereich: 50 – 100 mm.</li> <li>• Eckfräser mit pos. Zirkularwinkel und guter Spanabfuhr.</li> <li>• Eck- und Nutenfräsen.</li> <li>• Enge Teilung zur Erreichung hoher Bearbeitungswirtschaftlichkeit.</li> </ul> |
| <b>EMP04</b><br><br><br><br>B99  | Kr=90°<br>a <sub>pmax</sub> =58.0  | APKT11T3**-PF/PM/<br>PR<br>APKT11T3**-LH   | Adopting large cutting<br>depth, for milling steel, alloy<br>steel, stainless steel, cast<br>iron and Al alloy.<br><br>Fräsen mit großen<br>Schnitttiefen von Stahl,<br>leg. Stahl, rostfr. Stahl,<br>Grauguss und leg. Alu. | <ul style="list-style-type: none"> <li>• Diameter range Ø20-Ø40</li> <li>• End milling tools with positive helical angle, good chip removal</li> <li>• For side face milling and slot machining</li> <li>• Close pitch, high machining efficiency.</li> <li>• Durchmesserbereich: 20 – 40 mm.</li> <li>• Schafffräser mit pos. Zirkularwinkel und guter Spanabfuhr.</li> <li>• Eck- und Nutenfräsen.</li> <li>• Enge Teilung zur Erreichung hoher Bearbeitungswirtschaftlichkeit.</li> </ul> |  |
| <b>EMP05</b><br><br><br><br>B103 | Kr=90°<br>a <sub>pmax</sub> =40.0  | APMT1135PDR<br>APMT160408PDER  | Multi-function drilling and<br>milling steel alloy steel,<br>stainless steel and cast iron<br>Multi-Funktionsbohren<br>und Fräsen von Stahl, leg.<br>Stahl, rostfr. Stahl und<br>Grauguss                                    | <ul style="list-style-type: none"> <li>• Diameter range Ø25-Ø40</li> <li>• End edge over center, for drilling directly.</li> <li>• Durchmesserbereich: 25 – 40 mm.</li> <li>• Zentrum-Schneide (über Mitte) zum Bohren.</li> </ul>   |  |



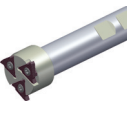

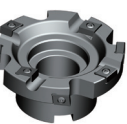
|                              | Serie<br>Serie   | Approach Angle /<br>max. depth of cut<br>Einstellwinkel/<br>max. Schnitttiefe   | Insert<br>WSP  | Application<br>Anwendung  | Features<br>Merkmale  |
|------------------------------|--|---|--|---|---|
| Profile milling<br>Formfräse | <b>BMR01</b><br><br>B105  | Cutting depth:<br>see the detailed<br>information about<br>tool specifications<br><br>Schnitttiefe:<br>siehe detaillierte<br>Info in der<br>Werkzeug-<br>spezifikation. | ZDET**CYR**<br>ZPNT2204CYR**<br>SPMT060304<br>SDMT** | Profile machining of<br>steel, stainless steel<br>and cast iron<br><br>Formfräsen von Stahl,<br>rostfreiem Stahl und<br>Grauguss. | <ul style="list-style-type: none"> <li>• Diameter range Ø20-Ø63</li> <li>• Very suitable for rough machining large mold</li> <li>• Ball nose cutter with 3-cutting-edges inserts, perfect economical efficiency</li> <li>• Durchmesserbereich: 20 – 63 mm</li> <li>• Besonders geeignet für die Schruppbearbeitung von großen Formen</li> <li>• Radiusfräser mit 3 Schneidkanten pro Schneidplatte.</li> <li>• Hohe Wirtschaftlichkeit</li> </ul>   |
|                              | <b>BMR02</b><br><br>B107  |   | ROHX**   | Profile machining of<br>steel, stainless steel<br>and cast iron<br><br>Formfräsen von Stahl,<br>rostfreiem Stahl und<br>Grauguss. | <ul style="list-style-type: none"> <li>• Diameter range Ø12-Ø20</li> <li>• Applied for profile finish machining</li> <li>• Good assembly stability.</li> <li>• Insert with two cutting edges, perfect economical efficiency.</li> <li>• Durchmesserbereich: 12 – 20 mm</li> <li>• Schlichtbearbeitung von Formen</li> <li>• Hohe Fräserstabilität</li> <li>• Schneidplatte mit 2 Schneidkanten</li> <li>• Hohe Wirtschaftlichkeit</li> </ul>  |
|                              | <b>BMR03</b><br><br>B109<br><br>B110<br><br>B111<br><br>B112 |   | XPHT**R**- GM  | Profile machining of<br>steel, stainless steel<br>and cast iron<br><br>Formfräsen von Stahl,<br>rostfreiem Stahl und<br>Grauguss. | <ul style="list-style-type: none"> <li>• Diameter range Ø16-Ø50</li> <li>• Very suitable for rough machining moulds</li> <li>• Equipped with 3D chipbreaker inserts, high circular edge precision.</li> <li>• Tool body with high rigidity</li> <li>• Durchmesserbereich: 16 – 50 mm</li> <li>• Besonders geeignet für das Schruppfräsen von Formen.</li> <li>• 3-D Spanbrecher für hohe Rundlaufgenauigkeit</li> <li>• Werkzeugkörper mit hoher Stabilität</li> </ul>                              |
|                              | <b>BMR04</b><br><br>B121<br><br>B122   |   | ZOHX**   | Profile machining of<br>steel, stainless steel<br>and cast iron<br><br>Formfräsen von Stahl,<br>rostfreiem Stahl und<br>Grauguss. | <ul style="list-style-type: none"> <li>• Diameter range Ø10-Ø40</li> <li>• High precision, for finish profile machining.</li> <li>• Two types of chipbreaker, used at different machining condition</li> <li>• High assembling precision, good stability.</li> <li>• Durchmesserbereich: 10 – 40 mm</li> <li>• Hohe Präzision zur Fertigbearbeitung beim Formfräsen.</li> <li>• 2 Spanbrechergeometrien für unterschiedliche Anwendungen</li> <li>• Hohe Fräserstabilität und Präzision.</li> </ul> |








# Milling - Fräsen

## General Technical Information - Allgemeine Technische Informationen

B

Milling Tools  
Fräser

|   | Serie<br>Serie  | Approach Angle /<br>max. depth of cut<br>Einstellwinkel/<br>max. Schnitttiefe   | Insert<br>WSP      | Application<br>Anwendung  | Features<br>Merkmale  |
|---|---|---|--------------------|---|---|
| Slot milling<br>Nutenfräsen                                     | <b>SMP01</b><br><br>B129<br>B130                   | Cutting depth:<br>see the detailed<br>information about<br>tool specifications  | XSEQ12□□           | Slot milling<br>of steel,<br>stainless<br>steel and cast<br>iron.<br><br>Nutenfräsen<br>von Stahl und<br>Grauguss   | <ul style="list-style-type: none"> <li>• Diameter range Ø100-Ø250</li> <li>• Two mounting types</li> <li>• Groove width range : 4, 5, 6, 7, 8mm</li> </ul> <ul style="list-style-type: none"> <li>• Durchmesserbereich Ø100-Ø250</li> <li>• Zwei Aufnahme Typen</li> <li>• Nutenbreiten Bereich : 4, 5, 6, 7, 8mm</li> </ul>  |
|   | <b>SMP03</b><br><br>B132<br>B133                   | Schnitttiefe:<br>siehe detaillierte<br>Info in der<br>Werkzeug-<br>spezifikation.   | MPHT□□             | Slot milling<br>of steel,<br>stainless<br>steel and cast<br>iron.<br><br>Nutenfräsen<br>von Stahl und<br>Grauguss   | <ul style="list-style-type: none"> <li>• Diameter range Ø80-Ø250</li> <li>• Two mounting types</li> <li>• Groove width range : 4, 5, 6, 7, 8mm</li> </ul> <ul style="list-style-type: none"> <li>• Durchmesserbereich Ø80-Ø250</li> <li>• Zwei Aufnahme Typen</li> <li>• Nutenbreiten Bereich : 4, 5, 6, 7, 8mm</li> </ul>  |
|   | <b>SMP05</b><br><b>New!</b><br><br>B135          | Cutting depth:<br>see the detailed<br>information about<br>tool specifications<br><br>Schnitttiefe:<br>siehe detaillierte<br>Info in der<br>Werkzeug-<br>spezifikation. | QC16L□□<br>QC22L□□ | Slot milling<br>of steel,<br>stainless<br>steel and cast<br>iron.<br><br>Nutenfräsen<br>von Stahl und<br>Grauguss   | <ul style="list-style-type: none"> <li>• Diameter range Ø25-Ø44</li> </ul> <ul style="list-style-type: none"> <li>• Durchmesserbereich Ø25-Ø44</li> </ul>   |
| Special milling (high feed)<br>Spezialfräsen für hohe Vorschübe | <b>XMR01</b><br><br>B138<br>B138<br>B140<br>B141 | Cutting depth:<br>see the detailed<br>information about<br>tool specifications<br><br>Schnitttiefe:<br>siehe detaillierte<br>Info in der<br>Werkzeug-<br>spezifikation. | SDMT□□-DM          | Face and<br>profile milling of<br>steel, stainless<br>steel and cast<br>iron in cavity<br>applications<br><br>Plan- und<br>Formfräsen<br>von Stahl,<br>rostfreiem Stahl<br>und Grauguss | <ul style="list-style-type: none"> <li>• Diameter range Ø25-Ø100</li> <li>• Two mounting types: Straight shank and Arbor</li> <li>• The cutting forces are decomposed effectively, realize cutting with high feed rate.</li> <li>• For plunge milling</li> <li>• Double clamping, firm and reliable.</li> <li>• Durchmesserbereich Ø25-Ø100</li> <li>• als Schaft- und Aufsteckfräser</li> <li>• Die Schnittkräfte werden axial konzentriert. Der Fräser ist für hohe Vorschübe geeignet.</li> <li>• Tauchfräsen möglich.</li> <li>• Doppeltes Klemmsystem für WSP.</li> </ul>        |
|   |   |   | WPGT□□ZSR          | Face and<br>profile milling of<br>steel, stainless<br>steel and cast<br>iron in cavity<br>applications<br><br>Plan- und<br>Formfräsen<br>von Stahl,<br>rostfreiem Stahl<br>und Grauguss | <ul style="list-style-type: none"> <li>• Diameter range Ø20-Ø100</li> <li>• Two mounting types: Straight shank and Arbor</li> <li>• The cutting forces are decomposed effectively, realize cutting with high feed rate.</li> <li>• Double clamping, firm and reliable.</li> <li>• Durchmesserbereich Ø25-Ø100</li> <li>• als Schaft und Aufsteckfräser</li> <li>• Die Schnittkräfte werden axial konzentriert. Der Fräser ist für hohe Vorschübe geeignet.</li> <li>• Doppeltes Klemmsystem für WSP.</li> </ul>   |
| Boring milling<br>Bohren-Fräser                                 | <b>XMP01</b><br><b>New!</b><br><br>B146          | Kr=90°<br>apmax=15~90   | CNE121006A/B       | Face milling,<br>side milling, and<br>boring milling<br><br>Fräsen für<br>Aufbohren,<br>Planfräsen,<br>Eckfräsen  | <ul style="list-style-type: none"> <li>• Diameter range Ø80-Ø400</li> <li>• Kr=90°</li> <li>• Good for helica milling</li> <li>• Two types of vertical inserts for different material CNE 121006A with sharper cutting edge. CNE 121006B with chamfer</li> </ul> <ul style="list-style-type: none"> <li>• Durchmesserbereich Ø80-Ø400</li> <li>• Kr=90°</li> <li>• Geeignet für Fräsen in Spiralinterpolation</li> <li>• Zwei WSP-Geometrie für verschiedene Materialien und Bearbeitungen. CNE 121006A mit schärferen Schneidkanten. CNE 121006A mit Schutzschneidkanten.</li> </ul> |


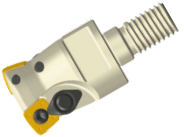
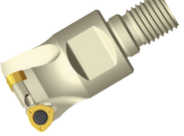
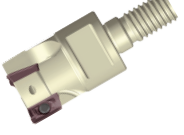
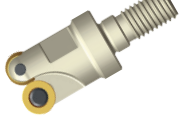



|  | Serie<br>Serie   | Approach Angle /<br>max. depth of cut<br>Einstellwinkel/<br>max. Schnitttiefe | Insert<br>WSP                                | Application<br>Anwendung   | Features<br>Merkmale   |
|--|--|---|--|--|--|
| T-slot milling<br>T-Nutenfräsen        | <b>TMP01</b><br><br>B149      | Kr=90°  | MPHT**                                       | Machining T<br>slot in cast iron<br><br>T-Nuten von<br>Gusseisen   | <ul style="list-style-type: none"> <li>• Diameter range Ø21-Ø60</li> <li>• Machining the T-slot with size range 12, 14, 18, 22, 28, 36 mm.</li> <li>• 86° rhombic inserts with positive angle.</li> <li>• Durchmesserbereich Ø21-Ø60</li> <li>• T-Nutenfräsen im Bereich von 12, 14, 18, 22, 28, 36mm.</li> <li>• 86° rhombische WSP mit positivem Winkel.</li> </ul>  |
| Helical end mills<br>Walzenstirnfräser | <b>HMP01</b><br><br>B151      | Kr=90°<br>a <sub>p</sub> max=55   | APKT150412-PM/<br>KM<br>SPMT120408-PM/<br>KM | Milling of steel,<br>alloy steel and<br>cast iron with<br>large cutting<br>depth.<br><br>Fräsen von<br>Stahl, leg. Stahl<br>und Grauguss.<br>Bei großen<br>Schnitttiefen.  | <ul style="list-style-type: none"> <li>• Diameter range Ø40-Ø80</li> <li>• Coarse and differential pitch, less vibration</li> <li>• Holistic structure with good rigidity, interchangeable heads achieve high economical efficiency.</li> <li>• Durchmesserbereich Ø40-Ø80</li> <li>• Weite und normale Teilung, weniger Vibrationen</li> <li>• Holistische Struktur mit hoher Stabilität, austauschbare Fräsköpfe für hohe Effizienz und Wirtschaftlichkeit.</li> </ul> |
|  | <br>B152                    | Kr=90°<br>a <sub>p</sub> max=144  |  |  |  |
|  | <b>HMP01 EC</b><br><br>B153 | Kr=90°<br>a <sub>p</sub> max=144  |  |  |  |
| Chamfer milling<br>Fasenfräser         | <b>CMZ01</b><br><br>B156    | Kr=30°  | SPMT120408                                   | Chamfer<br>machining of<br>steel, alloy<br>steel, stainless<br>steel and cast<br>iron<br><br>Fasenfräsen<br>von Stahl,<br>leg. Stahl,<br>rostfreiem Stahl<br>und Gusseisen | <ul style="list-style-type: none"> <li>• Diameter range Ø12, Ø25, Ø32, Ø36</li> <li>• With the function of milling small surface</li> <li>• Durchmesserbereich Ø12, Ø25, Ø32, Ø36</li> <li>• Einsatz bei kleinen Flächen</li> </ul>  |
|  | <b>CMA01</b><br><br>B157    | Kr=45°  |  |  |  |
|  | <b>CMD01</b><br><br>B158    | Kr=60°  |  |  |  |

# Milling - Fräsen

## General Technical Information - Allgemeine Technische Informationen

B

Milling Tools  
Fräser

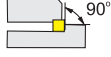
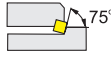
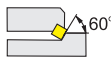

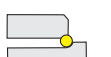
| New!   | Serie<br>Serie  | Approach Angle /<br>max. depth of cut<br>Einstellwinkel/<br>max. Schnitttiefe   | Insert<br>WSP  | Application<br>Anwendung   | Features<br>Merkmale   |  |  |
|--|---|---|--|--|--|--|--|
| Replacingshead milling<br>Wechselkopf-Fräser | QCH-XPHT<br><br>B163   | Cutting depth:<br>see the detailed<br>information about<br>tool specifications<br><br>Schnitttiefe:<br>siehe detaillierte<br>Info in der<br>Werkzeug-<br>spezifikation. | XPHT**   | Profile machining of<br>steel, stainless steel<br>and cast iron.<br><br>Formfräsen von Stahl,<br>rostfreiem Stahl und<br>Grauguss.   | <ul style="list-style-type: none"> <li>• Diameter range Ø16-Ø32</li> <li>• Very suitable for rough machining moulds.</li> <li>• Equipped with 3D chipbreaker inserts, high circular edge precision.</li> <li>• Tool body with high rigidity.</li> <li>• Durchmesserbereich: Ø16-Ø32.</li> <li>• Besonders geeignet für das Schrufffräsen von Formen.</li> <li>• 3-D Spanbrecher für hohe Rundlaufgenauigkeit</li> <li>• Werkzeugkörper mit hoher Stabilität</li> </ul>                                     |  |  |
|  | QCH-SDMT<br><br>B166   |   | SDMT**   | Face milling and<br>cavity profile milling<br>of steel, alloy steel,<br>stainless steel and<br>cast iron.<br><br>Plan- und Formfräsen<br>von Stahl, leg. Stahl,<br>rostfreiem Stahl und<br>Grauguss.   | <ul style="list-style-type: none"> <li>• Diameter range Ø25-Ø35.</li> <li>• The cutting forces are decomposed effectively, realize cutting with high feed rate.</li> <li>• For plunge milling</li> <li>• Double clamping, firm and reliable.</li> <li>• Durchmesserbereich Ø25-Ø35.</li> <li>• Die Schnittkräfte werden axial konzentriert. Der Fräser ist für hohe Vorschübe geeignet.</li> <li>• Tauchfräsen möglich.</li> <li>• Doppeltes Klemmsystem für WSP.</li> </ul>                               |  |  |
|  | QCH-WPGT<br><br>B167  |   | WPGT**   | Face milling and<br>cavity profile milling<br>of steel, alloy steel,<br>stainless steel and<br>cast iron.<br><br>Plan- und Formfräsen<br>von Stahl, leg. Stahl,<br>rostfreiem Stahl und<br>Grauguss.   | <ul style="list-style-type: none"> <li>• Diameter range Ø20-Ø35.</li> <li>• The cutting forces are decomposed effectively, realize cutting with high feed rate.</li> <li>• Double clamping, firm and reliable.</li> <li>• Durchmesserbereich Ø25-Ø35.</li> <li>• Die Schnittkräfte werden axial konzentriert. Der Fräser ist für hohe Vorschübe geeignet.</li> <li>• Doppeltes Klemmsystem für WSP.</li> </ul>   |  |  |
|  | QCH-APKT<br><br>B170 |   | APKT**   | Multi-function milling<br>of steel, alloy steel,<br>stainless steel,<br>cast iron and Al<br>alloy.<br><br>Multi-Funktionsbohren<br>und Fräsen von Stahl,<br>leg. Stahl, rostfr. Stahl<br>und Grauguss. | <ul style="list-style-type: none"> <li>• Diameter range Ø16-Ø30</li> <li>• Kr 90° , for square shoulder milling</li> <li>• Wiper inserts also suitable for face milling.</li> <li>• Inserts with 3D helical cutting edge, less cutting force.</li> <li>• Durchmesserbereich: 16 – 30 mm</li> <li>• Einstellwinkel 90 Grad zum Eckfräsen</li> <li>• Wiper-Schneidplatten zum Planfräsen</li> <li>• Schneidplatte im 3-D Design</li> <li>• Zirkularschneide zur Reduzierung der Zerspanungskräfte</li> </ul> |  |  |
|  | QCH-RD<br><br>B175   |   | RDKW**   | Face milling and<br>cavity profile milling<br>of steel, alloy steel,<br>stainless steel and<br>cast iron.<br><br>Plan- und Formfräsen<br>von Stahl, leg. Stahl,<br>rostfreiem Stahl und<br>Grauguss.   | <ul style="list-style-type: none"> <li>• Diameter range Ø16-Ø32.</li> <li>• R-type inserts possess stronger cutting edge</li> <li>• Suitable for machining curved surface of mould</li> <li>• Economical milling cutters with screw clamping.</li> <li>• Durchmesserbereich: 16 – 32 mm</li> <li>• Radiusfräser mit stabiler Schneidkante</li> <li>• Einsatz zur Bearbeitung von Formen und Gesenken.</li> <li>• Wirtschaftliche Fräser mit Schraubeklemmung.</li> </ul>                                   |  |  |
|  | QCH-ZOHX<br><br>B177 |   | ZOHX**   | Profile machining of<br>steel, stainless steel<br>and cast iron.<br><br>Formfräsen von Stahl,<br>rostfreiem Stahl und<br>Grauguss.   | <ul style="list-style-type: none"> <li>• Diameter range Ø16-Ø32</li> <li>• High precision, for finish profile machining.</li> <li>• Two types of chipbreaker, used at different machining condition</li> <li>• High assembling precision, good stability.</li> <li>• Durchmesserbereich: 16-32 mm</li> <li>• Hohe Präzision zur Fertigbearbeitung beim Formfräsen.</li> <li>• 2 Spanbrechergeometrien für unterschiedliche Anwendungen</li> <li>• Hohe Fräserstabilität und Präzision.</li> </ul>          |  |  |
|  | Hard alloy toolholder<br>Hartmetall Verlängerung<br><br>B179  |   |  |  |  |  |  |
|  | Steel toolholder<br>Stahl Verlängerung<br><br>B180  |   |  |  |  |  |  |

Comparison table for milling Insert - Grades  
Fräswendepplatten Übersichtstabelle - Sorten

| Workpiece material<br>Workpiece material              | ISO | Coated carbide<br>Beschichtetes Hartmetall |                  | Cermet<br>Cermet | Uncoated carbide<br>unbeschichtetes<br>Hartmetall | PCBN & PCD<br>PCBN & PKD |
|---|-----|--|------------------|------------------|---|--------------------------|
|   |     | CVD  | PVD              |                  |   |                          |
| <b>P</b><br>Steel<br>Stahl                            | P01 |  |                  |                  |   |                          |
|   | P10 |  | YBG202           | YNG151           |   |                          |
|   | P20 | YBC301<br>YBC302<br>YBM251<br>YBM253       |                  | YNG151C          |   |                          |
|   | P30 | YBM351<br>YBC401                           |                  |                  | YC30S   |                          |
|   | P40 |  |                  | YBG302           |   |                          |
| <b>M</b><br>Stainless Steel<br>Rostfreier Stahl       | M01 |  |                  |                  |   |                          |
|   | M10 | YBM251<br>YBM253                           | YBG202<br>YBG205 | YNG151           |   |                          |
|   | M20 |  | YBG252           | YNG151C          |   |                          |
|   | M30 | YBM351                                     |                  |                  | YC30S   |                          |
|   | M40 |  |                  | YBG302           |   |                          |
| <b>K</b><br>Cast iron<br>Grauguss                     | K01 |  |                  |                  |   |                          |
|   | K10 | YBD152                                     | YBG102           | YNG151           |   |                          |
|   | K20 |  |                  | YNG151C          |   | YD201                    |
|   | K30 | YBD252                                     | YBG152           |                  |   |                          |
|   | K40 |  |                  |                  |   |                          |
| <b>N</b><br>Hardened material<br>Gehärtete Werkstoffe | N01 |  |                  |                  |   |                          |
|   | N10 |  |                  |                  | YD101   |                          |
|   | N20 |  |                  |                  |   | YD201                    |
|   | N30 |  |                  |                  |   |                          |
| <b>S</b><br>Heat-resistant steel<br>Wärmefester Stahl | S01 |  |                  |                  |   |                          |
|   | S10 |  | YBG202           |                  |   |                          |
|   | S20 | YBM253                                     |                  |                  |   |                          |
|   | S30 |  |                  |                  |   |                          |
| <b>H</b><br>Non-ferrous materials<br>Ne Metalle       | H01 |  |                  |                  |   |                          |
|   | H10 |  |                  |                  |   |                          |
|   | H20 |  |                  |                  |   |                          |
|   | H30 |  |                  |                  |   |                          |

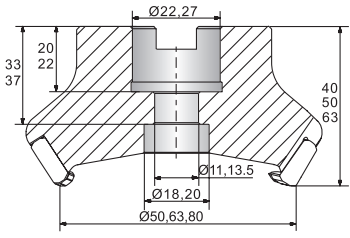
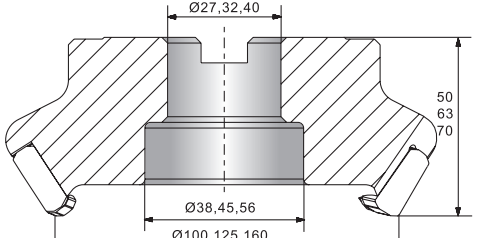
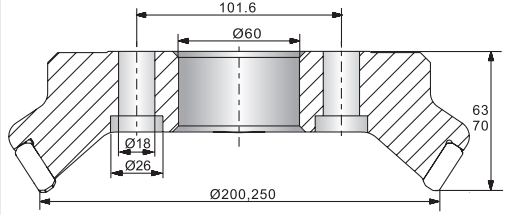
## Indexable milling tools code key · Kennzeichnung Fräsen ISO Code

| Cutter style<br>Fräser Typ |   |
|----------------------------|---|
| <b>FM</b>                  | Face milling tools<br>Planfräser                    |
| <b>EM</b>                  | Shoulder face milling tools<br>Eck- und Nutenfräser |
| <b>HM</b>                  | Helix end milling tools<br>Walzenstirnfräser        |
| <b>SM</b>                  | Side and face milling tools<br>Scheibenfräser       |
| <b>BM</b>                  | Profile milling tools<br>Kopierfräser               |
| <b>CM</b>                  | Chamfering end milling tools<br>Fasfräser           |
| <b>XM</b>                  | Special milling tools<br>Sonderfräser               |
| <b>TM</b>                  |   |

| Lead angle<br>Einstellwinkel der Platten |     |   |
|--|-----|---|
| <b>P</b>                                 | 90° |  |
| <b>E</b>                                 | 75° |  |
| <b>D</b>                                 | 60° |  |
| <b>A</b>                                 | 45° |  |
| <b>R</b>                                 |     |  |









|  |
|--|
| Serial number<br>Serien Nr.  |
| Tool diameter<br>Werkzeug Durchmesser<br>Side and face milling tool :<br>diameter x cutting edge width<br>Plan- und Eckfräser:<br>Durchmesser x WSP-Breite |
| Coupling size (mm) (as follow figure)<br>Aufnahmetyp   |

**FM E 03 100 - B 32**

| Structure shape and size of positioning<br>Ausführung und Größe von Werkzeugaufnahme |   |           |  |
|--|---|-----------|--|
| <b>A</b>   |  | <b>B</b>  |  |
|  | Arbor Welle $\varnothing 50\text{-}\varnothing 80$                                  |           | Arbor Welle $\varnothing 100\text{-}\varnothing 160$                                 |
| <b>C</b>   |  | <b>D</b>  |  |
|  | Arbor Welle $\varnothing 200\text{-}\varnothing 250$                                |           | Arbor Welle $\varnothing 315$  |
| <b>G</b>   | Cylindrical Shank / Zylinderschaft  | <b>MW</b> | MW   |
| <b>XP</b>  | Weldon / Weldon   |           |  |

Regarding to the Weldon shank, straight shank and Morse taper shank etc coupling method, please refer to the technical data of tooling systems

Bezüglich der Befestigung beachten Sie bitte die Angabe der Werkzeugaufnahmehersteller.

| Insert shape<br>Schneidplattenform   |  |
|--|--|
|  <b>C</b> |  <b>D</b> |
|  <b>R</b> |  <b>S</b> |
|  <b>T</b> |  <b>L</b> |
|  <b>H</b> |  <b>O</b> |

| Insert clearance angle<br>Freiwinkel der Platten |     |
|--|-----|
| <b>N</b>   | 0°  |
| <b>B</b>   | 5°  |
| <b>C</b>   | 7°  |
| <b>P</b>   | 11° |
| <b>D</b>   | 15° |
| <b>E</b>   | 20° |
| <b>F</b>   | 25° |

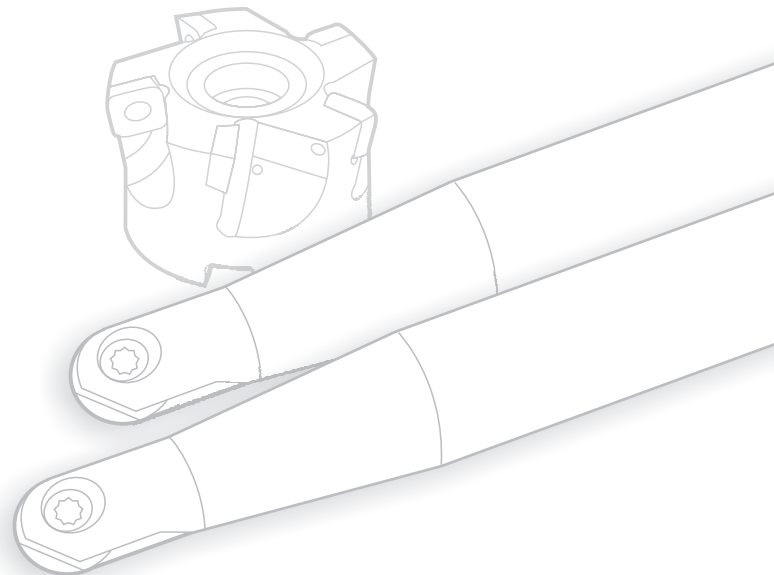
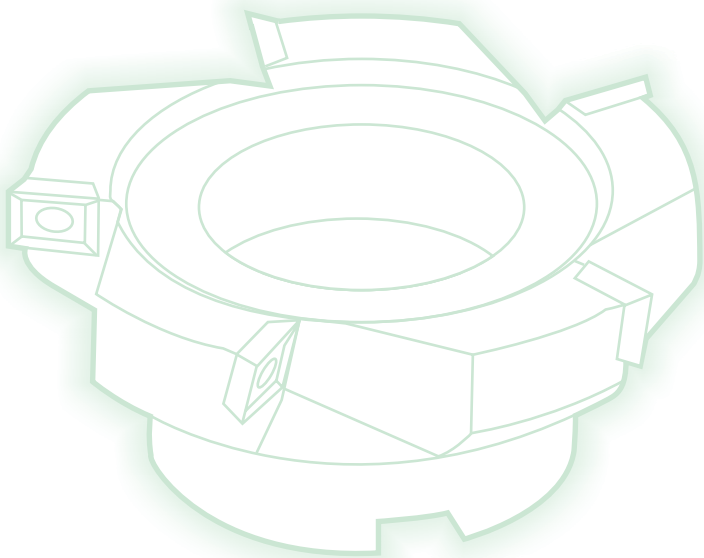
| Diameter<br>Durchmesser | Cutting edge length of insert<br>Schneidenlänge |          |          |          |          |          |
|-------------------------|---|----------|----------|----------|----------|----------|
|                         | Insert Shape<br>Plattenform                     |          |          |          |          |          |
|                         | <b>C</b>  | <b>D</b> | <b>R</b> | <b>S</b> | <b>T</b> | <b>L</b> |
| 5.556                   | —   | —        | —        | —        | 09       | —        |
| 6.350                   | 06  | 07       | —        | —        | 11       | —        |
| 9.525                   | 09  | 11       | 09       | 09       | 16       | —        |
| 12.700                  | 12  | 15       | 12       | 12       | 22       | —        |
| 15.875                  | 16  | 19       | 15       | 15       | 27       | —        |
| 19.050                  | 19  | —        | 19       | 19       | 33       | —        |
| 25.400                  | 25  | —        | 25       | 25       | 44       | 25       |

**S - P 12 - 06 L C**

Number of teeth  
Anzahl Zähne

Cutting direction  
Schnittrichtung  
R= right L=left  
R= rechts L= links

With Internal cooling  
Mit Innenkühlung



### Face Milling Tools · Planfräser

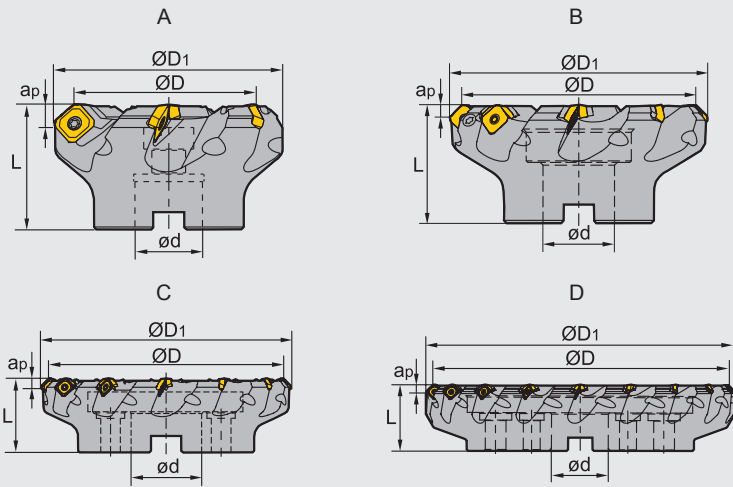
Kr:45°



**FMA01** P M K N S



Fine pitch  
Enge Teilung

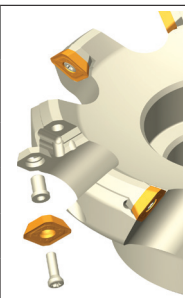


### Specification of tools · Werkzeug Beschreibung

| Type<br>Typ       | Stock<br>Lager | Dimension (mm)<br>Abmessung |     |     |                  |     |   |                   | No. of<br>teeth<br>Zähne | Coupling<br>Aufnahme | Weight<br>Gewicht<br>(kg) |
|-------------------|----------------|-----------------------------|-----|-----|------------------|-----|---|-------------------|--------------------------|----------------------|---------------------------|
|                   |                | R                           | L   | Ø D | Ø D <sub>1</sub> | Ø D | L | ap <sub>max</sub> |                          |                      |                           |
| <b>FMA01</b>      |                |                             |     |     |                  |     |   |                   |                          |                      |                           |
| -050-A22-SE12-04  | ●              | ○                           | 50  | 61  | 22               | 40  | 6 | 4                 | A                        | 0.3                  |                           |
| -050-A22-SE12-04C | ●              | ○                           | 50  | 61  | 22               | 40  | 6 | 4                 | A                        | 0.3                  |                           |
| -063-A22-SE12-05  | ●              | ○                           | 63  | 74  | 22               | 40  | 6 | 5                 | A                        | 0.5                  |                           |
| -063-A22-SE12-05C | ●              | ○                           | 63  | 74  | 22               | 40  | 6 | 5                 | A                        | 0.5                  |                           |
| -080-A27-SE12-06  | ●              | ○                           | 80  | 91  | 27               | 50  | 6 | 6                 | A                        | 1.2                  |                           |
| -080-A27-SE12-06C | ●              | ○                           | 80  | 91  | 27               | 50  | 6 | 6                 | A                        | 1.2                  |                           |
| -100-B32-SE12-07  | ●              | ○                           | 100 | 107 | 32               | 50  | 6 | 7                 | B                        | 1.2                  |                           |
| -100-B32-SE12-07C | ●              | ○                           | 100 | 107 | 32               | 50  | 6 | 7                 | B                        | 1.2                  |                           |
| -125-B40-SE12-08  | ●              | ○                           | 125 | 136 | 40               | 63  | 6 | 8                 | B                        | 2.6                  |                           |
| -125-B40-SE12-08C | ●              | ○                           | 125 | 136 | 40               | 63  | 6 | 8                 | B                        | 2.6                  |                           |
| -160-B40-SE12-10  | ●              | ○                           | 160 | 170 | 40               | 63  | 6 | 10                | B                        | 4.3                  |                           |
| -160-B40-SE12-10C | ○              | ○                           | 160 | 170 | 40               | 63  | 6 | 10                | B                        | 4.3                  |                           |
| -200-C60-SE12-12  | ●              | ○                           | 200 | 210 | 60               | 63  | 6 | 12                | C                        | 7.6                  |                           |
| -250-C60-SE12-14  | ●              | ○                           | 250 | 260 | 60               | 63  | 6 | 14                | C                        | 13.5                 |                           |
| -315-D60-SE12-18  | ●              | ○                           | 315 | 325 | 60               | 70  | 6 | 18                | D                        | 20.8                 |                           |

### Spare Parts · Ersatzteile

| Diameter<br>Durchmesser<br>Ø D | Screw<br>Schraube | Shim<br>Unterlage | Shim screw<br>Unterlagenschraube | Wrench<br>Schlüssel | Wrench<br>Schlüssel |
|--------------------------------|-------------------|-------------------|----------------------------------|---------------------|---------------------|
| Ø50 - Ø100                     | I60M3.5×10        | --                | --                               | WT15IS              | --                  |
| Ø125 - Ø315                    | I60M3.5×12        | S13BS             | SM5×7XA                          |                     | WH35L               |



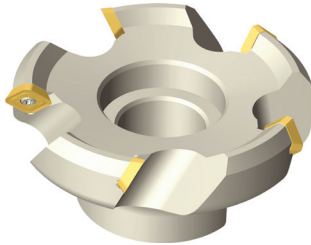
● Ex Stock / ab Lager ○ On demand / auf Anfrage

### Face Milling Tools · Planfräser

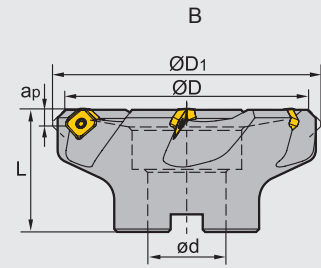
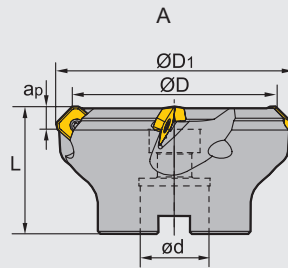
Kr:45°



**FMA02** P M K N S



Coarse and differential pitch  
Normale und weite Teilung



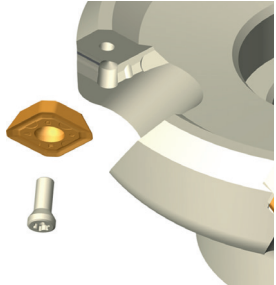


### Specification of tools · Werkzeug Beschreibung

| Type<br>Typ       | Stock<br>Lager | Dimension (mm)<br>Abmessung |     |     |                  |     |   |                   | No. of teeth<br>Zähne | Coupling<br>Aufnahme | Weight<br>Gewicht (kg) |
|-------------------|----------------|-----------------------------|-----|-----|------------------|-----|---|-------------------|-----------------------|----------------------|------------------------|
|                   |                | R                           | L   | Ø D | Ø D <sub>1</sub> | Ø D | L | ap <sub>max</sub> |                       |                      |                        |
| <b>FMA02</b>      |                |                             |     |     |                  |     |   |                   |                       |                      |                        |
| -050-A22-SE12-03  | ●              | ○                           | 50  | 61  | 22               | 40  | 6 | 3                 | A                     | 0.4                  |                        |
| -050-A22-SE12-03C | ●              | ○                           | 50  | 61  | 22               | 40  | 6 | 3                 | A                     | 0.4                  |                        |
| -063-A22-SE12-04  | ●              | ○                           | 63  | 74  | 22               | 40  | 6 | 4                 | A                     | 0.6                  |                        |
| -063-A22-SE12-04C | ●              | ○                           | 63  | 74  | 22               | 40  | 6 | 4                 | A                     | 0.6                  |                        |
| -080-A27-SE12-04  | ●              | ○                           | 80  | 91  | 27               | 50  | 6 | 4                 | A                     | 1.3                  |                        |
| -080-A27-SE12-04C | ●              | ○                           | 80  | 91  | 27               | 50  | 6 | 4                 | A                     | 1.3                  |                        |
| -100-B32-SE12-05  | ●              | ○                           | 100 | 107 | 32               | 50  | 6 | 5                 | B                     | 1.3                  |                        |
| -100-B32-SE12-05C | ○              | ○                           | 100 | 107 | 32               | 50  | 6 | 5                 | B                     | 1.3                  |                        |
| -125-B40-SE12-06  | ○              | ○                           | 125 | 131 | 40               | 63  | 6 | 6                 | B                     | 2.6                  |                        |
| -125-B40-SE12-06C | ○              | ○                           | 125 | 131 | 40               | 63  | 6 | 6                 | B                     | 2.6                  |                        |

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

### Spare Parts · Ersatzteile

| Diameter<br>Durchmesser<br>Ø D | Screw<br>Schraube   | Wrench<br>Schlüssel  |   |
|--------------------------------|---|--|---|
| Ø50-Ø125                       | <br>I60M3.5×10 | <br>WT15IS |  |
|                                |   |  |   |
|                                |   |  |   |

Applicable tool  
Werkzeug **B11-B18**

Tools code key  
Werkzeug ISO **B26-B27**

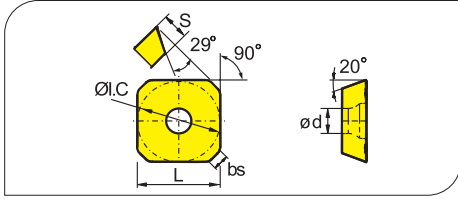
Grade selection guide  
Sortenauswahl **B19-B23**

Technical data  
Technische Daten **B215-B220**

# Milling · Fräsen

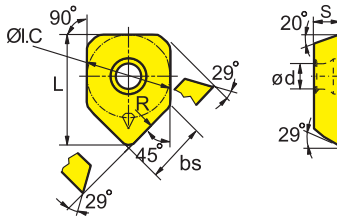
## Indexable Milling · Fräswendepplatten

Applicable inserts · Wendeschneidplatten



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

| Insert shape<br>Plattenform | Type<br>Typ | Dimension (mm)<br>Abmessung |      |      |     |      |     | CVD Coating<br>CVD Beschicht. |        |        |        |        |        | PVD Coating<br>PVD Beschicht. |        |        |        |        |        | Cermet<br>Cermet | Carbide uncoat.<br>unbe. Hartmetall |        |        |         |       |       |
|-----------------------------|-------------|-----------------------------|------|------|-----|------|-----|-------------------------------|--------|--------|--------|--------|--------|-------------------------------|--------|--------|--------|--------|--------|------------------|-------------------------------------|--------|--------|---------|-------|-------|
|                             |             | L                           | ØI.C | S    | ød  | bs   | R   | YBC301                        | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152                        | YBD252 | YBG102 | YBG202 | YBG205 | YBG302 |                  | YBG152                              | YBG252 | YNG151 | YNG151C | YC30S | YD101 |
|                             | SEET12T3-DF | 13.4                        | 13.4 | 3.97 | 4.1 | 2.55 |     | ●                             | ●      |        |        |        |        |                               |        | ●      |        | ○      |        |                  | ○                                   |        |        |         |       |       |
|                             | SEET12T3-CF | 13.4                        | 13.4 | 3.97 | 4.1 | 2.55 |     |                               |        |        |        |        |        | ●                             |        | ●      |        | ○      |        |                  |                                     |        |        |         |       | ●     |
|                             | SEET12T3-EF | 13.4                        | 13.4 | 3.97 | 4.1 | 2.55 |     |                               |        |        |        |        |        |                               |        |        | ●      |        | ●      |                  |                                     |        |        |         |       |       |
|                             | SEET12T3-DM | 13.4                        | 13.4 | 3.97 | 4.1 | 2.55 |     | ●                             | ●      | ●      | ●      | ●      | ●      |                               |        |        | ●      |        | ●      |                  |                                     |        |        |         |       |       |
|                             | SEET12T3-CM | 13.4                        | 13.4 | 3.97 | 4.1 | 2.55 |     |                               |        |        |        |        |        | ●                             |        | ●      |        | ○      |        |                  |                                     |        |        |         |       | ○     |
|                             | SEET12T3-EM | 13.4                        | 13.4 | 3.97 | 4.1 | 2.55 |     |                               |        |        | ●      | ○      | ●      |                               |        |        | ●      |        | ●      |                  |                                     |        |        |         |       |       |
|                             | SEET12T3-DR | 13.4                        | 13.4 | 3.97 | 4.1 | 2.55 |     | ●                             |        | ●      |        |        | ●      | ●                             |        |        | ○      |        | ○      |                  |                                     |        |        |         |       |       |
|                             | SEET12T3-CR | 13.4                        | 13.4 | 3.97 | 4.1 | 2.55 |     |                               |        |        |        |        |        | ●                             | ●      |        | ○      |        | ○      |                  |                                     |        |        |         |       |       |
|                             | SEET12T3-LH | 13.4                        | 13.4 | 3.97 | 4.1 | 2.55 |     |                               |        |        |        |        |        |                               |        |        |        |        |        |                  |                                     |        |        |         | ●     | ●     |
|                             |             |                             |      |      |     |      |     |                               |        |        |        |        |        |                               |        |        |        |        |        |                  |                                     |        |        |         |       |       |
|                             | SEET12T3-W  | 17.82                       | 13.4 | 3.97 | 4.1 | 9.46 | 500 |                               |        |        | ○      |        |        | ○                             |        | ●      |        | ○      |        | ○                |                                     |        |        |         |       |       |
|                             |             |                             |      |      |     |      |     |                               |        |        |        |        |        |                               |        |        |        |        |        |                  |                                     |        |        |         |       |       |



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

### Chipbreaker Selection for FMA01 · Spanbrecher Auswahl für FMA01

| Application<br>Anwendung | Finishing<br>Schlichten | Semi-Finishing<br>Mittlere Bearbeitung | Roughing<br>Schruppen |
|--------------------------|-------------------------|--|-----------------------|
| <b>P</b>                 | -DF                     | -DM                                    | -DR                   |
| <b>M</b> <b>S</b>        | -EF                     | -EM                                    |                       |
| <b>K</b>                 | -CF                     | -CM                                    | -CR                   |
| <b>N</b>                 | -LH                     |  |                       |

### Recommended cutting data · Empfohlene Schnittdaten

| Workpiece material<br>Werkstückstoff | Hardness HB<br>Härte  | Grade<br>Sorte             | Cutting data<br>Schnittdaten |                |                      |              |
|--------------------------------------|---|----------------------------|------------------------------|----------------|----------------------|--------------|
|                                      |   |                            | V (m/min)                    | f (mm/z)       |                      |              |
|                                      |   |                            |                              | -DF            | -DM                  | -DR          |
| <b>P</b>                             | Low-carbon steel<br>Soft steel<br>Niedrig legierter<br>Kohlenstoffstahl<br>Baustahl | YBM251<br>YBC301           | 270(220-350)                 | 0.15(0.1-0.2)  | 0.2 (0.1-0.3)        | 0.3(0.2-0.4) |
|                                      |   | YBG202<br>YBG205           | 270(200-360)                 | 0.15(0.1-0.2)  | 0.2 (0.1-0.3)        | 0.3(0.2-0.4) |
|                                      |   | YBG302                     | 230(180-350)                 | 0.15(0.1-0.2)  | 0.2 (0.1-0.3)        | 0.3(0.2-0.4) |
|                                      |   | YBM351<br>YBC401           | 220(170-300)                 | 0.15(0.1-0.2)  | 0.2 (0.1-0.3)        | 0.3(0.2-0.4) |
|                                      | High-carbon steel<br>Alloy steel<br>Hoch Leg.<br>Kohlenstoffstahl                   | YBM251<br>YBC301           | 240 (200-320)                | 0.15(0.1-0.2)  | 0.2 (0.1-0.3)        | 0.3(0.2-0.4) |
|                                      |   | YBG202<br>YBG205           | 240 (180-350)                | 0.15(0.1-0.2)  | 0.2 (0.1-0.3)        | 0.3(0.2-0.4) |
|                                      |   | YBG302                     | 220 (150-330)                | 0.15(0.1-0.2)  | 0.2 (0.1-0.3)        | 0.3(0.2-0.4) |
|                                      |   | YBM351<br>YBC401           | 200 (150-280)                | 0.15(0.1-0.2)  | 0.2 (0.1-0.3)        | 0.3(0.2-0.4) |
|                                      | Alloy tool steel<br>Leg. Werkzeugstahl  | YBM251<br>YBC301<br>YBD252 | 220 (180-300)                | 0.15(0.1-0.2)  | 0.2 (0.1-0.3)        | 0.3(0.2-0.4) |
|                                      |   | YBG202<br>YBG205           | 220 (170-340)                | 0.15(0.1-0.2)  | 0.2 (0.1-0.3)        | 0.3(0.2-0.4) |
|                                      |   | YBG302                     | 190 (130-300)                | 0.15(0.1-0.2)  | 0.2 (0.1-0.3)        | 0.3(0.2-0.4) |
|                                      |   | YBM351<br>YBC401           | 180 (150-250)                | 0.15(0.1-0.2)  | 0.2 (0.1-0.3)        | 0.3(0.2-0.4) |
| <b>M</b>                             | Stainless steel<br>Rostfreier Stahl   | YBM251                     | 150 (120-240)                | 0.15(0.1-0.2)  | -EM<br>0.2 (0.1-0.3) |              |
|                                      |   | YBG202<br>YBG205           | 160 (110-270)                | 0.15(0.1-0.2)  | 0.2 (0.1-0.3)        |              |
|                                      |   | YBG302                     | 140 (100-250)                | 0.15(0.1-0.2)  | 0.2 (0.1-0.3)        |              |
|                                      |   | YBM351<br>YBC401           | 140 (100-220)                | 0.15(0.1-0.2)  | 0.2 (0.1-0.3)        |              |
| <b>K</b>                             | Cast iron<br>Gusseisen  | YBG102                     | 210 (120-300)                | 0.15(0.1-0.2)  | -CF                  | -CM   -CR    |
|                                      |   | YBD152                     | 240 (180-300)                | 0.15(0.1-0.2)  | 0.2 (0.1-0.3)        | 0.3(0.2-0.4) |
| <b>N</b>                             | Al alloy<br>NE-Metalle  | YD101                      | 300-                         | -LH            |                      |              |
|                                      |   | YD201                      | 300-                         | 0.25 (0.1-0.4) |                      |              |
| <b>S</b>                             | High temperature<br>alloy<br>Hoch warmfeste Leg.                                    | YBG202                     | 40(20-50)                    | -EF            | -EM                  |              |
|                                      |   |                            |                              | 0.1 (0.1-0.2)  | 0.15 (0.1-0.3)       |              |

# Milling · Fräsen

Indexable Milling Tools · Wendeplattenfräser

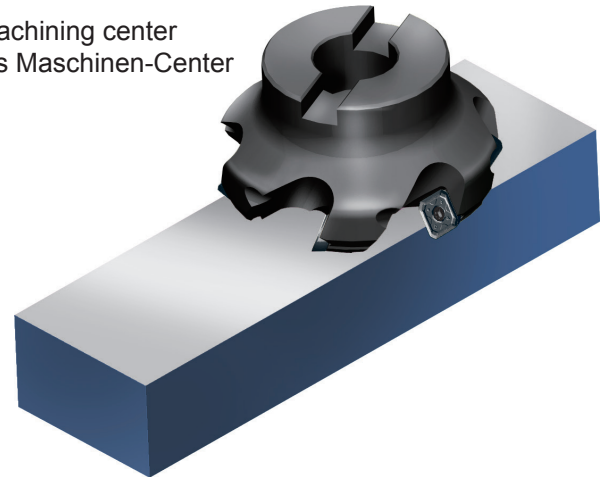
Case study for FMA 01  
 Bearbeitungsbeispiel für FMA 01

Workpiece material: 1Cr18Ni9Ti (HB180)  
 Werkstückstoff:

Cooling system: dry cutting  
 Kühlsystem: trocken

Machine: vertical machining center  
 Maschine: vertikales Maschinen-Center

Cutting data:  
 Schnittdaten:  
 $V_c=160\text{m/min}$   
 $a_p=1\text{mm}$   
 $f_z=0.2\text{mm/z}$   
 $a_e=60\text{mm}$



Surface roughness of workpiece  
 Rauhtiefe des Material

**ZCC-CT: Ra1.2**

Produkt of competitor: Ra1.6  
 Wettbewerbsprodukt

- Tool · Werkzeug : FMR01-080-A27-SE12-06
- Inserts · WSP : SEET12T3-DM/YBG202

- Wear comparison of insert.
- Verschleißvergleich der WSP

**ZCC-CT**

Produkt of competitor  
 Wettbewerbsprodukt

17'30"



29'30"



33'30"



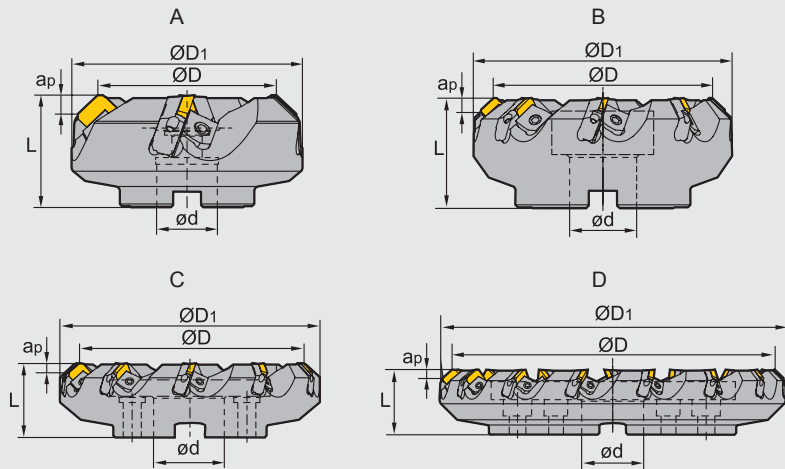
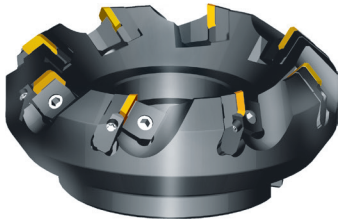
● Ex Stock / ab Lager ○ On demand / auf Anfrage

### Face Milling Tools · Planfräser

Kr:45°



**FMA03** P M K



### Specification of tools · Werkzeug Beschreibung

| Type<br>Typ      | Stock<br>Lager | Dimension (mm)<br>Abmessung |   |     |                  |     |    | No. of teeth<br>Zähne | Coupling<br>Aufnahme | Weight<br>Gewicht (kg) |                   |
|------------------|----------------|-----------------------------|---|-----|------------------|-----|----|-----------------------|----------------------|------------------------|-------------------|
|                  |                | R                           | L | Ø D | Ø D <sub>1</sub> | Ø d | L  |                       |                      |                        | ap <sub>max</sub> |
| <b>FMA03</b>     |                |                             |   |     |                  |     |    |                       |                      |                        |                   |
| -080-A27-SE12-04 | ○ ○            |                             |   | 80  | 103              | 27  | 50 | 5.5                   | 4                    | A                      | 1.8               |
| -100-B32-SE12-05 | ○ ○            |                             |   | 100 | 122              | 32  | 50 | 5.5                   | 5                    | B                      | 2.4               |
| -125-B40-SE12-06 | ○ ○            |                             |   | 125 | 147              | 40  | 63 | 5.5                   | 6                    | B                      | 4.4               |
| -160-B40-SE12-08 | ○ ○            |                             |   | 160 | 181              | 40  | 63 | 5.5                   | 8                    | B                      | 6.4               |
| -200-C60-SE12-10 | ○ ○            |                             |   | 200 | 221              | 60  | 63 | 5.5                   | 10                   | C                      | 8.5               |
| -250-C60-SE12-12 | ○ ○            |                             |   | 250 | 270              | 60  | 63 | 5.5                   | 12                   | C                      | 14.1              |
| -315-D60-SE12-15 | ○ ○            |                             |   | 315 | 353              | 60  | 63 | 5.5                   | 15                   | D                      | 22.2              |
| -080-A27-SE15-04 | ○ ○            |                             |   | 80  | 103              | 27  | 50 | 7.5                   | 4                    | A                      | 1.7               |
| -100-B32-SE15-05 | ○ ○            |                             |   | 100 | 122              | 32  | 50 | 7.5                   | 5                    | B                      | 2.3               |
| -125-B40-SE15-06 | ○ ○            |                             |   | 125 | 147              | 40  | 63 | 7.5                   | 6                    | B                      | 4.2               |
| -160-B40-SE15-08 | ○ ○            |                             |   | 160 | 181              | 40  | 63 | 7.5                   | 8                    | B                      | 6.1               |
| -200-C60-SE15-10 | ○ ○            |                             |   | 200 | 221              | 60  | 63 | 7.5                   | 10                   | C                      | 8.3               |
| -250-C60-SE15-12 | ○ ○            |                             |   | 250 | 270              | 60  | 63 | 7.5                   | 12                   | C                      | 13.6              |
| -315-D60-SE15-15 | ○ ○            |                             |   | 315 | 353              | 60  | 63 | 7.5                   | 15                   | D                      | 21.8              |

### Spare Parts · Ersatzteile

| Diameter<br>Durchmesser<br>Ø D | Insert<br>Platte | Cassette<br>Kassette | Wedge<br>Keil | Wedge screw<br>Keilschraube | Locator screw<br>Schraube | Wrench<br>Schlüssel |
|--------------------------------|------------------|----------------------|---------------|-----------------------------|---------------------------|---------------------|
| Ø80-Ø315                       | SE12             | LSE12R/L             | W01R/L        | DM8×21X                     | LOM5×15.1                 | WT20T<br>WH40T      |
| Ø80-Ø315                       | SE15             | LSE15R/L             |               |                             |                           |                     |

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

Applicable tool  
Werkzeug **B11-B18**

Tools code key  
Werkzeug ISO **B26-B27**

Grade selection guide  
Sortenauswahl **B19-B23**

Technical data  
Technische Daten **B215-B220**

**B**

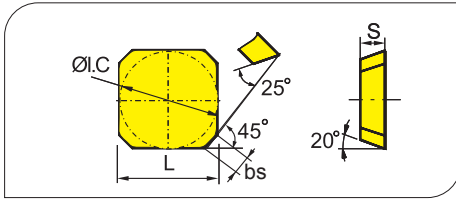
Milling Tools  
Fräser

# Milling · Fräsen

## Indexable Milling · Fräswendeplatten

■ Applicable inserts · Wendschneidplatten

- Ideal Machining Condition  
Gute Bearbeitungsbedingungen
- Normal Machining Condition  
Normale Bearbeitungsbedingungen
- Unfavorable Machining Condition  
Ungünstige Bearbeitungsbedingungen



| Workpiece Material<br>Werkstoffe               | P | M | K | N | S |
|--|---|---|---|---|---|
| Steel<br>Stahl                                 | ● | ● | ● | ● | ● |
| Stainless Steel<br>Rostfreier Stahl            | ● | ● | ● | ● | ● |
| Cast iron<br>Gusseisen                         | ● | ● | ● | ● | ● |
| Non-ferrous material<br>Nichtmetalle           | ● | ● | ● | ● | ● |
| Heat-resistant steel<br>Wärmebeständiger Stahl | ● | ● | ● | ● | ● |

| Insert shape<br>Plattenform | Type<br>Typ  | Dimension (mm)<br>Abmessung |        |      |     | CVD Coating<br>CVD Beschicht. |        |        |        |        |        | PVD Coating<br>PVD Beschicht. |        |        |        |        | Cermet<br>Cermet | Carbide uncoat.<br>unbe. Hartmetall |        |        |        |         |       |       |
|-----------------------------|--------------|-----------------------------|--------|------|-----|-------------------------------|--------|--------|--------|--------|--------|-------------------------------|--------|--------|--------|--------|------------------|-------------------------------------|--------|--------|--------|---------|-------|-------|
|                             |              | L                           | I.C    | S    | bs  | YBC301                        | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152                        | YBD252 | YBG102 | YBG202 | YBG205 |                  | YBG302                              | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 |
|                             | SEEN1203AFTN | 12.7                        | 12.7   | 3.18 | 1.8 |                               |        |        |        |        |        |                               |        |        |        |        |                  |                                     |        | ●      |        |         |       |       |
|                             | SEKN1203AFFN | 12.7                        | 12.7   | 3.18 | 1.8 |                               |        |        |        |        |        |                               |        |        |        |        |                  |                                     |        |        |        |         |       |       |
|                             | SEKN1203AFN  | 12.7                        | 12.7   | 3.18 | 1.8 | ○                             |        |        |        |        |        |                               |        |        |        |        |                  |                                     |        |        |        | ●       | ○     |       |
|                             | SEKN1203AFTN | 12.7                        | 12.7   | 3.18 | 1.8 | ●                             |        |        | ●      | ●      |        |                               |        |        |        |        |                  |                                     |        | ●      | ○      | ●       | ○     |       |
|                             | SEKN1504AFN  | 15.875                      | 15.875 | 4.76 | 1.6 | ○                             |        |        |        |        |        |                               |        |        |        |        |                  |                                     |        |        |        |         | ○     | ○     |
|                             | SEKN1504AFTN | 15.875                      | 15.875 | 4.76 | 1.6 | ●                             |        | ●      | ●      |        | ●      |                               |        |        |        |        |                  |                                     |        |        |        |         | ○     |       |
|                             | SEKR1203AFN  | 12.7                        | 12.7   | 3.18 | 1.8 | ●                             |        | ○      |        |        |        |                               |        |        | ●      |        |                  |                                     |        |        |        |         |       |       |
|                             | SEKR1504AFN  | 15.875                      | 15.875 | 4.76 | 1.6 |                               |        |        |        |        |        |                               |        |        |        |        |                  |                                     |        |        |        |         |       |       |

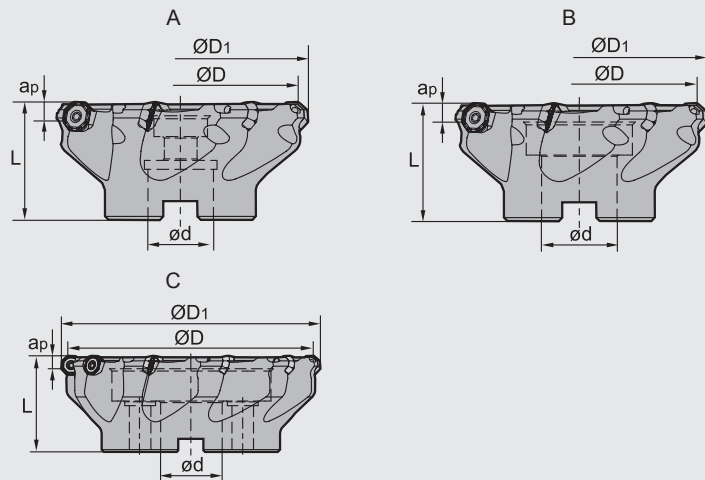
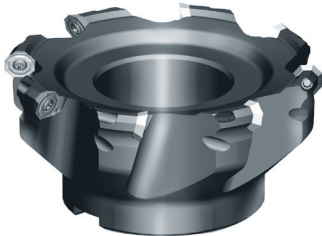
● Ex Stock / ab Lager ○ On demand / auf Anfrage

### Face Milling Tools · Planfräser

Kr:45°



**FMA04** P M K N

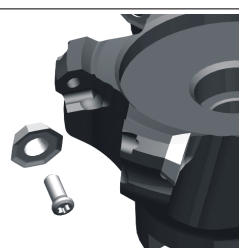


### Specification of tools · Werkzeug Beschreibung

| Type<br>Typ       | Stock<br>Lager |   | Dimension (mm)<br>Abmessung |                  |     |    |                   | No. of<br>teeth<br>Zähne | Coupling<br>Aufnahme | Weight<br>Gewicht<br>(kg) |
|-------------------|----------------|---|-----------------------------|------------------|-----|----|-------------------|--------------------------|----------------------|---------------------------|
|                   | R              | L | Ø D                         | Ø D <sub>1</sub> | Ø d | L  | ap <sub>max</sub> |                          |                      |                           |
| <b>FMA04</b>      |                |   |                             |                  |     |    |                   |                          |                      |                           |
| -050-A22-OF05-04  | ●              | ○ | 50                          | 56               | 22  | 40 | 3.5               | 4                        | A                    | 0.3                       |
| -050-A22-OF05-04C | ●              | ○ | 50                          | 56               | 22  | 40 | 3.5               | 4                        | A                    | 0.3                       |
| -050-A22-OF05-05  | ●              | ○ | 50                          | 56               | 22  | 40 | 3.5               | 5                        | A                    | 0.4                       |
| -050-A22-OF05-05C | ●              | ○ | 50                          | 56               | 22  | 40 | 3.5               | 5                        | A                    | 0.4                       |
| -063-A22-OF05-05  | ●              | ○ | 63                          | 69               | 22  | 40 | 3.5               | 5                        | A                    | 0.5                       |
| -063-A22-OF05-05C | ●              | ○ | 63                          | 69               | 22  | 40 | 3.5               | 5                        | A                    | 0.5                       |
| -080-A27-OF05-06  | ●              | ○ | 80                          | 86               | 27  | 50 | 3.5               | 6                        | A                    | 0.8                       |
| -080-A27-OF05-06C | ●              | ○ | 80                          | 86               | 27  | 50 | 3.5               | 6                        | A                    | 0.8                       |
| -100-B32-OF05-07  | ●              | ○ | 100                         | 106              | 32  | 50 | 3.5               | 7                        | B                    | 1.2                       |
| -100-B32-OF05-07C | ●              | ○ | 100                         | 106              | 32  | 50 | 3.5               | 7                        | B                    | 1.2                       |
| -125-B40-OF05-08  | ●              | ○ | 125                         | 130              | 40  | 63 | 3.5               | 8                        | B                    | 2.7                       |
| -125-B40-OF05-08C | ●              | ○ | 125                         | 130              | 40  | 63 | 3.5               | 8                        | B                    | 2.7                       |
| -160-B40-OF05-10  | ●              | ○ | 160                         | 165              | 40  | 63 | 3.5               | 10                       | B                    | 5.1                       |

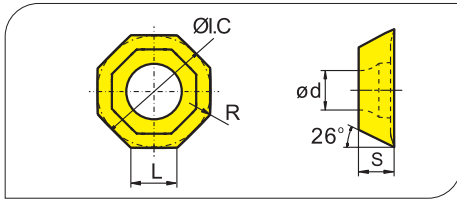
### Spare Parts · Ersatzteile

| Diameter<br>Durchmesser<br>Ø D | Screw<br>Schraube | Wrench<br>Schlüssel |
|--------------------------------|-------------------|---------------------|
| Ø50- Ø63                       | I60M4×8.4         | WT15IS              |
| Ø80 -Ø160                      | I60M4×10          |                     |



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

### Applicable inserts · Wendeschneidplatten



- Ideal Machining Condition / Gute Bearbeitungsbedingungen
- Normal Machining Condition / Normale Bearbeitungsbedingungen
- Unfavorable Machining Condition / Ungünstige Bearbeitungsbedingungen

| Workpiece Material / Werkstoffe         | 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 / Plattenform | Type / Typ  | Dimension (mm) / Abmessung |      |      |     |     | CVD Coating / CVD Beschicht. |        |        |        |        |        | PVD Coating / PVD Beschicht. |        |        | Cermet / Cermet | Carbide uncoat. / unbe. Hartmetall |        |        |        |        |         |       |       |       |  |
|----------------------------|-------------|----------------------------|------|------|-----|-----|------------------------------|--------|--------|--------|--------|--------|------------------------------|--------|--------|-----------------|------------------------------------|--------|--------|--------|--------|---------|-------|-------|-------|--|
|                            |             | L                          | I.C  | S    | d   | R   | YBC301                       | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152                       | YBD252 | YBG102 | YBG202          | YBG205                             | YBG302 | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |  |
|                            | OFKT05T3-DF | 5.26                       | 12.7 | 3.97 | 4.4 | 0.5 |                              |        |        | ○      |        |        |                              |        | ●      | ●               |                                    | ○      |        |        |        |         |       |       |       |  |
|                            | OFKT05T3-DM | 5.26                       | 12.7 | 3.97 | 4.4 | 0.5 |                              |        |        | ●      |        | ●      |                              |        | ●      | ●               |                                    | ●      |        |        |        |         |       |       |       |  |
|                            | OFKT05T3-LH | 5.26                       | 12.7 | 3.97 | 4.4 | 0.5 |                              |        |        |        |        |        |                              |        |        |                 |                                    |        |        |        |        |         |       | ●     |       |  |

### Chipbreaker Selection FMA04 · Spanbrecher Auswahl FMA04

| Application / Anwendung | Finishing / Schichten | Semi-Finishing / Mittlere Bearbeitung |
|-------------------------|-----------------------|---------------------------------------|
| <b>P</b>                |                       |                                       |
| <b>M</b>                | -DF                   | -DM                                   |
| <b>K</b>                |                       |                                       |
| <b>AL</b>               | -LH                   |                                       |

Applicable tool / Werkzeug: **B11-B18**

Tools code key / Werkzeug ISO: **B26-B27**

Grade selection guide / Sortenauswahl: **B19-B23**

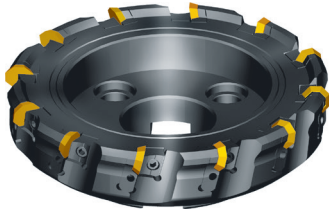
Technical data / Technische Daten: **B215-B220**

### Face Milling Tools · Planfräser

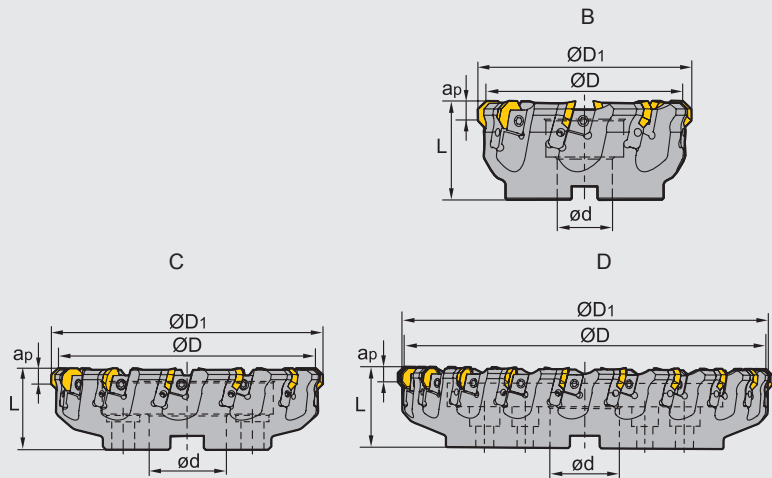
Kr:45°



**FMA04** P M K



Wedge  
Keil



#### Specification of tools · Werkzeug Beschreibung

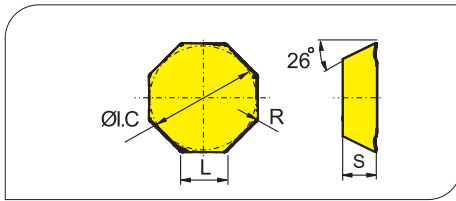
| Type<br>Typ      | Stock<br>Lager | Dimension (mm)<br>Abmessung |     |     |                  |     |   | No. of<br>teeth<br>Zähne | Coupling<br>Aufnahme | Weight<br>Gewicht<br>(kg) |
|------------------|----------------|-----------------------------|-----|-----|------------------|-----|---|--------------------------|----------------------|---------------------------|
|                  |                | R                           | L   | Ø D | Ø D <sub>1</sub> | Ø d | L |                          |                      |                           |
| <b>FMA04</b>     |                |                             |     |     |                  |     |   |                          |                      |                           |
| -125-B40-OF07-08 | ● ○            | ● ○                         | 125 | 136 | 40               | 63  | 5 | 8                        | B                    | 3.9                       |
| -160-B40-OF07-10 | ● ○            | ● ○                         | 160 | 171 | 40               | 63  | 5 | 10                       | B                    | 5.9                       |
| -200-C60-OF07-12 | ● ○            | ● ○                         | 200 | 211 | 60               | 63  | 5 | 12                       | C                    | 7.6                       |
| -250-C60-OF07-16 | ● ○            | ● ○                         | 250 | 261 | 60               | 63  | 5 | 16                       | C                    | 13.3                      |
| -315-D60-OF07-20 | ○ ○            | ○ ○                         | 315 | 321 | 60               | 63  | 5 | 20                       | D                    | 20.3                      |

#### Spare Parts · Ersatzteile

| Diameter<br>Durchmesser<br>Ø D | Cassette<br>Kassette | Wedge<br>Keil | Wedge screw<br>Keilschraube | Locator screw<br>Einstellschraube | Wrench<br>Schlüssel |  |
|--------------------------------|----------------------|---------------|-----------------------------|-----------------------------------|---------------------|--|
| Ø125-Ø315                      | LOF07R/L             | W02R/L        | DM8×21X                     | LOM5×15.1                         | WT20T<br>WH40T      |  |
|                                |                      |               |                             |                                   |                     |  |

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

### Applicable inserts · Wendeschneidplatten



- Ideal Machining Condition / Gute Bearbeitungsbedingungen
- Normal Machining Condition / Normale Bearbeitungsbedingungen
- Unfavorable Machining Condition / Ungünstige Bearbeitungsbedingungen

| Workpiece Material / Werkstoffe         | 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 / Plattenform | Type / Typ                   | Dimension (mm) / Abmessung |       |      |     | CVD Coating / CVD Beschicht. |        |        |        |        |        | PVD Coating / PVD Beschicht. |        |        |        | Cermet / Cermet | Carbide uncoat. / unbe. Hartmetall |        |        |        |        |         |       |       |       |
|----------------------------|------------------------------|----------------------------|-------|------|-----|------------------------------|--------|--------|--------|--------|--------|------------------------------|--------|--------|--------|-----------------|------------------------------------|--------|--------|--------|--------|---------|-------|-------|-------|
|                            |                              | L                          | I.C.  | S    | R   | YBC301                       | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152                       | YBD252 | YBG102 | YBG202 |                 | YBG205                             | YBG302 | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |
|                            | OFKR0704-DF                  | 7.45                       | 17.94 | 4.76 | 0.8 |                              |        |        | ○      |        |        |                              |        |        | ●      |                 |                                    |        |        |        |        |         |       |       |       |
|                            | OFKR0704-DM                  | 7.45                       | 17.94 | 4.76 | 0.8 | ●                            | ●      | ●      |        | ●      | ●      | ●                            | ●      | ○      |        | ●               |                                    |        |        |        |        |         |       |       |       |
|                            | OFKR0704W-DM<br><i>wiper</i> | 7.45                       | 17.94 | 4.76 |     | ○                            |        |        |        |        |        | ○                            |        |        | ●      | ●               |                                    |        |        |        |        |         |       |       |       |
|                            | OFKR0704-LH                  | 7.45                       | 19.94 | 4.76 |     |                              |        |        |        |        |        |                              |        |        |        |                 |                                    |        |        |        |        |         |       | ○     |       |

### Chipbreaker Selection FMA04 · Spanbrecher Auswahl FMA04

| Application / Anwendung | Finishing / Schlichten | Semi-Finishing / Mittlere Bearbeitung |
|-------------------------|------------------------|---------------------------------------|
| <b>P</b>                |                        |                                       |
| <b>M</b>                | -DF                    | -DM                                   |
| <b>K</b>                |                        |                                       |
| <b>N</b>                | LH                     | LH                                    |

Applicable tool / Werkzeug **B11-B18**

Tools code key / Werkzeug ISO **B26-B27**

Grade selection guide / Sortenauswahl **B19-B23**

Technical data / Technische Daten **B215-B220**

# Milling · Fräsen

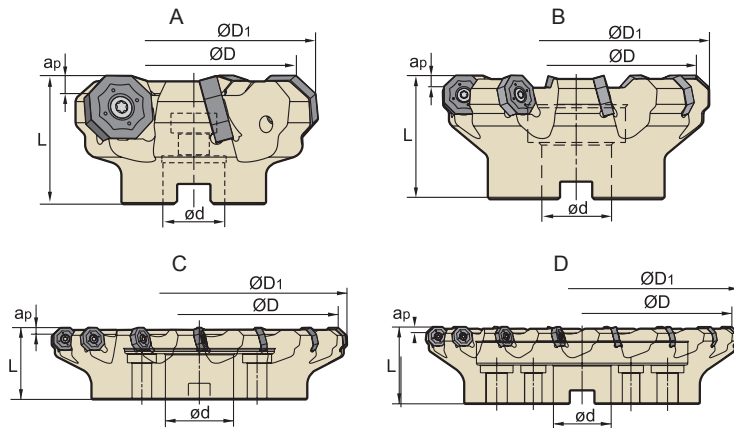
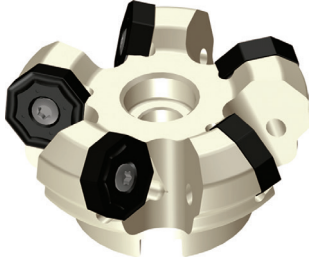
Indexable Milling Tools · Wendepplattenfräser

Face milling / Planfräser

Kr:45°






**FMA07** P M K



| Type<br>Typ       | Stock<br>Lager    |     | Dimension<br>Abmessung (mm) |     |    |    |                   | Tooth<br>Zähne<br>Z | Coupling<br>Aufnahme | Weight<br>Gewicht<br>(kg) |
|-------------------|-------------------|-----|-----------------------------|-----|----|----|-------------------|---------------------|----------------------|---------------------------|
|                   | R                 | L   | ØD                          | ØD1 | ød | L  | ap <sub>max</sub> |                     |                      |                           |
| <b>FMA07</b>      | -050-A22-ON06-05  | ● ○ | 50                          | 62  | 22 | 40 | 4                 | 5                   | A                    | 0.3                       |
|                   | -050-A22-ON06-05C | ● ○ | 50                          | 62  | 22 | 40 | 4                 | 5                   | A                    | 0.3                       |
|                   | -063-A22-ON06-06  | ● ○ | 63                          | 75  | 22 | 40 | 4                 | 6                   | A                    | 0.5                       |
|                   | -063-A22-ON06-06C | ● ○ | 63                          | 75  | 22 | 40 | 4                 | 6                   | A                    | 0.5                       |
|                   | -080-B27-ON06-07  | ● ○ | 80                          | 92  | 27 | 50 | 4                 | 7                   | B                    | 1.0                       |
|                   | -080-B27-ON06-07C | ● ○ | 80                          | 92  | 27 | 50 | 4                 | 7                   | B                    | 1.0                       |
|                   | -100-B32-ON06-08  | ● ○ | 100                         | 112 | 32 | 63 | 4                 | 8                   | B                    | 1.9                       |
|                   | -100-B32-ON06-08C | ● ○ | 100                         | 112 | 32 | 63 | 4                 | 8                   | B                    | 1.9                       |
|                   | -125-B40-ON06-09  | ● ○ | 125                         | 137 | 40 | 63 | 4                 | 9                   | B                    | 3.5                       |
|                   | -125-B40-ON06-09C | ● ○ | 125                         | 137 | 40 | 63 | 4                 | 9                   | B                    | 3.5                       |
|                   | -160-C40-ON06-11  | ○ ○ | 160                         | 172 | 40 | 63 | 4                 | 11                  | C                    | 4.3                       |
|                   | -200-C60-ON06-13  | ○ ○ | 200                         | 212 | 60 | 63 | 4                 | 13                  | C                    | 6.4                       |
|                   | -250-C60-ON06-15  | ○ ○ | 250                         | 262 | 60 | 63 | 4                 | 15                  | C                    | 13.4                      |
|                   | -315-D60-ON06-17  | ○ ○ | 315                         | 327 | 60 | 80 | 4                 | 17                  | D                    | 21.9                      |
|                   | -063-A22-ON08-05  | ● ○ | 63                          | 78  | 22 | 40 | 5                 | 5                   | A                    | 0.5                       |
|                   | -063-A22-ON08-05C | ● ○ | 63                          | 78  | 22 | 40 | 5                 | 5                   | A                    | 0.5                       |
| -080-B27-ON08-06  | ● ○               | 80  | 95                          | 27  | 50 | 5  | 6                 | B                   | 0.9                  |                           |
| -080-B27-ON08-06C | ● ○               | 80  | 95                          | 27  | 50 | 5  | 6                 | B                   | 0.9                  |                           |
| -100-B32-ON08-07  | ● ○               | 100 | 115                         | 32  | 63 | 5  | 7                 | B                   | 1.8                  |                           |
| -100-B32-ON08-07C | ● ○               | 100 | 115                         | 32  | 63 | 5  | 8                 | B                   | 3.1                  |                           |
| -125-B40-ON08-08  | ● ○               | 125 | 140                         | 40  | 63 | 5  | 8                 | B                   | 3.1                  |                           |
| -125-B40-ON08-08C | ○ ○               | 125 | 140                         | 40  | 63 | 5  | 8                 | B                   | 3.1                  |                           |
| -160-C40-ON08-10  | ● ○               | 160 | 175                         | 40  | 63 | 5  | 10                | C                   | 4.1                  |                           |
| -200-C60-ON08-12  | ● ○               | 200 | 215                         | 60  | 63 | 5  | 12                | C                   | 6.1                  |                           |
| -250-C60-ON08-14  | ● ○               | 250 | 265                         | 60  | 63 | 5  | 14                | C                   | 12.0                 |                           |
| -315-D60-ON08-16  | ● ○               | 315 | 330                         | 60  | 80 | 5  | 16                | D                   | 21.0                 |                           |

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

## Spare Parts · Ersatzteile

| Diameter<br>Durchmesser<br>ØD | Insert<br>WSP    | Screw<br>Schraube   | Wrench<br>Schlüssel   |  |
|-------------------------------|------------------|---|---|--|
|                               |                  |  |  |  |
| Ø50 -Ø315                     | ONHU06**-PF/PM/W | I60M4×10  | --  | WT15IS   |
| Ø63 -Ø315                     | ONHU08**-PF/PM/W | I60M5×13  | WT20IT  | --   |

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

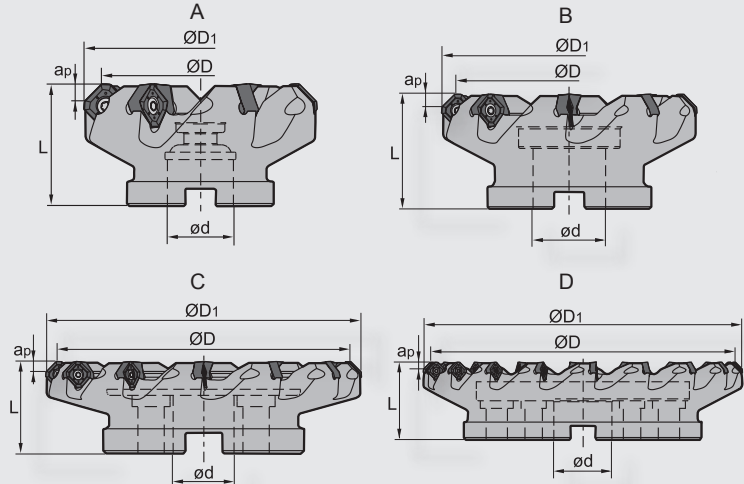
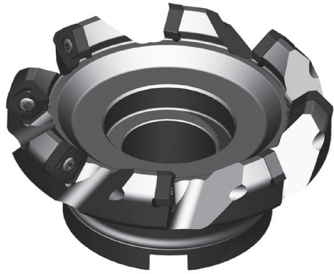


Kr:45°



### Face Milling Tools · Planfräser

**FMA11 P K**



#### Specification of tools · Werkzeug Beschreibung

| Type<br>Typ  | Stock<br>Lager    | Dimension (mm)<br>Abmessung |   |     |                 |    |    | No. of<br>teeth<br>Zähne | Coupling<br>Aufnahme | Weight<br>Gewicht<br>(kg) |                   |
|--------------|-------------------|-----------------------------|---|-----|-----------------|----|----|--------------------------|----------------------|---------------------------|-------------------|
|              |                   | R                           | L | ØD  | ØD <sub>1</sub> | Ød | L  |                          |                      |                           | a <sub>pmax</sub> |
| <b>FMA11</b> | -063-A22-SN12-05C | ●                           |   | 63  | 74.47           | 22 | 40 | 5.5                      | 5                    | A                         | 0.55              |
|              | -080-A27-SN12-06C | ●                           |   | 80  | 91.47           | 27 | 50 | 5.5                      | 6                    | A                         | 1.14              |
|              | -100-B32-SN12-07  | ●                           |   | 100 | 111.47          | 32 | 50 | 5.5                      | 7                    | B                         | 1.42              |
|              | -100-B32-SN12-07C | ○                           |   | 100 | 111.47          | 32 | 50 | 5.5                      | 7                    | B                         | 1.42              |
|              | -125-B40-SN12-08  | ●                           |   | 125 | 136.47          | 40 | 63 | 5.5                      | 8                    | B                         | 2.86              |
|              | -125-B40-SN12-08C | ○                           |   | 125 | 136.47          | 40 | 63 | 5.5                      | 8                    | B                         | 2.86              |
|              | -160-C40-SN12-10  | ●                           |   | 160 | 171.47          | 40 | 63 | 5.5                      | 10                   | C                         | 4.06              |
| <b>FMA11</b> | -063-A22-SN15-05C | ●                           |   | 63  | 77.4            | 22 | 40 | 7.0                      | 5                    | A                         | 0.56              |
|              | -080-A27-SN15-06C | ●                           |   | 80  | 94.4            | 27 | 50 | 7.0                      | 6                    | A                         | 1.06              |
|              | -100-B32-SN15-07  | ●                           |   | 100 | 114.4           | 32 | 50 | 7.0                      | 7                    | B                         | 1.47              |
|              | -100-B32-SN15-07C | ○                           |   | 100 | 114.4           | 32 | 50 | 7.0                      | 7                    | B                         | 1.47              |
|              | -125-B40-SN15-08  | ●                           |   | 125 | 139.4           | 40 | 63 | 7.0                      | 8                    | B                         | 2.70              |
|              | -125-B40-SN15-08C | ○                           |   | 125 | 139.4           | 40 | 63 | 7.0                      | 8                    | B                         | 2.70              |
|              | -160-C40-SN15-10  | ●                           |   | 160 | 174.4           | 40 | 63 | 7.0                      | 10                   | C                         | 3.92              |
|              | -200-C60-SN15-12  | ●                           |   | 200 | 214.4           | 60 | 63 | 7.0                      | 12                   | C                         | 5.46              |
|              | -250-C60-SN15-14  | ○                           |   | 250 | 264.4           | 60 | 63 | 7.0                      | 14                   | C                         | 11.26             |
|              | -315-D60-SN15-18  | ○                           |   | 315 | 329.4           | 60 | 80 | 7.0                      | 18                   | D                         | 20.00             |
| <b>FMA11</b> | -125-B40-SN19-07  | ○                           |   | 125 | 142.63          | 40 | 63 | 9.0                      | 7                    | B                         | 3.00              |
|              | -160-C40-SN19-09  | ○                           |   | 160 | 167.63          | 40 | 63 | 9.0                      | 9                    | C                         | 4.25              |
|              | -200-C60-SN19-11  | ○                           |   | 200 | 217.63          | 60 | 63 | 9.0                      | 11                   | C                         | 6.18              |
|              | -250-C60-SN19-13  | ○                           |   | 250 | 267.63          | 60 | 63 | 9.0                      | 13                   | C                         | 11.55             |
|              | -315-D60-SN19-16  | ○                           |   | 315 | 332.63          | 60 | 80 | 9.0                      | 16                   | D                         | 20.90             |

#### Spare Parts · Ersatzteile

| Diameter<br>Durchmesser<br>Ø D | Cassette<br>Kassette | Locator screw<br>Keilschraube | Wrench<br>Schlüssel |  |
|--------------------------------|----------------------|-------------------------------|---------------------|--|
| Ø63 - Ø160                     | SNEG1205ANR-GR       | DM8×21X                       | LOM5×15.1           |  |
| Ø63 - Ø315                     | SNEG1506ANR-GR       |                               |                     |  |
| Ø125 - Ø315                    | SNEG1907ANR-GR       |                               |                     |  |

Applicable tool  
Werkzeug **B11-B18**

Tools code key  
Werkzeug ISO **B26-B27**

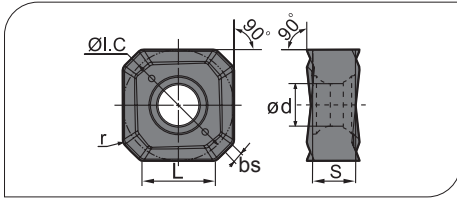
Grade selection guide  
Sortenauswahl **B19-B23**

Technical data  
Technische Daten **B215-B220**

# Milling · Fräsen

## Indexable Milling · Fräswendeplatten

### Applicable inserts · Wendeschneidplatten



- Ideal Machining Condition / Gute Bearbeitungsbedingungen
- Normal Machining Condition / Normale Bearbeitungsbedingungen
- Unfavorable Machining Condition / Ungünstige Bearbeitungsbedingungen

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

| Insert shape / Plattenform | Type / Typ     | Dimension (mm) / Abmessung |      |      |      |     |     | CVD Coating / CVD Beschicht. |        |        |        |        |        | PVD Coating / PVD Beschicht. |        |        |        |        |        | Cermet / Cermet | Carbide uncoat. / unbe. Hartmetall |        |        |         |       |       |       |
|----------------------------|----------------|----------------------------|------|------|------|-----|-----|------------------------------|--------|--------|--------|--------|--------|------------------------------|--------|--------|--------|--------|--------|-----------------|------------------------------------|--------|--------|---------|-------|-------|-------|
|                            |                | L                          | I.C  | S    | bs   | Ø d | r   | YBC301                       | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152                       | YBD252 | YBG102 | YBG202 | YBG205 | YBG302 |                 | YBG152                             | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |
|                            | SNEG1205ANR-GM | 7.6                        | 12.0 | 4.76 | 1.05 | 4.6 | 0.8 | ●                            |        |        |        | ●      |        |                              |        |        |        |        |        |                 |                                    |        |        |         |       |       |       |
|                            | SNEG1506ANR-GM | 9.4                        | 15.0 | 5.54 | 1.30 | 5.5 | 0.9 | ●                            |        |        |        | ●      |        |                              |        |        |        |        |        |                 |                                    |        |        |         |       |       |       |
|                            | SNEG1506ANR-GR | 9.4                        | 15.0 | 5.54 | 1.30 | 5.5 | 0.9 |                              |        |        |        | ●      |        | ●                            |        |        |        |        |        |                 |                                    |        |        |         |       |       |       |
|                            | SNEG1907ANR-GR | 12.1                       | 19.0 | 7.0  | 1.67 | 7.2 | 1.0 |                              |        |        |        | ○      |        |                              |        |        |        |        |        |                 |                                    |        |        |         |       |       |       |

### Recommended cutting data · Empfohlene Schnittdaten

| Workpiece material / Werkstückstoff   | Hardness HB / Härte | Grade / Sorte | Cutting data / Schnittdaten |               |                   |
|---|---------------------|---------------|-----------------------------|---------------|-------------------|
|   |                     |               | V (m/min)                   | f (mm/z)      | a <sub>pmax</sub> |
| P Low-carbon steel / Soft steel / Niederlegierter Kohlenstoffstahl / Baustahl | ≤180                | YBM253        | 270 (220-350)               | 0.2 (0.1-0.4) | 5.5-9.0           |
|   |                     | YBC302        | 270 (220-350)               | 0.2 (0.1-0.4) | 5.5-9.0           |
|   | 180-280             | YBM253        | 260 (200-320)               | 0.2 (0.1-0.4) | 5.5-9.0           |
|   |                     | YBC302        | 260 (200-320)               | 0.2 (0.1-0.4) | 5.5-9.0           |
| Alloy tool steel / Leg. Werkzeugstahl   | 280-350             | YBM253        | 240 (180-300)               | 0.2 (0.1-0.4) | 5.5-9.0           |
|   |                     | YBC302        | 240 (180-300)               | 0.2 (0.1-0.4) | 5.5-9.0           |
| K Cast iron / Gusseisen   | 180-250             | YBD152        | 270 (150-300)               | 0.4 (0.1-0.5) | 5.5-9.0           |

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

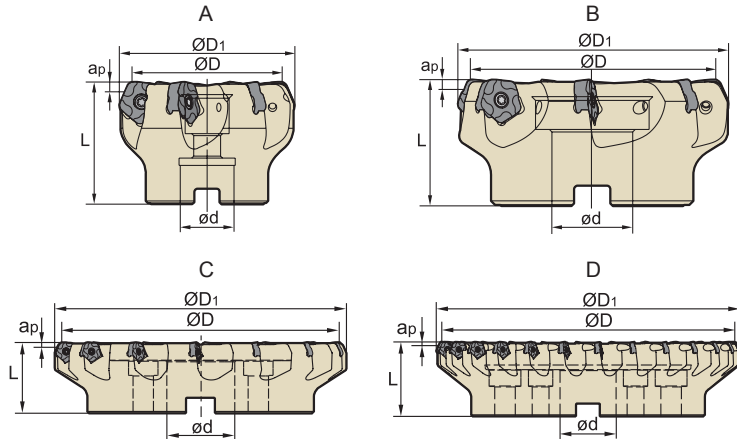
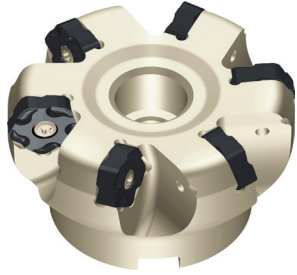
# Milling · Fräsen

Indexable Milling Tools · Wendeplattenfräser

Face milling / Planfräser **Kr:67°**



## FMD02 **K**



| Type<br>Typ      | Stock<br>Lager    |   | Dimension<br>Abmessung (mm) |                 |       |    |                   |    | Tooth<br>Zähne<br>Z | Coupling<br>Aufnahme | Weight<br>Gewicht<br>(kg) |
|------------------|-------------------|---|-----------------------------|-----------------|-------|----|-------------------|----|---------------------|----------------------|---------------------------|
|                  | R                 | L | ØD                          | ØD <sub>1</sub> | ød    | L  | a <sub>pmax</sub> |    |                     |                      |                           |
| <b>FMD02</b>     | -050-A22-PN11-04  | ● | ●                           | 50              | 60.1  | 22 | 50                | 5  | 4                   | A                    | 0.6                       |
|                  | -050-A22-PN11-04C | ● | ○                           | 50              | 60.1  | 22 | 50                | 5  | 4                   | A                    | 0.6                       |
|                  | -063-A22-PN11-05  | ● | ○                           | 63              | 73.1  | 22 | 50                | 5  | 5                   | A                    | 0.8                       |
|                  | -063-A22-PN11-05C | ● | ○                           | 63              | 73.1  | 22 | 50                | 5  | 5                   | A                    | 0.8                       |
|                  | -080-A27-PN11-06  | ● | ○                           | 80              | 90.1  | 27 | 50                | 5  | 6                   | A                    | 1.1                       |
|                  | -080-A27-PN11-06C | ● | ○                           | 80              | 90.1  | 27 | 50                | 5  | 6                   | A                    | 1.1                       |
|                  | -100-B32-PN11-07  | ● | ○                           | 100             | 110.1 | 32 | 50                | 5  | 7                   | B                    | 1.8                       |
|                  | -100-B32-PN11-07C | ● | ○                           | 100             | 110.1 | 32 | 50                | 5  | 7                   | B                    | 1.8                       |
|                  | -125-B40-PN11-08  | ● | ○                           | 125             | 135.1 | 40 | 63                | 5  | 8                   | B                    | 2.9                       |
|                  | -125-B40-PN11-08C | ● | ○                           | 125             | 135.1 | 40 | 63                | 5  | 8                   | B                    | 2.9                       |
|                  | -160-B40-PN11-10  | ● | ○                           | 160             | 170.1 | 40 | 63                | 5  | 10                  | B                    | 5.6                       |
|                  | -200-C60-PN11-12  | ● | ○                           | 200             | 210.1 | 60 | 63                | 5  | 12                  | C                    | 7.9                       |
| -250-C60-PN11-14 | ●                 | ○ | 250                         | 260.1           | 60    | 63 | 5                 | 14 | C                   | 13.4                 |                           |
| <b>FMD02</b>     | -050-A22-PN11-05  | ● | ○                           | 50              | 60.1  | 22 | 50                | 5  | 5                   | A                    | 0.6                       |
|                  | -050-A22-PN11-05C | ● | ○                           | 50              | 60.1  | 22 | 50                | 5  | 5                   | A                    | 0.6                       |
|                  | -063-A22-PN11-06  | ● | ○                           | 63              | 73.1  | 22 | 50                | 5  | 6                   | A                    | 0.9                       |
|                  | -063-A22-PN11-06C | ● | ○                           | 63              | 73.1  | 22 | 50                | 5  | 6                   | A                    | 0.9                       |
|                  | -080-A27-PN11-08  | ● | ○                           | 80              | 90.1  | 27 | 50                | 5  | 8                   | A                    | 1.2                       |
|                  | -080-A27-PN11-08C | ● | ○                           | 80              | 90.1  | 27 | 50                | 5  | 8                   | A                    | 1.2                       |
|                  | -100-B32-PN11-10  | ● | ○                           | 100             | 110.1 | 32 | 50                | 5  | 10                  | B                    | 1.9                       |
|                  | -100-B32-PN11-10C | ● | ○                           | 100             | 110.1 | 32 | 50                | 5  | 10                  | B                    | 1.9                       |
|                  | -125-B40-PN11-12  | ● | ○                           | 125             | 135.1 | 40 | 63                | 5  | 12                  | B                    | 3.2                       |
|                  | -125-B40-PN11-12C | ● | ○                           | 125             | 135.1 | 40 | 63                | 5  | 12                  | B                    | 3.2                       |
|                  | -160-B40-PN11-14  | ● | ○                           | 160             | 170.1 | 40 | 63                | 5  | 14                  | B                    | 6.4                       |
|                  | -200-C60-PN11-16  | ● | ○                           | 200             | 210.1 | 60 | 63                | 5  | 16                  | C                    | 8.5                       |
|                  | -200-C60-PN11-20  | ○ | ○                           | 200             | 210.1 | 60 | 63                | 5  | 20                  | C                    | 8.5                       |
|                  | -250-C60-PN11-18  | ● | ○                           | 250             | 260.1 | 60 | 63                | 5  | 18                  | C                    | 18.0                      |
| -315-D60-PN11-26 | ●                 | ○ | 315                         | 325.1           | 60    | 80 | 5                 | 26 | D                   | 24.5                 |                           |

### ■ Spare Parts · Ersatzteile

| ØD         | Screw / Schraube | Wrench / Schlüssel |  |
|------------|------------------|--------------------|--|
| Ø50 - Ø315 | <br>I60M4×10     | <br>WT15IS         |  |

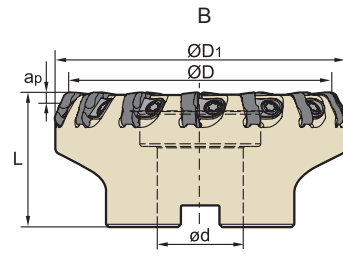
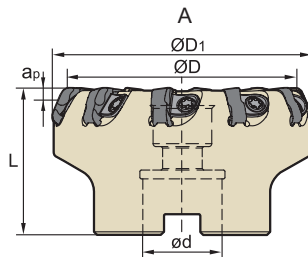
● Ex Stock / ab Lager ○ On demand / auf Anfrage

### Face Milling Tools · Planfräser

Kr:67°






### FMD02 K



| Type<br>Typ  | Stock<br>Lager |   | Dimension<br>Abmessung (mm) |       |    |    |                   | Tooth<br>Zähne<br>Z | Coupling<br>Aufnahme | Weight<br>Gewicht<br>(kg) |
|--------------|----------------|---|-----------------------------|-------|----|----|-------------------|---------------------|----------------------|---------------------------|
|              | R              | L | ØD                          | ØD1   | ød | L  | ap <sub>max</sub> |                     |                      |                           |
| <b>FMD02</b> | •              | ○ | 80                          | 90.1  | 27 | 50 | 5                 | 10                  | A                    | 1.3                       |
|              | •              | ○ | 80                          | 90.1  | 27 | 50 | 5                 | 10                  | A                    | 1.3                       |
|              | •              | ○ | 100                         | 110.1 | 32 | 50 | 5                 | 14                  | B                    | 1.6                       |
|              | •              | ○ | 100                         | 110.1 | 32 | 50 | 5                 | 14                  | B                    | 1.6                       |
|              | •              | ○ | 125                         | 135.1 | 40 | 63 | 5                 | 18                  | B                    | 3.2                       |
|              | •              | ○ | 125                         | 135.1 | 40 | 63 | 5                 | 18                  | B                    | 3.2                       |
|              | ○              | ○ | 160                         | 170.1 | 40 | 63 | 5                 | 22                  | B                    | 5.8                       |
|              | ○              | ○ | 200                         | 210.1 | 60 | 63 | 5                 | 28                  | C                    | 8.5                       |

### ■ Spare Parts · Ersatzteile

| ØD         | Shim / Unterlage  | Screw / Schraube   | Wrench / Schlüssel   |
|------------|---|--|--|
| Ø80 - Ø160 | <br>W18N | <br>DM6x20A | <br>WT15IT |
|            |   |  |  |
|            |   |  |  |



Applicable tool  
Werkzeug B11-B18

Tools code key  
Werkzeug ISO B26-B27

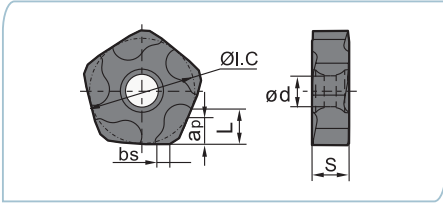
Grade selection guide  
Sortenauswahl B19-B23

Technical data  
Technische Daten B215-B220

# Milling · Fräsen

## Indexable Milling Tools · Wendeschneidplattenfräser

### Applicable inserts Wendeschneidplatten

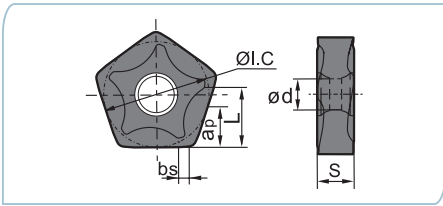


- Ideal Machining Condition  
Gute Bearbeitungsbedingungen
- Normal Machining Condition  
Normale Bearbeitungsbedingungen
- Unfavorable Machining Condition  
Ungünstige Bearbeitungsbedingungen

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

| Insert<br>WSP | Type<br>Typ    | Dimension<br>Abmessung (mm) |        |      |      |     |    | CVD Coating<br>CVD Beschicht. |        |        |        | PVD Coating<br>PVD Beschicht. |        |        |        | Cermet<br>Cermet | Carbide uncoat.<br>unb. Hartmetall |        |        |        |        |        |        |         |       |       |       |
|---------------|----------------|-----------------------------|--------|------|------|-----|----|-------------------------------|--------|--------|--------|-------------------------------|--------|--------|--------|------------------|------------------------------------|--------|--------|--------|--------|--------|--------|---------|-------|-------|-------|
|               |                | L                           | ØI.C   | S    | ød   | bs  | ap | YBC301                        | YBC302 | YBC401 | YBM251 | YBM253                        | YBM351 | YBD152 | YBD252 |                  | YBG102                             | YBG202 | YBG205 | YBG302 | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |
|               | PNEG110512R-CF | 5.4                         | 15.875 | 5.56 | 4.64 | 1.6 | 5  |                               |        |        |        |                               |        |        |        |                  |                                    |        |        |        |        |        |        |         |       |       |       |
|               | PNEG110512L-CF | 5.4                         | 15.875 | 5.56 | 4.64 | 1.6 | 5  |                               |        |        |        |                               |        |        |        |                  |                                    |        |        |        |        |        |        |         |       |       |       |
|               | PNEG110512R-CM | 5.4                         | 15.875 | 5.56 | 4.64 | 1.6 | 5  |                               |        |        |        |                               |        |        |        |                  |                                    |        |        |        |        |        |        |         |       |       |       |
|               | PNEG110512L-CM | 5.4                         | 15.875 | 5.56 | 4.64 | 1.6 | 5  |                               |        |        |        |                               |        |        |        |                  |                                    |        |        |        |        |        |        |         |       |       |       |
|               | PNEG110512R-CR | 5.4                         | 15.875 | 5.56 | 4.64 | 1.6 | 5  |                               |        |        |        |                               |        |        |        |                  |                                    |        |        |        |        |        |        |         |       |       |       |
|               | PNEG110512L-CR | 5.4                         | 15.875 | 5.56 | 4.64 | 1.6 | 5  |                               |        |        |        |                               |        |        |        |                  |                                    |        |        |        |        |        |        |         |       |       |       |

### Applicable inserts Wendeschneidplatten



- Ideal Machining Condition  
Gute Bearbeitungsbedingungen
- Normal Machining Condition  
Normale Bearbeitungsbedingungen
- Unfavorable Machining Condition  
Ungünstige Bearbeitungsbedingungen

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

| Insert<br>WSP | Type<br>Typ    | Dimension<br>Abmessung (mm) |        |      |      |     |     | CVD Coating<br>CVD Beschicht. |        |        |        | PVD Coating<br>PVD Beschicht. |        |        |        | Cermet<br>Cermet | Carbide uncoat.<br>unb. Hartmetall |        |        |        |        |        |        |         |       |       |       |
|---------------|----------------|-----------------------------|--------|------|------|-----|-----|-------------------------------|--------|--------|--------|-------------------------------|--------|--------|--------|------------------|------------------------------------|--------|--------|--------|--------|--------|--------|---------|-------|-------|-------|
|               |                | L                           | ØI.C   | S    | ød   | bs  | ap  | YBC301                        | YBC302 | YBC401 | YBM251 | YBM253                        | YBM351 | YBD152 | YBD252 |                  | YBG102                             | YBG202 | YBG205 | YBG302 | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |
|               | PNEG110512R-PF | 5.4                         | 15.875 | 5.56 | 4.64 | 1.6 | 7.5 | ●                             |        |        |        |                               |        |        |        |                  |                                    |        |        |        |        |        |        |         |       |       |       |
|               | PNEG110512L-PF | 5.4                         | 15.875 | 5.56 | 4.64 | 1.6 | 7.5 |                               |        |        |        |                               |        |        |        |                  |                                    |        |        |        |        |        |        |         |       |       |       |
|               | PNEG110512R-PM | 5.4                         | 15.875 | 5.56 | 4.64 | 1.6 | 7.5 | ●                             |        |        |        |                               |        |        |        |                  |                                    |        |        |        |        |        |        |         |       |       |       |
|               | PNEG110512L-PM | 5.4                         | 15.875 | 5.56 | 4.64 | 1.6 | 7.5 |                               |        |        |        |                               |        |        |        |                  |                                    |        |        |        |        |        |        |         |       |       |       |
|               | PNEG110512R-PR | 5.4                         | 15.875 | 5.56 | 4.64 | 1.6 | 7.5 | ●                             |        |        |        |                               |        |        |        |                  |                                    |        |        |        |        |        |        |         |       |       |       |
|               | PNEG110512L-PR | 5.4                         | 15.875 | 5.56 | 4.64 | 1.6 | 7.5 |                               |        |        |        |                               |        |        |        |                  |                                    |        |        |        |        |        |        |         |       |       |       |

### Cutting Data / Schnittdaten

| Workpiece material<br>Werkstück Material   | Hardness HB<br>Härte | Grade<br>Sorte   | Cutting data / Schnittdaten |                       |                     |                     |                        |  |         |                  |               |                |               |               |     |
|--|----------------------|------------------|-----------------------------|-----------------------|---------------------|---------------------|------------------------|--|---------|------------------|---------------|----------------|---------------|---------------|-----|
|  |                      |                  | V <sub>c</sub> (m/min)      | f <sub>z</sub> (mm/z) |                     |                     | a <sub>pmax</sub> (mm) |  |         |                  |               |                |               |               |     |
|  |                      |                  |                             | PF                    | PM                  | PR                  |                        |  |         |                  |               |                |               |               |     |
| <b>P</b><br>Low-carbon steel<br>Soft steel<br>Niedriglegierter<br>Kohlenstoffstahl<br>Baustahl | ≤180                 | YBM253<br>YBC302 | 270 (220-350)               | 0.15 (0.1-0.2)        | 0.2 (0.1-0.3)       | 0.3 (0.2-0.4)       | 7.5                    |  |         |                  |               |                |               |               |     |
|  |                      |                  |                             |                       |                     |                     |                        | High-carbon steel<br>Alloy steel<br>Hochleg.<br>Kohlenstoffstahl | 180-280 | YBM253<br>YBC302 | 260 (200-320) | 0.15 (0.1-0.2) | 0.2 (0.1-0.3) | 0.3 (0.2-0.4) | 7.5 |
|  |                      |                  |                             |                       |                     |                     |                        |  |         |                  |               |                |               |               |     |
| <b>K</b><br>Cast iron<br>Gusseisen   | 180-250              | YBD152           | 270 (150-300)               | CF<br>0.15 (0.1-0.2)  | CM<br>0.2 (0.1-0.3) | CR<br>0.3 (0.2-0.4) | 5                      |  |         |                  |               |                |               |               |     |

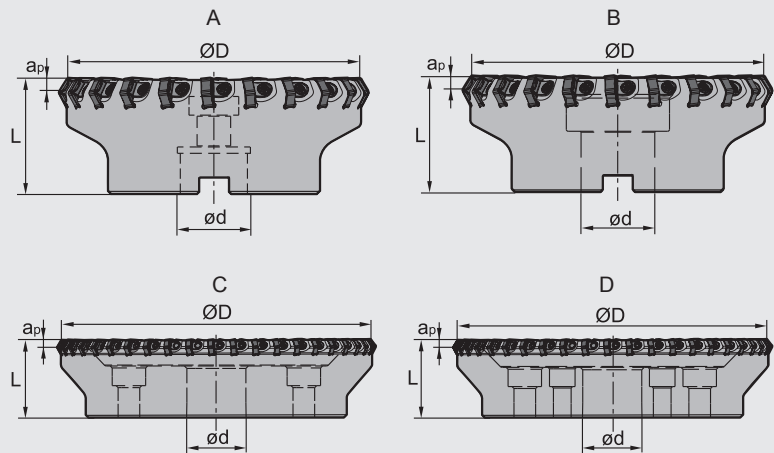
● Ex Stock / ab Lager ○ On demand / auf Anfrage

### Face Milling Tools · Planfräser

Kr:55°






### FMD02 K



### Specification of tools · Werkzeug Beschreibung

| Type<br>Typ      | Stock<br>Lager |   | Dimension (mm)<br>Abmessung |    |    |       | No. of teeth<br>Zähne | Coupling<br>Aufnahme | Weight<br>Gewicht<br>(kg) |
|------------------|----------------|---|-----------------------------|----|----|-------|-----------------------|----------------------|---------------------------|
|                  | R              | L | ØD                          | ød | L  | apmax |                       |                      |                           |
| <b>FMD02</b>     |                |   |                             |    |    |       |                       |                      |                           |
| -080-A27-HN09-10 | ○              | ○ | 80                          | 27 | 50 | 6     | 10                    | A                    | 1.1                       |
| -100-B32-HN09-14 | ○              | ○ | 100                         | 32 | 63 | 6     | 14                    | B                    | 2.6                       |
| -125-B40-HN09-18 | ○              | ○ | 125                         | 40 | 70 | 6     | 18                    | B                    | 3.7                       |
| -160-B40-HN09-22 | ○              | ○ | 160                         | 40 | 63 | 6     | 22                    | B                    | 5.6                       |
| -200-C60-HN09-28 | ○              | ○ | 200                         | 60 | 63 | 6     | 28                    | C                    | 6.3                       |
| -250-C60-HN09-36 | ○              | ○ | 250                         | 60 | 63 | 6     | 36                    | C                    | 10.3                      |
| -315-D60-HN09-44 | ○              | ○ | 315                         | 60 | 63 | 6     | 44                    | D                    | 21.7                      |

### Spare Parts · Ersatzteile

| Diameter<br>Durchmesser<br>Ø D | Wedge<br>Keil   | Wedge screw<br>Keilschraube  | Wrench<br>Schlüssel  |
|--------------------------------|---|--|--|
| Ø80-Ø315                       | <br>W18N | <br>DM6×20A | <br>WT15IT |

Applicable tool B11-B18  
Werkzeug

Tools code key B26-B27  
Werkzeug ISO

Grade selection guide B19-B23  
Sortenauswahl

Technical data B215-B220  
Technische Daten

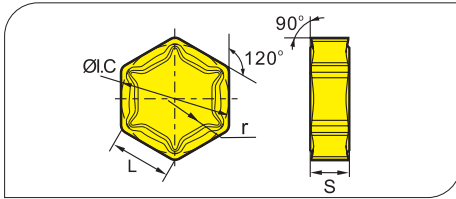
**B**

Milling Tools  
Fräser

# Milling · Fräsen

## Indexable Milling · Fräswendeplatten

### Applicable inserts · Wendeschneidplatten



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

| Insert shape<br>Plattenform | Type<br>Typ          | Dimension (mm)<br>Abmessung |        |      |     | CVD Coating<br>CVD Beschicht. |        |        |        |        |        | PVD Coating<br>PVD Beschicht. |        |        |        | Cermet<br>Cermet | Carbide uncoat.<br>unbe. Hartmetall |        |        |        |        |         |       |       |
|-----------------------------|----------------------|-----------------------------|--------|------|-----|-------------------------------|--------|--------|--------|--------|--------|-------------------------------|--------|--------|--------|------------------|-------------------------------------|--------|--------|--------|--------|---------|-------|-------|
|                             |                      | L                           | I.C    | S    | r   | YBC301                        | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152                        | YBD252 | YBG102 | YBG202 |                  | YBG205                              | YBG302 | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 |
|                             | <b>HNEX090512-DF</b> | 9.16                        | 15.875 | 5.56 | 1.2 |                               |        |        |        |        |        | ○                             |        |        |        |                  |                                     |        |        |        |        |         |       |       |
|                             | <b>HNEX090512-DM</b> | 9.16                        | 15.875 | 5.56 | 1.2 |                               |        |        |        |        |        | ○                             |        |        |        |                  |                                     |        |        |        |        |         |       |       |
|                             | <b>HNEX090512-DR</b> | 9.16                        | 15.875 | 5.56 | 1.2 |                               |        |        |        |        | ●      | ●                             |        |        |        |                  |                                     |        |        |        |        |         |       |       |

### Chipbreaker Selection FMD02 · Spanbrecher Auswahl FMD02

| Application<br>Anwendung | Finishing<br>Schlichten | Semi-Finishing<br>Mittlere Bearbeitung | Roughing<br>Schruppen |
|--------------------------|-------------------------|--|-----------------------|
| <b>K</b>                 | -DF                     | -DM                                    | -DR                   |

### Recommended cutting data · Empfohlene Schnittdaten

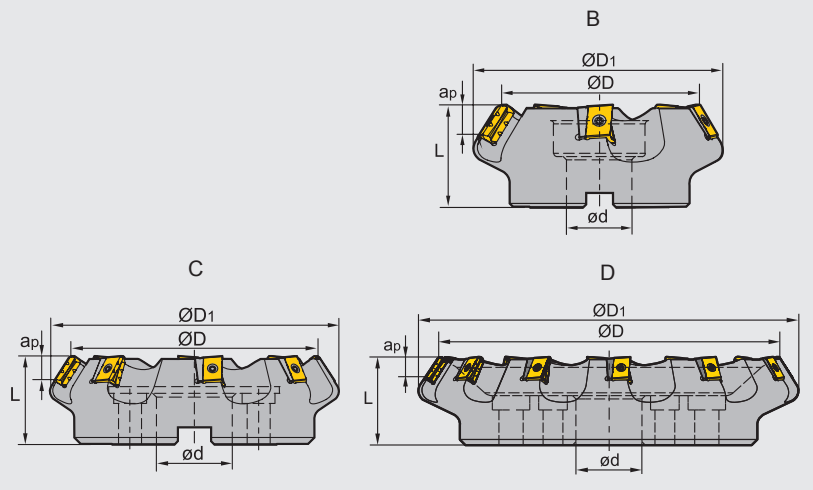
| Workpiece material<br>Werkstückstoff | Hardness HB<br>Härte | Grade<br>Sorte | Cutting data<br>Schnittdaten |               |                |              |
|--------------------------------------|----------------------|----------------|------------------------------|---------------|----------------|--------------|
|                                      |                      |                | V (m/min)                    | f (mm/z)      |                |              |
|                                      |                      |                |                              | -DF           | -DM            | -DR          |
| <b>K</b> Cast iron<br>Gusseisen      | 180-250              | YBD152         | 180 (110-250)                | 0.15(0.1-0.2) | 0.2 (0.1-0.3)  | 0.3(0.2-0.5) |
|                                      |                      | YBD252         | 130 (110-200)                | 0.2(0.1-0.2)  | 0.25 (0.1-0.3) | 0.3(0.2-0.5) |

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

### Face Milling Tools · Planfräser



**FMD03** P M K




### Specification of tools · Werkzeug Beschreibung

| Type<br>Typ      | Stock<br>Lager   | Dimension(mm)<br>Abmessung |     |     |                 |    |    | No. of<br>Teeth<br>Zähne | Insert<br>WSP | Coupling<br>Aufnahme | Weight<br>Gewicht<br>(kg) |                   |
|------------------|------------------|----------------------------|-----|-----|-----------------|----|----|--------------------------|---------------|----------------------|---------------------------|-------------------|
|                  |                  | R                          | L   | ØD  | ØD <sub>1</sub> | Ød | L  |                          |               |                      |                           | a <sub>pmax</sub> |
| <b>FMD03</b>     | -125-B40-LN20-06 | ●                          | ○   | 125 | 153             | 40 | 63 | 12                       | LNKT2007DN-ZR | B                    | 4.5                       |                   |
|                  | -160-C40-LN20-08 | ●                          | ○   | 160 | 187             | 40 | 63 | 12                       |               | 8                    | C                         | 6.9               |
|                  | -200-C60-LN20-10 | ●                          | ○   | 200 | 227             | 60 | 70 | 12                       |               | 10                   | C                         | 10.5              |
|                  | -250-C60-LN20-12 | ●                          | ○   | 250 | 276             | 60 | 70 | 12                       |               | 12                   | C                         | 13.4              |
|                  | -315-D60-LN20-15 | ○                          | ○   | 315 | 339             | 60 | 80 | 12                       |               | 15                   | D                         | 26.2              |
|                  | -125-B40-LN25-05 | ○                          | ○   | 125 | 154             | 40 | 63 | 16                       | 5             | LNKT2510-ZR          | B                         | 4.5               |
|                  | -160-C40-LN25-06 | ●                          | ○   | 160 | 189             | 40 | 63 | 16                       | 6             |                      | C                         | 6.9               |
|                  | -200-C60-LN25-08 | ●                          | ○   | 200 | 229             | 60 | 70 | 16                       | 8             |                      | C                         | 10.5              |
|                  | -250-C60-LN25-10 | ●                          | ○   | 250 | 278             | 60 | 70 | 16                       | 10            |                      | C                         | 16.7              |
|                  | -315-D60-LN25-12 | ○                          | ○   | 315 | 346             | 60 | 80 | 16                       | 12            |                      | D                         | 27.3              |
| -400-D60-LN25-16 | ○                | ○                          | 400 | 427 | 60              | 80 | 16 | 16                       | D             | 47.1                 |                           |                   |

### Spare Parts · Ersatzteile

| Insert<br>Platte | Cassette<br>Kassette | Wedge screw<br>Keilschraube | Locator screw<br>Einstellschraube | Wrench<br>Schlüssel |        |
|------------------|----------------------|-----------------------------|-----------------------------------|---------------------|--------|
| LNKT2007DN-ZR    | LLN20R-ZR            | I60M4×15                    | I60M3×7                           | WT15IS              | WT10IS |
| LNKT2510-ZR      | LLN25R-ZR            | I60M5×17                    | I60M3.5×10.4                      | WT20IT              | WT15IS |



Applicable tool  
Werkzeug **B11-B18**

Tools code key  
Werkzeug ISO **B26-B27**

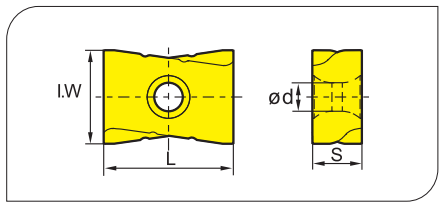
Grade selection guide  
Sortenauswahl **B19-B23**

Technical data  
Technische Daten **B215-B220**

# Milling · Fräsen

## Indexable Milling Tools · Wendeschneidplattenfräser

Applicable inserts · Wendeschneidplatten



- Ideal Machining Condition / Gute Bearbeitungsbedingungen
- Normal Machining Condition / Normale Bearbeitungsbedingungen
- Unfavorable Machining Condition / Ungünstige Bearbeitungsbedingungen

| Workpiece Material / Werkstoff                   | P | M | K | N | S |
|--|---|---|---|---|---|
| <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 / Plattenform | Type / Typ           | Dimension (mm) / Abmessung |     |       |     | CVD Coating / CVD Beschicht |        |        |        |        |        | PVD Coating / PVD Beschicht |        |        |        | Cermets / Cermet | Carbide uncoat. / unbe. Hartmetall |        |        |        |        |         |       |       |       |  |
|----------------------------|----------------------|----------------------------|-----|-------|-----|-----------------------------|--------|--------|--------|--------|--------|-----------------------------|--------|--------|--------|------------------|------------------------------------|--------|--------|--------|--------|---------|-------|-------|-------|--|
|                            |                      | L                          | I.W | S     | ød  | YBC301                      | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152                      | YBD252 | YBG102 | YBG202 |                  | YBG205                             | YBG302 | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |  |
|                            | <b>LNKT2007DN-ZR</b> | 20                         | 17  | 7.94  | 4.6 |                             |        |        |        |        | ●      | ●                           |        |        |        | ●                |                                    |        |        |        |        |         |       |       |       |  |
|                            | <b>LNKT2510-ZR</b>   | 25                         | 18  | 9.525 | 5.5 |                             |        |        |        |        | ●      | ●                           |        |        |        | ●                |                                    |        |        |        |        |         |       |       |       |  |

### Recommended cutting data · Empfohlene Schnittdaten

| Workpiece material / Werkstückstoff  | Hardness HB / Härte | Grade / Sorte | Cutting data / Schnittdaten |                |
|--|---------------------|---------------|-----------------------------|----------------|
|  |                     |               | V (m/min)                   | f (mm/z)       |
| <b>P</b> Low-carbon steel / Soft steel / Niederlegierter Kohlenstoffstahl / Baustahl | ≤180                | YBG302        | 180 (150-300)               | 0.5 (0.2-0.8)  |
|  |                     | YBM351        | 180 (150-300)               | 0.5 (0.2-0.8)  |
|  | 180-280             | YBG302        | 150 (120-280)               | 0.5 (0.2-0.8)  |
|  |                     | YBM351        | 140 (120-280)               | 0.5 (0.2-0.8)  |
|  | 280-350             | YBG302        | 120 (80-250)                | 0.45 (0.2-0.6) |
|  |                     | YBM351        | 100 (80-250)                | 0.45 (0.2-0.6) |
| <b>M</b> Stainless steel / Rostfreier Stahl  | ≤270                | YBG302        | 120 (80-200)                | 0.45 (0.2-0.6) |
|  |                     | YBM351        | 100 (80-200)                | 0.45 (0.2-0.6) |
| <b>K</b> Cast iron / Gusseisen   | 180-250             | YBM351        | 100 (80-180)                | 0.5 (0.2-0.8)  |
|  |                     | YBD252        | 130 (110-200)               | 0.5 (0.2-0.8)  |

Applicable tool / Werkzeug **B11-B18**

Tools code key / Werkzeug ISO **B26-B27**

Grade selection guide / Sortenauswahl **B19-B23**

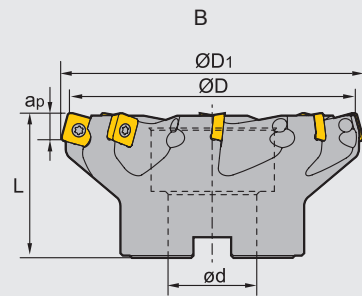
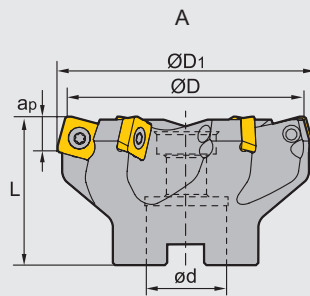
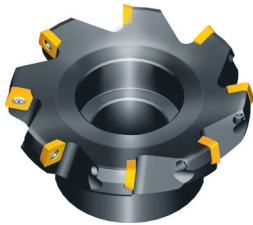
Technical data / Technische Daten **B215-B220**

### Face Milling Tools · Planfräser

Kr:75°





**FME02** P M K



#### Specification of tools · Werkzeug Beschreibung

| Type<br>Typ  | Stock<br>Lager | Dimension (mm)<br>Abmessung |                  |     |    |                   | No. of<br>teeth<br>Zähne | Coupling<br>Aufnahme | Weight<br>Gewicht<br>(kg) |
|--------------|----------------|-----------------------------|------------------|-----|----|-------------------|--------------------------|----------------------|---------------------------|
|              |                | Ø D                         | Ø D <sub>1</sub> | Ø d | L  | ap <sub>max</sub> |                          |                      |                           |
| <b>FME02</b> | ●              | 50                          | 54               | 22  | 40 | 6                 | 4                        | A                    | 0.3                       |
|              | ●              | 63                          | 66               | 22  | 50 | 6                 | 5                        | A                    | 0.6                       |
|              | ●              | 80                          | 83               | 27  | 50 | 6                 | 6                        | A                    | 0.9                       |
|              | ●              | 100                         | 103              | 32  | 50 | 6                 | 7                        | B                    | 1.4                       |
|              | ●              | 125                         | 128              | 40  | 63 | 6                 | 8                        | B                    | 2.5                       |

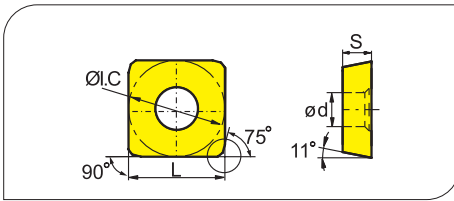
#### Spare Parts · Ersatzteile

| Diameter<br>Durchmesser<br>Ø D | Screw<br>Schraube   | Wrench<br>Schlüssel  |
|--------------------------------|---|--|
| Ø50-Ø125                       | <br>I60M5×13.2 | <br>WT20IS |
|                                |   |  |
|                                |   |  |



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

### Applicable inserts · Wendeschneidplatten



- Ideal Machining Condition / Gute Bearbeitungsbedingungen
- Normal Machining Condition / Normale Bearbeitungsbedingungen
- Unfavorable Machining Condition / Ungünstige Bearbeitungsbedingungen

| Workpiece Material / Werkstoffe         | 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 / Plattenform | Type / Typ   | Dimension (mm) / Abmessung |      |      |      | CVD Coating / CVD Beschicht. |        |        |        | PVD Coating / PVD Beschicht. |        |        |        | Cermet / Cermet | Carbide uncoat. / unbe. Hartmetall |        |        |        |        |        |        |        |         |       |
|----------------------------|--------------|----------------------------|------|------|------|------------------------------|--------|--------|--------|------------------------------|--------|--------|--------|-----------------|------------------------------------|--------|--------|--------|--------|--------|--------|--------|---------|-------|
|                            |              | L                          | I.C  | S    | d    | YBC301                       | YBC302 | YBC401 | YBM251 | YBM253                       | YBM351 | YBD152 | YBD252 |                 |                                    | YBG102 | YBG202 | YBG205 | YBG302 | YBG152 | YBG252 | YNG151 | YNG151C | YC30S |
|                            | SPKW1204EDFR | 12.7                       | 12.7 | 4.76 | 5.56 |                              |        |        |        |                              |        |        |        | ●               |                                    |        |        |        |        |        |        |        |         |       |
|                            | SPKW1204EDSR | 12.7                       | 12.7 | 4.76 | 5.56 |                              |        |        |        |                              |        |        |        | ●               |                                    |        |        |        |        |        |        |        |         |       |
|                            | SPKT1204EDR  | 12.7                       | 12.7 | 4.76 | 5.56 |                              |        |        |        |                              |        |        |        | ●               |                                    |        |        |        |        |        |        |        |         |       |

### Chipbreaker Selection FME02 · Spanbrecher Auswahl FME02

| Application / Anwendung | Finishing / Schlichten | Semi-Finishing / Mittlere Bearbeitung | Roughing / Schruppen |
|-------------------------|------------------------|---------------------------------------|----------------------|
| <b>P</b>                | EDFR                   | EDR                                   | EDSR                 |
| <b>M</b>                | EDFR                   | EDR                                   |                      |
| <b>K</b>                | EDFR                   | EDR                                   |                      |

### Recommended cutting data · Empfohlene Schnittdaten

| Workpiece material / Werkstückstoff  | Hardness HB / Härte | Grade / Sorte | Cutting data / Schnittdaten |               |
|--|---------------------|---------------|-----------------------------|---------------|
|  |                     |               | V (m/min)                   | f (mm/z)      |
| <b>P</b><br>Low-carbon steel / Soft steel / Niedriglegierter Kohlenstoffstahl / Baustahl | ≤180                | YBG202        | 270 (200-360)               | 0.2 (0.1-0.3) |
|  | 180-280             | YBG202        | 240 (180-350)               | 0.2 (0.1-0.3) |
|  | 280-350             | YBG202        | 220 (170-340)               | 0.2 (0.1-0.3) |
| <b>M</b><br>Stainless steel / Rostfreier Stahl   | ≤270                | YBG202        | 160 (110-270)               | 0.2 (0.1-0.3) |
| <b>K</b><br>Cast iron / Gusseisen  | 180-250             | YBG202        | 160 (120-200)               | 0.2 (0.1-0.3) |

Applicable tool / Werkzeug **B11-B18**

Tools code key / Werkzeug ISO **B26-B27**

Grade selection guide / Sortenauswahl **B19-B23**

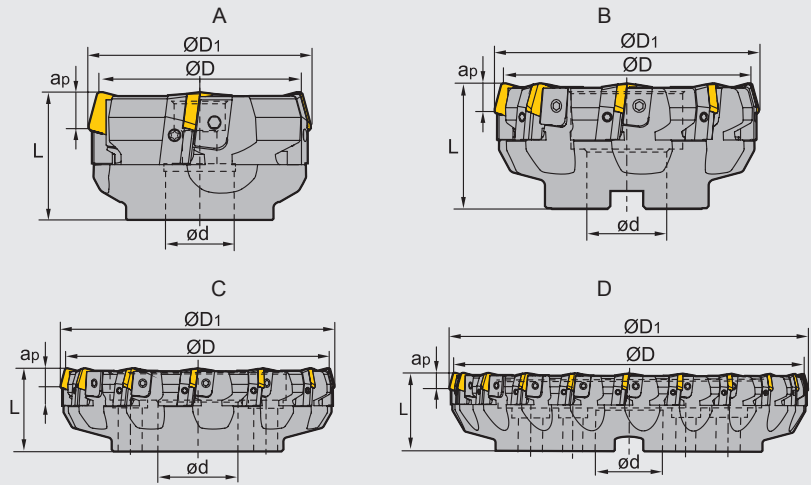
Technical data / Technische Daten **B215-B220**

Kr:75°



### Face Milling Tools · Planfräser

**FME03** **P** **M** **K**



#### Specification of tools · Werkzeug Beschreibung

| Type<br>Typ      | Stock<br>Lager | Dimension (mm)<br>Abmessung |     |     |                  |     |   | No. of teeth<br>Zähne | Coupling<br>Aufnahme | Weight<br>Gewicht (kg) |
|------------------|----------------|-----------------------------|-----|-----|------------------|-----|---|-----------------------|----------------------|------------------------|
|                  |                | R                           | L   | Ø D | Ø D <sub>1</sub> | Ø d | L |                       |                      |                        |
| <b>FME03</b>     |                |                             |     |     |                  |     |   |                       |                      |                        |
| -080-A27-SP12-04 | ●              | ○                           | 80  | 84  | 27               | 50  | 6 | 4                     | A                    | 1.1                    |
| -100-B32-SP12-06 | ●              | ○                           | 100 | 104 | 32               | 50  | 6 | 6                     | B                    | 1.9                    |
| -125-B40-SP12-08 | ○              | ○                           | 125 | 129 | 40               | 63  | 6 | 8                     | B                    | 3.5                    |
| -160-B40-SP12-10 | ●              | ○                           | 160 | 164 | 40               | 63  | 6 | 10                    | B                    | 5.7                    |
| -200-C60-SP12-12 | ○              | ○                           | 200 | 203 | 60               | 63  | 6 | 12                    | C                    | 8.2                    |
| -250-C60-SP12-16 | ○              | ○                           | 250 | 253 | 60               | 63  | 6 | 16                    | C                    | 13.8                   |
| -315-D60-SP12-20 | ○              | ○                           | 315 | 318 | 60               | 70  | 6 | 20                    | D                    | 23.5                   |
| -080-A27-SP15-04 | ○              | ○                           | 80  | 84  | 27               | 50  | 8 | 4                     | A                    | 1.0                    |
| -100-B27-SP15-06 | ○              | ○                           | 100 | 104 | 27               | 50  | 8 | 6                     | B                    | 1.8                    |
| -125-B40-SP15-08 | ●              | ○                           | 125 | 129 | 40               | 63  | 8 | 8                     | B                    | 3.3                    |
| -160-B40-SP15-10 | ○              | ○                           | 160 | 164 | 40               | 63  | 8 | 10                    | B                    | 5.4                    |
| -200-C60-SP15-12 | ○              | ○                           | 200 | 204 | 60               | 63  | 8 | 12                    | C                    | 7.9                    |
| -250-C60-SP15-16 | ○              | ○                           | 250 | 253 | 60               | 63  | 8 | 16                    | C                    | 13.6                   |
| -315-D60-SP15-20 | ○              | ○                           | 315 | 318 | 60               | 70  | 8 | 20                    | D                    | 23.1                   |

#### Spare Parts · Ersatzteile

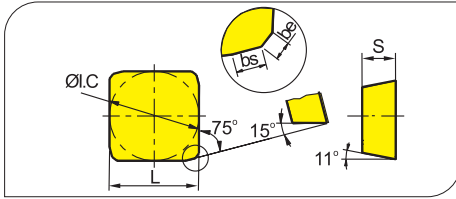
| Diameter<br>Durchmesser<br>Ø D | Insert<br>Platte | Cassette<br>Kassette | Wedge<br>Keil | Screw<br>Schraube | Locator screw<br>Schraube | Wrench<br>Schlüssel |  |
|--------------------------------|------------------|----------------------|---------------|-------------------|---------------------------|---------------------|--|
| Ø80-Ø100                       | SP12             | LSP12R/L             | W04R/L        | WM8×17            | LOM5×15.1                 | WT20T<br>WT25T      |  |
| Ø125-Ø315                      |                  |                      |               | WM8×22            |                           |                     |  |
| Ø80-Ø315                       | SP15             | LSP15R/L             | W04R/L        | WM8×22            |                           |                     |  |

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

# Milling · Fräsen

## Indexable Milling · Fräswendeplatten

Applicable inserts · Wendeschneidplatten



- Ideal Machining Condition  
Gute Bearbeitungsbedingungen
- Normal Machining Condition  
Normale Bearbeitungsbedingungen
- Unfavorable Machining Condition  
Ungünstige Bearbeitungsbedingungen

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

| Insert<br>WSP                     | Type<br>Typ                         | Dimensions (mm)<br>Abmessungen |        |      |     |     | CVD Coating<br>CVD Beschicht. |        |        |        |        |        | PVD Coating<br>PVD Beschicht. |        |        |        |        | Cermet<br>Cermet | Carbide uncoat.<br>unbe. Hartmetall |        |        |         |       |       |       |
|-----------------------------------|-------------------------------------|--------------------------------|--------|------|-----|-----|-------------------------------|--------|--------|--------|--------|--------|-------------------------------|--------|--------|--------|--------|------------------|-------------------------------------|--------|--------|---------|-------|-------|-------|
|                                   |                                     | L                              | I.C.   | S    | be  | bs  | YBC301                        | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152                        | YBD252 | YBG102 | YBG202 | YBG205 | YBG302           | YBG152                              | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |
|                                   | SPKN1203EDER                        | 12.7                           | 12.7   | 3.18 | 1   | 1.4 |                               |        |        |        |        |        |                               |        |        |        |        |                  |                                     |        |        |         |       |       |       |
|                                   | SPKN1203EDEL                        | 12.7                           | 12.7   | 3.18 | 1   | 1.4 |                               |        |        |        |        |        |                               |        |        |        |        |                  |                                     |        |        |         |       |       |       |
|                                   | SPKN1203EDFR                        | 12.7                           | 12.7   | 3.18 | 1   | 1.4 | ○                             |        |        |        |        |        |                               |        | ○      |        |        |                  |                                     |        |        |         |       | ○     | ●     |
|                                   | SPKN1203EDFL<br>(SPKN1203EDL)       | 12.7                           | 12.7   | 3.18 | 1   | 1.4 |                               |        |        |        |        |        |                               |        |        |        |        |                  |                                     |        |        |         |       |       | ●     |
|                                   | SPKN1203EDSKR<br>(SPKN1203EDR)      | 12.7                           | 12.7   | 3.18 | 1   | 1.4 | ●                             | ●      |        |        |        |        |                               |        | ●      | ●      | ●      |                  |                                     |        |        |         | ○     |       |       |
|                                   | SPKN1203EDSKL<br>(SPKN1203EDL)      | 12.7                           | 12.7   | 3.18 | 1   | 1.4 | ●                             |        |        |        |        |        |                               |        |        | ●      |        |                  |                                     |        |        |         |       | ●     |       |
|                                   | SPKN1203EDTKR                       | 12.7                           | 12.7   | 3.18 | 1   | 1.4 |                               | ○      |        |        | ○      |        |                               |        |        |        |        |                  |                                     |        |        |         |       | ●     |       |
|                                   | SPKN1203EDTKL                       | 12.7                           | 12.7   | 3.18 | 1   | 1.4 |                               |        |        |        |        |        |                               |        |        |        |        |                  |                                     |        |        |         |       |       |       |
|                                   | SPKN1203EDS31PR<br>(SPKN1203EDT31R) | 12.7                           | 12.7   | 3.18 | 1   | 1.4 |                               |        |        |        |        |        |                               |        |        | ○      |        |                  |                                     |        |        |         |       |       |       |
|                                   | SPKN1203EDS31PL<br>(SPKN1203EDT31L) | 12.7                           | 12.7   | 3.18 | 1   | 1.4 |                               |        |        |        |        |        |                               |        |        |        |        |                  |                                     |        |        |         |       |       |       |
|                                   | SPKR1203EDR-GM                      | 12.7                           | 12.7   | 3.18 | 1   | 1.4 |                               |        | ●      |        |        |        |                               |        |        | ○      |        |                  |                                     |        |        |         |       |       |       |
|                                   | SPKR1203EDL-GM                      | 12.7                           | 12.7   | 3.18 | 1   | 1.4 |                               |        | ●      |        |        |        |                               |        |        | ○      |        |                  |                                     |        |        |         |       |       |       |
|                                   | SPKN1204EDFL<br>(SPKN1204EDL)       | 12.7                           | 12.7   | 4.76 | 1   | 1.4 |                               |        |        |        |        |        |                               |        |        |        |        |                  |                                     |        |        |         |       |       |       |
|                                   | SPKN1204EDER<br>(SPKN1204EDR)       | 12.7                           | 12.7   | 4.76 | 1   | 1.4 | ●                             | ●      |        |        |        |        |                               |        |        |        |        |                  |                                     |        |        |         | ●     |       |       |
|                                   | SPKN1204EDFR                        | 12.7                           | 12.7   | 4.76 | 1   | 1.4 |                               |        |        |        |        |        |                               |        |        |        |        |                  |                                     |        |        |         |       |       |       |
|                                   | SPKN1204EDSKR                       | 12.7                           | 12.7   | 4.76 | 1   | 1.4 |                               |        |        |        |        |        |                               | ●      |        |        |        |                  |                                     |        |        |         |       |       |       |
|                                   | SPKN1504EDER                        | 15.875                         | 15.875 | 4.76 | 1   | 1.4 |                               |        |        |        |        |        |                               |        |        |        |        |                  |                                     |        |        |         |       |       |       |
|                                   | SPKN1504EDEL                        | 15.875                         | 15.875 | 4.76 | 1   | 1.4 |                               |        |        |        |        |        |                               |        |        |        |        |                  |                                     |        |        |         |       |       |       |
|                                   | SPKN1504EDFR                        | 15.875                         | 15.875 | 4.76 | 1   | 1.4 |                               |        |        |        |        |        |                               |        |        |        |        |                  |                                     |        |        |         |       |       |       |
|                                   | SPKN1504EDFL<br>(SPKN1504EDL)       | 15.875                         | 15.875 | 4.76 | 1   | 1.4 |                               |        |        |        |        |        |                               |        |        |        |        |                  |                                     |        |        |         |       |       |       |
|                                   | SPKN1504EDSKR<br>(SPKN1504EDR)      | 15.875                         | 15.875 | 4.76 | 1   | 1.4 | ●                             |        |        |        |        |        | ●                             |        | ●      | ●      | ●      |                  |                                     |        |        |         | ●     |       |       |
|                                   | SPKN1504EDSKL<br>(SPKN1504EDL)      | 15.875                         | 15.875 | 4.76 | 1   | 1.4 |                               |        |        |        |        |        |                               |        |        |        |        | ○                |                                     |        |        |         | ●     |       |       |
|                                   | SPKN1504EDTKR<br>(SPKN1504EDR)      | 15.875                         | 15.875 | 4.76 | 1   | 1.4 |                               |        |        |        |        |        |                               |        |        | ●      | ●      |                  |                                     |        |        |         |       |       |       |
|                                   | SPKN1504EDTKL                       | 15.875                         | 15.875 | 4.76 | 1   | 1.4 |                               |        |        |        |        |        |                               |        |        |        |        |                  |                                     |        |        |         |       |       |       |
|                                   | SPKN1504EDS32PR<br>(SPKN1504EDT32R) | 15.875                         | 15.875 | 4.76 | 1   | 1.4 | ○                             |        |        |        |        |        |                               |        |        | ●      |        |                  |                                     |        |        |         |       |       |       |
|                                   | SPKN1504EDS32PL<br>(SPKN1504EDTL)   | 15.875                         | 15.875 | 4.76 | 1   | 1.4 |                               |        |        |        |        |        |                               |        |        |        |        |                  |                                     |        |        |         |       |       |       |
| SPKN1504EDT32PR<br>(SPKN1504EDTR) | 15.875                              | 15.875                         | 4.76   | 1    | 1.4 | ●   |                               |        |        |        |        |        |                               |        | ○      |        |        |                  |                                     |        |        |         |       |       |       |
| SPKN1504EDT32PL<br>(SPKN1504EDTL) | 15.875                              | 15.875                         | 4.76   | 1    | 1.4 |     |                               |        |        |        |        |        |                               |        |        |        |        |                  |                                     |        |        |         |       |       |       |
|                                   | SPKR1904EDFL                        | 19.05                          | 19.05  | 4.76 | 1   | 1.4 |                               |        |        |        |        |        |                               |        |        |        |        |                  |                                     |        |        |         |       |       |       |
|                                   | SPKR1904EDFR                        | 19.05                          | 19.05  | 4.76 | 1   | 1.4 |                               |        |        |        |        |        |                               |        |        |        |        |                  |                                     |        |        |         |       |       |       |
|                                   | SPKR1504EDR-GM                      | 19.05                          | 19.05  | 4.76 | 1   | 1.4 |                               |        | ●      |        |        |        |                               |        |        | ●      |        |                  |                                     |        |        |         |       |       |       |
|                                   | SPKR1504EDL-GM                      | 19.05                          | 19.05  | 4.76 | 1   | 1.4 |                               |        | ●      |        |        |        |                               |        |        | ●      |        |                  |                                     |        |        |         |       |       |       |

SPKN1203EDT31R chamfer · Fase 20° X 0.15 mm

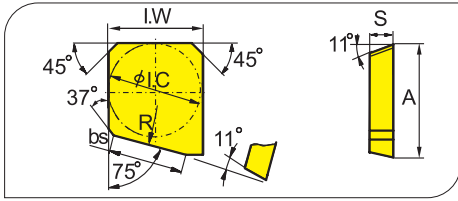
B

Milling Tools  
Fräser

# Milling · Fräsen

## Indexable Milling · Fräswendeplatten

### Applicable inserts · Wendeschneidplatten



- Ideal Machining Condition / Gute Bearbeitungsbedingungen
- Normal Machining Condition / Normale Bearbeitungsbedingungen
- Unfavorable Machining Condition / Ungünstige Bearbeitungsbedingungen

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

| Insert shape / Plattenform | Type / Typ    | Dimension (mm) / Abmessung |        |        |      |    |     | CVD Coating / CVD Beschicht. |        |        |        |        |        | PVD Coating / PVD Beschicht. |        |        |        | Cermet / Cermet | Carbide uncoat. / unbe. Hartmetall |        |        |        |        |         |       |       |       |
|----------------------------|---------------|----------------------------|--------|--------|------|----|-----|------------------------------|--------|--------|--------|--------|--------|------------------------------|--------|--------|--------|-----------------|------------------------------------|--------|--------|--------|--------|---------|-------|-------|-------|
|                            |               | A                          | I.C    | I.W    | S    | bs | R   | YBC301                       | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152                       | YBD252 | YBG102 | YBG202 |                 | YBG205                             | YBG302 | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |
|                            | SPEX1203EDL-1 | 15                         | 12.7   | 12.7   | 3.18 | 10 | 500 |                              |        |        |        |        |        |                              |        |        |        |                 |                                    |        |        |        |        |         |       |       | ○     |
|                            | SPEX1203EDR-1 | 15                         | 12.7   | 12.7   | 3.18 | 10 | 500 |                              |        |        |        |        |        |                              |        |        |        |                 |                                    |        |        |        |        |         |       |       | ●     |
|                            | SPEX1504EDL-1 | 18.2                       | 15.875 | 15.875 | 4.76 | 10 | 500 |                              |        |        |        |        |        |                              |        |        |        |                 |                                    |        |        |        |        |         |       |       | ●     |
|                            | SPEX1504EDR-1 | 18.2                       | 15.875 | 15.875 | 4.76 | 10 | 500 |                              |        |        |        |        |        |                              |        |        |        |                 |                                    |        |        |        |        |         |       |       | ●     |

### Edge preparation for FME03 / Schneidkantenausführung für FME03

| Edge preparation / Schneidkantenausführung | Recommended selection / Beschreibung  |
|--|---|
| SP**EDER/L                                 | Honing edge is suitable for semi-finish and finish machining steel and stainless steel.<br>Verrundete Schneidkante für mittlere bis Schlichtbearbeitung von Stahl und rostfreiem Stahl.   |
| SP**EDFR/L                                 | Sharp cutting edge is suitable for finish machining cast iron materials.<br>Scharfe Schneidkante für die Schlichtbearbeitung von Gussmaterial.  |
| SP**EDSKR/L<br>SP**EDS**R/L                | After chamfering and honing, the edge has strong capability of anti-breakage, suitable for rough machining steel parts in poor conditions.<br>Gefaste Schneidkante mit Verrundung und guter Stabilität. Für Schruppbearbeitung von Stahl auch bei ungünstigen Verhältnissen.  |
| SP**EDTKR/L<br>SP**EDT**R/L                | Chamfering edge is suitable for semi-finish and finish machining steel, stainless steel and cast iron materials.<br>Gefaste Schneide für mittlere bis Schlichtbearbeitung von Stahl und rostfreiem Stahl sowie Guss.  |
| SP**EDR/L-GM                               | 3D chipbreaker to reduce cutting force, reinforce the capability of chip control, improve insert life. Widely applied for semi-finish machining steel, stainless steel and cast iron materials.<br>3-D Spanbrecher für weniger Schnittkräfte, für gute Spankontrolle und höhere Standzeiten. Großer Anwendungsbereich bei mittlerer Bearbeitung von Stahl, rostfreiem Stahl und Guss. |

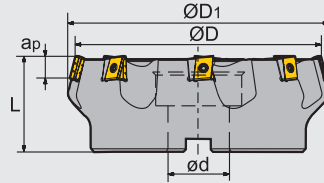
● Ex Stock / ab Lager ○ On demand / auf Anfrage

### Face Milling Tools · Planfräser

Kr:75°








**FME04** **P** **M** **K**



#### Specification of tools · Werkzeug Beschreibung

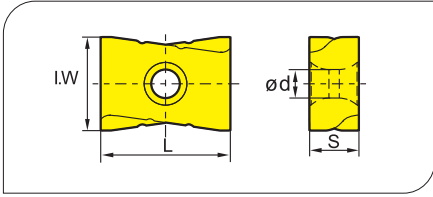
|              | Type<br>Typ      | Stock<br>Lager |   | Dimension (mm)<br>Abmessung |                   |                 |    |            | No. of teeth<br>Zähne | Coupling<br>Aufnahme | Weight<br>Gewicht<br>(kg) |
|--------------|------------------|----------------|---|-----------------------------|-------------------|-----------------|----|------------|-----------------------|----------------------|---------------------------|
|              |                  | R              | L | $\varnothing D$             | $\varnothing D_1$ | $\varnothing d$ | L  | $a_{pmax}$ |                       |                      |                           |
| <b>FME04</b> | -125-B40-LN15-06 | ●              | ○ | 125                         | 137               | 40              | 63 | 10         | 6                     | B                    | 3.8                       |
|              | -160-B40-LN15-08 | ●              | ○ | 160                         | 170               | 40              | 63 | 10         | 8                     | C                    | 6.6                       |
|              | -200-C60-LN15-10 | ●              | ○ | 200                         | 208               | 60              | 70 | 10         | 10                    | C                    | 9.6                       |
|              | -250-C60-LN15-12 | ○              | ○ | 250                         | 257               | 60              | 70 | 10         | 12                    | C                    | 13.4                      |
|              | -315-D60-LN15-16 | ○              | ○ | 315                         | 328               | 60              | 80 | 10         | 16                    | D                    | 25.2                      |

#### Spare Parts · Ersatzteile

| Diameter<br>Durchmesser<br>$\varnothing D$ | Shim<br>Unterlage   | Wedge<br>Keil   | Screw<br>Schraube   | Wrench<br>Schlüssel   |   |
|--|---|---|---|---|---|
| $\varnothing 80$ $\varnothing 100$         |  |  |  |  |  |
| $\varnothing 125 \sim \varnothing 315$     | LLN15-ZR  | I60M4×12  | I60M3×7   | WT15IS<br>WT10IS  |   |

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

### Applicable inserts · Wendeschneidplatten



- Ideal Machining Condition / Gute Bearbeitungsbedingungen
- Normal Machining Condition / Normale Bearbeitungsbedingungen
- Unfavorable Machining Condition / Ungünstige Bearbeitungsbedingungen

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

| Insert shape / Plattenform | Type / Typ           | Dimension (mm) / Abmessung |     |      |     | CVD Coating / CVD Beschicht. |        |        |        |        |        | PVD Coating / PVD Beschicht. |        |        |        | Cermet / Cermet | Carbide uncoat. / unbe. Hartmetall |        |        |        |        |         |       |       |       |  |
|----------------------------|----------------------|----------------------------|-----|------|-----|------------------------------|--------|--------|--------|--------|--------|------------------------------|--------|--------|--------|-----------------|------------------------------------|--------|--------|--------|--------|---------|-------|-------|-------|--|
|                            |                      | L                          | I.W | S    | d   | YBC301                       | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152                       | YBD252 | YBG102 | YBG202 |                 | YBG205                             | YBG302 | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |  |
|                            | <b>LNKT1506EN-ZR</b> | 15.875                     | 14  | 6.35 | 4.6 | ●                            |        |        | ●      |        | ●      | ●                            |        |        |        |                 | ●                                  |        |        |        |        |         |       |       |       |  |

### Recommended cutting data · Empfohlene Schnittdaten

| Workpiece material / Werkstückstoff   | Hardness HB / Härte | Grade / Sorte | Cutting data / Schnittdaten |                |
|---|---------------------|---------------|-----------------------------|----------------|
|   |                     |               | V (m/min)                   | f (mm/z)       |
| <b>P</b><br>Low-carbon steel / Soft steel / Niedrig legierter Kohlenstoffstahl / Baustahl | ≤180                | YBG302        | 180 (150-300)               | 0.5 (0.2-0.8)  |
|   |                     | YBM351        | 180 (150-300)               | 0.5 (0.2-0.8)  |
|   | 180-280             | YBG302        | 150 (120-280)               | 0.5 (0.2-0.8)  |
|   |                     | YBM351        | 140 (120-280)               | 0.5 (0.2-0.8)  |
| Alloy tool steel / Leg. Werkzeugstahl   | 280-350             | YBG302        | 120 (80-250)                | 0.45 (0.2-0.6) |
|   |                     | YBM351        | 100 (80-250)                | 0.45 (0.2-0.6) |
| <b>M</b><br>Stainless steel / Rostfreier Stahl  | ≤270                | YBG302        | 120 (80-200)                | 0.45 (0.2-0.6) |
|   |                     | YBM351        | 100 (80-200)                | 0.45 (0.2-0.6) |
| <b>K</b><br>Cast iron / Gusseisen   | 180-250             | YBD152        | 150 (120-200)               | 0.3 (0.2-0.5)  |
|   |                     | YBD252        | 130 (110-200)               | 0.3 (0.2-0.5)  |

**B**

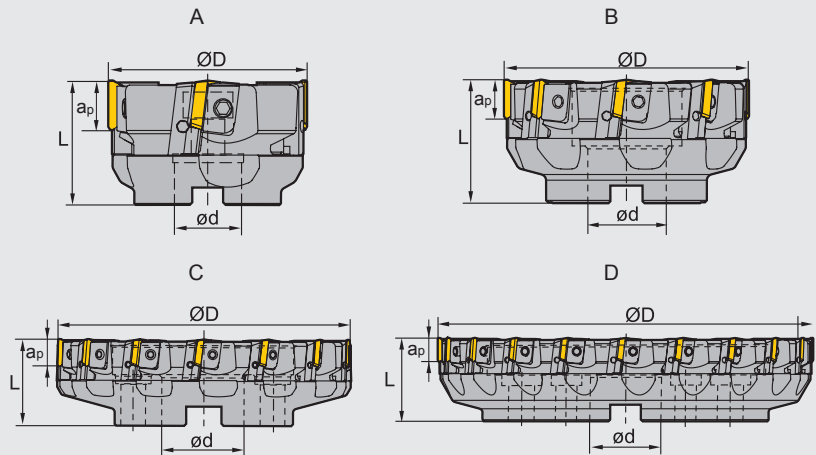
Milling Tools  
Fräser

### Face Milling Tools · Planfräser

Kr:90°



**FMP01** P M K

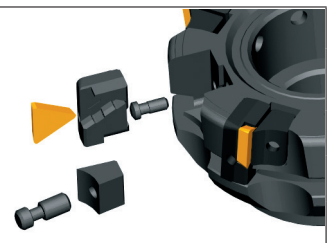


#### Specification of tools · Werkzeug Beschreibung

| Type Typ                      | Stock Lager |   | Dimension (mm) Abmessung |     |    |       | No. of teeth Zähne | Coupling Aufnahme | Weight Gewicht (kg) |
|-------------------------------|-------------|---|--------------------------|-----|----|-------|--------------------|-------------------|---------------------|
|                               | R           | L | Ø D                      | Ø d | L  | apmax |                    |                   |                     |
| <b>FMP01</b> -080-A27-TP22-04 | ●           | ○ | 80                       | 27  | 50 | 18    | 4                  | A                 | 1.2                 |
| -100-B32-TP22-06              | ●           | ○ | 100                      | 32  | 50 | 18    | 6                  | B                 | 1.7                 |
| -125-B40-TP22-08              | ●           | ○ | 125                      | 40  | 63 | 18    | 8                  | B                 | 3.2                 |
| -160-B40-TP22-10              | ●           | ○ | 160                      | 40  | 63 | 18    | 10                 | B                 | 5.1                 |
| -200-C60-TP22-12              | ●           | ○ | 200                      | 60  | 63 | 18    | 12                 | C                 | 7.4                 |
| -250-C60-TP22-16              | ○           | ○ | 250                      | 60  | 63 | 18    | 16                 | C                 | 12.3                |
| -315-D60-TP22-20              | ○           | ○ | 315                      | 60  | 70 | 18    | 20                 | D                 | 21.9                |

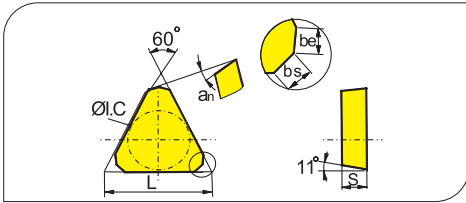
#### Spare Parts · Ersatzteile

| Diameter Durchmesser Ø D | Cassette Kassette | Wedge Keil | Screw Schraube | Locator screw Schraube | Wrench Schlüssel |
|--------------------------|-------------------|------------|----------------|------------------------|------------------|
| Ø80 Ø100                 | LTP4R1/L1         | W04R/L     | WM8×17         | LOM5×15.1              | WT20T            |
| Ø125 ~ Ø315              | LTP4R/L           |            | WM8×22         |                        | WT25T            |



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

### Applicable inserts · Wendeschneidplatten



- Ideal Machining Condition / Gute Bearbeitungsbedingungen
- Normal Machining Condition / Normale Bearbeitungsbedingungen
- Unfavorable Machining Condition / Ungünstige Bearbeitungsbedingungen

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

| Insert WSP | Type Typ                    | Dimensions (mm) / Abmessungen |      |      |     |     |     | CVD Coating / CVD Beschicht. |        |        |        | PVD Coating / PVD Beschicht. |        |        |        | Cermet / Cermet | Carbide uncoat. / unbe. Hartmetall |        |        |        |        |        |        |         |       |       |       |
|------------|-----------------------------|-------------------------------|------|------|-----|-----|-----|------------------------------|--------|--------|--------|------------------------------|--------|--------|--------|-----------------|------------------------------------|--------|--------|--------|--------|--------|--------|---------|-------|-------|-------|
|            |                             | L                             | I.C. | S    | be  | bs  | an  | YBC301                       | YBC302 | YBC401 | YBM251 | YBM253                       | YBM351 | YBD152 | YBD252 |                 | YBG102                             | YBG202 | YBG205 | YBG302 | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |
|            | TPKN2204PDKR                | 22                            | 12.7 | 4.76 | 1.4 | 0.7 | 11° |                              |        |        |        |                              |        |        |        | ●               |                                    |        |        |        |        |        |        |         |       |       |       |
|            | TPKN2204PDFR                | 22                            | 12.7 | 4.76 | 1.4 | 0.7 | 11° |                              |        |        |        |                              |        |        |        |                 |                                    |        |        |        |        |        |        |         |       | ●     |       |
|            | TPKN2204PDFL                | 22                            | 12.7 | 4.76 | 1.4 | 0.7 | 11° |                              |        |        |        |                              |        |        |        |                 |                                    |        |        |        |        |        |        |         |       |       | ○     |
|            | TPKN2204PDSKR (TPKN2204PDR) | 22                            | 12.7 | 4.76 | 1.4 | 0.7 | 11° | ●                            | ●      |        |        | ●                            |        |        |        |                 | ●                                  | ●      | ●      |        |        |        |        |         | ○     |       |       |
|            | TPKN2204PDL                 | 22                            | 12.7 | 4.76 | 1.4 | 0.7 | 11° | ●                            |        |        |        |                              |        |        |        |                 |                                    |        |        |        |        |        |        |         | ●     |       | ●     |
|            | TPKN2204PDTR                | 22                            | 12.7 | 4.76 | 1.4 | 0.7 | 11° | ○                            |        |        |        |                              |        |        |        |                 |                                    | ○      |        |        |        |        |        |         | ●     |       |       |

(old Material No. / alte Artikelnr.)

### Recommended cutting data · Empfohlene Schnittdaten

| Workpiece material / Werkstückstoff  | Hardness HB / Härte | Grade / Sorte | Cutting data / Schnittdaten |                 |
|--|---------------------|---------------|-----------------------------|-----------------|
|  |                     |               | V (m/min)                   | f (mm/z)        |
| <b>P</b><br>Low-carbon steel / Soft steel / Niedriglegierter Kohlenstoffstahl / Baustahl<br>High-carbon steel / Alloy steel / Hochleg. Kohlenstoffstahl<br>Alloy tool steel / Leg. Werkzeugstahl | ≤180                | YBC301        | 270 (220-350)               | 0.2 (0.1-0.4)   |
|  |                     | YBM351        | 220 (180-300)               | 0.2 (0.08-0.3)  |
|  |                     | YBG202        | 270 (200-360)               | 0.2 (0.1-0.3)   |
|  |                     | YC30S         | 140 (100-220)               | 0.22 (0.1-0.3)  |
|  | 180—280             | YBC301        | 240 (200-320)               | 0.2 (0.1-0.4)   |
|  |                     | YBM351        | 200 (160-280)               | 0.2 (0.08-0.3)  |
|  |                     | YBG202        | 240 (180-350)               | 0.2 (0.1-0.3)   |
|  |                     | YC30S         | 120 (80-200)                | 0.22 (0.1-0.3)  |
| 280—350  | YBC301              | 220 (180-300) | 0.2 (0.1-0.4)               |                 |
|  | YBM351              | 180 (150-250) | 0.2 (0.08-0.3)              |                 |
|  | YBG202              | 220 (170-340) | 0.2 (0.1-0.3)               |                 |
|  | YC30S               | 100 (60-180)  | 0.22 (0.1-0.3)              |                 |
| <b>M</b><br>Stainless steel / Rostfreier Stahl   | ≤270                | YBM351        | 140 (100-240)               | 0.2 (0.08-0.3)  |
|  |                     | YBG202        | 140 (100-250)               | 0.2 (0.1-0.3)   |
| <b>K</b><br>Cast iron / Gusseisen  | 180—250             | YBG102        | 210 (120-300)               | 0.2 (0.1-0.3)   |
|  |                     | YBG302        | 160 (120-200)               | 0.35 (0.10-0.4) |
|  |                     | YD201         | 100 (80-160)                | 0.24 (0.15-0.4) |

Applicable tool / Werkzeug **B11-B18**

Tools code key / Werkzeug ISO **B26-B27**

Grade selection guide / Sortenauswahl **B19-B23**

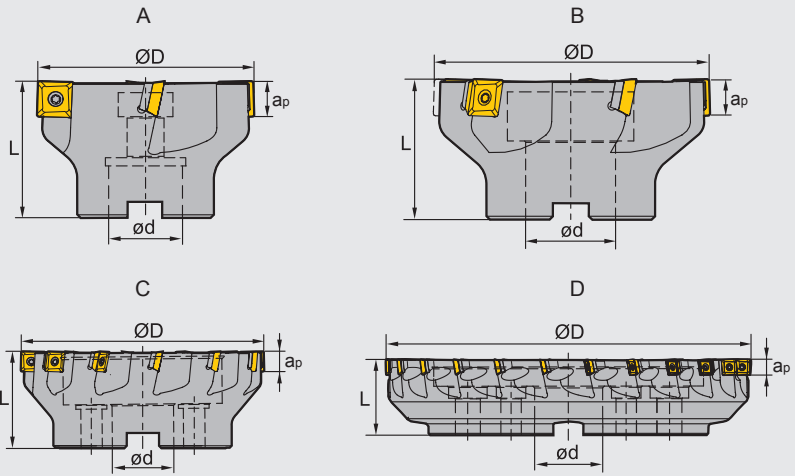
Technical data / Technische Daten **B215-B220**

Kr:90°



### Face Milling Tools · Planfräser

**FMP02** **P** **M** **K**



#### Specification of tools · Werkzeug Beschreibung

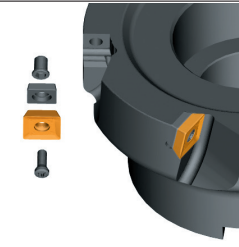





| Type<br>Typ                   | Stock<br>Lager | Dimension (mm)<br>Abmessung |     |    |       | No. of teeth<br>Zähne | Coupling<br>Aufnahme | Weight<br>Gewicht<br>(kg) |
|-------------------------------|----------------|-----------------------------|-----|----|-------|-----------------------|----------------------|---------------------------|
|                               |                | Ø D                         | Ø D | L  | apmax |                       |                      |                           |
| <b>FMP02</b> -050-A22-SE09-05 | ●              | 50                          | 22  | 40 | 6.7   | 5                     | A                    | 0.3                       |
| -050-A22-SE09-05C             | ●              | 50                          | 22  | 40 | 6.7   | 5                     | A                    | 0.3                       |
| -063-A22-SE09-06              | ●              | 63                          | 22  | 40 | 6.7   | 6                     | A                    | 0.5                       |
| -063-A22-SE09-06C             | ●              | 63                          | 22  | 40 | 6.7   | 6                     | A                    | 0.5                       |
| -080-A27-SE09-08              | ●              | 80                          | 27  | 50 | 6.7   | 8                     | A                    | 0.9                       |
| -080-A27-SE09-08C             | ●              | 80                          | 27  | 50 | 6.7   | 8                     | A                    | 0.9                       |
| -100-B32-SE09-08              | ○              | 100                         | 32  | 50 | 6.7   | 8                     | B                    | 1.7                       |
| -100-B32-SE09-08C             | ○              | 100                         | 32  | 50 | 6.7   | 8                     | B                    | 1.7                       |
| -100-B32-SE09-10              | ○              | 100                         | 32  | 50 | 6.7   | 10                    | B                    | 1.7                       |
| -100-B32-SE09-10C             | ○              | 100                         | 32  | 50 | 6.7   | 10                    | B                    | 1.7                       |
| -125-B40-SE09-12              | ○              | 125                         | 40  | 63 | 6.7   | 12                    | B                    | 2.6                       |
| -125-B40-SE09-12C             | ○              | 125                         | 40  | 63 | 6.7   | 12                    | B                    | 2.6                       |

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

### ■ Specification of tools · Werkzeug Beschreibung

|                  | Type<br>Typ       | Stock<br>Lager | Dimension (mm)<br>Abmessung |     |      |                   | No. of teeth<br>Zähne | Coupling<br>Aufnahme | Weight<br>Gewicht<br>(kg) |
|------------------|-------------------|----------------|-----------------------------|-----|------|-------------------|-----------------------|----------------------|---------------------------|
|                  |                   |                | Ø D                         | Ø D | L    | a <sub>pmax</sub> |                       |                      |                           |
| <b>FMP02</b>     | -050-A22-SE12-03  | ○              | 50                          | 22  | 40   | 10.8              | 3                     | A                    | 0.3                       |
|                  | -050-A22-SE12-03C | ○              | 50                          | 22  | 40   | 10.8              | 3                     | A                    | 0.3                       |
|                  | -063-A22-SE12-04  | ○              | 63                          | 22  | 40   | 10.8              | 4                     | A                    | 0.4                       |
|                  | -063-A22-SE12-04C | ○              | 63                          | 22  | 40   | 10.8              | 4                     | A                    | 0.4                       |
|                  | -080-A27-SE12-04  | ●              | 80                          | 27  | 50   | 10.8              | 4                     | A                    | 0.9                       |
|                  | -080-A27-SE12-04C | ●              | 80                          | 27  | 50   | 10.8              | 4                     | A                    | 0.9                       |
|                  | -100-B32-SE12-05  | ●              | 100                         | 32  | 50   | 10.8              | 5                     | B                    | 1.2                       |
|                  | -100-B32-SE12-05C | ●              | 100                         | 32  | 50   | 10.8              | 5                     | B                    | 1.2                       |
|                  | -125-B40-SE12-06  | ○              | 125                         | 40  | 63   | 10.8              | 6                     | B                    | 3.1                       |
|                  | -125-B40-SE12-06C | ○              | 125                         | 40  | 63   | 10.8              | 6                     | B                    | 3.1                       |
|                  | -160-C40-SE12-08  | ○              | 160                         | 40  | 63   | 10.8              | 8                     | C                    | 4.1                       |
|                  | -250-C60-SE12-12  | ○              | 250                         | 60  | 63   | 10.8              | 12                    | C                    | 11.1                      |
|                  | -050-A22-SE12-04  | ●              | 50                          | 22  | 40   | 10.8              | 4                     | A                    | 0.3                       |
|                  | -050-A22-SE12-04C | ●              | 50                          | 22  | 40   | 10.8              | 4                     | A                    | 0.3                       |
|                  | -063-A22-SE12-05  | ●              | 63                          | 22  | 40   | 10.8              | 5                     | A                    | 0.4                       |
|                  | -063-A22-SE12-05C | ●              | 63                          | 22  | 40   | 10.8              | 5                     | A                    | 0.4                       |
|                  | -080-A27-SE12-06  | ●              | 80                          | 27  | 50   | 10.8              | 6                     | A                    | 0.8                       |
|                  | -080-A27-SE12-06C | ●              | 80                          | 27  | 50   | 10.8              | 6                     | A                    | 0.8                       |
|                  | -100-B32-SE12-07  | ●              | 100                         | 32  | 50   | 10.8              | 7                     | B                    | 1.2                       |
|                  | -100-B32-SE12-07C | ●              | 100                         | 32  | 50   | 10.8              | 7                     | B                    | 1.2                       |
|                  | -125-B40-SE12-08  | ●              | 125                         | 40  | 63   | 10.8              | 8                     | B                    | 3.0                       |
|                  | -125-B40-SE12-08C | ●              | 125                         | 40  | 63   | 10.8              | 8                     | B                    | 3.0                       |
|                  | -160-C40-SE12-12  | ●              | 160                         | 40  | 63   | 10.8              | 12                    | C                    | 3.9                       |
|                  | -050-A22-SE12-05  | ●              | 50                          | 22  | 40   | 10.8              | 5                     | A                    | 0.2                       |
|                  | -050-A22-SE12-05C | ●              | 50                          | 22  | 40   | 10.8              | 5                     | A                    | 0.2                       |
|                  | -063-A22-SE12-06  | ●              | 63                          | 22  | 40   | 10.8              | 6                     | A                    | 0.4                       |
|                  | -063-A22-SE12-06C | ●              | 63                          | 22  | 40   | 10.8              | 6                     | A                    | 0.4                       |
|                  | -080-A27-SE12-08  | ●              | 80                          | 27  | 50   | 10.8              | 8                     | A                    | 0.8                       |
|                  | -080-A27-SE12-08C | ●              | 80                          | 27  | 50   | 10.8              | 8                     | A                    | 0.8                       |
|                  | -100-B32-SE12-10  | ●              | 100                         | 32  | 50   | 10.8              | 10                    | B                    | 1.2                       |
|                  | -100-B32-SE12-10C | ●              | 100                         | 32  | 50   | 10.8              | 10                    | B                    | 1.2                       |
|                  | -125-B40-SE12-12  | ●              | 125                         | 40  | 63   | 10.8              | 12                    | B                    | 2.9                       |
|                  | -125-B40-SE12-12C | ●              | 125                         | 40  | 63   | 10.8              | 12                    | B                    | 2.9                       |
| -200-C60-SE12-16 | ●                 | 200            | 60                          | 63  | 10.8 | 16                | C                     | 6.1                  |                           |
| -250-C60-SE12-18 | ●                 | 250            | 60                          | 63  | 10.8 | 18                | C                     | 10.9                 |                           |
| -315-D60-SE12-24 | ○                 | 315            | 60                          | 63  | 10.8 | 24                | D                     | 21.6                 |                           |

### ■ Spare Parts · Ersatzteile

| Diameter<br>Durchmesser<br>Ø D | Insert<br>Platte | shim<br>Unterlage   | Screw<br>Schraube   | shim<br>Unterlage<br>Schraube   | Wrench<br>Schlüssel   | Wrench<br>Schlüssel   |  |
|--------------------------------|------------------|---|---|---|---|---|---|
|                                |                  |  |  |  |  |  |   |
| Ø50 ~ Ø125                     | SE09             | --  | I60M3×7   | --  | WT09IS  | --  |   |
| Ø50                            | SE12             | --  | I60M3.5×10  | --  | WT15IS  | --  |   |
| Ø63 ~ Ø315                     |                  | S12BSX  | I60M3.5×12  | SM5×7XA   |   | WH35L   |   |

Applicable tool **B11-B18**  
Werkzeug

Tools code key **B26-B27**  
Werkzeug ISO

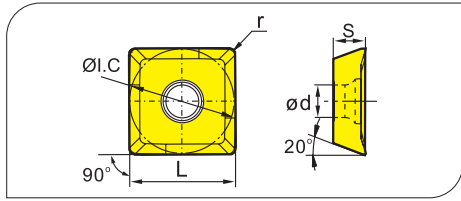
Grade selection guide **B19-B23**  
Sortenauswahl

Technical data **B215-B220**  
Technische Daten

# Milling · Fräsen

## Indexable Milling · Fräswendeplatten

### Applicable inserts · Wendschneidplatten



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

| Insert shape<br>Plattenform | Type<br>Typ      | Dimension (mm)<br>Abmessung |        |      |     |     | CVD Coating<br>CVD Beschicht. |        |        |        |        |        | PVD Coating<br>PVD Beschicht. |        |        |        |        | Cermet<br>Cermet | Carbide uncoat.<br>unbe. Hartmetall |        |        |        |         |       |       |       |
|-----------------------------|------------------|-----------------------------|--------|------|-----|-----|-------------------------------|--------|--------|--------|--------|--------|-------------------------------|--------|--------|--------|--------|------------------|-------------------------------------|--------|--------|--------|---------|-------|-------|-------|
|                             |                  | L                           | I.C    | S    | d   | r   | YBC301                        | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152                        | YBD252 | YBG102 | YBG202 | YBG205 |                  | YBG302                              | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |
|                             | SEET09T308PER-PF | 9.525                       | 9.525  | 4.01 | 3.3 | 0.8 |                               |        |        |        |        |        |                               |        |        | ●      |        |                  |                                     |        |        |        |         |       |       |       |
|                             | SEET09T308PER-PM | 9.525                       | 9.525  | 4.01 | 3.3 | 0.8 |                               |        |        |        |        |        |                               |        |        | ●      |        |                  |                                     |        |        |        |         |       |       |       |
|                             | SEET09T308PER-PR | 9.525                       | 9.525  | 4.01 | 3.3 | 0.8 |                               |        |        |        |        |        |                               |        |        | ●      |        |                  |                                     |        |        |        |         |       |       |       |
|                             | SEET120308PER-PF | 13.308                      | 13.308 | 4.04 | 4.1 | 0.8 | ●                             | ●      |        |        |        | ○      |                               |        |        | ●      |        |                  |                                     |        |        |        |         |       |       |       |
|                             | SEET120308PER-PM | 13.308                      | 13.308 | 4.04 | 4.1 | 0.8 |                               | ●      |        | ●      | ●      | ●      | ●                             | ●      | ●      | ●      | ●      |                  |                                     |        |        |        |         |       |       |       |
|                             | SEET120308PER-PR | 13.308                      | 13.308 | 4.04 | 4.1 | 0.8 |                               | ●      |        | ●      | ●      | ●      | ●                             | ○      | ○      |        | ○      |                  |                                     |        |        |        |         |       |       |       |
|                             | SEET120308-LH    | 13.308                      | 13.308 | 4.04 | 4.1 | 0.8 |                               |        |        |        |        |        |                               |        | ○      |        |        |                  |                                     |        |        |        |         |       | ●     |       |

### Chipbreaker Selection FMP02 · Spanbrecher Auswahl FMP02

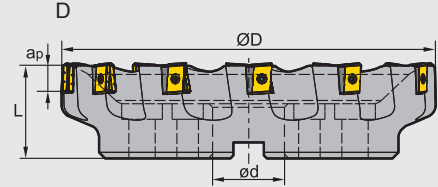
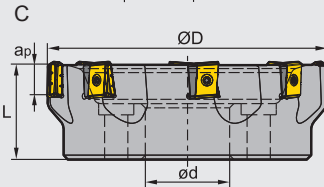
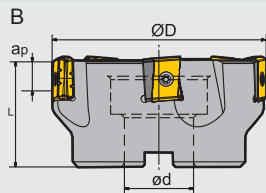
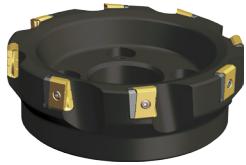
| Application<br>Anwendung | Finishing<br>Schlichten | Semi-Finishing<br>Mittlere Bearbeitung | Roughing<br>Schruppen |
|--------------------------|-------------------------|--|-----------------------|
| <b>P</b>                 | <b>PF</b><br>           | <b>PM</b><br>                          | <b>PR</b><br>         |
| <b>M</b>                 |                         |  |                       |
| <b>K</b>                 |                         |  |                       |
| <b>N</b>                 |                         | <b>LH</b>                              |                       |

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

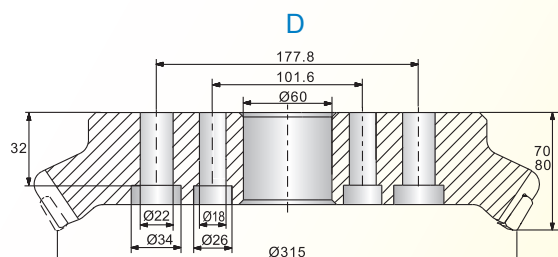
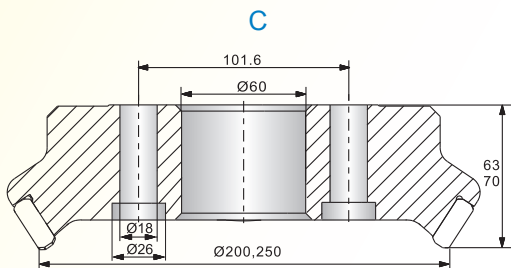
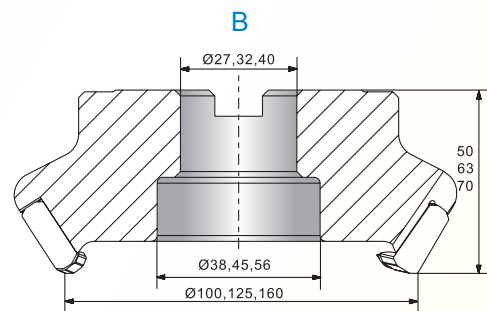
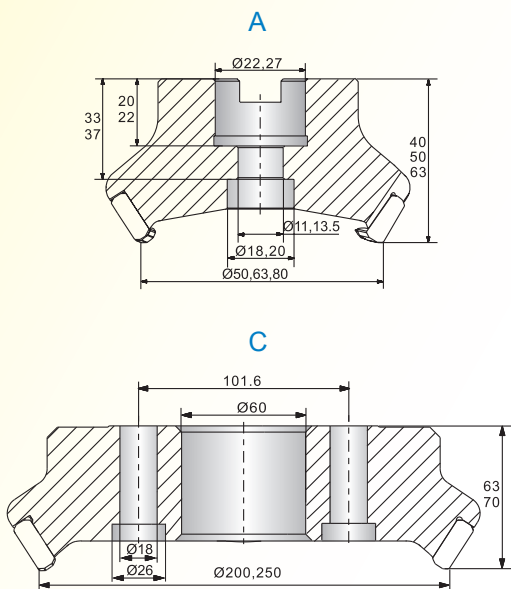
### Face Milling Tools · Planfräser



**FMP03 P M K**



| Type<br>Typ  | Stock<br>Lager   |   | Ø D | Ø d | L  | ap <sub>max</sub> | No. of<br>teeth<br>Zähne | Insert<br>WSP | Coupling<br>Aufnahme | Weight<br>Gewicht<br>(kg) |      |
|--------------|------------------|---|-----|-----|----|-------------------|--------------------------|---------------|----------------------|---------------------------|------|
|              | R                | L |     |     |    |                   |                          |               |                      |                           |      |
| <b>FMP03</b> | -125-B40-LN15-06 | ● | ○   | 125 | 40 | 63                | 12                       | 6             | LNKT1506EN-ZR        | B                         | 3.2  |
|              | -160-C40-LN15-08 | ● | ○   | 160 | 40 | 63                | 12                       | 8             |                      | C                         | 5.1  |
|              | -200-C60-LN15-10 | ● | ○   | 200 | 60 | 70                | 12                       | 10            |                      | C                         | 7.5  |
|              | -250-C60-LN15-12 | ● | ○   | 250 | 60 | 70                | 12                       | 12            |                      | C                         | 12.2 |
|              | -315-D60-LN15-16 | ○ | ○   | 315 | 60 | 80                | 12                       | 16            |                      | D                         | 23.7 |
|              | -125-B40-LN20-06 | ○ | ○   | 125 | 40 | 63                | 16                       | 6             | LNKT2007DN-ZR        | B                         | 3.3  |
|              | -160-C40-LN20-08 | ● | ○   | 160 | 40 | 63                | 16                       | 8             |                      | C                         | 5.3  |
|              | -200-C60-LN20-10 | ● | ○   | 200 | 60 | 70                | 16                       | 10            |                      | C                         | 8.8  |
|              | -250-C60-LN20-12 | ● | ○   | 250 | 60 | 70                | 16                       | 12            |                      | C                         | 14.0 |
|              | -315-D60-LN20-15 | ○ | ○   | 315 | 60 | 80                | 16                       | 15            |                      | D                         | 23.9 |
|              | -125-B40-LN25-05 | ○ | ○   | 125 | 40 | 63                | 20                       | 5             | LNKT2510-ZR          | B                         | 3.3  |
|              | -160-C40-LN25-06 | ○ | ○   | 160 | 40 | 63                | 20                       | 6             |                      | C                         | 5.1  |
|              | -200-C60-LN25-08 | ○ | ○   | 200 | 60 | 70                | 20                       | 8             |                      | C                         | 8.9  |
|              | -250-C60-LN25-10 | ● | ○   | 250 | 60 | 70                | 20                       | 10            |                      | C                         | 12.0 |
|              | -315-D60-LN25-12 | ○ | ○   | 315 | 60 | 80                | 20                       | 12            |                      | D                         | 21.9 |



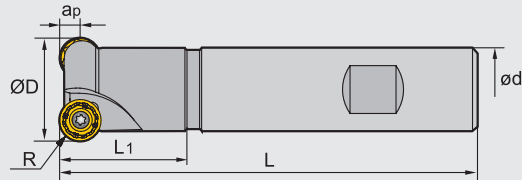
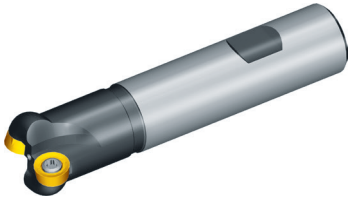
● Ex Stock / ab Lager ○ On demand / auf Anfrage



### Face Milling Tools · Planfräser



**FMR01** **P** **M** **K**

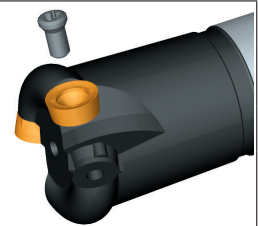


#### Specification of tools · Werkzeug Beschreibung

| Type<br>Typ        | Stock<br>Lager | Dimension (mm)<br>Abmessung |     |     |    |   |       | No. of<br>teeth<br>Zähne | Weight<br>Gewicht<br>(kg) |
|--------------------|----------------|-----------------------------|-----|-----|----|---|-------|--------------------------|---------------------------|
|                    |                | Ø D                         | Ø d | L   | L1 | R | apmax |                          |                           |
| <b>FMR01</b>       |                |                             |     |     |    |   |       |                          |                           |
| -025-XP20-RC10-02  | ●              | 25                          | 20  | 100 | 30 | 5 | 5     | 2                        | 0.2                       |
| -025-XP20-RC10-02C | ○              | 25                          | 20  | 100 | 30 | 5 | 5     | 2                        | 0.2                       |
| -032-XP25-RC10-02  | ●              | 32                          | 25  | 120 | 35 | 5 | 5     | 2                        | 0.5                       |
| -032-XP25-RC10-02C | ○              | 32                          | 25  | 120 | 35 | 5 | 5     | 2                        | 0.5                       |
| -040-XP32-RC12-03  | ●              | 40                          | 32  | 120 | 40 | 6 | 6     | 3                        | 0.7                       |
| -040-XP32-RC12-03C | ○              | 40                          | 32  | 120 | 40 | 6 | 6     | 3                        | 0.7                       |
| -050-XP32-RC12-03  | ●              | 50                          | 32  | 120 | 40 | 6 | 6     | 3                        | 0.8                       |
| -050-XP32-RC12-03C | ○              | 50                          | 32  | 120 | 40 | 6 | 6     | 3                        | 0.8                       |

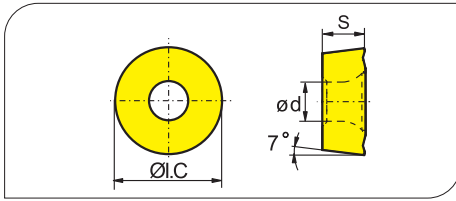
#### Spare Parts · Ersatzteile

| Diameter<br>Durchmesser<br>Ø D | Screw<br>Schraube | Wrench<br>Schlüssel |
|--------------------------------|-------------------|---------------------|
| Ø25 - Ø32                      | I60M4×8.4         | WT15S               |
| Ø40 - Ø50                      | I60M3.5×10        |                     |



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

### Applicable inserts · Wendeschneidplatten



- Ideal Machining Condition / Gute Bearbeitungsbedingungen
- Normal Machining Condition / Normale Bearbeitungsbedingungen
- Unfavorable Machining Condition / Ungünstige Bearbeitungsbedingungen

| Workpiece Material / Werkstoff                   | P          | M          | K          | N          | S          |
|--|------------|------------|------------|------------|------------|
| <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 / Plattenform | Type / Typ    | Dimension (mm) / Abmessung |      |     | CVD Coating / CVD Beschicht. |        |        |        |        |        | PVD Coating / PVD Beschicht. |        |        | Cermet / Cermet | Carbide uncoat. / unbe. Hartmetall |        |        |        |        |         |       |       |       |  |
|----------------------------|---------------|----------------------------|------|-----|------------------------------|--------|--------|--------|--------|--------|------------------------------|--------|--------|-----------------|------------------------------------|--------|--------|--------|--------|---------|-------|-------|-------|--|
|                            |               | I.C                        | S    | d   | YBC301                       | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152                       | YBD252 | YBG102 | YBG202          | YBG205                             | YBG302 | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |  |
|                            | RCKT10T3MO-DM | 10.0                       | 3.97 | 4.4 | ●                            | ●      |        |        |        |        |                              |        | ●      | ○               |                                    |        |        |        |        |         |       |       |       |  |
|                            | RCKT1204MO-DM | 12.0                       | 4.76 | 4.0 | ●                            | ●      | ●      |        | ●      | ○      |                              |        | ●      | ○               |                                    |        |        |        |        |         |       |       |       |  |
|                            | RCKT1204MO-DR | 12.0                       | 4.76 | 4.0 | ●                            | ●      | ●      |        | ●      |        |                              |        |        | ○               |                                    |        |        |        |        |         |       |       |       |  |
|                            | RCKT1204MO-ER | 12.0                       | 4.76 | 4.0 |                              |        |        |        | ●      | ○      |                              |        |        |                 |                                    |        |        |        |        |         |       |       |       |  |

### Recommended cutting data · Empfohlene Schnittdaten

| Workpiece material / Werkstückstoff   | Hardness HB / Härte  | Grade / Sorte   | Cutting data · Schnittdaten |               |               |               |
|---|--|-----------------|-----------------------------|---------------|---------------|---------------|
|   |  |                 | V (m/min)                   | f (mm/z)      |               |               |
|   |  |                 |                             | -DM           | -DR           |               |
| <b>P</b> Low-carbon steel / Soft steel / Niedriglegierter Kohlenstoffstahl / Baustahl | ≤180   | YBM251 / YBC301 | 270 (220-350)               | 0.2(0.1-0.5)  | 0.3 (0.2-0.8) |               |
|   |  | YBM351 / YBC401 | 220 (180-300)               | 0.25(0.1-0.5) | 0.3 (0.2-0.8) |               |
|   |  | YBG202          | 270 (200-360)               | 0.2(0.1-0.5)  | 0.3 (0.2-0.8) |               |
|   | High-carbon steel / Alloy steel / Hochleg. Kohlenstoffstahl / Leg. Stahl | 180-280         | YBM251 / YBM253             | 240 (200-320) | 0.2(0.1-0.5)  | 0.3 (0.2-0.8) |
|   |  |                 | YBC301                      | 200 (160-280) | 0.25(0.1-0.5) | 0.3 (0.2-0.8) |
|   |  |                 | YBM351 / YBC401             | 240 (180-350) | 0.2(0.1-0.5)  | 0.3 (0.2-0.8) |
|   |  |                 | YBG202                      | 240 (170-340) | 0.2(0.1-0.4)  | 0.3 (0.2-0.6) |
| Alloy tool steel / Leg. Werkzeugstahl   | 280-350  | YBM251 / YBM253 | 150 (120-240)               | 0.2(0.1-0.4)  | 0.3 (0.2-0.6) |               |
|   |  | YBC301          | 150 (100-220)               | 0.2(0.1-0.4)  | 0.3 (0.2-0.6) |               |
|   |  | YBM351 / YBC401 | 160 (110-270)               | 0.2(0.1-0.4)  | 0.3 (0.2-0.6) |               |
|   |  | YBG202          | 210 (120-300)               | 0.2(0.1-0.5)  | 0.3 (0.2-0.8) |               |
| <b>M</b> Stainless steel / Rostfreier Stahl   | ≤270   | YBM251 / YBM253 | 150 (120-240)               | 0.2(0.1-0.4)  | 0.3 (0.2-0.6) |               |
|   |  | YBM351 / YBC401 | 150 (100-220)               | 0.2(0.1-0.4)  | 0.3 (0.2-0.6) |               |
|   |  | YBG202          | 160 (110-270)               | 0.2(0.1-0.4)  | 0.3 (0.2-0.6) |               |
| <b>K</b> Cast iron / Gusseisen  | 180-250  | YBD152          | 210 (120-300)               | 0.2(0.1-0.5)  | 0.3 (0.2-0.8) |               |

Applicable tool / Werkzeug **B11-B18**

Tools code key / Werkzeug ISO **B26-B27**

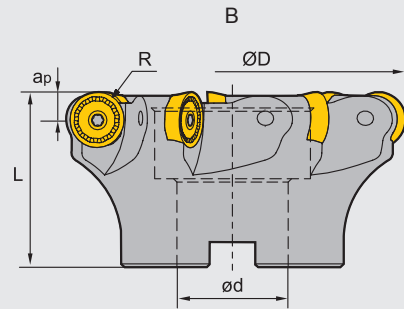
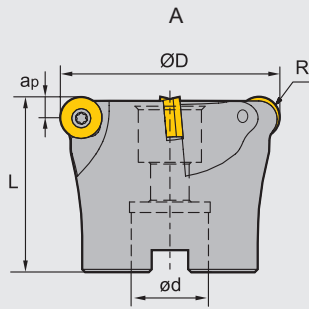
Grade selection guide / Sortenauswahl **B19-B23**

Technical data / Technische Daten **B215-B220**

### Face Milling Tools · Planfräser






**FMR02** P M K



### Specification of tools · Werkzeug Beschreibung

| Type<br>Typ      | Stock<br>Lager | Dimension (mm)<br>Abmessung |     |    |    |       | No. of<br>teeth<br>Zähne | Coupling<br>Aufnahme | Weight<br>Gewicht<br>(kg) |
|------------------|----------------|-----------------------------|-----|----|----|-------|--------------------------|----------------------|---------------------------|
|                  |                | Ø D                         | Ø d | L  | R  | apmax |                          |                      |                           |
| <b>FMR02</b>     |                |                             |     |    |    |       |                          |                      |                           |
| 050-A22-RC12-05C | ●              | 50                          | 22  | 50 | 6  | 6     | 5                        | A                    | 0.7                       |
| 052-A22-RC12-05C | ●              | 52                          | 22  | 50 | 6  | 6     | 5                        | A                    | 0.7                       |
| 063-A22-RC12-04  | ●              | 63                          | 22  | 50 | 6  | 6     | 4                        | A                    | 0.7                       |
| 063-A22-RC12-04C | ●              | 63                          | 22  | 50 | 6  | 6     | 4                        | A                    | 0.7                       |
| 063-A22-RC12-06  | ●              | 63                          | 22  | 50 | 6  | 6     | 4                        | A                    | 0.7                       |
| 063-A22-RC12-06C | ●              | 63                          | 22  | 50 | 6  | 6     | 6                        | A                    | 0.7                       |
| 063-A22-RC16-04  | ●              | 63                          | 22  | 50 | 8  | 8     | 4                        | A                    | 0.7                       |
| 063-A22-RC16-04C | ●              | 63                          | 22  | 50 | 8  | 8     | 4                        | A                    | 0.7                       |
| 080-A27-RC12-07C | ●              | 80                          | 27  | 50 | 6  | 6     | 7                        | B                    | 0.7                       |
| 080-B27-RC16-05  | ●              | 80                          | 27  | 50 | 8  | 8     | 5                        | B                    | 0.7                       |
| 080-B27-RC16-05C | ○              | 80                          | 27  | 50 | 8  | 8     | 5                        | B                    | 0.7                       |
| 080-A27-RC20-04  | ●              | 80                          | 27  | 50 | 10 | 10    | 4                        | A                    | 0.7                       |
| 080-A27-RC20-04C | ●              | 80                          | 27  | 50 | 10 | 10    | 4                        | A                    | 0.7                       |
| 100-B32-RC16-06  | ●              | 100                         | 32  | 63 | 8  | 8     | 6                        | B                    | 1.2                       |
| 100-B32-RC16-06C | ●              | 100                         | 32  | 63 | 8  | 8     | 6                        | B                    | 1.2                       |
| 100-B32-RC20-05  | ●              | 100                         | 32  | 63 | 10 | 10    | 5                        | B                    | 1.2                       |
| 100-B32-RC20-05C | ●              | 100                         | 32  | 63 | 10 | 10    | 5                        | B                    | 1.2                       |
| 100-B32-RC20-06  | ●              | 100                         | 32  | 63 | 10 | 10    | 6                        | B                    | 1.2                       |
| 100-B32-RC20-06C | ●              | 100                         | 32  | 63 | 10 | 10    | 6                        | B                    | 1.2                       |
| 125-B40-RC20-06  | ●              | 125                         | 40  | 63 | 10 | 10    | 6                        | B                    | 1.2                       |
| 125-B40-RC20-06C | ●              | 125                         | 40  | 63 | 10 | 10    | 6                        | B                    | 1.2                       |
| 125-B40-RC20-07  | ●              | 125                         | 40  | 63 | 10 | 10    | 7                        | B                    | 2.2                       |
| 125-B40-RC20-07C | ●              | 125                         | 40  | 63 | 10 | 10    | 7                        | B                    | 2.2                       |
| 160-B40-RC20-08  | ●              | 160                         | 40  | 63 | 10 | 10    | 8                        | B                    | 4.2                       |
| 160-B40-RC20-08C | ○              | 160                         | 40  | 63 | 10 | 10    | 8                        | B                    | 4.2                       |
| 250-B40-RC20-10  | ○              | 250                         | 40  | 63 | 10 | 10    | 10                       | B                    | -                         |

### Spare Parts · Ersatzteile

| Diameter<br>Durchmesser<br>Ø D | Insert<br>WSP | Screw<br>Schraube   | Wrench<br>Schlüssel   |   |
|--------------------------------|---------------|---|---|---|
|                                |               |  |  |  |
| Ø63-Ø80                        | RC12          | I60M3.5×10  | WT15IS  | --  |
| Ø63-Ø100                       | RC16          | I60M5×13  | --  | WT20IT  |
| Ø80-Ø250                       | RC20          | I43M6×16  | --  | WT25IT  |



Applicable tool  
Werkzeug **B11-B18**

Tools code key  
Werkzeug ISO **B26-B27**

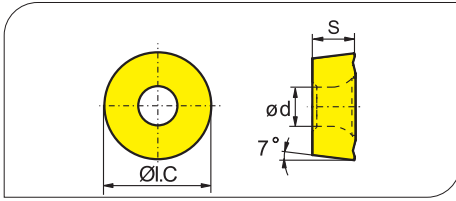
Grade selection guide  
Sortenauswahl **B19-B23**

Technical data  
Technische Daten **B215-B220**

# Milling · Fräsen

## Indexable Milling Tools · Wendepplattenfräser

Applicable inserts · Wendeschneidplatten



- Ideal Machining Condition / Gute Bearbeitungsbedingungen
- Normal Machining Condition / Normale Bearbeitungsbedingungen
- Unfavorable Machining Condition / Ungünstige Bearbeitungsbedingungen

| Workpiece Material / Werkstoff                   | P | M | K | N | S | YBC301 | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152 | YBD252 | YBG102 | YBG202 | YBG205 | YBG302 | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |
|--|---|---|---|---|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|-------|-------|-------|
| <b>P</b> Steel / Stahl                           | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     |
| <b>M</b> Stainless Steel / Rostfreier Stahl      | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     |
| <b>K</b> Cast iron / Gusseisen                   | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     |
| <b>N</b> Non-ferrite material / Ne Metalle       | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     |
| <b>S</b> Heat-resistant steel / Warmfester Stahl | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     |

| Insert shape / Plattenform | Type / Typ    | Dimension (mm) / Abmessung |      |      | CVD Coating / CVD Beschicht. |        |        |        |        |        |        |        | PVD Coating / PVD Beschicht. |        |        |        |        | Cermet / Cermet | Carbide uncoat. / unbe. Hartmetall |        |         |       |       |       |
|----------------------------|---------------|----------------------------|------|------|------------------------------|--------|--------|--------|--------|--------|--------|--------|------------------------------|--------|--------|--------|--------|-----------------|------------------------------------|--------|---------|-------|-------|-------|
|                            |               | I.C                        | S    | d    | YBC301                       | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152 | YBD252 | YBG102                       | YBG202 | YBG205 | YBG302 | YBG152 |                 | YBG252                             | YNG151 | YNG151C | YC30S | YD101 | YD201 |
|                            | RCKT1204MO-DM | 12.0                       | 4.76 | 4.0  | ●                            | ●      | ●      | ●      | ●      | ○      |        |        |                              | ●      |        | ○      |        |                 |                                    |        |         |       |       |       |
|                            | RCKT1606MO-DM | 16.0                       | 6.35 | 5.56 | ●                            | ●      | ○      |        |        |        |        |        |                              |        |        | ○      | ●      |                 |                                    |        |         |       |       |       |
|                            | RCKT2006MO-DM | 20.0                       | 6.35 | 6.55 | ○                            | ○      | ○      |        |        |        |        |        |                              |        |        |        |        |                 |                                    |        |         |       |       |       |
|                            | RCKT1204MO-DR | 12.0                       | 4.76 | 4.0  | ●                            | ●      | ●      | ●      | ●      |        |        |        |                              |        | ○      |        |        |                 |                                    |        |         |       |       |       |
|                            | RCKT1606MO-DR | 16.0                       | 6.35 | 5.56 | ●                            | ●      |        |        |        | ●      |        | ●      |                              |        |        |        |        |                 |                                    |        |         |       |       |       |
|                            | RCKT2006MO-DR | 20.0                       | 6.35 | 6.55 | ●                            | ●      |        |        |        | ●      |        | ●      |                              |        |        |        |        |                 |                                    |        |         |       |       |       |
|                            | RCKT1204MO-ER | 12.0                       | 4.76 | 4.0  |                              |        |        |        | ●      | ○      |        |        |                              |        |        |        |        |                 |                                    |        |         |       |       |       |
|                            | RCKT1606MO-ER | 16.0                       | 6.35 | 5.56 |                              |        |        |        | ●      | ○      |        |        |                              |        |        |        |        |                 |                                    |        |         |       |       |       |
|                            | RCKT2006MO-ER | 20.0                       | 6.35 | 6.55 |                              |        |        |        | ●      | ○      |        |        |                              |        |        |        |        |                 |                                    |        |         |       |       |       |

### Recommended cutting data · Empfohlene Schnittdaten

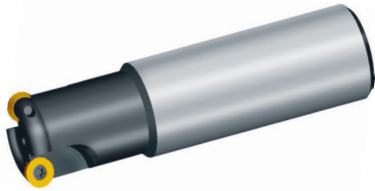
| Workpiece material / Werkstückstoff   | Hardness HB / Härte | Grade / Sorte   | Cutting data · Schnittdaten |               |               |  |
|---|---------------------|-----------------|-----------------------------|---------------|---------------|--|
|   |                     |                 | V (m/min)                   | f (mm/z)      |               |  |
|   |                     |                 |                             | -DM           | -DR           |  |
| <b>P</b> Low-carbon steel / Soft steel / Niedriglegierter Kohlenstoffstahl / Baustahl | ≤180                | YBM251 / YBC301 | 270 (220-350)               | 0.2(0.1-0.5)  | 0.3 (0.2-0.8) |  |
|   |                     | YBM351 / YBC401 | 220 (180-300)               | 0.25(0.1-0.5) | 0.3 (0.2-0.8) |  |
|   |                     | YBG202          | 270 (200-360)               | 0.2(0.1-0.5)  | 0.3 (0.2-0.8) |  |
|   | 180-280             | YBM251 / YBC301 | 240 (200-320)               | 0.2(0.1-0.5)  | 0.3 (0.2-0.8) |  |
|   |                     | YBM351 / YBC401 | 200 (160-280)               | 0.25(0.1-0.5) | 0.3 (0.2-0.8) |  |
|   |                     | YBG202          | 240 (180-350)               | 0.2(0.1-0.5)  | 0.3 (0.2-0.8) |  |
|   | 280-350             | YBM251 / YBC301 | 220 (180-300)               | 0.2(0.1-0.4)  | 0.3 (0.2-0.6) |  |
|   |                     | YBM351 / YBC401 | 180 (150-250)               | 0.2(0.1-0.5)  | 0.3 (0.2-0.8) |  |
|   |                     | YBG202          | 220 (170-340)               | 0.2(0.1-0.4)  | 0.3 (0.2-0.6) |  |
| <b>M</b> Stainless steel / Rostfreier Stahl   | ≤270                | YBM251 / YBM253 | 150 (120-240)               | 0.2(0.1-0.4)  | 0.3 (0.2-0.6) |  |
|   |                     | YBM351 / YBC401 | 150 (100-220)               | 0.2(0.1-0.4)  | 0.3 (0.2-0.6) |  |
|   |                     | YBG202          | 160 (110-270)               | 0.2(0.1-0.4)  | 0.3 (0.2-0.6) |  |
| <b>K</b> Cast iron / Gusseisen  | 180-250             | YBD152          | 210 (120-300)               | 0.2(0.1-0.5)  | 0.3 (0.2-0.8) |  |

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

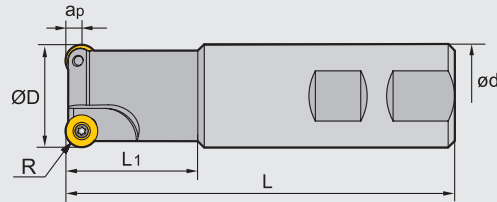
### Face Milling Tools · Planfräser



**FMR03** **P** **M** **K**



Walter-System




### ■ Specification of tools · Werkzeug Beschreibung

| Type<br>Typ                    | Stock<br>Lager | Dimension (mm)<br>Abmessung |     |     |    |   |       |   | No. of<br>teeth<br>Zähne | Weight<br>Gewicht<br>(kg) |
|--------------------------------|----------------|-----------------------------|-----|-----|----|---|-------|---|--------------------------|---------------------------|
|                                |                | Ø D                         | Ø d | L   | L1 | R | apmax |   |                          |                           |
| <b>FMR03</b> -016-XP16-RD08-02 | ○              | 16                          | 16  | 100 | 25 | 4 | 4     | 2 | 0.1                      |                           |
| -016-XP16-RD08-02C             | ○              | 16                          | 16  | 100 | 25 | 4 | 4     | 2 | 0.1                      |                           |
| -025-XP25-RD08-02              | ●              | 25                          | 25  | 100 | 30 | 4 | 4     | 2 | 0.3                      |                           |
| -025-XP25-RD08-02C             | ●              | 25                          | 25  | 100 | 30 | 4 | 4     | 2 | 0.3                      |                           |
| -032-XP32-RD10-02              | ●              | 32                          | 32  | 120 | 40 | 5 | 5     | 2 | 0.7                      |                           |
| -032-XP32-RD10-02C             | ●              | 32                          | 32  | 120 | 40 | 5 | 5     | 2 | 0.7                      |                           |
| -040-XP32-RD12-03              | ●              | 40                          | 32  | 120 | 40 | 6 | 6     | 3 | 0.7                      |                           |
| -040-XP32-RD12-03C             | ●              | 40                          | 32  | 120 | 40 | 6 | 6     | 3 | 0.7                      |                           |
| -050-XP32-RD12-04              | ●              | 50                          | 32  | 120 | 40 | 6 | 6     | 4 | 0.8                      |                           |
| -050-XP32-RD12-04C             | ●              | 50                          | 32  | 120 | 40 | 6 | 6     | 4 | 0.8                      |                           |

### ■ Spare Parts · Ersatzteile

| Diameter<br>Durchmesser<br>Ø D | Screw<br>Schraube | Wrench<br>Schlüssel |
|--------------------------------|-------------------|---------------------|
| Ø25                            | I60M3×7           | WT09IP              |
| Ø32-Ø50                        | I60M4×10          | WT15IP              |



Applicable tool **B11-B18**  
Werkzeug

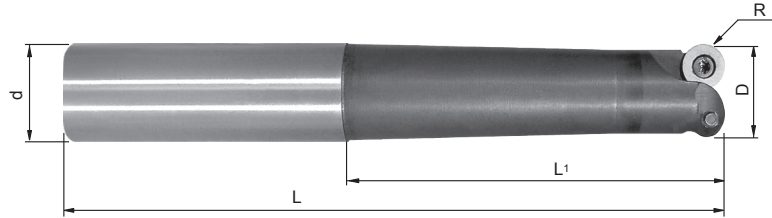
Tools code key **B26-B27**  
Werkzeug ISO

Grade selection guide **B19-B23**  
Sortenauswahl

Technical data **B215-B220**  
Technische Daten

### Face Milling Tools · Planfräser

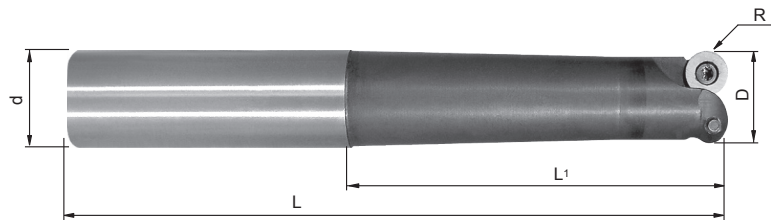
**FMR03** P M K



Depo-System

| Type<br>Typ  | Stock<br>Lager         | Dimension (mm)<br>Abmessung |     |    |                |     |                   | No. of teeth<br>Zähne |   |
|--------------|------------------------|-----------------------------|-----|----|----------------|-----|-------------------|-----------------------|---|
|              |                        | Ø D                         | Ø d | L  | L <sub>1</sub> | R   | a <sub>pmax</sub> |                       |   |
| <b>FMR03</b> | -015-G16-XS RD0702-02  | ○                           | 15  | 16 | 88             | 40  | 3.5               | 3.5                   | 2 |
|              | -015-G16-XS RD0702-02C | ○                           | 15  | 16 | 88             | 40  | 3.5               | 3.5                   | 2 |
|              | -015-G16-S RD0702-02   | ○                           | 15  | 16 | 108            | 60  | 3.5               | 3.5                   | 2 |
|              | -015-G16-S RD0702-02C  | ○                           | 15  | 16 | 108            | 60  | 3.5               | 3.5                   | 2 |
|              | -015-G20-M RD0702-02   | ○                           | 15  | 20 | 130            | 80  | 3.5               | 3.5                   | 2 |
|              | -015-G20-M RD0702-02C  | ○                           | 15  | 20 | 130            | 80  | 3.5               | 3.5                   | 2 |
|              | -015-G20-L RD0702-02   | ○                           | 15  | 20 | 150            | 100 | 3.5               | 3.5                   | 2 |
|              | -015-G20-L RD0702-02C  | ○                           | 15  | 20 | 150            | 100 | 3.5               | 3.5                   | 2 |
|              | -015-G25-XL RD0702-02  | ○                           | 15  | 25 | 120            | 176 | 3.5               | 3.5                   | 2 |
|              | -015-G25-XL RD0702-02C | ○                           | 15  | 25 | 120            | 176 | 3.5               | 3.5                   | 2 |





Inserts · WSP: RDKW0702MO\*\*/ RDKW1003MO\*\*



| Type<br>Typ  | Stock<br>Lager         | Dimension (mm)<br>Abmessung |     |    |                |     |                   | No. of teeth<br>Zähne |   |
|--------------|------------------------|-----------------------------|-----|----|----------------|-----|-------------------|-----------------------|---|
|              |                        | Ø D                         | Ø d | L  | L <sub>1</sub> | R   | a <sub>pmax</sub> |                       |   |
| <b>FMR03</b> | -020-G20-XS RD1003-02  | ○                           | 20  | 20 | 90             | 40  | 5                 | 5                     | 2 |
|              | -020-G20-XS RD1003-02C | ○                           | 20  | 20 | 90             | 40  | 5                 | 5                     | 2 |
|              | -020-G20-S RD1003-02   | ○                           | 20  | 20 | 110            | 60  | 5                 | 5                     | 2 |
|              | -020-G20-S RD1003-02C  | ○                           | 20  | 20 | 110            | 60  | 5                 | 5                     | 2 |
|              | -020-G25-M RD1003-02   | ○                           | 20  | 25 | 136            | 80  | 5                 | 5                     | 2 |
|              | -020-G25-M RD1003-02C  | ○                           | 20  | 25 | 136            | 80  | 5                 | 5                     | 2 |
|              | -020-G25-L RD1003-02   | ○                           | 20  | 25 | 156            | 100 | 5                 | 5                     | 2 |
|              | -020-G25-L RD1003-02C  | ○                           | 20  | 25 | 156            | 100 | 5                 | 5                     | 2 |
|              | -020-G25-XL RD1003-02  | ○                           | 20  | 25 | 176            | 120 | 5                 | 5                     | 2 |
|              | -020-G25-XL RD1003-02C | ○                           | 20  | 25 | 176            | 120 | 5                 | 5                     | 2 |

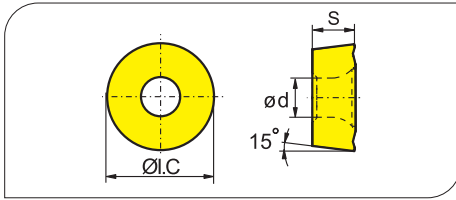
Inserts · WSP: RDKW0702MO\*\*/ RDKW1003MO\*\*

#### Spare Parts · Ersatzteile

| Type<br>Typ   | Screw<br>Schraube  | Wrench<br>Schlüssel   |
|---------------|--|---|
| FMR03**RD0702 | <br>I60M2,5 x 5,0 | <br>WT07P |
| FMR03**RD1003 | <br>I60M3,5 x 7,7 | <br>WT15P |

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

### Applicable inserts - Wendeschneidplatten



- Ideal Machining Condition / Gute Bearbeitungsbedingungen
- Normal Machining Condition / Normale Bearbeitungsbedingungen
- Unfavorable Machining Condition / Ungünstige Bearbeitungsbedingungen

| Workpiece Material / Werkstückstoffe             | P | M | K | N | S | YBC301 | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152 | YBD252 | YBG102 | YBG202 | YBG205 | YBG302 | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |
|--|---|---|---|---|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|-------|-------|-------|
| <b>P</b> Steel / Stahl                           | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     |
| <b>M</b> Stainless Steel / Rostfreier Stahl      | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     |
| <b>K</b> Cast iron / Gusseisen                   | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     |
| <b>N</b> Non-ferrite material / Ne Metalle       | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     |
| <b>S</b> Heat-resistant steel / Warmfester Stahl | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     |

| Insert shape / Plattenform | Type / Typ        | Dimension (mm) / Abmessung |      |     | CVD Coating / CVD Beschicht. |        |        |        | PVD Coating / PVD Beschicht. |        |        |        | Cermet / Cermet | Carbide uncoat. / unbe. Hartmetall |        |        |        |        |        |         |       |       |       |  |  |  |
|----------------------------|-------------------|----------------------------|------|-----|------------------------------|--------|--------|--------|------------------------------|--------|--------|--------|-----------------|------------------------------------|--------|--------|--------|--------|--------|---------|-------|-------|-------|--|--|--|
|                            |                   | I.C                        | S    | d   | YBC301                       | YBC302 | YBC401 | YBM251 | YBM253                       | YBM351 | YBD152 | YBD252 | YBG102          | YBG202                             | YBG205 | YBG302 | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |  |  |  |
|                            | <b>RDKW0702MO</b> | 7.0                        | 2.38 | 2.7 |                              |        |        |        |                              | ●      |        |        |                 | ●                                  | ●      |        |        |        |        |         |       |       |       |  |  |  |
|                            | <b>RDKW0803MO</b> | 8.0                        | 3.18 | 3.4 |                              |        |        |        |                              | ●      |        |        |                 |                                    | ●      |        |        |        |        |         |       |       |       |  |  |  |
|                            | <b>RDKW1003MO</b> | 10.0                       | 3.18 | 3.9 |                              |        |        | ●      |                              | ●      |        |        |                 |                                    | ●      | ●      |        |        |        |         |       |       |       |  |  |  |
|                            | <b>RDKW10T3MO</b> | 10.0                       | 3.97 | 4.4 | ○                            | ●      |        |        |                              | ●      |        |        |                 |                                    | ●      | ●      |        |        |        |         |       |       |       |  |  |  |
|                            | <b>RDKW1204MO</b> | 12.0                       | 4.76 | 4.4 | ○                            | ●      |        | ●      |                              | ●      |        |        |                 |                                    | ●      | ●      | ●      | ○      |        |         |       |       |       |  |  |  |

### Recommended cutting data - Empfohlene Schnittdaten

| Workpiece material / Werkstückstoff   | Hardness HB / Härte   | Grade / Sorte  | Cutting data / Schnittdaten |                  |                  |
|---|---|----------------|-----------------------------|------------------|------------------|
|   |   |                | V (m/min)                   | f (mm/z)         |                  |
| <b>P</b> Low-carbon steel / Soft steel / Niedriglegierter Kohlenstoffstahl / Baustahl | ≤180  | YBM251         | 270 (220-350)               | 0.2 (0.08-0.45)  |                  |
|   |   | YBC301         |                             |                  |                  |
|   |   | YBM351         | 220 (180-300)               | 0.25 (0.15-0.45) |                  |
|   | YBG302  |                |                             |                  |                  |
|   | YBG202  | 270 (200-360)  | 0.2 (0.1-0.45)              |                  |                  |
|   | High-carbon steel / Alloy steel / Hochleg. Kohlenstoffstahl | 180-280        | YBM251                      | 240 (200-320)    | 0.2 (0.08-0.45)  |
|   |   |                | YBC301                      |                  |                  |
|   |   |                | YBM351                      | 200 (160-280)    | 0.25 (0.15-0.45) |
|   | YBG302  |                |                             |                  |                  |
| YBG202  | 240 (180-350)   | 0.2 (0.1-0.45) |                             |                  |                  |
| Alloy tool steel / Leg. Werkzeugstahl   | 280-350   | YBM251         | 220 (180-300)               | 0.2 (0.08-0.45)  |                  |
|   |   | YBC301         |                             |                  |                  |
|   |   | YBM351         | 180 (150-250)               | 0.25 (0.15-0.45) |                  |
| YBG302  |   |                |                             |                  |                  |
| YBG202  | 220 (170-340)   | 0.2 (0.1-0.45) |                             |                  |                  |
| <b>M</b> Stainless steel / Rostfreier Stahl   | ≤270  | YBM251         | 150 (120-240)               | 0.2 (0.08-0.45)  |                  |
|   |   | YBM351         | 150 (100-220)               | 0.25 (0.1-0.45)  |                  |
|   |   | YBG302         |                             |                  |                  |
| YBG202  | 160 (110-270)   | 0.2 (0.1-0.45) |                             |                  |                  |
| <b>K</b> Cast iron / Gusseisen  | 180-250   | YBG102         | 210 (120-300)               | 0.2 (0.1-0.45)   |                  |

Applicable tool / Werkzeug **B11-B18**

Tools code key / Werkzeug ISO **B26-B27**

Grade selection guide / Sortenauswahl **B19-B23**

Technical data / Technische Daten **B215-B220**

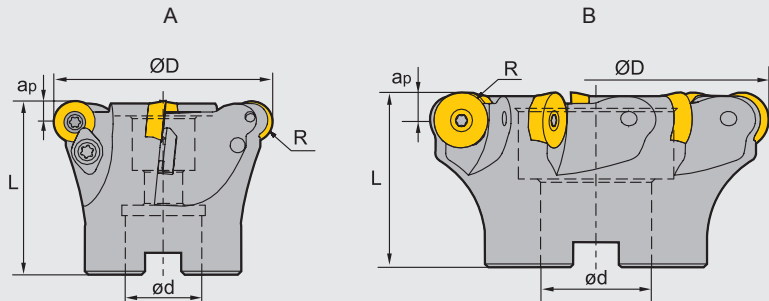
### Face Milling Tools · Planfräser



**FMR04** P M K



Walter-System

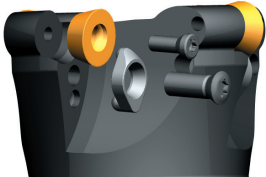







### Specification of tools · Werkzeug Beschreibung

|              | Type<br>Typ      | Stock<br>Lager | Dimension (mm)<br>Abmessung |     |    |    |       | No. of teeth<br>Zähne | Coupling<br>Aufnahme | Weight<br>Gewicht (kg) |
|--------------|------------------|----------------|-----------------------------|-----|----|----|-------|-----------------------|----------------------|------------------------|
|              |                  |                | Ø D                         | Ø d | L  | R  | apmax |                       |                      |                        |
| <b>FMR04</b> | 050-A22-RD12-03  | ●              | 50                          | 22  | 40 | 6  | 6     | 3                     | A                    | 0.3                    |
|              | 050-A22-RD12-03C | ●              | 50                          | 22  | 40 | 6  | 6     | 3                     | A                    | 0.3                    |
|              | 063-A22-RD12-04  | ●              | 63                          | 22  | 50 | 6  | 6     | 4                     | A                    | 0.5                    |
|              | 063-A22-RD12-04C | ●              | 63                          | 22  | 50 | 6  | 6     | 4                     | A                    | 0.5                    |
|              | 080-B27-RD16-05  | ●              | 80                          | 27  | 50 | 8  | 8     | 5                     | B                    | 1.2                    |
|              | 080-B27-RD16-05C | ●              | 80                          | 27  | 50 | 8  | 8     | 5                     | B                    | 1.2                    |
|              | 100-B32-RD16-06  | ●              | 100                         | 32  | 50 | 8  | 8     | 6                     | B                    | 1.0                    |
|              | 100-B32-RD16-06C | ●              | 100                         | 32  | 50 | 8  | 8     | 6                     | B                    | 1.0                    |
|              | 125-B40-RD20-06  | ○              | 125                         | 40  | 63 | 10 | 10    | 6                     | B                    | 1.9                    |
|              | 125-B40-RD20-06C | ○              | 125                         | 40  | 63 | 10 | 10    | 6                     | B                    | 1.9                    |
|              | 160-B40-RD20-07  | ○              | 160                         | 40  | 63 | 10 | 10    | 7                     | B                    | 3.7                    |
|              | 160-B40-RD20-07C | ○              | 160                         | 40  | 63 | 10 | 10    | 7                     | B                    | 3.7                    |

Inserts · WSP : RDKW1204MO\*\*/ RDKW1605MO\*\*/ RDKW2006MO

### Spare Parts · Ersatzteile

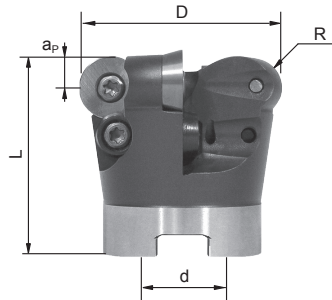
| Diameter<br>Durchmesser<br>Ø D | Screw<br>Schraube   | Clamp<br>Pratze   | Clamp Screw<br>Schraube<br>(Pratze)   | Wrench<br>Schlüssel   |   |  |
|--------------------------------|---|---|---|---|---|---|
|                                |  |  |  |  |  |   |
| Ø50-Ø63                        | I60M3.5×10  | WD-204  | I60M4×10  | WT15IP  | --  |   |
| Ø80 -Ø100                      | I60M5×13  | --  | --  | --  | WT20IT  |   |
| Ø125 -Ø160                     | I43M6×16  | --  | --  | --  | WT25IT  |   |

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

### Face Milling Tools · Planfräser



**FMR04** P M K



Depo-System

| Type<br>Typ  | Stock<br>Lager     | Dimension (mm)<br>Abmessung |     |    |    |       | No. of teeth<br>Zähne |   |
|--------------|--------------------|-----------------------------|-----|----|----|-------|-----------------------|---|
|              |                    | Ø D                         | Ø d | L  | R  | apmax |                       |   |
| <b>FMR04</b> | 042-A16-RD1003-06  | •                           | 42  | 16 | 44 | 5     | 5                     | 6 |
|              | 042-A16-RD1003-06C | •                           | 42  | 16 | 44 | 5     | 5                     | 6 |
|              | 052-A22-RD1003-07  | •                           | 52  | 22 | 50 | 5     | 5                     | 7 |
|              | 052-A22-RD1003-07C | •                           | 52  | 22 | 50 | 5     | 5                     | 7 |

Inserts · WSP: RDKW1003MO\*\*

| Type<br>Typ  | Stock<br>Lager     | Dimension (mm)<br>Abmessung |     |    |    |       | No. of teeth<br>Zähne |   |
|--------------|--------------------|-----------------------------|-----|----|----|-------|-----------------------|---|
|              |                    | Ø D                         | Ø d | L  | R  | apmax |                       |   |
| <b>FMR04</b> | 042-A16-RD12T3-05  | •                           | 42  | 16 | 42 | 6     | 6                     | 5 |
|              | 042-A16-RD12T3-05C | •                           | 42  | 16 | 42 | 6     | 6                     | 5 |
|              | 052-A22-RD12T3-05  | •                           | 52  | 22 | 50 | 6     | 6                     | 5 |
|              | 052-A22-RD12T3-05C | •                           | 52  | 22 | 50 | 6     | 6                     | 5 |
|              | 066-A27-RD12T3-06  | •                           | 66  | 27 | 50 | 6     | 6                     | 6 |
|              | 066-A27-RD12T3-06C | •                           | 66  | 27 | 50 | 6     | 6                     | 6 |
|              | 080-A27-RD12T3-07  | •                           | 80  | 27 | 50 | 6     | 6                     | 7 |
|              | 080-A27-RD12T3-07C | •                           | 80  | 27 | 50 | 6     | 6                     | 7 |

Inserts · WSP: RDKW12T3MO\*\*













| Type<br>Typ        | Stock<br>Lager      | Dimension (mm)<br>Abmessung |     |    |    |       | No. of teeth<br>Zähne |   |
|--------------------|---------------------|-----------------------------|-----|----|----|-------|-----------------------|---|
|                    |                     | Ø D                         | Ø d | L  | R  | apmax |                       |   |
| <b>FMR04</b>       | *052-A22-RD1604-04  | •                           | 52  | 22 | 50 | 8     | 8                     | 4 |
|                    | *052-A22-RD1604-04C | •                           | 52  | 22 | 50 | 8     | 8                     | 4 |
|                    | *052-A22-RD1604-05  | •                           | 52  | 22 | 50 | 8     | 8                     | 5 |
|                    | *052-A22-RD1604-05C | •                           | 52  | 22 | 50 | 8     | 8                     | 5 |
|                    | 066-A27-RD1604-05   | •                           | 66  | 27 | 50 | 8     | 8                     | 5 |
|                    | 066-A27-RD1604-05C  | •                           | 66  | 27 | 50 | 8     | 8                     | 5 |
|                    | 080-A27-RD1604-06   | •                           | 80  | 27 | 52 | 8     | 8                     | 6 |
|                    | 080-A27-RD1604-06C  | •                           | 80  | 27 | 52 | 8     | 8                     | 6 |
|                    | 100-B32-RD1604-07   | •                           | 100 | 32 | 52 | 8     | 8                     | 7 |
|                    | 100-B32-RD1604-07C  | •                           | 100 | 32 | 52 | 8     | 8                     | 7 |
|                    | 125-B40-RD1604-08   | •                           | 125 | 40 | 52 | 8     | 8                     | 8 |
|                    | 125-B40-RD1604-08C  | •                           | 125 | 40 | 52 | 8     | 8                     | 8 |
|                    | 160-B40-RD1604-09   | •                           | 160 | 40 | 52 | 8     | 8                     | 9 |
| 160-B40-RD1604-09C | ○                   | 160                         | 40  | 52 | 8  | 8     | 9                     |   |

Inserts · WSP: RDKW1604MO\*\*

\*= WX16N (außer für FMP04-052) (except for FMP04-052)

\*\*= nur ab (Ø 052) from (Ø 052)

### ■ Spare Parts · Ersatzteile

| Type<br>Typ   | Screw<br>Schraube   | Clamp<br>Klemmscheibe  | Clamp Screw<br>Klemmschraube  | Wrench<br>Schlüssel  |
|---------------|---|--|---|--|
| FMR04**RD1003 |  I60M3,5 x 7,7 |  -      |  -               |  WT15P |
| FMR04**RD12T3 |  I60M3,5 x 7,7 |  -      |  **LOM 3,5 x 7,1 |  WT15P |
| FMR04**RD1604 |  I60M4,5 x 1,0 |  *WX16N |  -               |  WT20T |

Applicable tool  
Werkzeug [B11-B18](#)

Tools code key  
Werkzeug ISO [B26-B27](#)

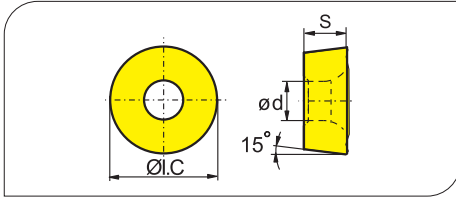
Grade selection guide  
Sortenauswahl [B19-B23](#)

Technical data  
Technische Daten [B215-B220](#)

# Milling - Fräsen

## Indexable Milling Tools - Wendeschleiffräser

### Applicable inserts - Wendeschleifplatten



- Ideal Machining Condition / Gute Bearbeitungsbedingungen
- Normal Machining Condition / Normale Bearbeitungsbedingungen
- Unfavorable Machining Condition / Ungünstige Bearbeitungsbedingungen

| Workpiece Material / Werkstoff            | P | M | K | N | S | YBC301 | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152 | YBD252 | YBG102 | YBG202 | YBG205 | YBG302 | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |
|---|---|---|---|---|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|-------|-------|-------|
| P Steel / Stahl                           | ● |   |   |   |   | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       |       |       |       |
| M Stainless Steel / Rostfreier Stahl      |   | ● |   |   |   |        |        |        | ●      | ●      | ●      | ●      | ●      |        |        |        |        |        |        |        |         |       |       |       |
| K Cast iron / Gusseisen                   |   |   | ● |   |   |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |         |       |       |       |
| N Non-ferrite material / Ne Metalle       |   |   |   | ● |   |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |         |       |       |       |
| S Heat-resistant steel / Warmfester Stahl |   |   |   |   | ● |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |         |       |       |       |

| Insert shape / Plattenform | Type / Typ           | Dimension (mm) / Abmessung |      |     | CVD Coating / CVD Beschicht. |        |        |        |        |        |        |        | PVD Coating / PVD Beschicht. |        |        |        | Cermets / Cermet | Carbide uncoat. / unbe. Hartmetall |        |        |         |       |       |       |  |
|----------------------------|----------------------|----------------------------|------|-----|------------------------------|--------|--------|--------|--------|--------|--------|--------|------------------------------|--------|--------|--------|------------------|------------------------------------|--------|--------|---------|-------|-------|-------|--|
|                            |                      | I.C.                       | S    | d   | YBC301                       | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152 | YBD252 | YBG102                       | YBG202 | YBG205 | YBG302 |                  | YBG152                             | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |  |
|                            | <b>RDKW1003MO</b>    | 10.0                       | 3.18 | 3.9 |                              |        |        | ●      |        |        |        |        |                              | ●      | ●      |        |                  |                                    |        |        |         |       |       |       |  |
|                            | <b>RDKW10T3MO</b>    | 10.0                       | 3.97 | 4.4 | ○                            | ●      |        |        |        |        | ●      |        |                              | ●      | ●      |        |                  |                                    |        |        |         |       |       |       |  |
|                            | <b>RDKW1204MO</b>    | 12.0                       | 4.76 | 4.4 | ○                            | ●      |        | ●      |        |        | ●      |        |                              | ●      | ●      | ●      | ○                |                                    |        |        |         |       |       |       |  |
|                            | <b>RDKW12T3MO</b>    | 12.0                       | 3.97 | 3.9 |                              |        | ○      | ●      |        |        | ●      |        |                              | ●      | ●      |        |                  |                                    |        |        |         |       |       | ○     |  |
|                            | <b>RDKT12T3MO-EM</b> | 12.0                       | 3.97 | 3.9 |                              |        |        |        |        |        | ●      |        |                              |        |        |        |                  |                                    |        |        |         |       |       |       |  |
|                            | <b>RDKW1604MO</b>    | 16.0                       | 4.76 | 5.2 |                              |        |        |        |        |        | ●      |        |                              |        | ●      | ●      |                  |                                    |        |        |         |       |       |       |  |
|                            | <b>RDKW1605MO</b>    | 16.0                       | 5.56 | 5.5 |                              |        |        |        |        |        | ●      |        |                              |        | ●      |        | ●                |                                    |        |        |         |       |       |       |  |
|                            | <b>RDKW2006MO</b>    | 20.0                       | 6.35 | 6.5 | ●                            |        |        |        |        |        | ●      |        |                              | ○      |        |        |                  |                                    |        |        |         |       |       |       |  |

### Recommended cutting data - Empfohlene Schnittdaten

| Workpiece material / Werkstückstoff  | Hardness HB / Härte | Grade / Sorte    | Cutting data / Schnittdaten |                  |
|--|---------------------|------------------|-----------------------------|------------------|
|  |                     |                  | V (m/min)                   | f (mm/z)         |
| <b>P</b><br>Low-carbon steel / Soft steel / Niedriglegierter Kohlenstoffstahl / Baustahl<br><br>High-carbon steel / Alloy steel / Hochleg. Kohlenstoffstahl<br><br>Alloy tool steel / Leg. Werkzeugstahl | ≤180                | YBM251<br>YBC301 | 270 (220-350)               | 0.2 (0.08-0.45)  |
|  |                     | YBM351<br>YBG302 | 220 (180-300)               | 0.25 (0.15-0.45) |
|  |                     | YBG202           | 270 (200-360)               | 0.2 (0.1-0.45)   |
|  | 180-280             | YBM251<br>YBC301 | 240 (200-320)               | 0.2 (0.08-0.45)  |
|  |                     | YBM351<br>YBG302 | 200 (160-280)               | 0.25 (0.15-0.45) |
|  |                     | YBG202           | 240 (180-350)               | 0.2 (0.1-0.45)   |
|  | 280-350             | YBM251<br>YBC301 | 220 (180-300)               | 0.2 (0.08-0.45)  |
|  |                     | YBM351<br>YBG302 | 180 (150-250)               | 0.25 (0.15-0.45) |
|  |                     | YBG202           | 220 (170-340)               | 0.2 (0.1-0.45)   |
| <b>M</b><br>Stainless steel / Rostfreier Stahl   | ≤270                | YBM251           | 150 (120-240)               | 0.2 (0.08-0.45)  |
|  |                     | YBM351<br>YBG302 | 150 (100-220)               | 0.25 (0.1-0.45)  |
|  |                     | YBG202           | 160 (110-270)               | 0.2 (0.1-0.45)   |
| <b>K</b><br>Cast iron / Gusseisen  | 180-250             | YBG102           | 210 (120-300)               | 0.2 (0.1-0.45)   |

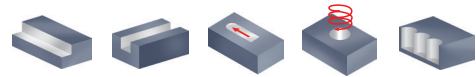
- Ex Stock / ab Lager
- On demand / auf Anfrage

# Milling · Fräsen

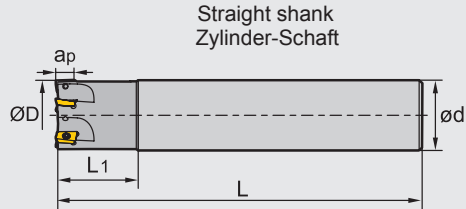
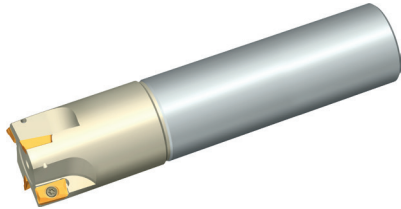
Indexable Milling Tools · Wendepplattenfräser

## Square shoulder milling tools · Eckfräser

Kr:90°






EMP01 P M K N

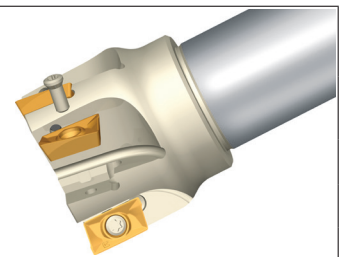


### Specification of tools · Werkzeug Beschreibung

|                     | Type<br>Typ      | Stock<br>Lager | Dimensions (mm)<br>Abmessungen |                 |     |                |                   | No. of teeth<br>Zähne | Weight<br>Gewicht<br>(kg) |
|---------------------|------------------|----------------|--------------------------------|-----------------|-----|----------------|-------------------|-----------------------|---------------------------|
|                     |                  |                | $\varnothing D$                | $\varnothing d$ | L   | L <sub>1</sub> | a <sub>pmax</sub> |                       |                           |
| <b>EMP01</b>        | 012-G16-AP11-01  | ●              | 12                             | 16              | 85  | 25             | 10.5              | 1                     | 0.1                       |
|                     | 012-G16-AP11-01C | ●              | 12                             | 16              | 85  | 25             | 10.5              | 1                     | 0.1                       |
| Straight<br>shank   | 016-G16-AP11-02  | ●              | 16                             | 16              | 90  | 25             | 10.5              | 2                     | 0.1                       |
|                     | 016-G16-AP11-02C | ●              | 16                             | 16              | 90  | 25             | 10.5              | 2                     | 0.1                       |
| Zylinder-<br>Schaft | 020-G20-AP11-02  | ●              | 20                             | 20              | 100 | 30             | 10.5              | 2                     | 0.2                       |
|                     | 020-G20-AP11-02C | ●              | 20                             | 20              | 100 | 30             | 10.5              | 2                     | 0.2                       |
|                     | 020-G20-AP11-03  | ●              | 20                             | 20              | 100 | 30             | 10.5              | 3                     | 0.2                       |
|                     | 020-G20-AP11-03C | ○              | 20                             | 20              | 100 | 30             | 10.5              | 3                     | 0.2                       |
|                     | 025-G25-AP11-03  | ●              | 25                             | 25              | 115 | 35             | 10.5              | 3                     | 0.4                       |
|                     | 025-G25-AP11-03C | ●              | 25                             | 25              | 115 | 35             | 10.5              | 3                     | 0.4                       |
|                     | 025-G25-AP11-04  | ●              | 25                             | 25              | 115 | 35             | 10.5              | 4                     | 0.4                       |
|                     | 025-G25-AP11-04C | ○              | 25                             | 25              | 115 | 35             | 10.5              | 4                     | 0.4                       |
|                     | 032-G32-AP11-04  | ●              | 32                             | 32              | 125 | 40             | 10.5              | 4                     | 0.7                       |
|                     | 032-G32-AP11-04C | ●              | 32                             | 32              | 125 | 40             | 10.5              | 4                     | 0.7                       |
|                     | 025-G25-AP16-02  | ●              | 25                             | 25              | 115 | 35             | 15.5              | 2                     | 0.4                       |
|                     | 025-G25-AP16-02C | ●              | 25                             | 25              | 115 | 35             | 15.5              | 2                     | 0.4                       |
|                     | 032-G32-AP16-03  | ●              | 32                             | 32              | 125 | 40             | 15.5              | 3                     | 0.7                       |
|                     | 032-G32-AP16-03C | ●              | 32                             | 32              | 125 | 40             | 15.5              | 3                     | 0.7                       |
|                     | 040-G32-AP16-03  | ●              | 40                             | 32              | 130 | 42             | 15.5              | 3                     | 0.7                       |
|                     | 040-G32-AP16-03C | ●              | 40                             | 32              | 130 | 42             | 15.5              | 3                     | 0.7                       |
|                     | 040-G32-AP16-04  | ●              | 40                             | 32              | 130 | 42             | 15.5              | 4                     | 0.8                       |
|                     | 040-G32-AP16-04C | ●              | 40                             | 32              | 130 | 42             | 15.5              | 4                     | 0.8                       |
|                     | 050-G32-AP16-05  | ●              | 50                             | 32              | 135 | 45             | 15.5              | 5                     | 1.0                       |
|                     | 050-G32-AP16-05C | ●              | 50                             | 32              | 135 | 45             | 15.5              | 5                     | 1.0                       |
|                     | 063-G32-AP16-06  | ●              | 63                             | 32              | 135 | 45             | 15.5              | 6                     | 1.4                       |
|                     | 063-G32-AP16-06C | ●              | 63                             | 32              | 135 | 45             | 15.5              | 6                     | 1.4                       |

### Spare Parts · Ersatzteile

| Diameter<br>Durchmesser<br>$\varnothing D$ | Insert<br>WSP | Screw<br>Schraube   | Wrench<br>Schlüssel   |  |
|--|---------------|---|---|--|
|  |               |  |  |  |
| $\varnothing 12$ - $\varnothing 32$        | AP11          | I60M2.5×6.5T  | WT08IP  | --   |
| $\varnothing 25$ - $\varnothing 63$        | AP16          | I60M4×8.4   | --  | WT15IS   |



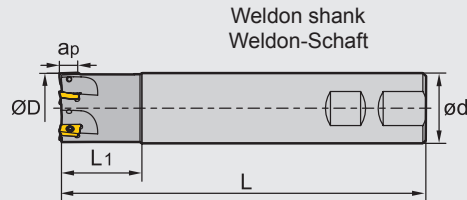
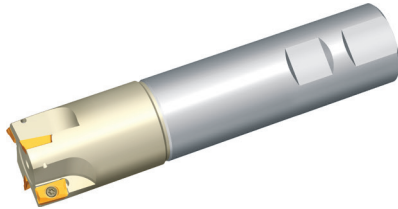
● Ex Stock / ab Lager ○ On demand / auf Anfrage

### Square shoulder milling tools · Eckfräser

Kr:90°






EMP01 P M K N

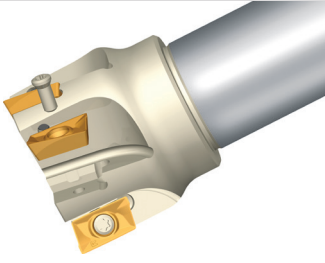


### Specification of tools · Werkzeug Beschreibung

|                     | Type<br>Typ       | Stock<br>Lager | Dimensions (mm)<br>Abmessungen |     |     |                |                   | No. of teeth<br>Zähne | Weight<br>Gewicht<br>(kg) |
|---------------------|-------------------|----------------|--------------------------------|-----|-----|----------------|-------------------|-----------------------|---------------------------|
|                     |                   |                | Ø D                            | Ø d | L   | L <sub>1</sub> | ap <sub>max</sub> |                       |                           |
| <b>EMP01</b>        | 012-XP16-AP11-01  | •              | 12                             | 16  | 85  | 25             | 10.5              | 1                     | 0.1                       |
|                     | 012-XP16-AP11-01C | •              | 12                             | 16  | 85  | 25             | 10.5              | 1                     | 0.1                       |
| Weldon<br>shank     | 016-XP16-AP11-02  | •              | 16                             | 16  | 90  | 25             | 10.5              | 2                     | 0.1                       |
|                     | 016-XP16-AP11-02C | •              | 16                             | 16  | 90  | 25             | 10.5              | 2                     | 0.1                       |
| Zylinder-<br>Schaft | 020-XP20-AP11-02  | •              | 20                             | 20  | 100 | 30             | 10.5              | 2                     | 0.2                       |
|                     | 020-XP20-AP11-02C | •              | 20                             | 20  | 100 | 30             | 10.5              | 2                     | 0.2                       |
|                     | 020-XP20-AP11-03  | •              | 20                             | 20  | 100 | 30             | 10.5              | 3                     | 0.2                       |
|                     | 020-XP20-AP11-03C | ○              | 20                             | 20  | 100 | 30             | 10.5              | 3                     | 0.2                       |
|                     | 025-XP25-AP11-03  | •              | 25                             | 25  | 115 | 35             | 10.5              | 3                     | 0.4                       |
|                     | 025-XP25-AP11-03C | •              | 25                             | 25  | 115 | 35             | 10.5              | 3                     | 0.4                       |
|                     | 025-XP25-AP11-04  | •              | 25                             | 25  | 115 | 35             | 10.5              | 4                     | 0.4                       |
|                     | 025-XP25-AP11-04C | ○              | 25                             | 25  | 115 | 35             | 10.5              | 4                     | 0.4                       |
|                     | 032-XP32-AP11-04  | •              | 32                             | 32  | 125 | 40             | 10.5              | 4                     | 0.7                       |
|                     | 032-XP32-AP11-04C | •              | 32                             | 32  | 125 | 40             | 10.5              | 4                     | 0.7                       |
|                     | 025-XP25-AP16-02  | •              | 25                             | 25  | 115 | 35             | 15.5              | 2                     | 0.4                       |
|                     | 025-XP25-AP16-02C | •              | 25                             | 25  | 115 | 35             | 15.5              | 2                     | 0.4                       |
|                     | 032-XP32-AP16-03  | •              | 32                             | 32  | 125 | 40             | 15.5              | 3                     | 0.7                       |
|                     | 032-XP32-AP16-03C | •              | 32                             | 32  | 125 | 40             | 15.5              | 3                     | 0.7                       |
|                     | 040-XP32-AP16-04  | •              | 40                             | 32  | 130 | 42             | 15.5              | 4                     | 0.8                       |
|                     | 040-XP32-AP16-04C | •              | 40                             | 32  | 130 | 42             | 15.5              | 4                     | 0.8                       |
|                     | 050-XP32-AP16-05  | •              | 50                             | 32  | 135 | 45             | 15.5              | 5                     | 1.0                       |
|                     | 050-XP32-AP16-05C | •              | 50                             | 32  | 135 | 45             | 15.5              | 5                     | 1.0                       |
|                     | 063-XP32-AP16-06  | ○              | 63                             | 32  | 135 | 45             | 15.5              | 6                     | 1.4                       |
|                     | 063-XP32-AP16-06C | ○              | 63                             | 32  | 135 | 45             | 15.5              | 6                     | 1.4                       |

### Spare Parts · Ersatzteile

| Diameter<br>Durchmesser<br>Ø D | Insert<br>WSP | Screw<br>Schraube   | Wrench<br>Schlüssel   |  |
|--------------------------------|---------------|---|---|--|
|                                |               |  |  |  |
| Ø12-Ø32                        | AP11          | I60M2.5×6.5T  | WT08IP  | --   |
| Ø25-Ø63                        | AP16          | I60M4×8.4   | --  | WT15IS   |



Applicable tool  
Werkzeug [B11-B18](#)

Tools code key  
Werkzeug ISO [B26-B27](#)

Grade selection guide  
Sortenauswahl [B19-B23](#)

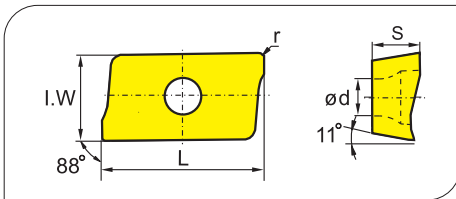
Technical data  
Technische Daten [B215-B220](#)

# Milling · Fräsen

## Indexable Milling Tools · Wendepplattenfräser

■ Applicable inserts · Wendeschneidplatten

- Ideal Machining Condition / Gute Bearbeitungsbedingungen
- Normal Machining Condition / Normale Bearbeitungsbedingungen
- Unfavorable Machining Condition / Ungünstige Bearbeitungsbedingungen



| Workpiece Material / Werkstoffe         | P | M | K | N | S |
|---|---|---|---|---|---|
| Steel / Stahl                           | ● | ● | ● | ● | ● |
| Stainless Steel / Rostfreier Stahl      | ● | ● | ● | ● | ● |
| Cast iron / Gusseisen                   | ● | ● | ● | ● | ● |
| Non-ferrite material / Ne Metalle       | ● | ● | ● | ● | ● |
| Heat-resistant steel / Warmfester Stahl | ● | ● | ● | ● | ● |

| Insert shape / Plattenform | Type / Typ        | Dimensions (mm) / Abmessungen |      |      |     |     | CVD Coating / CVD Beschicht. |        |        |        |        |        | PVD Coating / PVD Beschicht. |        |        |        | Cermets / Cermet |        | Carbide uncoat. / unbe. Hartmetall |        |        |         |       |       |       |  |
|----------------------------|-------------------|-------------------------------|------|------|-----|-----|------------------------------|--------|--------|--------|--------|--------|------------------------------|--------|--------|--------|------------------|--------|------------------------------------|--------|--------|---------|-------|-------|-------|--|
|                            |                   | L                             | I.W  | S    | d   | r   | YBC301                       | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152                       | YBD252 | YBG102 | YBG202 | YBG205           | YBG302 | YBG152                             | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |  |
|                            | APKT11T304-PF     | 12.24                         | 6.5  | 3.6  | 2.8 | 0.4 | ○                            |        | ●      |        |        |        |                              |        | ●      | ●      |                  | ●      |                                    |        |        |         |       |       |       |  |
|                            | APKT11T308-PF     | 12.24                         | 6.5  | 3.6  | 2.8 | 0.8 |                              |        |        | ○      |        |        |                              |        |        | ●      |                  |        |                                    |        |        |         |       |       |       |  |
|                            | APKT11T312-PF     | 12.24                         | 6.5  | 3.6  | 2.8 | 1.2 |                              |        |        |        |        |        |                              |        |        | ○      |                  |        |                                    |        |        |         |       |       |       |  |
|                            | APKT11T316-PF     | 12.24                         | 6.5  | 3.6  | 2.8 | 1.6 |                              |        |        |        |        |        |                              |        |        | ○      |                  |        |                                    |        |        |         |       |       |       |  |
|                            | APKT160408-PF     | 17.877                        | 9.33 | 5.76 | 4.4 | 0.8 | ●                            |        |        | ○      | ●      |        |                              |        | ●      | ●      |                  |        |                                    |        |        |         |       |       |       |  |
|                            | APKT11T304-PM     | 12.24                         | 6.5  | 3.6  | 2.8 | 0.4 | ●                            | ●      | ○      | ●      | ●      |        |                              |        | ●      | ●      |                  | ●      |                                    |        |        |         |       |       |       |  |
|                            | APKT11T308-PM     | 12.24                         | 6.5  | 3.6  | 2.8 | 0.8 | ●                            | ●      |        | ●      | ●      | ●      | ●                            | ●      | ●      | ●      | ●                | ●      |                                    |        |        |         |       |       |       |  |
|                            | APKT11T312-PM     | 12.24                         | 6.5  | 3.6  | 2.8 | 1.2 |                              |        |        | ○      |        |        |                              |        | ○      | ●      |                  |        |                                    |        |        |         |       |       |       |  |
|                            | APKT11T316-PM     | 12.24                         | 6.5  | 3.6  | 2.8 | 1.6 |                              |        |        | ●      |        |        |                              |        | ○      | ●      |                  |        |                                    |        |        |         |       |       |       |  |
|                            | APKT160408-PM     | 17.877                        | 9.33 | 5.76 | 4.4 | 0.8 | ●                            | ●      | ●      | ●      | ●      | ●      | ●                            | ●      | ●      | ●      | ●                | ●      |                                    |        |        |         |       |       |       |  |
|                            | APKT11T304-PR     | 12.24                         | 6.5  | 3.6  | 2.8 | 0.4 |                              |        | ●      |        |        | ○      |                              |        |        |        |                  | ○      |                                    |        |        |         |       |       |       |  |
|                            | APKT11T308-PR     | 12.24                         | 6.5  | 3.6  | 2.8 | 0.8 |                              |        |        |        |        |        |                              |        |        |        |                  | ○      |                                    |        |        |         |       |       |       |  |
|                            | APKT11T312-PR     | 12.24                         | 6.5  | 3.6  | 2.8 | 1.2 |                              |        |        |        |        |        |                              |        |        |        |                  | ○      |                                    |        |        |         |       |       |       |  |
|                            | APKT11T316-PR     | 12.24                         | 6.5  | 3.6  | 2.8 | 1.6 |                              |        |        |        |        |        |                              |        |        |        |                  | ○      |                                    |        |        |         |       |       |       |  |
|                            | APKT160408-PR     | 17.877                        | 9.33 | 5.76 | 4.4 | 0.8 |                              |        |        |        |        |        |                              |        |        |        |                  | ○      |                                    |        |        |         |       |       |       |  |
|                            | APKT11T304-LH     | 12.24                         | 6.5  | 3.6  | 2.8 | 0.4 |                              |        |        |        |        |        |                              |        |        |        |                  |        |                                    |        |        |         |       | ●     | ●     |  |
|                            | APKT11T308-LH     | 12.24                         | 6.5  | 3.6  | 2.8 | 0.8 |                              |        |        |        |        |        |                              |        |        |        |                  |        |                                    |        |        |         |       | ●     | ●     |  |
|                            | APET160402-LH     | 17.877                        | 9.33 | 5.76 | 4.4 | 0.2 |                              |        |        |        |        |        |                              |        |        |        |                  |        |                                    |        |        |         |       | ○     |       |  |
|                            | APKT160408-LH     | 17.877                        | 9.33 | 5.76 | 4.4 | 0.8 |                              |        |        |        |        |        |                              |        |        |        |                  |        |                                    |        |        |         |       | ●     | ●     |  |
|                            | APET160408PDFR-LH | 17.877                        | 9.33 | 5.76 | 4.4 | 0.8 |                              |        |        |        |        |        |                              |        |        |        |                  |        |                                    |        |        |         |       | ○     |       |  |

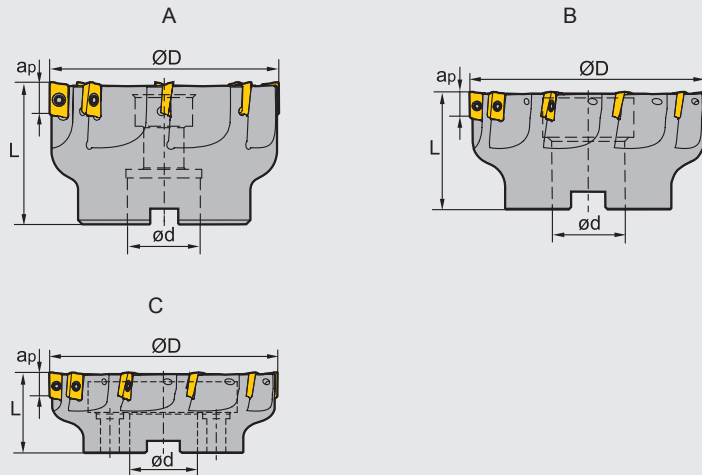
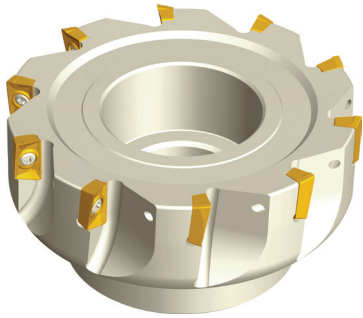
● Ex Stock / ab Lager ○ On demand / auf Anfrage

### Square shoulder milling tools · Eckfräser

Kr:90°



EMPO2 P M K N



### Specification of tools · Werkzeug Beschreibung

| Type<br>Typ                  | Stock<br>Lager | Dimensions (mm)<br>Abmessungen |     |    |       | No. of teeth<br>Zähne | Coupling<br>Aufnahme | Weight<br>Gewicht<br>(kg) |
|------------------------------|----------------|--------------------------------|-----|----|-------|-----------------------|----------------------|---------------------------|
|                              |                | Ø D                            | Ø d | L  | apmax |                       |                      |                           |
| <b>EMPO2</b> 050-A22-AP11-06 | ●              | 50                             | 22  | 40 | 11    | 6                     | A                    | 0.3                       |
| 050-A22-AP11-06C             | ●              | 50                             | 22  | 40 | 11    | 6                     | A                    | 0.3                       |
| 063-A22-AP11-08              | ●              | 63                             | 22  | 40 | 11    | 8                     | A                    | 0.6                       |
| 063-A22-AP11-08C             | ●              | 63                             | 22  | 40 | 11    | 8                     | A                    | 0.6                       |
| 080-A27-AP11-08              | ●              | 80                             | 27  | 50 | 11    | 8                     | A                    | 1.2                       |
| 080-A27-AP11-08C             | ●              | 80                             | 27  | 50 | 11    | 8                     | A                    | 1.2                       |
| 100-B32-AP11-10              | ●              | 100                            | 32  | 50 | 11    | 10                    | B                    | 1.7                       |
| 100-B32-AP11-10C             | ●              | 100                            | 32  | 50 | 11    | 10                    | B                    | 1.7                       |
| 050-A22-AP16-05              | ●              | 50                             | 22  | 40 | 15.5  | 5                     | A                    | 0.3                       |
| 050-A22-AP16-05C             | ●              | 50                             | 22  | 40 | 15.5  | 5                     | A                    | 0.3                       |
| 063-A22-AP16-06              | ●              | 63                             | 22  | 40 | 15.5  | 6                     | A                    | 0.5                       |
| 063-A22-AP16-06C             | ●              | 63                             | 22  | 40 | 15.5  | 6                     | A                    | 0.5                       |
| 080-A27-AP16-07              | ●              | 80                             | 27  | 50 | 15.5  | 7                     | A                    | 1.1                       |
| 080-A27-AP16-07C             | ●              | 80                             | 27  | 50 | 15.5  | 7                     | A                    | 1.1                       |
| 100-B32-AP16-08              | ●              | 100                            | 32  | 50 | 15.5  | 8                     | B                    | 1.6                       |
| 100-B32-AP16-08C             | ●              | 100                            | 32  | 50 | 15.5  | 8                     | B                    | 1.6                       |
| 125-B40-AP16-10              | ○              | 125                            | 40  | 63 | 15.5  | 10                    | B                    | 3.2                       |
| 125-B40-AP16-10C             | ○              | 125                            | 40  | 63 | 15.5  | 10                    | B                    | 3.2                       |
| 160-B40-AP16-10              | ○              | 160                            | 40  | 63 | 15.5  | 10                    | B                    | 6.3                       |
| 160-B40-AP16-10C             | ○              | 160                            | 40  | 63 | 15.5  | 10                    | B                    | 6.3                       |
| 200-C60-AP16-12              | ○              | 200                            | 60  | 63 | 15.5  | 12                    | C                    | 8.1                       |
| 250-C60-AP16-12              | ○              | 250                            | 60  | 63 | 15.5  | 12                    | C                    | 11.2                      |

### Spare Parts · Ersatzteile

| Diameter<br>Durchmesser<br>Ø D | Insert<br>WSP | Screw<br>Schraube | Wrench<br>Schlüssel |  |
|--------------------------------|---------------|-------------------|---------------------|--|
|                                |               |                   |                     |  |
| Ø50-Ø250                       | AP11          | I60M2.5×6.5T      | WT08IS              |  |
| Ø50-Ø250                       | AP16          | I60M4×10          | WT15IS              |  |

Applicable tool B11-B18  
Werkzeug

Tools code key B26-B27  
Werkzeug ISO

Grade selection guide B19-B23  
Sortenauswahl

Technical data B215-B220  
Technische Daten

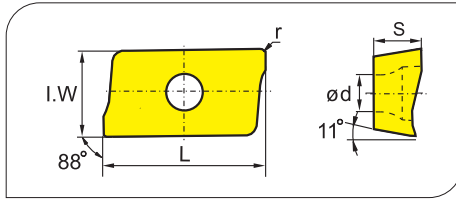
B

Milling Tools  
Fräser

# Milling · Fräsen

## Indexable Milling Tools · Wendepplattenfräser

■ Applicable inserts · Wendeschneidplatten



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

| Insert shape<br>Plattenform | Type<br>Typ       | Dimensions (mm)<br>Abmessungen |      |      |     |     | CVD Coating<br>CVD Beschicht. |        |        |        |        |        | PVD Coating<br>PVD Beschicht. |        |        |        | Cermet<br>Cermet | Carbide uncoat.<br>unbe. Hartmetall |        |        |        |        |         |       |       |       |
|-----------------------------|-------------------|--------------------------------|------|------|-----|-----|-------------------------------|--------|--------|--------|--------|--------|-------------------------------|--------|--------|--------|------------------|-------------------------------------|--------|--------|--------|--------|---------|-------|-------|-------|
|                             |                   | L                              | I.W  | S    | d   | r   | YBC301                        | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152                        | YBD252 | YBG102 | YBG202 |                  | YBG205                              | YBG302 | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |
|                             | APKT11T304-PF     | 12.24                          | 6.5  | 3.6  | 2.8 | 0.4 | ○                             |        | ●      |        |        |        |                               |        | ●      | ●      | ●                |                                     |        |        |        |        |         |       |       |       |
|                             | APKT11T308-PF     | 12.24                          | 6.5  | 3.6  | 2.8 | 0.8 |                               |        |        | ○      |        |        |                               |        |        | ●      |                  |                                     |        |        |        |        |         |       |       |       |
|                             | APKT11T312-PF     | 12.24                          | 6.5  | 3.6  | 2.8 | 1.2 |                               |        |        |        |        |        |                               |        |        | ○      |                  |                                     |        |        |        |        |         |       |       |       |
|                             | APKT11T316-PF     | 12.24                          | 6.5  | 3.6  | 2.8 | 1.6 |                               |        |        |        |        |        |                               |        |        | ○      |                  |                                     |        |        |        |        |         |       |       |       |
|                             | APKT160408-PF     | 17.877                         | 9.33 | 5.76 | 4.4 | 0.8 | ●                             |        | ○      | ●      |        |        |                               |        | ●      | ●      |                  |                                     |        |        |        |        |         |       |       |       |
|                             | APKT11T304-PM     | 12.24                          | 6.5  | 3.6  | 2.8 | 0.4 | ●                             | ●      | ●      | ●      | ●      |        |                               |        | ●      | ●      | ●                |                                     |        |        |        |        |         |       |       |       |
|                             | APKT11T308-PM     | 12.24                          | 6.5  | 3.6  | 2.8 | 0.8 | ●                             | ●      |        | ●      | ●      | ●      | ●                             | ●      | ●      | ●      | ●                | ●                                   |        |        |        |        |         |       |       |       |
|                             | APKT11T312-PM     | 12.24                          | 6.5  | 3.6  | 2.8 | 1.2 |                               |        |        | ○      |        |        |                               |        |        | ○      | ●                |                                     |        |        |        |        |         |       |       |       |
|                             | APKT11T316-PM     | 12.24                          | 6.5  | 3.6  | 2.8 | 1.6 |                               |        |        | ●      |        |        |                               |        | ○      | ●      |                  |                                     |        |        |        |        |         |       |       |       |
|                             | APKT160408-PM     | 17.877                         | 9.33 | 5.76 | 4.4 | 0.8 | ●                             | ●      | ●      | ●      | ●      | ●      | ●                             | ●      | ●      | ●      | ●                | ●                                   |        |        |        |        |         |       |       |       |
|                             | APKT11T304-PR     | 12.24                          | 6.5  | 3.6  | 2.8 | 0.4 |                               |        | ●      |        | ○      |        |                               |        |        |        | ○                |                                     |        |        |        |        |         |       |       |       |
|                             | APKT11T308-PR     | 12.24                          | 6.5  | 3.6  | 2.8 | 0.4 |                               |        |        |        |        |        |                               |        |        |        |                  | ○                                   |        |        |        |        |         |       |       |       |
|                             | APKT11T312-PR     | 12.24                          | 6.5  | 3.6  | 2.8 | 0.4 |                               |        |        |        |        |        |                               |        |        |        | ○                |                                     |        |        |        |        |         |       |       |       |
|                             | APKT11T316-PR     | 12.24                          | 6.5  | 3.6  | 2.8 | 0.4 |                               |        |        |        |        |        |                               |        |        |        | ○                |                                     |        |        |        |        |         |       |       |       |
|                             | APKT160408-PR     | 17.877                         | 9.33 | 5.76 | 4.4 | 0.8 |                               |        |        |        |        |        |                               |        |        |        |                  | ○                                   |        |        |        |        |         |       |       |       |
|                             | APKT11T304-LH     | 12.24                          | 6.5  | 3.6  | 2.8 | 0.4 |                               |        |        |        |        |        |                               |        |        |        |                  |                                     |        |        |        |        |         | ●     | ●     |       |
|                             | APKT11T308-LH     | 12.24                          | 6.5  | 3.6  | 2.8 | 0.8 |                               |        |        |        |        |        |                               |        |        |        |                  |                                     |        |        |        |        |         | ●     | ●     |       |
|                             | APET160402-LH     | 17.877                         | 9.33 | 5.76 | 4.4 | 0.2 |                               |        |        |        |        |        |                               |        |        |        |                  |                                     |        |        |        |        |         | ○     |       |       |
|                             | APKT160408-LH     | 17.877                         | 9.33 | 5.76 | 4.4 | 0.8 |                               |        |        |        |        |        |                               |        |        |        |                  |                                     |        |        |        |        |         | ●     | ●     |       |
|                             | APET160408PDFR-LH | 17.877                         | 9.33 | 5.76 | 4.4 | 0.8 |                               |        |        |        |        |        |                               |        |        |        |                  |                                     |        |        |        |        |         | ○     |       |       |

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

# Milling · Fräsen

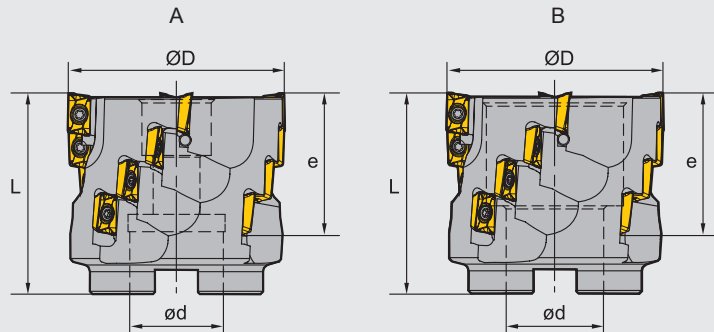
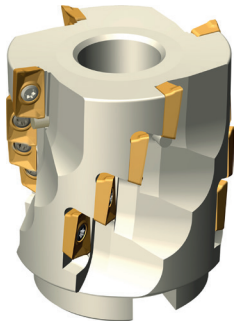
Indexable Milling Tools · Wendeplattenfräser

Square shoulder milling tools · Eckfräser

Kr:90°






EMPO3 P M K N



## Specification of tools · Werkzeug Beschreibung

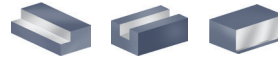
| Type<br>Typ                   | Stock<br>Lager | Dimensions (mm)<br>Abmessungen |     |    |    | Flute<br>number<br>Zahn-<br>reihen<br>z | No. of<br>inserts<br>WSP<br>Anzahl | Coupling<br>Aufnahme | Weight<br>Gewicht<br>(kg) |
|-------------------------------|----------------|--------------------------------|-----|----|----|---|------------------------------------|----------------------|---------------------------|
|                               |                | Ø D                            | Ø d | L  | e  |   |                                    |                      |                           |
| <b>EMPO3</b> -050-A22-AP11-04 | ●              | 50                             | 22  | 58 | 39 | 4                                       | 16                                 | A                    | 0.5                       |
| -050-A22-AP11-04C             | ●              | 50                             | 22  | 58 | 39 | 4                                       | 16                                 | A                    | 0.5                       |
| -063-A27-AP11-04              | ●              | 63                             | 27  | 58 | 39 | 4                                       | 16                                 | A                    | 0.9                       |
| -063-A27-AP11-04C             | ●              | 63                             | 27  | 58 | 39 | 4                                       | 16                                 | A                    | 0.9                       |
| -080-B32-AP11-05              | ●              | 80                             | 32  | 63 | 39 | 5                                       | 20                                 | B                    | 1.3                       |
| -080-B32-AP11-05C             | ●              | 80                             | 32  | 63 | 39 | 5                                       | 20                                 | B                    | 1.3                       |
| -100-B40-AP11-06              | ○              | 100                            | 40  | 63 | 39 | 6                                       | 24                                 | B                    | 2.0                       |
| -100-B40-AP11-06C             | ○              | 100                            | 40  | 63 | 39 | 6                                       | 24                                 | B                    | 2.0                       |

## Spare Parts · Ersatzteile

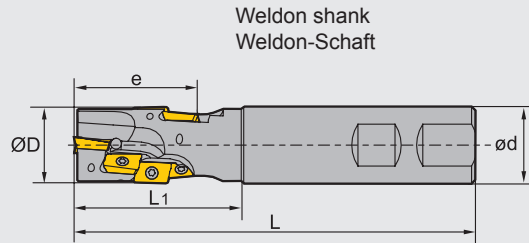
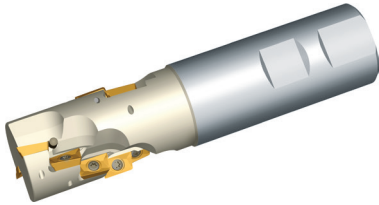
| Diameter<br>Durchmesser<br>Ø D | Screw<br>Schraube   | Wrench<br>Schlüssel  |  |
|--------------------------------|---|--|---|
| Ø50-Ø100                       | <br>I60M2.5×6.5T | <br>WT08IS |   |
|                                |   |  |   |

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

### Square shoulder milling tools · Eckfräser





**EMP04** P M K N

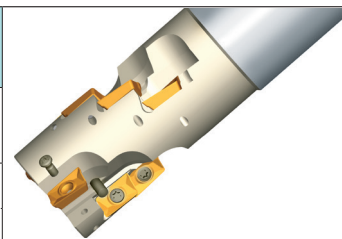


### Specification of tools · Werkzeug Beschreibung

| Type<br>Typ                    | Stock<br>Lager | Dimensions (mm)<br>Abmessungen |     |     |    |      | Flute<br>number<br>Zahn-<br>reihen<br>z | No. of<br>inserts<br>WSP<br>Anzahl | Weight<br>Gewicht<br>(kg) |
|--------------------------------|----------------|--------------------------------|-----|-----|----|------|---|------------------------------------|---------------------------|
|                                |                | Ø D                            | Ø d | L   | L1 | e    |   |                                    |                           |
| <b>EMP04</b> -020-XP20-AP11-01 | ●              | 20                             | 20  | 120 | 45 | 29.4 | 1                                       | 3                                  | 0.3                       |
| -020-XP20-AP11-01C             | ●              | 20                             | 20  | 120 | 45 | 29.4 | 1                                       | 3                                  | 0.3                       |
| -025-XP25-AP11-02              | ●              | 25                             | 25  | 130 | 55 | 38.9 | 2                                       | 8                                  | 0.4                       |
| -025-XP25-AP11-02C             | ●              | 25                             | 25  | 130 | 55 | 38.9 | 2                                       | 8                                  | 0.4                       |
| -032-XP32-AP11-02              | ●              | 32                             | 32  | 140 | 65 | 48.5 | 2                                       | 10                                 | 0.7                       |
| -032-XP32-AP11-02C             | ●              | 32                             | 32  | 140 | 65 | 48.5 | 2                                       | 10                                 | 0.7                       |
| -040-XP40-AP11-02              | ●              | 40                             | 40  | 150 | 75 | 58.0 | 2                                       | 14                                 | 1.3                       |
| -040-XP40-AP11-02C             | ●              | 40                             | 40  | 150 | 75 | 58.0 | 2                                       | 14                                 | 1.3                       |

### Spare Parts · Ersatzteile

| Diameter<br>Durchmesser<br>Ø D | Screw<br>Schraube   | Wrench<br>Schlüssel   |
|--------------------------------|---|---|
| Ø20-Ø40                        | <br>I60M2.5×6.5T | <br>WT08IS |
|                                |   |   |
|                                |   |   |



Applicable tool  
Werkzeug **B11-B18**

Tools code key  
Werkzeug ISO **B26-B27**

Grade selection guide  
Sortenauswahl **B19-B23**

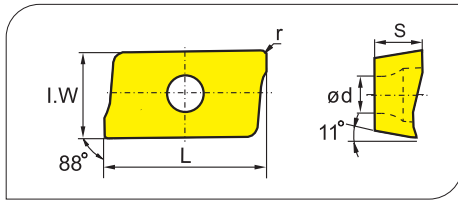
Technical data  
Technische Daten **B215-B220**

# Milling · Fräsen

## Indexable Milling Tools · Wendepplattenfräser

■ Applicable inserts · Wendeschneidplatten

● Ideal Machining Condition / Gute Bearbeitungsbedingungen  
 ● Normal Machining Condition / Normale Bearbeitungsbedingungen  
 ● Unfavorable Machining Condition / Ungünstige Bearbeitungsbedingungen



| Workpiece Material / Werkstoffe         | P | M | K | N | S | Steel / Stahl | Stainless Steel / Rostfreier Stahl | Cast iron / Gusseisen | Non-ferrite material / Ne Metalle | Heat-resistant steel / Warmfester Stahl |
|---|---|---|---|---|---|---------------|------------------------------------|-----------------------|-----------------------------------|---|
| Steel / Stahl                           | ● | ● | ● | ● | ● | ●             | ●                                  | ●                     | ●                                 | ●                                       |
| Stainless Steel / Rostfreier Stahl      | ● | ● | ● | ● | ● | ●             | ●                                  | ●                     | ●                                 | ●                                       |
| Cast iron / Gusseisen                   | ● | ● | ● | ● | ● | ●             | ●                                  | ●                     | ●                                 | ●                                       |
| Non-ferrite material / Ne Metalle       | ● | ● | ● | ● | ● | ●             | ●                                  | ●                     | ●                                 | ●                                       |
| Heat-resistant steel / Warmfester Stahl | ● | ● | ● | ● | ● | ●             | ●                                  | ●                     | ●                                 | ●                                       |

| Insert shape / Plattenform | Type / Typ    | Dimensions (mm) / Abmessungen |      |      |     |     | CVD Coating / CVD Beschicht. |        |        |        |        |        | PVD Coating / PVD Beschicht. |        |        |        | Cermets / Cermet |        | Carbide uncoat. / unbe. Hartmetall |        |        |         |       |       |       |   |  |  |
|----------------------------|---------------|-------------------------------|------|------|-----|-----|------------------------------|--------|--------|--------|--------|--------|------------------------------|--------|--------|--------|------------------|--------|------------------------------------|--------|--------|---------|-------|-------|-------|---|--|--|
|                            |               | L                             | I.W  | S    | d   | r   | YBC301                       | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152                       | YBD252 | YBG102 | YBG202 | YBG205           | YBG302 | YBG152                             | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |   |  |  |
|                            | APKT11T304-PF | 12.24                         | 6.5  | 3.6  | 2.8 | 0.4 | ○                            |        |        | ●      |        |        |                              |        | ●      | ●      |                  | ●      |                                    |        |        |         |       |       |       |   |  |  |
|                            | APKT11T308-PF | 12.24                         | 6.5  | 3.6  | 2.8 | 0.8 |                              |        |        | ○      |        |        |                              |        |        | ●      |                  |        |                                    |        |        |         |       |       |       |   |  |  |
|                            | APKT11T312-PF | 12.24                         | 6.5  | 3.6  | 2.8 | 1.2 |                              |        |        |        |        |        |                              |        |        | ○      |                  |        |                                    |        |        |         |       |       |       |   |  |  |
|                            | APKT11T316-PF | 12.24                         | 6.5  | 3.6  | 2.8 | 1.6 |                              |        |        |        |        |        |                              |        |        | ○      |                  |        |                                    |        |        |         |       |       |       |   |  |  |
|                            | APKT11T304-PM | 12.24                         | 6.5  | 3.6  | 2.8 | 0.4 | ●                            | ●      | ○      | ●      |        | ●      |                              |        | ●      | ●      |                  | ●      |                                    |        |        |         |       |       |       |   |  |  |
|                            | APKT11T308-PM | 12.24                         | 6.5  | 3.6  | 2.8 | 0.8 | ●                            | ●      |        | ●      | ●      | ●      | ●                            | ●      | ●      | ●      | ●                | ●      | ●                                  |        |        |         |       |       |       |   |  |  |
|                            | APKT11T312-PM | 12.24                         | 6.5  | 3.6  | 2.8 | 1.2 |                              |        |        | ○      |        |        |                              |        | ○      | ●      |                  |        |                                    |        |        |         |       |       |       |   |  |  |
|                            | APKT11T316-PM | 12.24                         | 6.5  | 3.6  | 2.8 | 1.6 |                              |        |        | ●      |        |        |                              |        | ○      | ●      |                  |        |                                    |        |        |         |       |       |       |   |  |  |
|                            | APKT11T304-PR | 12.24                         | 6.5  | 3.6  | 2.8 | 0.4 |                              |        | ●      |        |        | ○      |                              |        |        |        |                  | ○      |                                    |        |        |         |       |       |       |   |  |  |
|                            | APKT11T308-PR | 12.24                         | 6.5  | 3.6  | 2.8 | 0.4 |                              |        |        |        |        |        |                              |        |        |        |                  | ○      |                                    |        |        |         |       |       |       |   |  |  |
|                            | APKT11T312-PR | 12.24                         | 6.5  | 3.6  | 2.8 | 0.4 |                              |        |        |        |        |        |                              |        |        |        |                  | ○      |                                    |        |        |         |       |       |       |   |  |  |
|                            | APKT11T316-PR | 12.24                         | 6.5  | 3.6  | 2.8 | 0.4 |                              |        |        |        |        |        |                              |        |        |        |                  | ○      |                                    |        |        |         |       |       |       |   |  |  |
|                            | APKT11T304-LH | 12.24                         | 6.5  | 3.6  | 2.8 | 0.4 |                              |        |        |        |        |        |                              |        |        |        |                  |        |                                    |        |        |         |       |       | ●     | ● |  |  |
|                            | APKT11T308-LH | 12.24                         | 6.5  | 3.6  | 2.8 | 0.8 |                              |        |        |        |        |        |                              |        |        |        |                  |        |                                    |        |        |         |       |       | ●     | ● |  |  |
|                            | APKT160408-LH | 17.877                        | 9.33 | 5.76 | 4.4 | 0.8 |                              |        |        |        |        |        |                              |        |        |        |                  |        |                                    |        |        |         |       |       | ●     | ● |  |  |

### ■ Chipbreaker Selection · Spanbrecher Auswahl

| Application / Anwendung | Finishing / Schlichten | Semi-Finishing / Mittlere Bearbeitung | Roughing / Schruppen |
|-------------------------|------------------------|---------------------------------------|----------------------|
| <b>P</b>                | -PF                    | -PM                                   | -PR                  |
| <b>M</b>                | -PF                    | -PM                                   | -PR                  |
| <b>K</b>                | -PF                    | -PM                                   |                      |
| <b>AL</b>               | -LH                    |                                       |                      |

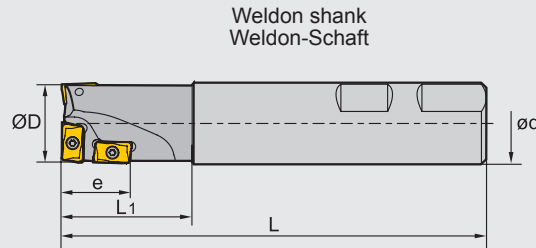
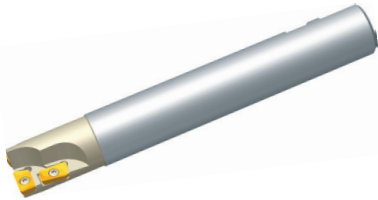
● Ex Stock / ab Lager ○ On demand / auf Anfrage

### Square shoulder milling tools · Eckfräser

Kr:90°





**EMP05** P M K

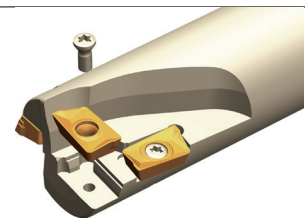


### Specification of tools · Werkzeug Beschreibung

| Type<br>Typ  | Stock<br>Lager | Dimensions (mm)<br>Abmessungen |     |     |     |    | No. of inserts<br>WSP Anzahl |        | Weight<br>Gewicht<br>(kg) |        |
|--------------|----------------|--------------------------------|-----|-----|-----|----|------------------------------|--------|---------------------------|--------|
|              |                | R                              | Ø D | Ø d | L   | L1 | e                            | APMT11 |                           | APMT16 |
| <b>EMP05</b> | ●              | ●                              | 25  | 25  | 130 | 40 | 20                           | 3      | --                        | 0.5    |
|              | ●              | ●                              | 25  | 25  | 130 | 40 | 20                           | 3      | --                        | 0.5    |
|              | ●              | ●                              | 32  | 32  | 140 | 50 | 30                           | --     | 3                         | 0.8    |
|              | ●              | ●                              | 32  | 32  | 140 | 50 | 30                           | --     | 3                         | 0.8    |
|              | ●              | ●                              | 40  | 32  | 150 | 60 | 40                           | --     | 4                         | 1.0    |
|              | ●              | ●                              | 40  | 32  | 150 | 60 | 40                           | --     | 4                         | 1.0    |

### Spare Parts · Ersatzteile

| Diameter<br>Durchmesser<br>Ø D | Insert<br>WSP | Screw<br>Schraube   | Wrench<br>Schlüssel  |
|--------------------------------|---------------|---|--|
|                                |               |  |  |
| Ø25-Ø40                        | APMT11        | I60M2.5×6.5T  | WT08IP   |
|                                | APMT16        | I60M4×10  | WT15IP   |



Applicable tool  
Werkzeug

[B11-B18](#)

Tools code key  
Werkzeug ISO

[B26-B27](#)

Grade selection guide  
Sortenauswahl

[B19-B23](#)

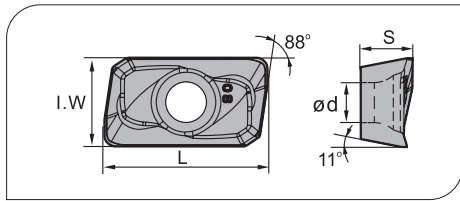
Technical data  
Technische Daten

[B215-B220](#)

# Milling · Fräsen

## Indexable Milling Tools · Wendepplattenfräser

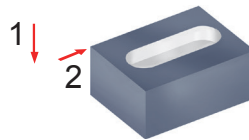
Applicable inserts · Wendeschneidplatten



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

| Insert shape<br>Plattenform | Type<br>Typ           | Dimensions (mm)<br>Abmessungen |      |      |     |     | CVD Coating<br>CVD Beschicht. |        |        |        |        |        | PVD Coating<br>PVD Beschicht. |        |        |        | Cermets<br>Cermet |        | Carbide uncoat.<br>unbe. Hartmetall |        |        |         |       |       |       |  |
|-----------------------------|-----------------------|--------------------------------|------|------|-----|-----|-------------------------------|--------|--------|--------|--------|--------|-------------------------------|--------|--------|--------|-------------------|--------|-------------------------------------|--------|--------|---------|-------|-------|-------|--|
|                             |                       | L                              | I.W  | S    | d   | r   | YBC301                        | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152                        | YBD252 | YBG102 | YBG202 | YBG205            | YBG302 | YBG152                              | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |  |
|                             | <b>APMT1135PDR</b>    | 11.25                          | 6.2  | 3.5  | 2.8 | 0.8 |                               |        |        | ○      |        |        |                               |        | ○      | ○      | ●                 |        |                                     |        |        |         |       |       |       |  |
|                             | <b>APMT160408PDER</b> | 17.25                          | 9.25 | 4.76 | 4.4 | 0.8 |                               |        |        | ○      | ○      |        |                               |        | ○      | ●      |                   |        |                                     |        |        |         |       |       |       |  |

### 1 Drilling Bohren



### Recommended cutting data · Empfohlene Schnittdaten

|          | Workpiece material<br>Werkstück Material                                      | Hardness HB<br>Härte | Grade<br>Sorte   | Cutting data · Schnittdaten |                  |
|----------|---|----------------------|------------------|-----------------------------|------------------|
|          |   |                      |                  | V(m/min)                    | f(mm/z)          |
| <b>P</b> | Low-carbon steel Soft steel<br>Niedrig legierter Kohlenstoffstahl<br>Baustahl | ≤180                 | YBG202<br>YBG205 | 180 (150-220)               | 0.2 (0.08-0.25)  |
|          | High-carbon steel Alloy steel<br>Hoch Leg. Kohlenstoffstahl                   | 180-280              | YBG202<br>YBG205 | 160 (130-200)               | 0.15 (0.08-0.2)  |
|          | Alloy tool steel<br>Leg. Werkzeugstahl  | 280-350              | YBG202<br>YBG205 | 140 (120-180)               | 0.12 (0.05-0.2)  |
| <b>M</b> | Stainless steel<br>Rostfreier Stahl   | ≤270                 | YBG202<br>YBG205 | 80 (50-150)                 | 0.08 (0.03-0.15) |
| <b>K</b> | Cast iron<br>Gusseisen  | 180-250              | YBG202<br>YBG205 | 150 (100-220)               | 0.15 (0.08-0.2)  |

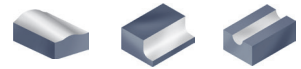
### 2 Milling Fräsen

### Recommended cutting data · Empfohlene Schnittdaten

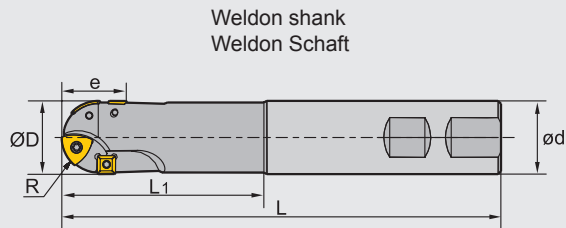
|          | Workpiece material<br>Werkstück Material                                      | Hardness HB<br>Härte | Grade<br>Sorte   | Cutting data · Schnittdaten |                  |
|----------|---|----------------------|------------------|-----------------------------|------------------|
|          |   |                      |                  | V(m/min)                    | f(mm/z)          |
| <b>P</b> | Low-carbon steel Soft steel<br>Niedrig legierter Kohlenstoffstahl<br>Baustahl | ≤180                 | YBG202<br>YBG205 | 190 (140-250)               | 0.08 (0.04-0.15) |
|          | High-carbon steel Alloy steel<br>Hoch leg. Kohlenstoffstahl                   | 180-280              | YBG202<br>YBG205 | 170 (130-250)               | 0.08 (0.04-0.15) |
|          | Alloy tool steel<br>Leg. Werkzeugstahl  | 280-350              | YBG202<br>YBG205 | 150 (110-240)               | 0.08 (0.04-0.15) |
| <b>M</b> | Stainless steel<br>Rostfreier Stahl   | ≤270                 | YBG202<br>YBG205 | 120 (80-190)                | 0.08 (0.04-0.15) |
| <b>K</b> | Cast iron<br>Gusseisen  | 180-250              | YBG202<br>YBG205 | 120 (80-210)                | 0.08 (0.04-0.15) |

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

### Profile milling tools · Profilfräser



**BMR01** P M K






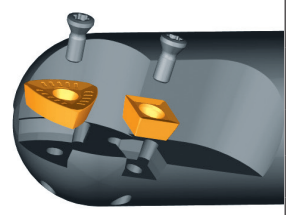
### Specification of tools · Werkzeug Beschreibung

| Type<br>Typ  | Stock<br>Lager | Dimensions (mm)<br>Abmessungen |     |    |     |     |                |                 | Inserts<br>WSP     |             |                    |     | Weight<br>Gewicht<br>(kg) |  |
|--------------|----------------|--------------------------------|-----|----|-----|-----|----------------|-----------------|--------------------|-------------|--------------------|-----|---------------------------|--|
|              |                | R                              | Ø D | e  | ø d | L   | L <sub>1</sub> | Type<br>Typ     | Quantity<br>Anzahl | Type<br>Typ | Quantity<br>Anzahl |     |                           |  |
| <b>BMR01</b> |                |                                |     |    |     |     |                |                 |                    |             |                    |     |                           |  |
| -020-XP20-S  | ○              | 10                             | 20  | 20 | 20  | 125 | 50             | ZDET08T2CYR10   | 2                  | SPMT060304  | 2                  | 0.3 |                           |  |
| -020-XP20-M  | ○              | 10                             | 20  | 20 | 20  | 150 | 75             | ZDET08T2CYR10   | 2                  | SPMT060304  | 2                  | 0.3 |                           |  |
| -020-XP20-L  | ○              | 10                             | 20  | 20 | 20  | 200 | 100            | ZDET08T2CYR10   | 2                  | SPMT060304  | 2                  | 0.4 |                           |  |
| -025-XP25-S  | ○              | 12.5                           | 25  | 23 | 25  | 150 | 70             | ZDET1103CYR12.5 | 2                  | SPMT060304  | 2                  | 0.5 |                           |  |
| -025-XP25-M  | ●              | 12.5                           | 25  | 23 | 25  | 175 | 95             | ZDET1103CYR12.5 | 2                  | SPMT060304  | 2                  | 0.6 |                           |  |
| -025-XP25-L  | ○              | 12.5                           | 25  | 23 | 25  | 200 | 100            | ZDET1103CYR12.5 | 2                  | SPMT060304  | 2                  | 0.7 |                           |  |
| -032-XP32-S  | ○              | 16                             | 32  | 31 | 32  | 175 | 85             | ZDET13T3CYR16   | 2                  | SDMT090308  | 2                  | 0.9 |                           |  |
| -032-XP32-M  | ○              | 16                             | 32  | 31 | 32  | 200 | 100            | ZDET13T3CYR16   | 2                  | SDMT090308  | 2                  | 1.1 |                           |  |
| -032-XP32-L  | ○              | 16                             | 32  | 31 | 32  | 250 | 150            | ZDET13T3CYR16   | 2                  | SDMT090308  | 2                  | 1.4 |                           |  |
| -040-XP40-S  | ○              | 20                             | 40  | 41 | 40  | 175 | 85             | ZPNT2204CY(R20) | 3                  | SPMT120408  | 2                  | 1.4 |                           |  |
| -040-XP40-M  | ○              | 20                             | 40  | 41 | 40  | 200 | 100            | ZPNT2204CY(R20) | 3                  | SPMT120408  | 2                  | 1.7 |                           |  |
| -040-XP40-L  | ○              | 20                             | 40  | 41 | 40  | 250 | 150            | ZPNT2204CY(R20) | 3                  | SPMT120408  | 2                  | 2.1 |                           |  |
| -050-XP40-S  | ○              | 25                             | 50  | 45 | 40  | 200 | 100            | ZPNT2204CY(R25) | 3                  | SPMT120408  | 2                  | 1.8 |                           |  |
| -050-XP40-M  | ○              | 25                             | 50  | 45 | 40  | 300 | 100            | ZPNT2204CY(R25) | 3                  | SPMT120408  | 2                  | 2.8 |                           |  |
| -063-XP40-S  | ○              | 31.5                           | 63  | 52 | 40  | 200 | 100            | ZPNT2204CY(R31) | 4                  | SPMT120408  | 2                  | 3.0 |                           |  |
| -063-XP40-M  | ○              | 31.5                           | 63  | 52 | 40  | 300 | 100            | ZPNT2204CY(R31) | 4                  | SPMT120408  | 2                  | 3.5 |                           |  |

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

### Spare parts · Ersatzteile

| Diameter<br>Durchmesser<br>Ø D | Screw<br>Schraube   | Wrench<br>Schlüssel   |  |
|--------------------------------|---|---|--|
|                                |  |  |  |
| Ø20-Ø25                        | I43M2.5×5.7   | WT071P  | --   |
| Ø32                            | I43M4×8   | --  | WT15IS   |
| Ø40-Ø63                        | I43M5×11  | --  | WT20IS   |



Applicable tool  
Werkzeug **B11-B18**

Tools code key  
Werkzeug ISO **B26-B27**

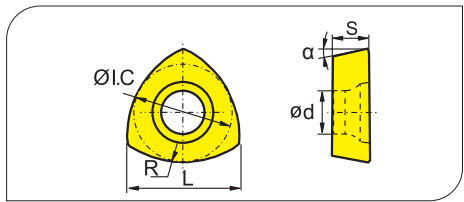
Grade selection guide  
Sortenauswahl **B19-B23**

Technical data  
Technische Daten **B215-B220**

# Milling · Fräsen

## Indexable Milling Tools · Wendepplattenfräser

### Applicable inserts · Wendeschneidplatten

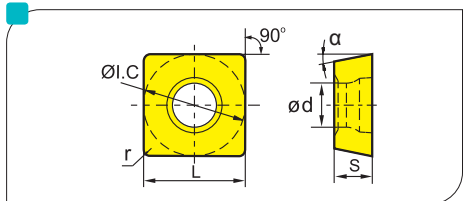


- Ideal Machining Condition / Gute Bearbeitungsbedingungen
- Normal Machining Condition / Normale Bearbeitungsbedingungen
- Unfavorable Machining Condition / Ungünstige Bearbeitungsbedingungen

| Workpiece Material / Werkstoffe         | 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 WSP | Type Typ        | Dimensions (mm) / Abmessungen |      |      |      |      |     | CVD Coating / CVD Beschicht. |        |        |        |        |        | PVD Coating / PVD Beschicht. |        |        |        |        |        | Cermet / Cermet | Carbide uncoat. / unbee. Hartmetall |        |        |         |       |       |       |
|------------|-----------------|-------------------------------|------|------|------|------|-----|------------------------------|--------|--------|--------|--------|--------|------------------------------|--------|--------|--------|--------|--------|-----------------|-------------------------------------|--------|--------|---------|-------|-------|-------|
|            |                 | R                             | L    | I.C. | S    | d    | α   | YBC301                       | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152                       | YBD252 | YBG102 | YBG202 | YBG205 | YBG302 |                 | YBG152                              | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |
|            | ZDET08T2CYR10   | 10                            | 8.4  | 6.75 | 2.78 | 2.8  | 14° |                              |        |        | ●      |        |        |                              |        |        |        |        |        |                 |                                     |        |        |         |       |       |       |
|            | ZDET1103CYR12.5 | 12.5                          | 10.6 | 8.5  | 3.18 | 2.8  | 14° |                              |        |        | ●      |        |        |                              |        |        |        |        |        |                 |                                     |        |        |         |       |       |       |
|            | ZDET13T3CYR16   | 16                            | 13.2 | 10.5 | 3.97 | 4.4  | 14° |                              |        |        |        |        |        |                              |        |        |        |        |        |                 |                                     |        |        |         |       |       |       |
|            | ZPNT2204CY(R20) | 20                            | 16.1 | 12.7 | 4.76 | 5.56 | 11° |                              |        |        | ○      |        |        |                              |        |        |        |        |        |                 |                                     |        |        |         |       |       |       |
|            | ZPNT2204CY(R25) | 25                            | 16.9 | 12.7 | 4.76 | 5.56 | 11° |                              |        |        | ●      |        |        |                              |        |        |        |        |        |                 |                                     |        |        |         |       |       |       |
|            | ZPNT2204CY(R31) | 31.5                          | 17.6 | 12.7 | 4.76 | 5.56 | 11° |                              |        |        | ●      |        |        |                              |        |        |        |        |        |                 |                                     |        |        |         |       |       |       |

### Applicable inserts · Wendeschneidplatten



- Ideal Machining Condition / Gute Bearbeitungsbedingungen
- Normal Machining Condition / Normale Bearbeitungsbedingungen
- Unfavorable Machining Condition / Ungünstige Bearbeitungsbedingungen

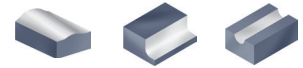
| Workpiece Material / Werkstoffe         | P          | M          | K          | N          | S          |
|---|------------|------------|------------|------------|------------|
| Steel / Stahl                           | ●●●●●●●●●● | ●●●●●●●●●● | ●●●●●●●●●● | ●●●●●●●●●● | ●●●●●●●●●● |
| Stainless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

| Insert WSP | Type Typ   | Dimensions (mm) / Abmessungen |       |       |      |     |     | CVD Coating / CVD Beschicht. |        |        |        |        |        | PVD Coating / PVD Beschicht. |        |        |        |        |        | Cermet / Cermet | Carbide uncoat. / unbee. Hartmetall |        |        |         |       |       |       |
|------------|------------|-------------------------------|-------|-------|------|-----|-----|------------------------------|--------|--------|--------|--------|--------|------------------------------|--------|--------|--------|--------|--------|-----------------|-------------------------------------|--------|--------|---------|-------|-------|-------|
|            |            | r                             | L     | I.C.  | S    | d   | α   | YBC301                       | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152                       | YBD252 | YBG102 | YBG202 | YBG205 | YBG302 |                 | YBG152                              | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |
|            | SPMT060304 | 0.4                           | 6.35  | 6.35  | 3.18 | 2.8 | 11° |                              |        |        | ●      |        |        |                              |        |        |        |        |        |                 |                                     |        |        |         |       |       |       |
|            | SDMT090308 | 0.8                           | 9.525 | 9.525 | 3.18 | 4.4 | 15° |                              |        |        | ●      | ○      |        |                              |        |        |        |        |        |                 |                                     |        |        |         |       |       |       |
|            | SPMT120408 | 0.8                           | 12.7  | 12.70 | 4.76 | 5.5 | 11° | ●                            | ○      | ●      |        |        |        |                              |        |        |        |        |        |                 |                                     |        |        |         |       |       |       |

### Recommended Cutting data · Schnittdaten

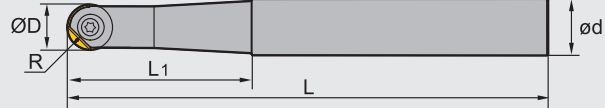
|          | Workpiece material / Werkstückstoff  | Hardness HB / Härte | Grade / Sorte   | Cutting data / Schnittdaten |               |
|----------|--|---------------------|-----------------|-----------------------------|---------------|
|          |  |                     |                 | V(m/min)                    | f(mm/z)       |
| <b>P</b> | Low-carbon steel / Soft steel / Niedriglegierter Kohlenstoffstahl / Baustahl | ≤180                | YBM251 / YBC301 | 180(120-220)                | 0.25(0.1-0.4) |
|          |  |                     | YBG302 / YBC401 | 160(120-220)                | 0.25(0.1-0.4) |
|          | High-carbon steel / Alloy steel / Hochleg. Kohlenstoffstahl / Leg. Stahl     | 180-280             | YBM251 / YBC301 | 150(100-200)                | 0.2(0.1-0.4)  |
|          |  |                     | YBG302 / YBC401 | 120(100-200)                | 0.2(0.1-0.4)  |
| <b>M</b> | Alloy tool steel / Leg. Werkzeugstahl  | 280-350             | YBM251 / YBC301 | 100(80-150)                 | 0.2(0.1-0.3)  |
|          |  |                     | YBG302          | 100(80-150)                 | 0.2(0.1-0.3)  |
| <b>K</b> | Stainless steel / Rostfreier Stahl   | ≤270                | YBM251          | 100(80-150)                 | 0.2(0.1-0.3)  |
|          |  |                     | YBG302 / YBC401 | 100(80-150)                 | 0.2(0.1-0.3)  |
| <b>K</b> | Cast iron / Gusseisen  | 180-250             | YBM251          | 150(100-180)                | 0.3(0.2-0.5)  |

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



### Profile milling tools · Profilfräser

**BMR02** P M K



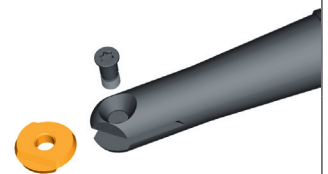
### Specification of tools · Werkzeug Beschreibung

| Type<br>Typ  | Stock<br>Lager | Dimensions (mm)<br>Abmessungen |     |     |     |                | Weight<br>Gewicht<br>(kg) |
|--------------|----------------|--------------------------------|-----|-----|-----|----------------|---------------------------|
|              |                | R                              | Ø D | ø d | L   | L <sub>1</sub> |                           |
| <b>BMR02</b> | ●              | 6                              | 12  | 16  | 110 | 40             | 0.1                       |
|              | ●              | 6                              | 12  | 16  | 130 | 50             | 0.2                       |
|              | ●              | 6                              | 12  | 16  | 160 | 50             | 0.2                       |
|              | ●              | 8                              | 16  | 20  | 140 | 45             | 0.3                       |
|              | ●              | 8                              | 16  | 20  | 170 | 65             | 0.3                       |
|              | ●              | 8                              | 16  | 20  | 200 | 65             | 0.4                       |
|              | ●              | 10                             | 20  | 25  | 160 | 60             | 0.5                       |
|              | ●              | 10                             | 20  | 25  | 200 | 80             | 0.6                       |
|              | ●              | 10                             | 20  | 25  | 240 | 80             | 0.8                       |

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

### Spare parts · Ersatzteile

| Diameter<br>Durchmesser<br>Ø D | Screw<br>Schraube | Wrench<br>Schlüssel |
|--------------------------------|-------------------|---------------------|
| Ø12                            | I90M4×09TT        | WT10S               |
| Ø16                            | I90M5×11TT        | WT15S               |
| Ø20                            | I90M5×13.5TT      | WT15S               |



Applicable tool  
Werkzeug B11-B18

Tools code key  
Werkzeug ISO B26-B27

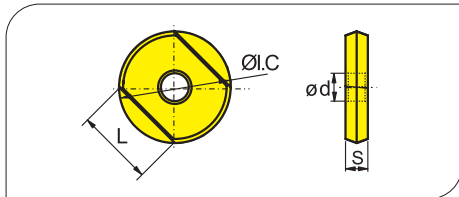
Grade selection guide  
Sortenauswahl B19-B23

Technical data  
Technische Daten B215-B220

# Milling - Fräsen

## Indexable Milling Tools - Wendepplattenfräser

### Applicable inserts - Wendeschneidplatten



- Ideal Machining Condition / Gute Bearbeitungsbedingungen
- Normal Machining Condition / Normale Bearbeitungsbedingungen
- Unfavorable Machining Condition / Ungünstige Bearbeitungsbedingungen

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

| Insert WSP | Type Typ | Dimensions (mm) / Abmessungen |      |   |   | CVD Coating / CVD Beschicht. |        |        |        | PVD Coating / PVD Beschicht. |        |        |        | Cermet Cermet | Carbide uncoat. / unbe. Hartmetall |        |        |        |        |        |        |         |       |       |       |  |
|------------|----------|-------------------------------|------|---|---|------------------------------|--------|--------|--------|------------------------------|--------|--------|--------|---------------|------------------------------------|--------|--------|--------|--------|--------|--------|---------|-------|-------|-------|--|
|            |          | I.C                           | L    | S | d | YBC301                       | YBC302 | YBC401 | YBM251 | YBM253                       | YBM351 | YBD152 | YBD252 |               | YBG102                             | YBG202 | YBG205 | YBG302 | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |  |
|            | ROHX1203 | 12                            | 8.5  | 3 | 4 |                              |        |        |        |                              |        |        |        |               |                                    |        |        |        |        |        |        |         |       |       |       |  |
|            | ROHX1604 | 16                            | 11.3 | 4 | 5 |                              |        |        |        |                              |        |        |        |               |                                    |        |        |        |        |        |        |         |       |       |       |  |
|            | ROHX2005 | 20                            | 14.1 | 5 | 5 |                              |        |        |        |                              |        |        |        |               |                                    |        |        |        |        |        |        |         |       |       |       |  |

### Recommended Cutting data - Schnittdaten

| Workpiece material / Werkstückstoff        | Hardness HB / Härte               | Grade / Sorte    | Cutting data / Schnittdaten | Diameter / Durchmesser Ø D |           |         |         |
|--|-----------------------------------|------------------|-----------------------------|----------------------------|-----------|---------|---------|
|  |                                   |                  |                             | Ø12                        | Ø16       | Ø20     |         |
| P<br>carbon steel / leg. Kohlenstoff-stahl | HB≤180                            | YBG202<br>YBG252 | V(m/min)                    | 100~200                    | 100~200   | 100~200 |         |
|  |                                   |                  | fz(mm/z)                    | 0.15~0.25                  | 0.2~0.3   | 0.2~0.3 |         |
|  |                                   |                  | apmax(mm)                   | 0.8                        | 1         | 1.25    |         |
|  | Alloy steel / Leg. Stahl          |                  | HB180~280                   | V(m/min)                   | 80~180    | 80~180  | 80~180  |
|  |                                   |                  |                             | fz(mm/z)                   | 0.15~0.25 | 0.2~0.3 | 0.2~0.3 |
|  |                                   |                  |                             | apmax(mm)                  | 0.8       | 1       | 1.25    |
|  | Hardened steel / gehärteter Stahl |                  | HRC55~65                    | V(m/min)                   | 60~100    | 60~100  | 60~100  |
|  |                                   |                  |                             | fz(mm/z)                   | 0.15~0.25 | 0.2~0.3 | 0.2~0.3 |
|  |                                   |                  |                             | apmax(mm)                  | 0.4       | 0.5     | 0.6     |
| M<br>Stainless steel / Rostfreier Stahl    | HB≤270                            | V(m/min)         | 70~150                      | 70~150                     | 70~150    |         |         |
|  |                                   | fz(mm/z)         | 0.1~0.2                     | 0.1~0.25                   | 0.1~0.25  |         |         |
|  |                                   | apmax(mm)        | 0.6                         | 0.8                        | 1         |         |         |
|  |                                   | aemax(mm)        | 0.6                         | 0.8                        | 1         |         |         |
| K<br>Cast iron / Gusseisen                 | HB180-250                         | V(m/min)         | 160~300                     | 160~300                    | 160~300   |         |         |
|  |                                   | fz(mm/z)         | 0.2~0.3                     | 0.25~0.35                  | 0.25~0.35 |         |         |
|  |                                   | apmax(mm)        | 1                           | 1.5                        | 1.8       |         |         |
|  |                                   | aemax(mm)        | 1                           | 1.5                        | 1.8       |         |         |

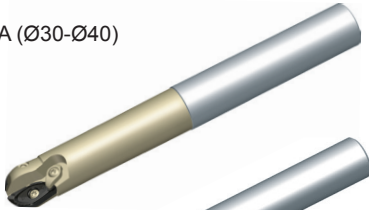
● Ex Stock / ab Lager ○ On demand / auf Anfrage

### Profile milling tools · Profilfräser



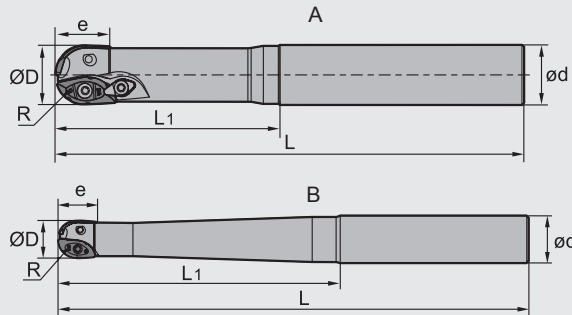
**BMR03** P M K

A (Ø30-Ø40)



B (Ø16-Ø25)

Straight shank  
Zylinder Schaft



### Specification of tools · Werkzeug Beschreibung

| Type<br>Typ  | Stock<br>Lager | Dimensions (mm)<br>Abmessungen |     |     |     |                |    | No. of teeth<br>Zähne | Weight<br>Gewicht (kg) | Type<br>Typ | Clamp<br>Pratze |        |
|--------------|----------------|--------------------------------|-----|-----|-----|----------------|----|-----------------------|------------------------|-------------|-----------------|--------|
|              |                | R                              | Ø D | ø d | L   | L <sub>1</sub> | e  |                       |                        |             |                 |        |
| <b>BMR03</b> |                |                                |     |     |     |                |    |                       |                        |             |                 |        |
| -016-G20-S   | ●              | 8                              | 16  | 20  | 150 | 70             | 16 | 2                     | 0.3                    | B           | WD-208          |        |
| -016-G20-M   | ●              | 8                              | 16  | 20  | 180 | 80             | 16 | 2                     | 0.4                    | B           |                 |        |
| -020-G25-S   | ●              | 10                             | 20  | 25  | 180 | 80             | 20 | 2                     | 0.5                    | B           |                 |        |
| -020-G25-M   | ●              | 10                             | 20  | 25  | 200 | 100            | 20 | 2                     | 0.6                    | B           |                 |        |
| -020-G25-L   | ●              | 10                             | 20  | 25  | 250 | 150            | 20 | 2                     | 0.7                    | B           |                 |        |
| -020-G25-XL  | ○              | 10                             | 20  | 25  | 300 | 110            | 20 | 2                     | 1.0                    | B           |                 |        |
| -025-G25-S   | ●              | 12.5                           | 25  | 25  | 180 | 80             | 25 | 2                     | 0.6                    | B           |                 |        |
| -025-G25-M   | ●              | 12.5                           | 25  | 25  | 200 | 100            | 25 | 2                     | 0.7                    | B           |                 |        |
| -025-G25-L   | ○              | 12.5                           | 25  | 25  | 250 | 110            | 25 | 2                     | 0.8                    | B           |                 |        |
| -025-G25-XL  | ○              | 12.5                           | 25  | 25  | 300 | 120            | 25 | 2                     | 1.0                    | B           |                 |        |
| -030-G32-S   | ○              | 15                             | 30  | 32  | 200 | 120            | 30 | 2                     | 1.0                    | A           | WD-208          |        |
| -030-G32-M   | ●              | 15                             | 30  | 32  | 250 | 150            | 30 | 2                     | 1.3                    | A           |                 |        |
| -030-G32-L   | ○              | 15                             | 30  | 32  | 300 | 200            | 30 | 2                     | 1.6                    | A           |                 |        |
| -030-G32-XL  | ○              | 15                             | 30  | 32  | 350 | 200            | 30 | 2                     | 1.9                    | A           |                 |        |
| -032-G32-S   | ●              | 16                             | 32  | 32  | 200 | 120            | 32 | 2                     | 1.1                    | A           |                 |        |
| -032-G32-M   | ●              | 16                             | 32  | 32  | 250 | 150            | 32 | 2                     | 1.4                    | A           |                 |        |
| -032-G32-L   | ●              | 16                             | 32  | 32  | 300 | 200            | 32 | 2                     | 1.6                    | A           | WD-208          |        |
| -032-G32-XL  | ○              | 16                             | 32  | 32  | 350 | 200            | 32 | 2                     | 2.0                    | A           |                 |        |
| -040-G40-S   | ○              | 20                             | 40  | 40  | 200 | 120            | 40 | 2                     | 1.6                    | A           |                 | CBH5R1 |
| -040-G40-M   | ○              | 20                             | 40  | 40  | 250 | 150            | 40 | 2                     | 2.0                    | A           |                 |        |
| -040-G40-L   | ●              | 20                             | 40  | 40  | 300 | 200            | 40 | 2                     | 2.5                    | A           |                 |        |
| -040-G40-XL  | ○              | 20                             | 40  | 40  | 350 | 200            | 40 | 2                     | 3.0                    | A           |                 |        |

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

Applicable tool  
Werkzeug **B11-B18**

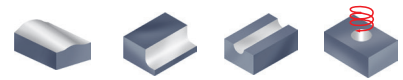
Tools code key  
Werkzeug ISO **B26-B27**

Grade selection guide  
Sortenauswahl **B19-B23**

Technical data  
Technische Daten **B215-B220**

**B**

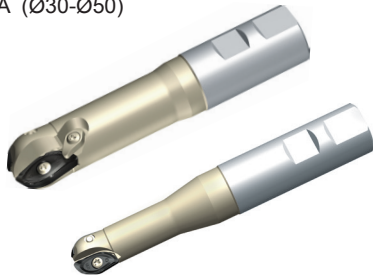
Milling Tools  
Fräser



### Profile milling tools · Profilfräser

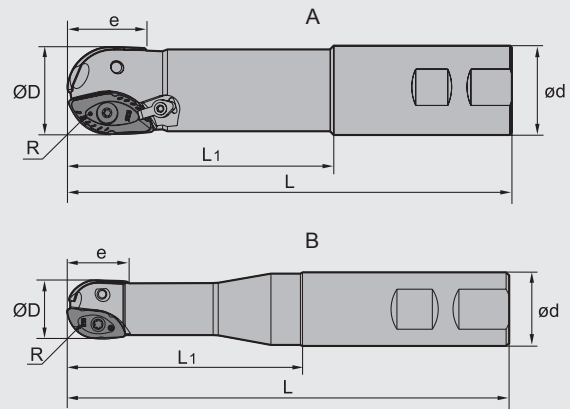
#### BMR03 P M K

A (Ø30-Ø50)



B (Ø16-Ø25)

Weldon shank  
Weldon Schaft

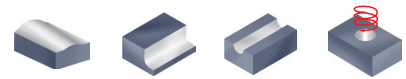


### Specification of tools · Werkzeug Beschreibung

| Type<br>Typ  | Stock<br>Lager | Dimensions (mm)<br>Abmessungen |     |     |     |     |    |   | No. of<br>teeth<br>Zähne | Weight<br>Gewicht<br>(kg) | Type<br>Typ | Clamp<br>Pratze |
|--------------|----------------|--------------------------------|-----|-----|-----|-----|----|---|--------------------------|---------------------------|-------------|-----------------|
|              |                | R                              | Ø D | ø d | L   | L1  | e  |   |                          |                           |             |                 |
| <b>BMR03</b> | ●              | 8                              | 16  | 20  | 111 | 60  | 16 | 2 | 0.2                      | B                         | WD-208      |                 |
| -016-XP20-M  | ●              | 10                             | 20  | 25  | 127 | 70  | 20 | 2 | 0.3                      | B                         |             |                 |
| -020-XP25-M  | ●              | 10                             | 20  | 25  | 150 | 80  | 20 | 2 | 0.4                      | B                         |             |                 |
| -020-XP25-L  | ●              | 12.5                           | 25  | 25  | 137 | 80  | 25 | 2 | 0.4                      | B                         |             |                 |
| -025-XP25-M  | ●              | 12.5                           | 25  | 25  | 200 | 100 | 25 | 2 | 0.6                      | B                         |             |                 |
| -025-XP25-L  | ●              | 15                             | 30  | 32  | 161 | 100 | 30 | 2 | 0.8                      | A                         |             |                 |
| -030-XP32-M  | ●              | 15                             | 30  | 32  | 250 | 150 | 30 | 2 | 1.3                      | A                         |             |                 |
| -030-XP32-L  | ●              | 16                             | 32  | 32  | 161 | 100 | 32 | 2 | 0.8                      | A                         |             |                 |
| -032-XP32-M  | ○              | 16                             | 32  | 32  | 250 | 120 | 32 | 2 | 1.3                      | A                         |             |                 |
| -032-XP32-L  | ○              | 20                             | 40  | 40  | 175 | 100 | 40 | 2 | 1.3                      | A                         |             |                 |
| -040-XP40-M  | ●              | 20                             | 40  | 40  | 250 | 120 | 40 | 2 | 2.0                      | A                         |             |                 |
| -040-XP40-L  | ○              | 25                             | 50  | 50  | 200 | 100 | 50 | 2 | 2.5                      | A                         |             |                 |
| -050-XP50-M  | ○              | 25                             | 50  | 50  | 250 | 150 | 50 | 2 | 3.1                      | A                         | CBH5R1      |                 |
| -050-XP50-L  | ○              |                                |     |     |     |     |    |   |                          |                           |             |                 |

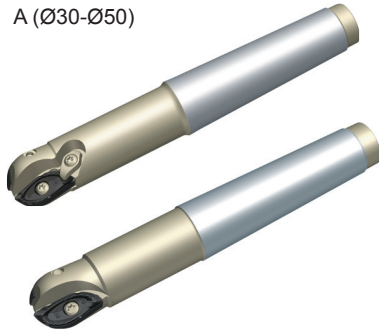
● Ex Stock / ab Lager ○ On demand / auf Anfrage

### Profile milling tools · Profilfräser



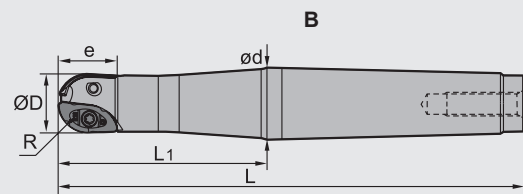
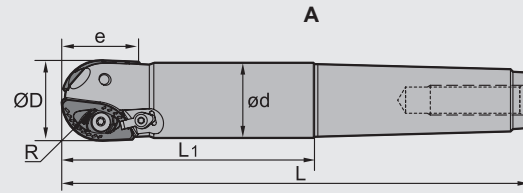
**BMR03** P M K

A (Ø30-Ø50)



B (Ø20-Ø25)

Morse taper shank  
Morsekegel Schaft



### Specification of tools · Werkzeug Beschreibung

| Type<br>Typ  | Stock<br>Lager | Dimensions (mm)<br>Abmessungen |     |      |     |                |    | No. of<br>teeth<br>Zähne | Weight<br>Gewicht<br>(kg) | type<br>typ | Clamp<br>Pratze |
|--------------|----------------|--------------------------------|-----|------|-----|----------------|----|--------------------------|---------------------------|-------------|-----------------|
|              |                | R                              | Ø D | ø d  | L   | L <sub>1</sub> | e  |                          |                           |             |                 |
| <b>BMR03</b> |                |                                |     |      |     |                |    |                          |                           |             |                 |
| -020-MT3-M   | ○              | 10                             | 20  | 18.7 | 156 | 70             | 20 | 2                        | 0.4                       | B           | WD-208          |
| -020-MT3-L   | ○              | 10                             | 20  | 18.7 | 186 | 100            | 20 | 2                        | 0.4                       | B           |                 |
| -025-MT3-M   | ○              | 12.5                           | 25  | 23.5 | 156 | 70             | 25 | 2                        | 0.4                       | B           |                 |
| -025-MT3-L   | ○              | 12.5                           | 25  | 23.5 | 186 | 100            | 25 | 2                        | 0.4                       | B           |                 |
| -030-MT4-M   | ○              | 15                             | 30  | 28.2 | 189 | 70             | 30 | 2                        | 0.8                       | A           | WD-208          |
| -030-MT4-L   | ○              | 15                             | 30  | 28.2 | 229 | 120            | 30 | 2                        | 1.0                       | A           |                 |
| -032-MT4-M   | ○              | 16                             | 32  | 29.2 | 179 | 70             | 32 | 2                        | 0.9                       | A           |                 |
| -032-MT4-L   | ●              | 16                             | 32  | 29.2 | 209 | 100            | 32 | 2                        | 0.9                       | A           |                 |
| -040-MT4-M   | ○              | 20                             | 40  | 36.9 | 199 | 100            | 40 | 2                        | 1.0                       | A           | CBH5R1          |
| -040-MT5-L   | ○              | 20                             | 40  | 36.9 | 226 | 90             | 40 | 2                        | 1.8                       | A           |                 |
| -040-MT5-XL  | ○              | 20                             | 40  | 36.9 | 256 | 120            | 40 | 2                        | 2.0                       | A           |                 |
| -050-MT5-M   | ●              | 25                             | 50  | 46.8 | 236 | 100            | 50 | 2                        | 2.2                       | A           |                 |
| -050-MT5-L   | ○              | 25                             | 50  | 46.8 | 286 | 150            | 50 | 2                        | 2.9                       | A           |                 |

Applicable tool  
Werkzeug

[B11-B18](#)

Tools code key  
Werkzeug ISO

[B26-B27](#)

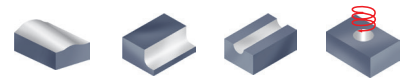
Grade selection guide  
Sortenauswahl

[B19-B23](#)

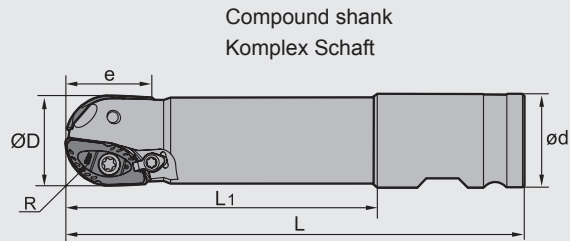
Technical data  
Technische Daten

[B215-B220](#)

### Profile milling tools · Profilfräser



**BMR03** P M K

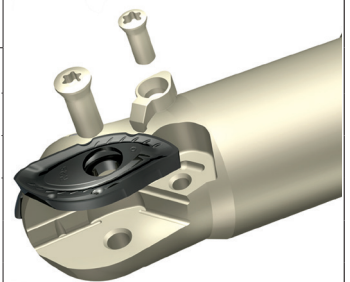


### Specification of tools · Werkzeug Beschreibung

| Type<br>Typ  | Stock<br>Lager | Dimensions (mm)<br>Abmessungen |     |     |      |                |     |    | No. of teeth<br>Zähne | Weight<br>Gewicht<br>(kg) | Clamp<br>Pratze |
|--------------|----------------|--------------------------------|-----|-----|------|----------------|-----|----|-----------------------|---------------------------|-----------------|
|              |                | R                              | Ø D | ø d | L    | L <sub>1</sub> | e   |    |                       |                           |                 |
| <b>BMR03</b> | -040-XPX-M     | ○                              | 20  | 40  | 50.8 | 250            | 170 | 40 | 2                     | 1.3                       | CBH5R1          |
|              | -040-XPX-L     | ○                              | 20  | 40  | 50.8 | 300            | 220 | 40 | 2                     | 3.1                       |                 |
|              | -040-XPX-XL    | ○                              | 20  | 40  | 50.8 | 350            | 270 | 40 | 2                     | 3.5                       |                 |
|              | -050-XPX-M     | ○                              | 25  | 50  | 50.8 | 250            | 170 | 50 | 2                     | 3.1                       |                 |
|              | -050-XPX-L     | ○                              | 25  | 50  | 50.8 | 300            | 200 | 50 | 2                     | 3.8                       |                 |
|              | -050-XPX-XL    | ○                              | 25  | 50  | 50.8 | 350            | 270 | 50 | 2                     | 4.4                       |                 |

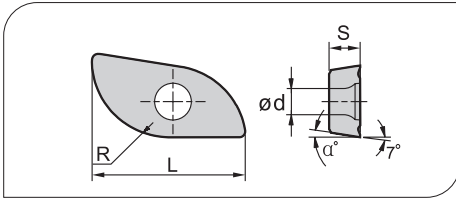
### Spare parts · Ersatzteile

| Diameter<br>Durchmesser<br>Ø D | Clamp<br>Pratze | Screw<br>Schraube | Wrench<br>Schlüssel |        |
|--------------------------------|-----------------|-------------------|---------------------|--------|
| Φ16                            | --              | I60M2.5×6.5       |                     | WT07P  |
| Φ20                            | --              | I60M3.5×08TT      | --                  | WT10IP |
| Φ25                            | --              | I60M4×10          |                     | WT15S  |
| Φ30                            | WD-208          | I60M5×13          |                     |        |
| Φ32                            | WD-208          | I60M5×13          | WT20IT              |        |
| Φ40                            | CBH5R1          | I43M6×16          | WT25IT              |        |
| Φ50                            | CBH5R1          | I43M8×21          | WT25IT              |        |
|                                |                 | I43M6×16          | WT30IT              |        |



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

### Applicable inserts · Wendeschneidplatten



- Ideal Machining Condition / Gute Bearbeitungsbedingungen
- Normal Machining Condition / Normale Bearbeitungsbedingungen
- Unfavorable Machining Condition / Ungünstige Bearbeitungsbedingungen

| Workpiece Material / Werkstoffe                  | P | M | K | N | S | YBC301 | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152 | YBD252 | YBG102 | YBG202 | YBG205 | YBG302 | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |   |
|--|---|---|---|---|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|-------|-------|-------|---|
| <b>P</b> Steel / Stahl                           | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     | ● |
| <b>M</b> Stainless Steel / Rostfreier Stahl      | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     | ● |
| <b>K</b> Cast iron / Gusseisen                   | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     | ● |
| <b>N</b> Non-ferrous material / Nichte Metalle   | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     | ● |
| <b>S</b> Heat-resistant steel / Warmfester Stahl | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     | ● |

| Insert WSP | Type Typ       | Dimensions (mm) / Abmessungen |     |      |    |    |  | CVD Coating / CVD Beschicht. |        |        |        |        |        | PVD Coating / PVD Beschicht. |        |        |        | Cermet Cermet | Carbide uncoat. / unbe. Hartmetall |        |        |        |        |         |       |       |       |
|------------|----------------|-------------------------------|-----|------|----|----|--|------------------------------|--------|--------|--------|--------|--------|------------------------------|--------|--------|--------|---------------|------------------------------------|--------|--------|--------|--------|---------|-------|-------|-------|
|            |                | R                             | d   | S    | α° | L  | Applicable tools / Entsprechendes Werkzeug | YBC301                       | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152                       | YBD252 | YBG102 | YBG202 |               | YBG205                             | YBG302 | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |
|            | XPHT16R0803-GM | 8                             | 3.1 | 3.18 | 9  | 16 | Φ16  |                              |        |        |        |        |        |                              |        |        |        |               |                                    |        |        |        |        |         |       |       |       |
|            | XPHT20R10T3-GM | 10                            | 4.0 | 3.97 | 9  | 20 | Φ20  |                              |        |        |        |        |        |                              |        |        |        |               |                                    |        |        |        |        |         |       |       |       |
|            | XPHT25R1204-GM | 12.5                          | 4.7 | 4.76 | 9  | 25 | Φ25  |                              |        |        |        |        |        |                              |        |        |        |               |                                    |        |        |        |        |         |       |       |       |
|            | XPHT30R1506-GM | 15                            | 5.8 | 6.35 | 11 | 30 | Φ30  |                              |        |        |        |        |        |                              |        |        |        |               |                                    |        |        |        |        |         |       |       |       |
|            | XPHT32R1606-GM | 16                            | 5.8 | 6.35 | 9  | 32 | Φ32  |                              |        |        |        |        |        |                              |        |        |        |               |                                    |        |        |        |        |         |       |       |       |
|            | XPHT40R2007-GM | 20                            | 6.8 | 7.94 | 9  | 40 | Φ40  |                              |        |        |        |        |        |                              |        |        |        |               |                                    |        |        |        |        |         |       |       |       |
|            | XPHT50R2507-GM | 25                            | 9.2 | 7.94 | 9  | 50 | Φ50  |                              |        |        |        |        |        |                              |        |        |        |               |                                    |        |        |        |        |         |       |       |       |

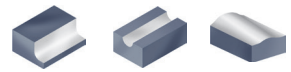
B  
Milling Tools  
Fräser

Applicable tool / Werkzeug **B11-B18**

Tools code key / Werkzeug ISO **B26-B27**

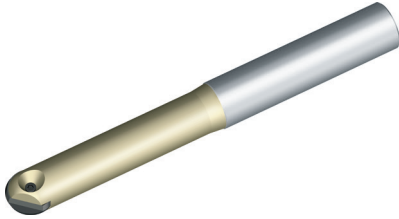
Grade selection guide / Sortenauswahl **B19-B23**

Technical data / Technische Daten **B215-B220**

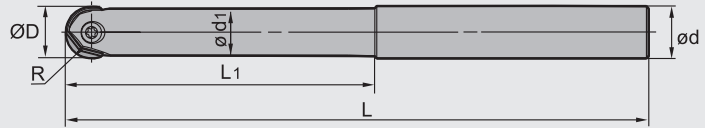


### Profile milling tools · Profilfräser

**BMR04** **P** **M** **K**



Straight shank  
Zylinderschaft



### Specification of tools · Werkzeug Beschreibung

|              | Type<br>Typ | Stock<br>Lager | Dimensions (mm)<br>Abmessungen |     |     |                  |                |     | Weight<br>Gewicht<br>(kg) |
|--------------|-------------|----------------|--------------------------------|-----|-----|------------------|----------------|-----|---------------------------|
|              |             |                | R                              | Ø D | ø d | ø d <sub>1</sub> | L <sub>1</sub> | L   |                           |
| <b>BMR04</b> | -012-G12-M  | ●              | 6                              | 12  | 12  | 11               | 35             | 125 | 0.1                       |
|              | -012-G12-L  | ●              | 6                              | 12  | 12  | 11               | 45             | 150 | 0.1                       |
|              | -016-G16-M  | ●              | 8                              | 16  | 16  | 14               | 40             | 150 | 0.2                       |
|              | -016-G16-L  | ●              | 8                              | 16  | 16  | 14               | 55             | 180 | 0.3                       |
|              | -020-G20-M  | ●              | 10                             | 20  | 20  | 18               | 65             | 180 | 0.4                       |
|              | -020-G20-L  | ●              | 10                             | 20  | 20  | 18               | 100            | 250 | 0.6                       |
|              | -025-G25-M  | ●              | 12.5                           | 25  | 25  | 23               | 70             | 200 | 0.7                       |
|              | -025-G25-L  | ●              | 12.5                           | 25  | 25  | 23               | 100            | 250 | 0.9                       |
|              | -030-G32-M  | ●              | 15                             | 30  | 32  | 27               | 80             | 250 | 1.2                       |
|              | -030-G32-L  | ●              | 15                             | 30  | 32  | 27               | 110            | 300 | 1.5                       |
|              | -032-G32-M  | ●              | 16                             | 32  | 32  | 29               | 80             | 250 | 1.4                       |
|              | -032-G32-L  | ●              | 16                             | 32  | 32  | 29               | 110            | 300 | 1.7                       |

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

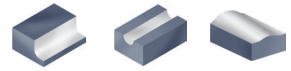
Applicable tool  
Werkzeug **B11-B18**

Tools code key  
Werkzeug ISO **B26-B27**

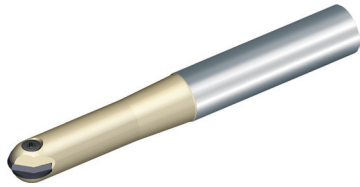
Grade selection guide  
Sortenauswahl **B19-B23**

Technical data  
Technische Daten **B215-B220**

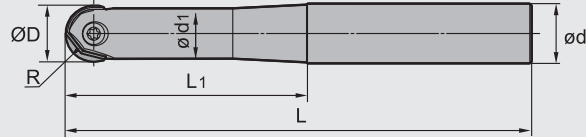
### Profile milling tools · Profilfräser



**BMR04** P M K



Straight shank  
Zylinderschaft






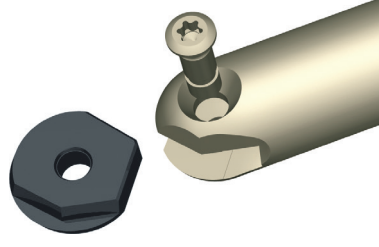
### Specification of tools · Werkzeug Beschreibung

|              | Type<br>Typ | Stock<br>Lager | Dimensions (mm)<br>Abmessungen |     |     |                  |                |     | Weight<br>Gewicht<br>(kg) |
|--------------|-------------|----------------|--------------------------------|-----|-----|------------------|----------------|-----|---------------------------|
|              |             |                | R                              | Ø D | ø d | ø d <sub>1</sub> | L <sub>1</sub> | L   |                           |
| <b>BMR04</b> | -012-G16-M  | ●              | 6                              | 12  | 16  | 11               | 50             | 125 | 0.2                       |
|              | -012-G16-L  | ●              | 6                              | 12  | 16  | 11               | 70             | 150 | 0.2                       |
|              | -016-G20-M  | ●              | 8                              | 16  | 20  | 14               | 60             | 150 | 0.3                       |
|              | -016-G20-L  | ●              | 8                              | 16  | 20  | 14               | 80             | 180 | 0.3                       |
|              | -020-G25-M  | ●              | 10                             | 20  | 25  | 18               | 75             | 180 | 0.6                       |
|              | -020-G25-L  | ●              | 10                             | 20  | 25  | 18               | 95             | 200 | 0.6                       |
|              | -025-G32-M  | ●              | 12.5                           | 25  | 32  | 23               | 90             | 200 | 1.0                       |
|              | -025-G32-L  | ●              | 12.5                           | 25  | 32  | 23               | 110            | 250 | 1.3                       |
|              | -030-G40-M  | ●              | 15                             | 30  | 40  | 27               | 110            | 250 | 2.0                       |
|              | -030-G40-L  | ●              | 15                             | 30  | 40  | 27               | 125            | 300 | 2.4                       |
|              | -032-G40-M  | ●              | 16                             | 32  | 40  | 29               | 110            | 250 | 2.0                       |
|              | -032-G40-L  | ●              | 16                             | 32  | 40  | 29               | 125            | 300 | 2.4                       |

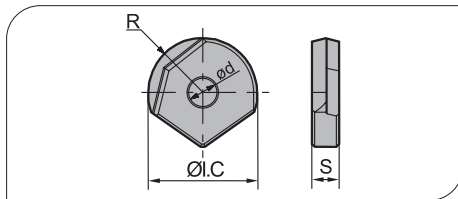
● Ex Stock / ab Lager ○ On demand / auf Anfrage

### Spare parts · Ersatzteile

| Diameter<br>Durchmesser<br>Ø D | Screw<br>Schraube   | Wrench<br>Schlüssel   |   |
|--------------------------------|---|---|---|
|                                |  |  |  |
| Ø12                            | I90M4×09TT  | WT15P   | --  |
| Ø16                            | I90M5×11TT  | WT20P   | --  |
| Ø20                            | I90M5×13.5TT  | WT20P   | --  |
| Ø25                            | I70M6×20TT  | WT20P   | --  |
| Ø30                            | I70M8×25TT  | --  | WT30IT  |
| Ø32                            | I70M8×25TT  | --  | WT30IT  |

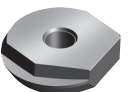
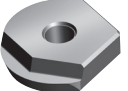


### Applicable inserts · Wendschneidplatten



-  Ideal Machining Condition / Gute Bearbeitungsbedingungen
-  Normal Machining Condition / Normale Bearbeitungsbedingungen
-  Unfavorable Machining Condition / Ungünstige Bearbeitungsbedingungen

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

| Insert<br>WSP   | Type<br>Typ | Dimensions (mm)<br>Abmessungen |     |   |   | Applicable<br>insert<br>Zugehörige<br>WSP | CVD Coating<br>CVD Beschicht. |        |        |        | PVD Coating<br>PVD Beschicht. |        |        |        | Cermet<br>Cermet | Carbide uncoat.<br>unbe. Hartmetall |        |        |        |        |        |        |         |       |       |       |  |
|---|-------------|--------------------------------|-----|---|---|---|-------------------------------|--------|--------|--------|-------------------------------|--------|--------|--------|------------------|-------------------------------------|--------|--------|--------|--------|--------|--------|---------|-------|-------|-------|--|
|   |             | R                              | I.C | S | d |   | YBC301                        | YBC302 | YBC401 | YBM251 | YBM253                        | YBM351 | YBD152 | YBD252 |                  | YBG102                              | YBG202 | YBG205 | YBG302 | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |  |
|  | ZOHX1203-GF | 6                              | 12  | 3 | 4 | Φ12                                       |                               |        |        |        |                               |        |        |        |                  |                                     |        |        |        |        |        |        |         |       |       |       |  |
|   | ZOHX1604-GF | 8                              | 16  | 4 | 5 | Φ16                                       |                               |        |        |        |                               |        |        |        |                  |                                     |        |        |        |        |        |        |         |       |       |       |  |
|   | ZOHX2005-GF | 10                             | 20  | 5 | 5 | Φ20                                       |                               |        |        |        |                               |        |        |        |                  |                                     |        |        |        |        |        |        |         |       |       |       |  |
|   | ZOHX2506-GF | 12.5                           | 25  | 6 | 6 | Φ25                                       |                               |        |        |        |                               |        |        |        |                  |                                     |        |        |        |        |        |        |         |       |       |       |  |
|   | ZOHX3007-GF | 15                             | 30  | 7 | 8 | Φ30                                       |                               |        |        |        |                               |        |        |        |                  |                                     |        |        |        |        |        |        |         |       |       |       |  |
|   | ZOHX3207-GF | 16                             | 32  | 7 | 8 | Φ32                                       |                               |        |        |        |                               |        |        |        |                  |                                     |        |        |        |        |        |        |         |       |       |       |  |
|  | ZOHX1203-GM | 6                              | 12  | 3 | 4 | Φ12                                       |                               |        |        |        |                               |        |        |        |                  |                                     |        |        |        |        |        |        |         |       |       |       |  |
|   | ZOHX1604-GM | 8                              | 16  | 4 | 5 | Φ16                                       |                               |        |        |        |                               |        |        |        |                  |                                     |        |        |        |        |        |        |         |       |       |       |  |
|   | ZOHX2005-GM | 10                             | 20  | 5 | 5 | Φ20                                       |                               |        |        |        |                               |        |        |        |                  |                                     |        |        |        |        |        |        |         |       |       |       |  |
|   | ZOHX2506-GM | 12.5                           | 25  | 6 | 6 | Φ25                                       |                               |        |        |        |                               |        |        |        |                  |                                     |        |        |        |        |        |        |         |       |       |       |  |
|   | ZOHX3007-GM | 15                             | 30  | 7 | 8 | Φ30                                       |                               |        |        |        |                               |        |        |        |                  |                                     |        |        |        |        |        |        |         |       |       |       |  |
|   | ZOHX3207-GM | 16                             | 32  | 7 | 8 | Φ32                                       |                               |        |        |        |                               |        |        |        |                  |                                     |        |        |        |        |        |        |         |       |       |       |  |

Applicable tool  
Werkzeug [B11-B18](#)

Tools code key  
Werkzeug ISO [B26-B27](#)

Grade selection guide  
Sortenauswahl [B19-B23](#)

Technical data  
Technische Daten [B215-B220](#)

# Milling - Fräsen

Indexable Milling Tools - Wendeplattenfräser

## Side and face milling tools - Scheiben- und Planfräser code key

| Milling tool type<br>Fräserotyp |  |
|---------------------------------|--|
| <b>FM</b>                       | Face milling<br>Planfräsen                   |
| <b>EM</b>                       | Square shoulder milling<br>Eckfräsen         |
| <b>HM</b>                       | Helical end milling<br>Spiralfräsen          |
| <b>SM</b>                       | Side and face milling<br>Eck- und Planfräsen |
| <b>BM</b>                       | Profile milling<br>Profilfräsen              |
| <b>CM</b>                       | Chamfer milling<br>Fasfräsen                 |
| <b>XM</b>                       | Special milling<br>Spezialfräsen             |

| Approach angle<br>Anstellwinkel |     |  |
|---------------------------------|-----|--|
| <b>P</b>                        | 90° |  |
| <b>E</b>                        | 75° |  |
| <b>D</b>                        | 60° |  |
| <b>A</b>                        | 45° |  |
| <b>R</b>                        |     |  |

Sequence number of series  
Serien Nummer

Cutting diameter ØD (mm)  
Fräserdurchmesser

Cutting width of milling tools  
Schnittbreite

| Coupling structure and demension<br>Aufnahmetyp |                |          |                                     |
|---|----------------|----------|-------------------------------------|
| <b>A</b>  | A type / A Typ | <b>D</b> | D type / D Typ                      |
| <b>B</b>  | B type / B Typ | <b>K</b> | Mounting by keyway<br>Mit Passfeder |
| <b>C</b>  | C type / C Typ |          |                                     |

**SM P 03 - 160 × 16 - K40**

**- M P 12 - 12 L**

| Insert<br>WSP |                                   |
|---------------|-----------------------------------|
| <b>C</b>      | Diamond with 80°<br>Raute mit 80° |
| <b>D</b>      | Diamond with 55°<br>Raute mit 55° |
| <b>R</b>      | Round<br>Rund                     |
| <b>S</b>      | Square<br>Viereckig               |
| <b>T</b>      | Regular triangle<br>dreieckig     |
| <b>V</b>      | Diamond with 35°<br>Raute mit 35° |
| <b>M</b>      | Diamond with 86°<br>Raute mit 86° |

| Insert clearance angle<br>Freiwinkel |     |
|--------------------------------------|-----|
| <b>N</b>                             | 0°  |
| <b>B</b>                             | 5°  |
| <b>C</b>                             | 7°  |
| <b>P</b>                             | 11° |
| <b>D</b>                             | 15° |
| <b>E</b>                             | 20° |

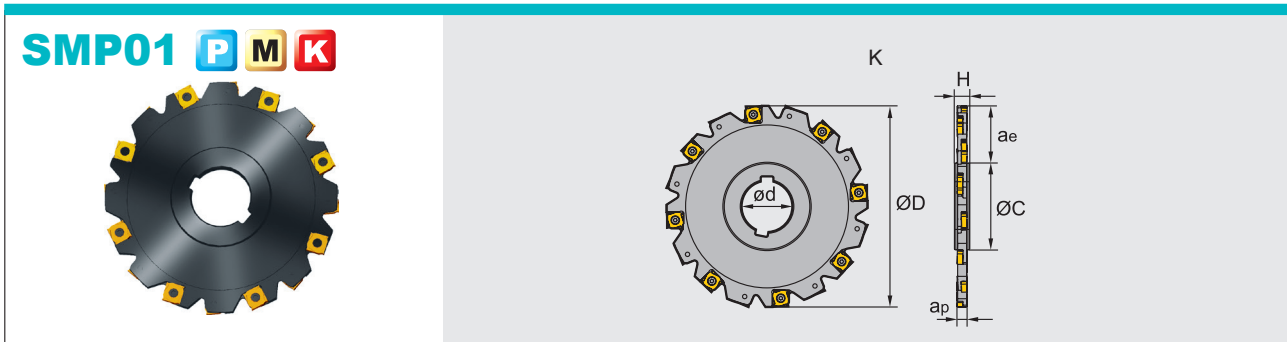
| Diameter of IC<br>Durchmesse<br>Innenkreis | Length of cutting edge<br>Schneidkantenlänge |    |    |    |    |    |
|--|--|----|----|----|----|----|
|  | Insert · WSP                                 |    |    |    |    |    |
|  | C  | D  | R  | S  | T  | V  |
| 5.556                                      | —  | —  | —  | —  | 09 | —  |
| 6.350                                      | 06   | 07 | —  | —  | 11 | —  |
| 9.525                                      | 09   | 11 | 09 | 09 | 16 | 16 |
| 12.700                                     | 12   | 15 | 12 | 12 | 22 | 22 |
| 15.875                                     | 16   | 19 | 15 | 15 | 27 | —  |
| 19.050                                     | 19   | —  | 19 | 19 | 33 | —  |
| 25.400                                     | 25   | —  | 25 | 25 | 44 | —  |

Cutting direction  
Schnitttrichtung  
(R: right L: left)  
(R: rechts L: links)

Number of teeth  
Zähnezahl

Milling Tools  
Fräser

### Side and face milling tools · Scheibenfräser



### Specification of tools · Werkzeug Beschreibung

| Type<br>Typ   | Stock<br>Lager     | Dimensions (mm)<br>Abmessungen |     |     |    |    |                   | Inserts<br>WSP | No. of<br>teeth<br>Zähne | Coupling<br>Aufnahme | Weight<br>Gewicht<br>(kg) |     |
|---|--------------------|--------------------------------|-----|-----|----|----|-------------------|----------------|--------------------------|----------------------|---------------------------|-----|
|   |                    | Ø D                            | ø d | ø c | H  | ap | ae <sub>max</sub> |                |                          |                      |                           |     |
| <b>SMP01</b><br><b>SMP01</b><br>Mounting by<br>keyway | -100×4-K27-SN12-10 | ○                              | 100 | 27  | 45 | 12 | 4                 | 25             | XSEQ1202                 | 10                   | K                         | 0.2 |
|   | -125×4-K40-SN12-12 | ○                              | 125 | 40  | 56 | 12 | 4                 | 32             |                          | 12                   | K                         | 0.3 |
|   | -160×4-K40-SN12-16 | ●                              | 160 | 40  | 67 | 12 | 4                 | 44             |                          | 16                   | K                         | 0.5 |
| Mit<br>Passfeder                                      | -100×5-K27-SN12-10 | ●                              | 100 | 27  | 45 | 12 | 5                 | 25             | XSEQ1203                 | 10                   | K                         | 0.2 |
|   | -125×5-K40-SN12-12 | ○                              | 125 | 40  | 56 | 12 | 5                 | 32             |                          | 12                   | K                         | 0.3 |
|   | -160×5-K40-SN12-16 | ●                              | 160 | 40  | 67 | 12 | 5                 | 44             | XSEQ12T3                 | 16                   | K                         | 0.6 |
|   | -100×6-K27-SN12-10 | ○                              | 100 | 27  | 45 | 12 | 6                 | 25             |                          | 10                   | K                         | 0.3 |
|   | -125×6-K40-SN12-12 | ●                              | 125 | 40  | 56 | 12 | 6                 | 32             | XSEQ12T3                 | 12                   | K                         | 0.4 |
|   | -160×6-K40-SN12-16 | ●                              | 160 | 40  | 67 | 12 | 6                 | 44             |                          | 16                   | K                         | 0.7 |
|   | -200×6-K50-SN12-18 | ●                              | 200 | 50  | 71 | 12 | 6                 | 62             | XSEQ12T3                 | 18                   | K                         | 1.1 |
|   | -250×6-K50-SN12-24 | ●                              | 250 | 50  | 71 | 12 | 6                 | 87             |                          | 24                   | K                         | 1.7 |
|   | -100×7-K27-SN12-10 | ●                              | 100 | 27  | 45 | 12 | 7                 | 25             | XSEQ1204                 | 10                   | K                         | 0.3 |
|   | -125×7-K40-SN12-12 | ●                              | 125 | 40  | 56 | 12 | 7                 | 32             |                          | 12                   | K                         | 0.4 |
|   | -160×7-K40-SN12-16 | ●                              | 160 | 40  | 67 | 12 | 7                 | 44             |                          | 16                   | K                         | 0.8 |
|   | -200×7-K50-SN12-18 | ●                              | 200 | 50  | 71 | 12 | 7                 | 62             |                          | 18                   | K                         | 1.2 |
|   | -250×7-K50-SN12-24 | ○                              | 250 | 50  | 71 | 12 | 7                 | 87             | XSEQ12T4                 | 24                   | K                         | 1.9 |
|   | -100×8-K27-SN12-10 | ●                              | 100 | 27  | 45 | 12 | 8                 | 25             |                          | 10                   | K                         | 0.3 |
|   | -125×8-K40-SN12-12 | ●                              | 125 | 40  | 56 | 12 | 8                 | 32             | XSEQ12T4                 | 12                   | K                         | 0.5 |
|   | -160×8-K40-SN12-16 | ○                              | 160 | 40  | 67 | 12 | 8                 | 44             |                          | 16                   | K                         | 0.9 |
| -200×8-K50-SN12-18                                    | ●                  | 200                            | 50  | 71  | 12 | 8  | 62                | 18             |                          | K                    | 1.4                       |     |
| -250×8-K50-SN12-24                                    | ●                  | 250                            | 50  | 71  | 12 | 8  | 87                | 24             |                          | K                    | 2.2                       |     |

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

Applicable tool  
Werkzeug **B11-B18**

Tools code key  
Werkzeug ISO **B26-B27**

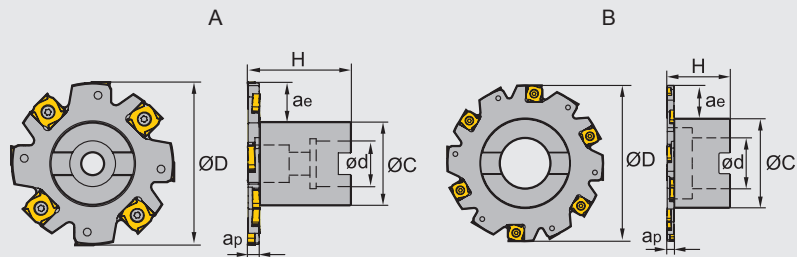
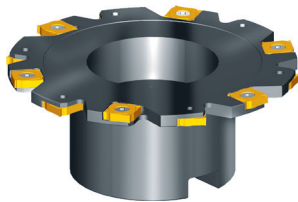
Grade selection guide  
Sortenauswahl **B19-B23**

Technical data  
Technische Daten **B215-B220**

### Side and face milling tools · Scheibenfräser



**SMP01** **P** **M** **K**


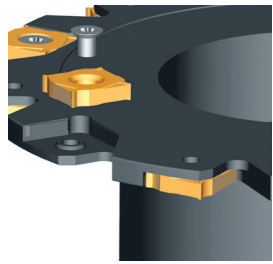




### Specification of tools · Werkzeug Beschreibung

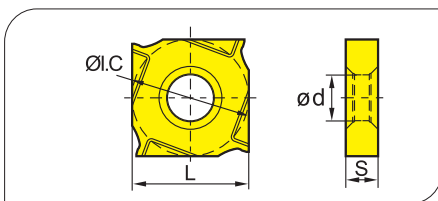
| Type<br>Typ                       | Stock<br>Lager     |   | Dimensions (mm)<br>Abmessungen |     |     |    |    |                   |    | Inserts<br>WSP | No. of<br>teeth<br>Zähne | Coupling<br>Aufnahme | Weight<br>Gewicht<br>(kg) |
|-----------------------------------|--------------------|---|--------------------------------|-----|-----|----|----|-------------------|----|----------------|--------------------------|----------------------|---------------------------|
|                                   | R                  | L | Ø D                            | Ø d | Ø c | H  | ap | ae <sub>max</sub> |    |                |                          |                      |                           |
| <b>SMP01</b><br>Arbor<br>mounting | -063×4-A22-SN12-06 | ● | ○                              | 63  | 22  | 32 | 40 | 4                 | 14 | XSEQ1202       | 6                        | A                    | 0.2                       |
|                                   | -080×4-A22-SN12-08 | ● | ○                              | 80  | 22  | 40 | 40 | 4                 | 18 |                | 8                        | A                    | 0.4                       |
|                                   | -100×4-A27-SN12-10 | ● | ○                              | 100 | 27  | 48 | 50 | 4                 | 23 |                | 10                       | A                    | 0.6                       |
| Arbor<br>Aufnahme                 | -063×5-A22-SN12-06 | ○ | ○                              | 63  | 22  | 32 | 40 | 5                 | 14 | XSEQ1203       | 6                        | A                    | 0.2                       |
|                                   | -080×5-A22-SN12-08 | ● | ○                              | 80  | 22  | 40 | 40 | 5                 | 18 |                | 8                        | A                    | 0.4                       |
|                                   | -100×5-A27-SN12-10 | ● | ○                              | 100 | 27  | 48 | 50 | 5                 | 23 |                | 10                       | A                    | 0.7                       |
|                                   | -063×6-A22-SN12-06 | ○ | ○                              | 63  | 22  | 32 | 40 | 6                 | 14 | XSEQ12T3       | 6                        | A                    | 0.2                       |
|                                   | -080×6-A22-SN12-08 | ● | ○                              | 80  | 22  | 40 | 40 | 6                 | 18 |                | 8                        | A                    | 0.5                       |
|                                   | -100×6-A27-SN12-10 | ● | ○                              | 100 | 27  | 48 | 50 | 6                 | 23 |                | 10                       | A                    | 0.7                       |
|                                   | -125×6-B40-SN12-12 | ○ | ○                              | 125 | 40  | 70 | 50 | 6                 | 30 | XSEQ1204       | 12                       | B                    | 1.0                       |
|                                   | -160×6-B40-SN12-16 | ○ | ○                              | 160 | 40  | 70 | 60 | 6                 | 41 |                | 16                       | B                    | 1.3                       |
|                                   | -063×7-A22-SN12-06 | ○ | ○                              | 63  | 22  | 32 | 40 | 7                 | 14 |                | XSEQ1204                 | 6                    | A                         |
| -080×7-A22-SN12-08                | ○                  | ○ | 80                             | 22  | 40  | 40 | 7  | 18                | 8  | A              |                          | 0.5                  |                           |
| -100×7-A27-SN12-10                | ○                  | ○ | 100                            | 27  | 48  | 50 | 7  | 23                | 10 | A              |                          | 0.7                  |                           |
|                                   | -125×7-B40-SN12-12 | ○ | ○                              | 125 | 40  | 70 | 50 | 7                 | 30 | XSEQ12T4       | 12                       | B                    | 1.1                       |
|                                   | -160×7-B40-SN12-16 | ○ | ○                              | 160 | 40  | 70 | 60 | 7                 | 41 |                | 16                       | B                    | 1.4                       |
|                                   | -063×8-A22-SN12-06 | ○ | ○                              | 63  | 22  | 32 | 40 | 8                 | 14 |                | XSEQ12T4                 | 6                    | A                         |
| -080×8-A22-SN12-08                | ●                  | ○ | 80                             | 22  | 40  | 40 | 8  | 18                | 8  | A              |                          | 0.5                  |                           |
| -100×8-A27-SN12-10                | ●                  | ○ | 100                            | 27  | 48  | 50 | 8  | 23                | 10 | A              |                          | 0.8                  |                           |
|                                   | -125×8-B40-SN12-12 | ● | ○                              | 125 | 40  | 70 | 50 | 8                 | 30 | XSEQ12T4       | 12                       | B                    | 1.1                       |
|                                   | -160×8-B40-SN12-16 | ○ | ○                              | 160 | 40  | 70 | 60 | 8                 | 41 |                | 16                       | B                    | 1.5                       |

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

### Spare parts - Ersatzteile


| Diameter<br>Durchmesser<br>Ø D | Cutting width<br>Schnittbreite<br>a <sub>p</sub> | Screw<br>Schraube   | Wrench<br>Schlüssel  |   |
|--------------------------------|--|---|--|---|
|                                |  |  |  |   |
| Ø63-Ø160                       | 4  | I91M4×3.2X  | WT10S  |   |
| Ø63-Ø160                       | 5  | I91M4×4.2X  |  |   |
| Ø63-Ø250                       | 6  | I91M4×5.1X  |  |   |
| Ø63-Ø250                       | 7  | I91M4×6.1X  |  |   |
| Ø63-Ø250                       | 8  | I91M4×7.1X  |  |   |

### Applicable inserts - Wendeschneidplatten



-  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<br>Stahl                           |   |   |   |   |   |
| Stainless Steel<br>Rostfreier Stahl      |   |   |   |   |   |
| Cast iron<br>Gusseisen                   |   |   |   |   |   |
| Non-ferrite material<br>Ne Metalle       |   |   |   |   |   |
| Heat-resistant steel<br>Warmfester Stahl |   |   |   |   |   |

| Insert<br>WSP   | Type<br>Typ | Dimensions (mm)<br>Abmessungen |      |     |     | CVD Coating<br>CVD Beschicht. |        |        |        | PVD Coating<br>PVD Beschicht. |        |        |        | Cermet<br>Cermet | Carbide uncoat.<br>unbe. Hartmetall |        |        |        |        |        |        |         |       |       |       |  |
|---|-------------|--------------------------------|------|-----|-----|-------------------------------|--------|--------|--------|-------------------------------|--------|--------|--------|------------------|-------------------------------------|--------|--------|--------|--------|--------|--------|---------|-------|-------|-------|--|
|   |             | I.C                            | L    | S   | d   | YBC301                        | YBC302 | YBC401 | YBM251 | YBM253                        | YBM351 | YBD152 | YBD252 |                  | YBG102                              | YBG202 | YBG205 | YBG302 | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |  |
|  | XSEQ1202    | 12.7                           | 12.7 | 2.3 | 5.0 |                               |        |        |        |                               |        |        |        |                  |                                     |        |        |        |        |        |        |         |       |       |       |  |
|   | XSEQ1203    | 12.7                           | 12.7 | 3.0 | 5.0 |                               | •      |        |        | •                             |        |        |        |                  |                                     |        |        |        |        |        |        |         |       |       |       |  |
|   | XSEQ12T3    | 12.7                           | 12.7 | 3.5 | 5.0 |                               | •      |        |        |                               |        |        |        |                  |                                     |        |        |        |        |        |        |         |       |       | ○     |  |
|   | XSEQ1204    | 12.7                           | 12.7 | 4.0 | 5.0 |                               |        |        |        |                               |        |        |        |                  |                                     |        |        |        |        |        |        |         |       |       |       |  |
|   | XSEQ12T4    | 12.7                           | 12.7 | 4.5 | 5.0 |                               |        |        |        |                               |        |        |        |                  |                                     |        |        |        |        |        |        |         |       |       |       |  |

### Recommended Cutting data - Schnittdaten

|          | Workpiece material<br>Werkstückstoff   | Hardness HB<br>Härte | Grade<br>Sorte | Cutting data<br>Schnittdaten |                 |
|----------|--|----------------------|----------------|------------------------------|-----------------|
|          |  |                      |                | V(m/min)                     | f(mm/z)         |
| <b>P</b> | Low-carbon steel Soft steel<br>Niedriglegierter Kohlenstoffstahl<br>Baustahl | ≤180                 | YBG202         | 180 (100-250)                | 0.1(0.08-0.25)  |
|          |  |                      | YBG302         | 150 (100-200)                | 0.15(0.1-0.3)   |
|          | High-carbon steel Alloy steel<br>Hochleg. Kohlenstoffstahl<br>Leg. Stahl     | 180-280              | YBG202         | 150 (80-250)                 | 0.1(0.08-0.25)  |
|          |  |                      | YBG302         | 120 (80-200)                 | 0.15(0.1-0.3)   |
| <b>M</b> | Alloy tool steel<br>Leg. Werkzeugstahl                                       | 280-350              | YBG202         | 120 (80-250)                 | 0.1(0.08-0.25)  |
|          |  |                      | YBG302         | 100 (80-200)                 | 0.15(0.1-0.3)   |
| <b>K</b> | Stainless steel<br>Rostfreier Stahl  | ≤270                 | YBG202         | 120 (80-250)                 | 0.1(0.05-0.15)  |
|          |  |                      | YBG302         | 100 (80-200)                 | 0.08(0.05-0.15) |
| <b>K</b> | Cast iron<br>Gusseisen   | 180-250              | YBG152         | 120 (80-250)                 | 0.1(0.05-0.15)  |
|          |  |                      | YBG302         | 150 (100-250)                | 0.08(0.05-0.15) |

Applicable tool  
Werkzeug **B11-B18**

Tools code key  
Werkzeug ISO **B26-B27**

Grade selection guide  
Sortenauswahl **B19-B23**

Technical data  
Technische Daten **B215-B220**

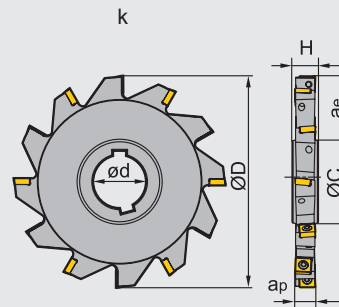
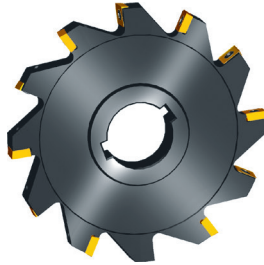
# Milling · Fräsen

Indexable Milling Tools · Wendepplattenfräser

## Side and face milling tools · Scheibenfräser






**SMP03** **P** **M** **K**

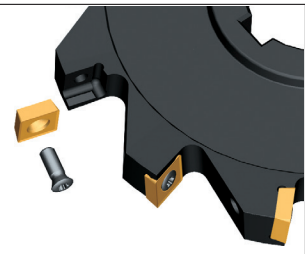


### ■ Specification of tools ·

| Type<br>Typ                       | Stock<br>Lager | Dimensions (mm)<br>Abmessungen |     |      |                   |      |    |    | Inserts<br>WSP | No. of teeth<br>Zähne | Coupling<br>Aufnahme | Weight<br>Gewicht<br>(kg) |     |
|-----------------------------------|----------------|--------------------------------|-----|------|-------------------|------|----|----|----------------|-----------------------|----------------------|---------------------------|-----|
|                                   |                | ØD                             | øc  | ød   | ae <sub>max</sub> | ap   | H  |    |                |                       |                      |                           |     |
| <b>SMP03</b><br>Arbor<br>mounting | ○              | -080×8-K27-MP06-10             | 80  | 44.0 | 27                | 17.6 | 8  | 12 | MPHT060304-DM  | 10                    | K                    | 0.2                       |     |
|                                   | ●              | -100×8-K32-MP06-14             | 100 | 49.0 | 32                | 25.1 | 8  | 12 |                | 14                    | K                    | 0.3                       |     |
| Arbor<br>Aufnahme                 | ●              | -100×10-K32-MP06-14            | 100 | 49.0 | 32                | 25.1 | 10 | 14 |                | 14                    | K                    | 0.4                       |     |
|                                   | ○              | -125×10-K40-MP06-16            | 125 | 57.0 | 40                | 33.6 | 10 | 14 |                | 16                    | K                    | 0.6                       |     |
|                                   | ○              | -125×12-K40-MP08-12            | 125 | 58.3 | 40                | 32.6 | 12 | 16 |                | MPHT080305-DM         | 12                   | K                         | 0.7 |
|                                   | ●              | -160×12-K40-MP08-14            | 160 | 64.3 | 40                | 31.5 | 12 | 16 |                |                       | 14                   | K                         | 1.3 |
|                                   | ○              | -160×16-K40-MP12-12            | 160 | 64.6 | 40                | 47.6 | 16 | 20 |                | MPHT120408-DM         | 12                   | K                         | 1.6 |
|                                   | ○              | -160×18-K40-MP12-12            | 160 | 65.3 | 40                | 47.3 | 18 | 24 |                |                       | 12                   | K                         | 1.9 |
|                                   | ○              | -160×20-K40-MP12-12            | 160 | 65.3 | 40                | 47.3 | 20 | 26 |                |                       | 12                   | K                         | 2.1 |
|                                   | ○              | -200×16-K50-MP12-14            | 200 | 74.6 | 50                | 62.6 | 16 | 20 |                |                       | 14                   | K                         | 2.5 |
|                                   | ○              | -200×18-K50-MP12-14            | 200 | 75.3 | 50                | 62.3 | 18 | 24 |                |                       | 14                   | K                         | 2.9 |
|                                   | ●              | -200×20-K50-MP12-14            | 200 | 75.3 | 50                | 62.3 | 20 | 26 |                |                       | 14                   | K                         | 3.3 |

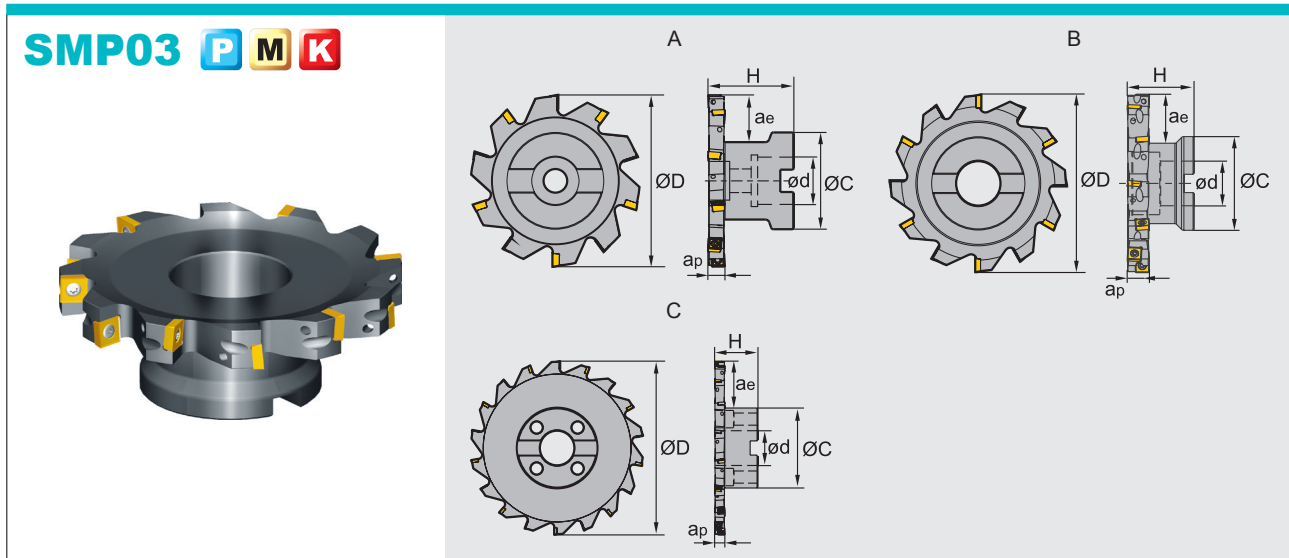
### ■ Spare parts · Ersatzteile

| Diameter<br>Durchmesser<br>Ø D | Insert<br>WSP | Screw<br>Schraube   | Wrench<br>Schlüssel   |  |
|--------------------------------|---------------|---|---|--|
|                                |               |  |  |  |
| Ø80-Ø125                       | MP06          | I60M2.5x6.5   | WT07IP  | --   |
| Ø125-Ø160                      | MP08          | I60M3x7   | WT09IP  | --   |
| Ø160-Ø200                      | MP12          | I60M5x13  | --  | WT20IS   |



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

### Side and face milling tools - Scheibenfräser

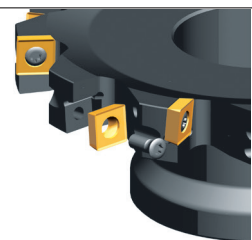


### Specification of tools - Werkzeug Beschreibung

| Type<br>Typ                       | Stock<br>Lager      | Dimensions (mm)<br>Abmessungen |     |     |     |     |                   |                | Inserts<br>WSP | No. of<br>teeth<br>Zähne | Coupling<br>Aufnahme | Weight<br>Gewicht<br>(kg) |     |     |
|-----------------------------------|---------------------|--------------------------------|-----|-----|-----|-----|-------------------|----------------|----------------|--------------------------|----------------------|---------------------------|-----|-----|
|                                   |                     | R                              | L   | Ø D | ø c | ø d | a <sub>emax</sub> | a <sub>p</sub> |                |                          |                      |                           | H   |     |
| <b>SMP03</b><br>Arbor<br>mounting | -080×8-A22-MP06-10  | ○                              | ○   | 80  | 45  | 22  | 21                | 8              | 40             | MPHT060304-DM            | 10                   | A                         | 0.4 |     |
|                                   | -100×8-B27-MP06-14  | ○                              | ○   | 100 | 55  | 27  | 24.5              | 8              | 40             |                          | 14                   | B                         | 0.6 |     |
| Arbor<br>Aufnahme                 | -100×10-B27-MP06-14 | ●                              | ○   | 100 | 55  | 27  | 24.5              | 10             | 40             |                          | 14                   | B                         | 0.7 |     |
|                                   | -125×10-B32-MP06-16 | ○                              | ○   | 125 | 65  | 32  | 33.3              | 10             | 45             |                          | 16                   | B                         | 1.1 |     |
|                                   | -125×12-B32-MP08-12 | ○                              | ○   | 125 | 65  | 32  | 33                | 12             | 45             |                          | MPHT080305-DM        | 12                        | B   | 1.4 |
|                                   | -160×12-B40-MP08-14 | ○                              | ○   | 160 | 80  | 40  | 44                | 12             | 50             |                          |                      | 14                        | B   | 1.9 |
|                                   | -200×12-C40-MP08-18 | ○                              | ○   | 200 | 92  | 40  | 52                | 12             | 50             |                          | 18                   | C                         | 3.2 |     |
|                                   | -125×16-B32-MP12-10 | ○                              | ○   | 125 | 65  | 32  | 33                | 16             | 50             |                          | MPHT120408-DM        | 10                        | B   | 2.3 |
|                                   | -160×16-B40-MP12-12 | ○                              | ○   | 160 | 80  | 40  | 45                | 16             | 60             |                          |                      | 12                        | B   | 2.3 |
|                                   | -160×18-B40-MP12-12 | ○                              | ○   | 160 | 80  | 40  | 45                | 18             | 60             |                          |                      | 12                        | B   | 2.4 |
|                                   | -200×16-C40-MP12-14 | ○                              | ○   | 200 | 92  | 40  | 52                | 16             | 50             |                          |                      | 14                        | C   | 3.6 |
|                                   | -200×18-C40-MP12-14 | ○                              | ○   | 200 | 92  | 40  | 52                | 18             | 50             |                          |                      | 14                        | C   | 3.9 |
| -200×20-C40-MP12-14               | ○                   | ○                              | 200 | 92  | 40  | 52  | 20                | 50             | 14             |                          |                      | C                         | 4.2 |     |

### Spare parts - Ersatzteile

| Diameter<br>Durchmesser<br>Ø D | Insert<br>WSP | Screw<br>Schraube | Wrench<br>Schlüssel |        |
|--------------------------------|---------------|-------------------|---------------------|--------|
|                                |               |                   |                     |        |
| Ø80-Ø125                       | MP06          | I60M2.5×6.5       | WT07IP              |        |
| Ø125-Ø200                      | MP08          | I60M3×7           | WT09P               |        |
| Ø125-Ø200                      | MP12          | I60M5×13          |                     | WT20IS |



Applicable tool  
Werkzeug **B11-B18**

Tools code key  
Werkzeug ISO **B26-B27**

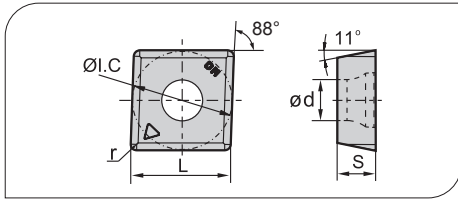
Grade selection guide  
Sortenauswahl **B19-B23**

Technical data  
Technische Daten **B215-B220**

# Milling · Fräsen

## Indexable Milling Tools · Wendepplattenfräser

### Applicable inserts · Wendeschneidplatten



- Ideal Machining Condition / Gute Bearbeitungsbedingungen
- Normal Machining Condition / Normale Bearbeitungsbedingungen
- Unfavorable Machining Condition / Ungünstige Bearbeitungsbedingungen

| Workpiece Material / Werkstoffe                  | P | M | K | N | S | YBC301 | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152 | YBD252 | YBG102 | YBG202 | YBG205 | YBG302 | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |   |
|--|---|---|---|---|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|-------|-------|-------|---|
| <b>P</b> Steel / Stahl                           | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     | ● |
| <b>M</b> Stainless Steel / Rostfreier Stahl      | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     | ● |
| <b>K</b> Cast iron / Gusseisen                   | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     | ● |
| <b>N</b> Non-ferrite material / Ne Metalle       | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     | ● |
| <b>S</b> Heat-resistant steel / Warmfester Stahl | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     | ● |

| Insert WSP | Type Typ             | Dimensions (mm) / Abmessungen |      |      |      |     | CVD Coating / CVD Beschicht. |        |        |        |        |        | PVD Coating / PVD Beschicht. |        |        |        | Cermet Cermet | Carbide uncoat. / unbe. Hartmetall |        |        |        |        |         |       |       |       |
|------------|----------------------|-------------------------------|------|------|------|-----|------------------------------|--------|--------|--------|--------|--------|------------------------------|--------|--------|--------|---------------|------------------------------------|--------|--------|--------|--------|---------|-------|-------|-------|
|            |                      | I.C                           | L    | S    | d    | r   | YBC301                       | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152                       | YBD252 | YBG102 | YBG202 |               | YBG205                             | YBG302 | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |
|            | <b>MPHT060304-DM</b> | 6.35                          | 6.35 | 3.18 | 2.8  | 0.4 | ●                            | ○      |        |        |        |        |                              |        |        |        |               | ●                                  |        |        |        |        |         |       |       |       |
|            | <b>MPHT080305-DM</b> | 8.3                           | 8.3  | 3.18 | 5.56 | 0.5 | ●                            | ○      |        |        |        |        |                              |        |        |        |               | ●                                  |        |        |        |        |         |       |       |       |
|            | <b>MPHT120408-DM</b> | 12.7                          | 12.7 | 4.76 | 5.56 | 0.8 | ●                            | ○      |        |        |        |        |                              |        |        |        |               | ●                                  |        |        |        |        |         |       |       |       |

### Recommended Cutting data · Schnittdaten

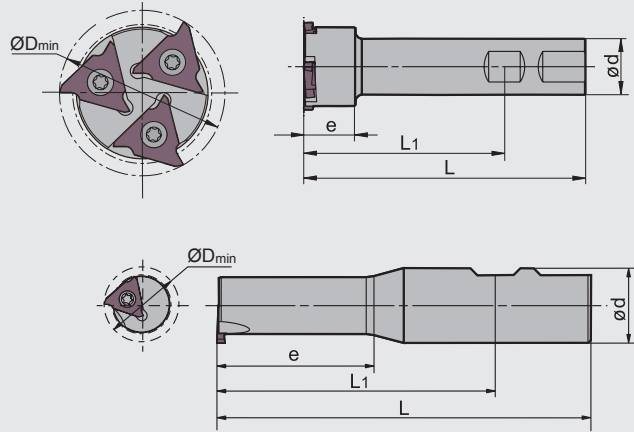
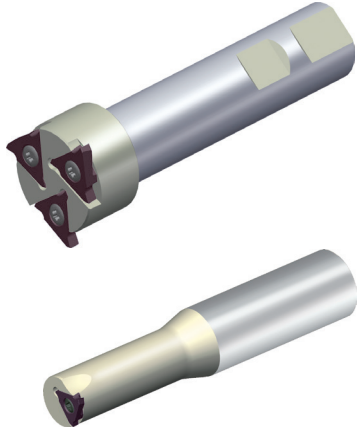
| Workpiece material / Werkstückstoff   | Hardness HB / Härte                   | Grade / Sorte   | Cutting data / Schnittdaten |                 |
|---|---------------------------------------|-----------------|-----------------------------|-----------------|
|   |                                       |                 | V(m/min)                    | f(mm/z)         |
| <b>P</b> Low-carbon steel / Soft steel / Niedriglegierter Kohlenstoffstahl / Baustahl | ≤180                                  | YBM251 / YBG202 | 180 (100-250)               | 0.1(0.08-0.25)  |
|   |                                       | YBG302          | 150 (100-200)               | 0.15(0.1-0.3)   |
|   | 180-280                               | YBM251 / YBG202 | 150 (80-250)                | 0.1(0.08-0.25)  |
|   |                                       | YBG302          | 120 (80-200)                | 0.15(0.1-0.3)   |
| 280-350   | Alloy tool steel / Leg. Werkzeugstahl | YBM251 / YBG202 | 120 (80-250)                | 0.1(0.08-0.25)  |
|   |                                       | YBG302          | 100 (80-200)                | 0.15(0.1-0.3)   |
| <b>M</b> Stainless steel / Rostfreier Stahl   | ≤270                                  | YBM251 / YBG202 | 120 (80-250)                | 0.1(0.05-0.15)  |
|   |                                       | YBG302          | 100 (80-200)                | 0.08(0.05-0.15) |
| <b>K</b> Cast iron / Gusseisen  | 180-250                               | YBG152          | 120 (80-250)                | 0.1(0.05-0.15)  |
|   |                                       | YBG302          | 150 (100-250)               | 0.08(0.05-0.15) |

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

### Groove milling tools - Nutenfräser



**SMP05** **P** **M** **K**



**B**

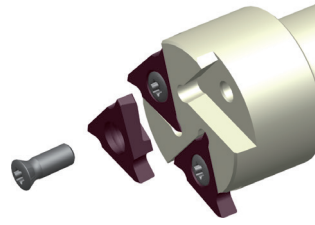
Milling Tools  
Fräser

### ■ Specification of tools - Werkzeug Beschreibung

| Type<br>Typ                        | Stock<br>Lager | Dimensions (mm)<br>Abmessungen |                 |    |       |     | No. of<br>teeth<br>Zähne | Inserts<br>WSP | W(mm)     |
|------------------------------------|----------------|--------------------------------|-----------------|----|-------|-----|--------------------------|----------------|-----------|
|                                    |                | $\varnothing D_{min}$          | $\varnothing d$ | e  | $L_1$ | L   |                          |                |           |
| <b>SMP05</b> -025×3.0-XP25-QC16-01 | ●              | 25                             | 25              | 40 | 89    | 125 | 1                        | QC16L 110~300  | 1.10-3.00 |
| -039×3.0-XP25-QC16-03              | ●              | 39                             | 25              | 23 | 89    | 125 | 3                        | QC16L 110~300  | 1.10-3.00 |
| -044×4.8-XP25-QC22-03              | ●              | 44                             | 25              | 23 | 89    | 125 | 3                        | QC22L 125~480  | 1.25-4.8  |

### ■ Spare parts - Ersatzteile

| Diameter<br>Durchmesser<br>$\varnothing D$ | Screw<br>Schraube | Wrench<br>Schlüssel |
|--|-------------------|---------------------|
| $\varnothing 25$                           | I60M3.5×10        | WT15IP              |
| $\varnothing 39$                           | I60M3.5×10        | WT15IP              |
| $\varnothing 44$                           | I60M5×13          | WT20IP              |



Applicable tool  
Werkzeug **B11-B18**

Tools code key  
Werkzeug ISO **B26-B27**

Grade selection guide  
Sortenauswahl **B19-B23**

Technical data  
Technische Daten **B215-B220**

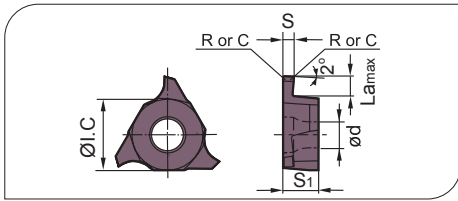
# Milling · Fräsen

## Indexable Milling Tools · Wendepplattenfräser

**B**

Milling Tools  
Fräser

Applicable inserts · Wendeschneidplatten



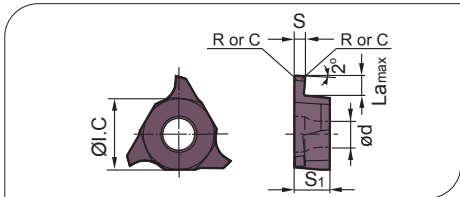
- Ideal Machining Condition / Gute Bearbeitungsbedingungen
- Normal Machining Condition / Normale Bearbeitungsbedingungen
- Unfavorable Machining Condition / Ungünstige Bearbeitungsbedingungen

| Workpiece Material / Werkstoffe         | 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 WSP | Type Typ     | Dimensions (mm) / Abmessungen |        |      |       |      |     | CVD Coating / CVD Beschicht. |        |        |        |        |        | PVD Coating / PVD Beschicht. |        |        |        |        |        | Cermet / Cermet |        | Carbide uncoat. / unbe. Hartmetall |         |       |       |       |
|------------|--------------|-------------------------------|--------|------|-------|------|-----|------------------------------|--------|--------|--------|--------|--------|------------------------------|--------|--------|--------|--------|--------|-----------------|--------|------------------------------------|---------|-------|-------|-------|
|            |              | S±0.025                       | La_max | R/C  | ØI.C  | S1   | ød  | YBC301                       | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152                       | YBD252 | YBG102 | YBG202 | YBG205 | YBG302 | YBG152          | YBG252 | YNG151                             | YNG151C | YC30S | YD101 | YD201 |
|            | QC16L110-R01 | 1.10                          | 2.00   | R0.1 | 9.525 | 3.18 | 4.4 |                              |        |        |        |        |        |                              |        |        | ○      | ●      |        |                 |        |                                    |         |       |       |       |
|            | QC16L125-R02 | 1.25                          | 2.00   | R0.2 | 9.525 | 3.18 | 4.4 |                              |        |        |        |        |        |                              |        |        | ○      | ●      |        |                 |        |                                    |         |       |       |       |
|            | QC16L145-R02 | 1.45                          | 2.00   | R0.2 | 9.525 | 3.18 | 4.4 |                              |        |        |        |        |        |                              |        |        | ○      | ●      |        |                 |        |                                    |         |       |       |       |
|            | QC16L150-R02 | 1.50                          | 2.00   | R0.2 | 9.525 | 3.18 | 4.4 |                              |        |        |        |        |        |                              |        |        | ○      | ●      |        |                 |        |                                    |         |       |       |       |
|            | QC16L175-R02 | 1.75                          | 2.00   | R0.2 | 9.525 | 3.18 | 4.4 |                              |        |        |        |        |        |                              |        |        | ○      | ●      |        |                 |        |                                    |         |       |       |       |
|            | QC16L185-R02 | 1.85                          | 2.50   | R0.2 | 9.525 | 3.18 | 4.4 |                              |        |        |        |        |        |                              |        |        | ○      | ●      |        |                 |        |                                    |         |       |       |       |
|            | QC16L200-R02 | 2.00                          | 2.50   | R0.2 | 9.525 | 3.18 | 4.4 |                              |        |        |        |        |        |                              |        |        | ○      | ●      |        |                 |        |                                    |         |       |       |       |
|            | QC16L250-R02 | 2.50                          | 2.50   | R0.2 | 9.525 | 3.18 | 4.4 |                              |        |        |        |        |        |                              |        |        | ○      | ●      |        |                 |        |                                    |         |       |       |       |
|            | QC16L300-R02 | 3.00                          | 3.00   | R0.2 | 9.525 | 3.18 | 4.4 |                              |        |        |        |        |        |                              |        |        | ○      | ●      |        |                 |        |                                    |         |       |       |       |

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

### Applicable inserts · Wendeschneidplatten



- Ideal Machining Condition  
Gute Bearbeitungsbedingungen
- Normal Machining Condition  
Normale Bearbeitungsbedingungen
- Unfavorable Machining Condition  
Ungünstige Bearbeitungsbedingungen

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

| Insert<br>WSP | Type<br>Typ  | Dimensions (mm)<br>Abmessungen |      |      |       |      |     | CVD Coating<br>CVD Beschicht. |        |        |        |        |        | PVD Coating<br>PVD Beschicht. |        | Cermet<br>Cermet | Carbide uncoat.<br>unbe. Hartmetall |        |        |        |        |        |        |         |       |       |       |
|---------------|--------------|--------------------------------|------|------|-------|------|-----|-------------------------------|--------|--------|--------|--------|--------|-------------------------------|--------|------------------|-------------------------------------|--------|--------|--------|--------|--------|--------|---------|-------|-------|-------|
|               |              | S±0.025                        | Lmax | R/C  | øI.C  | S1   | ød  | YBC301                        | YBC302 | YBC401 | YBM251 | YBM253 | YBM851 | YBD152                        | YBD252 |                  | YBG102                              | YBG202 | YBG205 | YBG302 | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |
|               | QC22L125-R02 | 1.25                           | 2.00 | R0.2 | 12.70 | 4.76 | 5.5 |                               |        |        |        |        |        |                               |        |                  | ○                                   | ●      |        |        |        |        |        |         |       |       |       |
|               | QC22L145-R02 | 1.45                           | 2.00 | R0.2 | 12.70 | 4.76 | 5.5 |                               |        |        |        |        |        |                               |        |                  | ○                                   | ●      |        |        |        |        |        |         |       |       |       |
|               | QC22L150-R02 | 1.50                           | 3.50 | R0.2 | 12.70 | 4.76 | 5.5 |                               |        |        |        |        |        |                               |        |                  | ○                                   | ●      |        |        |        |        |        |         |       |       |       |
|               | QC22L175-R02 | 1.75                           | 3.50 | R0.2 | 12.70 | 4.76 | 5.5 |                               |        |        |        |        |        |                               |        |                  | ○                                   | ●      |        |        |        |        |        |         |       |       |       |
|               | QC22L185-R02 | 1.85                           | 3.50 | R0.2 | 12.70 | 4.76 | 5.5 |                               |        |        |        |        |        |                               |        |                  | ○                                   | ●      |        |        |        |        |        |         |       |       |       |
|               | QC22L200-R02 | 2.00                           | 3.50 | R0.2 | 12.70 | 4.76 | 5.5 |                               |        |        |        |        |        |                               |        |                  | ○                                   | ●      |        |        |        |        |        |         |       |       |       |
|               | QC22L230-R02 | 2.30                           | 3.50 | R0.2 | 12.70 | 4.76 | 5.5 |                               |        |        |        |        |        |                               |        |                  | ○                                   | ●      |        |        |        |        |        |         |       |       |       |
|               | QC22L250-R03 | 2.50                           | 4.00 | R0.3 | 12.70 | 4.76 | 5.5 |                               |        |        |        |        |        |                               |        |                  | ○                                   | ●      |        |        |        |        |        |         |       |       |       |
|               | QC22L265-R03 | 2.65                           | 4.00 | R0.3 | 12.70 | 4.76 | 5.5 |                               |        |        |        |        |        |                               |        |                  | ○                                   | ●      |        |        |        |        |        |         |       |       |       |
|               | QC22L280-R03 | 2.80                           | 4.00 | R0.3 | 12.70 | 4.76 | 5.5 |                               |        |        |        |        |        |                               |        |                  | ○                                   | ●      |        |        |        |        |        |         |       |       |       |
|               | QC22L300-R03 | 3.00                           | 4.00 | R0.3 | 12.70 | 4.76 | 5.5 |                               |        |        |        |        |        |                               |        |                  | ○                                   | ●      |        |        |        |        |        |         |       |       |       |
|               | QC22L320-R03 | 3.20                           | 4.00 | R0.3 | 12.70 | 4.76 | 5.5 |                               |        |        |        |        |        |                               |        |                  | ○                                   | ●      |        |        |        |        |        |         |       |       |       |
|               | QC22L330-R03 | 3.30                           | 4.00 | R0.3 | 12.70 | 4.76 | 5.5 |                               |        |        |        |        |        |                               |        |                  | ○                                   | ●      |        |        |        |        |        |         |       |       |       |
|               | QC22L350-R03 | 3.50                           | 5.00 | R0.3 | 12.70 | 4.76 | 5.5 |                               |        |        |        |        |        |                               |        |                  | ○                                   | ●      |        |        |        |        |        |         |       |       |       |
|               | QC22L400-R04 | 4.00                           | 5.00 | R0.4 | 12.70 | 4.76 | 5.5 |                               |        |        |        |        |        |                               |        |                  | ○                                   | ○      |        |        |        |        |        |         |       |       |       |
|               | QC22L430-R04 | 4.30                           | 5.00 | R0.4 | 12.70 | 4.76 | 5.5 |                               |        |        |        |        |        |                               |        |                  | ○                                   | ○      |        |        |        |        |        |         |       |       |       |
|               | QC22L450-R04 | 4.50                           | 5.00 | R0.4 | 12.70 | 4.76 | 5.5 |                               |        |        |        |        |        |                               |        |                  | ○                                   | ○      |        |        |        |        |        |         |       |       |       |
|               | QC22L480-R04 | 4.80                           | 5.00 | R0.4 | 12.70 | 5.06 | 5.5 |                               |        |        |        |        |        |                               |        |                  | ○                                   | ○      |        |        |        |        |        |         |       |       |       |

Applicable tool  
Werkzeug **B11-B18**

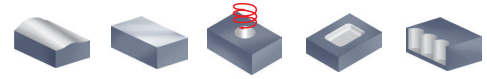
Tools code key  
Werkzeug ISO **B26-B27**

Grade selection guide  
Sortenauswahl **B19-B23**

Technical data  
Technische Daten **B215-B220**

# Milling · Fräsen

Indexable Milling Tools · Wendepplattenfräser

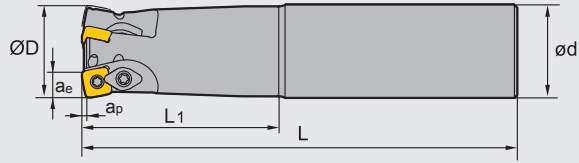


## High feed milling cutters · Hochvorschubfräser

**XMR01** P M K



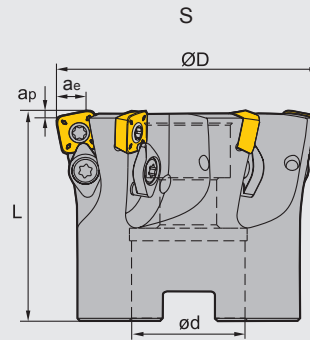
S type insert, straight shank  
S Typ WSP, Zylinder Schaft



### Specification of tools · Werkzeug-Beschreibung With Internal Cooling · Mit Innenkühlung

| Type<br>Typ  | Stock<br>Lager    | Dimensions (mm)<br>Abmessungen |     |      |                |     |     |    | No. of<br>teeth<br>Zähne | Weight<br>Gewicht<br>(kg) |
|--------------|-------------------|--------------------------------|-----|------|----------------|-----|-----|----|--------------------------|---------------------------|
|              |                   | Ø D                            | ap  | ae   | L <sub>1</sub> | L   | Ø d |    |                          |                           |
| <b>XMR01</b> | •                 | -025-G25-SD09-02               | 25  | 1.4  | 8.8            | 60  | 140 | 25 | 2                        | 0.5                       |
|              | •                 | -025-G25-SD09-02C              | 25  | 1.4  | 8.8            | 60  | 140 | 25 | 2                        | 0.5                       |
|              | •                 | -032-G32-SD09-03               | 32  | 1.4  | 8.8            | 70  | 150 | 32 | 3                        | 0.8                       |
|              | •                 | -032-G32-SD09-03C              | 32  | 1.4  | 8.8            | 70  | 150 | 32 | 3                        | 0.8                       |
|              | ○                 | -035-G32-SD09-03               | 35  | 1.4  | 8.8            | 70  | 150 | 32 | 3                        | 0.8                       |
|              | ○                 | -035-G32-SD09-03C              | 35  | 1.4  | 8.8            | 70  | 150 | 32 | 3                        | 0.8                       |
|              | •                 | -032-G32-SD12-02               | 32  | 1.8  | 11.7           | 70  | 150 | 32 | 2                        | 0.8                       |
|              | •                 | -032-G32-SD12-02C              | 32  | 1.8  | 11.7           | 70  | 150 | 32 | 2                        | 0.8                       |
|              | •                 | -040-G40-SD12-03               | 40  | 1.8  | 11.7           | 70  | 150 | 40 | 3                        | 1.3                       |
| •            | -040-G40-SD12-03C | 40                             | 1.8 | 11.7 | 70             | 150 | 40  | 3  | 1.3                      |                           |

**XMR01** P M K



### Specification of tools · Werkzeug-Beschreibung With Internal Cooling · Mit Innenkühlung

| Type<br>Typ  | Stock<br>Lager | Dimensions (mm)<br>Abmessungen |     |     |      |     |    | No. of<br>teeth<br>Zähne | Coupling<br>Aufnahme | Weight<br>Gewicht<br>(kg) |
|--------------|----------------|--------------------------------|-----|-----|------|-----|----|--------------------------|----------------------|---------------------------|
|              |                | Ø D                            | ap  | ae  | L    | Ø d |    |                          |                      |                           |
| <b>XMR01</b> | •              | -050-A22-SD09-04               | 50  | 1.4 | 8.8  | 40  | 22 | 4                        | A                    | 0.3                       |
|              | •              | -050-A22-SD09-04C              | 50  | 1.4 | 8.8  | 40  | 22 | 4                        | A                    | 0.3                       |
|              | •              | -063-A22-SD09-06               | 63  | 1.4 | 8.8  | 40  | 22 | 6                        | A                    | 0.5                       |
|              | •              | -063-A22-SD09-06C              | 63  | 1.4 | 8.8  | 40  | 22 | 6                        | A                    | 0.5                       |
|              | ○              | -063-A27-SD09-06               | 63  | 1.4 | 8.8  | 50  | 27 | 6                        | A                    | 0.6                       |
|              | ○              | -063-A27-SD09-06C              | 63  | 1.4 | 8.8  | 50  | 27 | 6                        | A                    | 0.6                       |
|              | •              | -063-A22-SD12-05               | 63  | 1.8 | 11.7 | 40  | 22 | 5                        | A                    | 0.5                       |
|              | •              | -063-A22-SD12-05C              | 63  | 1.8 | 11.7 | 40  | 22 | 5                        | A                    | 0.5                       |
|              | ○              | -063-A27-SD12-05               | 63  | 1.8 | 11.7 | 50  | 27 | 5                        | A                    | 0.6                       |
|              | ○              | -063-A27-SD12-05C              | 63  | 1.8 | 11.7 | 50  | 27 | 5                        | A                    | 0.6                       |
|              | •              | -080-A27-SD12-05               | 80  | 1.8 | 11.7 | 63  | 27 | 5                        | A                    | 0.9                       |
|              | •              | -080-A27-SD12-05C              | 80  | 1.8 | 11.7 | 63  | 27 | 5                        | A                    | 0.9                       |
|              | •              | -100-B32-SD12-06               | 100 | 1.8 | 11.7 | 50  | 32 | 6                        | B                    | 1.8                       |
|              | •              | -100-B32-SD12-06C              | 100 | 1.8 | 11.7 | 50  | 32 | 6                        | B                    | 1.8                       |

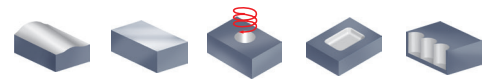
● Ex Stock / ab Lager ○ On demand / auf Anfrage



# Milling · Fräsen

Indexable Milling Tools · Wendepplattenfräser

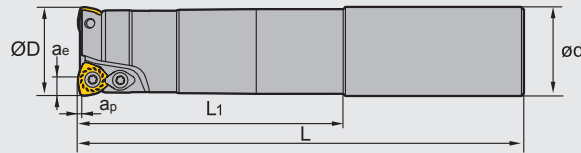
## High feed milling cutters · Hochvorschubschafffräser



**XMR01 P M K**



W type insert, straight shank  
W Typ WSP, Zylinder Schaft

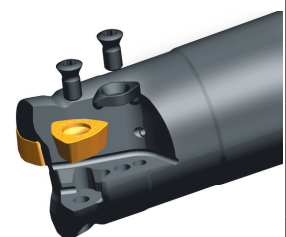


### Specification of tools · Werkzeug-Beschreibung

| Type<br>Typ                     | Stock<br>Lager | Dimensions (mm)<br>Abmessungen |                |                |                |     |     |   | No. of<br>teeth<br>Zähne | Weight<br>Gewicht<br>(kg) |
|---------------------------------|----------------|--------------------------------|----------------|----------------|----------------|-----|-----|---|--------------------------|---------------------------|
|                                 |                | Ø D                            | a <sub>p</sub> | a <sub>e</sub> | L <sub>1</sub> | L   | ø d |   |                          |                           |
| <b>XMR01</b> -020-G20-WP05-02-M | ●              | 20                             | 1.5            | 3.8            | 50             | 130 | 20  | 2 | 0.2                      |                           |
| -020-G20-WP05-02C-M             | ●              | 20                             | 1.5            | 3.8            | 50             | 130 | 20  | 2 | 0.2                      |                           |
| -020-G20-WP05-02-L              | ●              | 20                             | 1.5            | 3.8            | 100            | 180 | 20  | 2 | 0.3                      |                           |
| -020-G20-WP05-02C-L             | ●              | 20                             | 1.5            | 3.8            | 100            | 180 | 20  | 2 | 0.3                      |                           |
| -020-G20-WP05-02-XL             | ○              | 20                             | 1.5            | 3.8            | 130            | 250 | 20  | 2 | 0.8                      |                           |
| -020-G20-WP05-02C-XL            | ○              | 20                             | 1.5            | 3.8            | 130            | 250 | 20  | 2 | 0.8                      |                           |
| -025-G25-WP06-02-M              | ●              | 25                             | 1.5            | 4.35           | 60             | 140 | 25  | 2 | 0.4                      |                           |
| -025-G25-WP06-02C-M             | ●              | 25                             | 1.5            | 4.35           | 60             | 140 | 25  | 2 | 0.4                      |                           |
| -025-G25-WP06-02-L              | ○              | 25                             | 1.5            | 4.35           | 120            | 200 | 25  | 2 | 0.6                      |                           |
| -025-G25-WP06-02C-L             | ○              | 25                             | 1.5            | 4.35           | 120            | 200 | 25  | 2 | 0.6                      |                           |
| -025-G25-WP06-02-XL             | ○              | 25                             | 1.5            | 4.35           | 180            | 300 | 25  | 2 | 1.0                      |                           |
| -025-G25-WP06-02C-XL            | ○              | 25                             | 1.5            | 4.35           | 180            | 300 | 25  | 2 | 1.0                      |                           |
| -032-G32-WP06-03-M              | ●              | 32                             | 1.5            | 4.35           | 70             | 150 | 32  | 3 | 0.8                      |                           |
| -032-G32-WP06-03C-M             | ●              | 32                             | 1.5            | 4.35           | 70             | 150 | 32  | 3 | 0.8                      |                           |
| -032-G32-WP06-03-L              | ●              | 32                             | 1.5            | 4.35           | 120            | 200 | 32  | 3 | 1.0                      |                           |
| -032-G32-WP06-03C-L             | ●              | 32                             | 1.5            | 4.35           | 120            | 200 | 32  | 3 | 1.0                      |                           |
| -032-G32-WP06-03-XL             | ○              | 32                             | 1.5            | 4.35           | 180            | 300 | 32  | 3 | 1.6                      |                           |
| -032-G32-WP06-03C-XL            | ○              | 32                             | 1.5            | 4.35           | 180            | 300 | 32  | 3 | 1.6                      |                           |
| -040-G32-WP06-03-M              | ○              | 40                             | 1.5            | 4.35           | 50             | 150 | 32  | 3 | 0.9                      |                           |
| -040-G32-WP06-03C-M             | ○              | 40                             | 1.5            | 4.35           | 50             | 150 | 32  | 3 | 0.9                      |                           |
| -040-G32-WP06-03-L              | ○              | 40                             | 1.5            | 4.35           | 50             | 250 | 32  | 3 | 1.5                      |                           |
| -040-G32-WP06-03C-L             | ○              | 40                             | 1.5            | 4.35           | 50             | 250 | 32  | 3 | 1.5                      |                           |
| -040-G32-WP06-03-XL             | ○              | 40                             | 1.5            | 4.35           | 50             | 300 | 32  | 3 | 1.8                      |                           |
| -040-G32-WP06-03C-XL            | ○              | 40                             | 1.5            | 4.35           | 50             | 300 | 32  | 3 | 1.8                      |                           |
| -040-G32-WP08-02-M              | ○              | 40                             | 1.5            | 5.66           | 50             | 150 | 32  | 2 | 0.9                      |                           |
| -040-G32-WP08-02C-M             | ○              | 40                             | 1.5            | 5.66           | 50             | 150 | 32  | 2 | 0.9                      |                           |
| -040-G32-WP08-02-L              | ○              | 40                             | 1.5            | 5.66           | 50             | 250 | 32  | 2 | 1.5                      |                           |
| -040-G32-WP08-02C-L             | ○              | 40                             | 1.5            | 5.66           | 50             | 250 | 32  | 2 | 1.5                      |                           |
| -040-G32-WP08-02-XL             | ○              | 40                             | 1.5            | 5.66           | 50             | 300 | 32  | 2 | 1.9                      |                           |
| -040-G32-WP08-02C-XL            | ○              | 40                             | 1.5            | 5.66           | 50             | 300 | 32  | 2 | 1.9                      |                           |
| -050-G32-WP09-02-M              | ○              | 50                             | 3.0            | 6.8            | 50             | 150 | 32  | 2 | 1.9                      |                           |
| -050-G32-WP09-02C-M             | ○              | 50                             | 3.0            | 6.8            | 50             | 150 | 32  | 2 | 1.9                      |                           |
| -050-G32-WP09-02-L              | ○              | 50                             | 3.0            | 6.8            | 50             | 250 | 32  | 2 | 2.5                      |                           |
| -050-G32-WP09-02C-L             | ○              | 50                             | 3.0            | 6.8            | 50             | 250 | 32  | 2 | 2.5                      |                           |

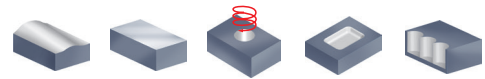
### Spare parts · Ersatzteile

| Tool<br>Werkzeug | Clamp/Insert Screw<br>Schraube | Clamp<br>Pratze | Wrench<br>Schlüssel |        |
|------------------|--------------------------------|-----------------|---------------------|--------|
| XMR01**-WP05**   | I60M3,5×08TT                   | —               | WT10P               | —      |
| XMR01**-WP06**   | I60M4×8.4                      | —               | WT15P               | —      |
| XMR01**-WP08**   | I60M5×13                       | WD-208          | —                   | WT20IT |
| XMR01**-WP09**   |                                |                 |                     |        |



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

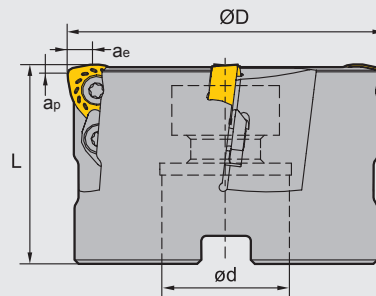
### High feed milling cutters · Hochvorschubfräser



**XMR01 P M K**



W type insert, Arbor mounting  
W Typ WSP, Aufsteckfräser

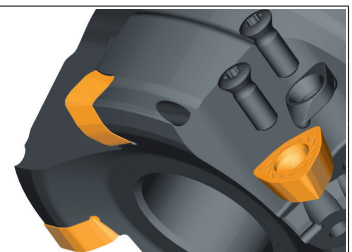


### Specification of tools · Werkzeug-Beschreibung

| Type<br>Typ                   | Stock<br>Lager | Dimensions (mm)<br>Abmessungen |     |      |    |     | No. of<br>teeth<br>Zähne | Inserts<br>WSP | Weight<br>Gewicht<br>(kg) |
|-------------------------------|----------------|--------------------------------|-----|------|----|-----|--------------------------|----------------|---------------------------|
|                               |                | Ø D                            | ap  | ae   | L  | ø d |                          |                |                           |
| <b>XMR01</b> -050-A22-WP06-04 | ●              | 50                             | 1.5 | 4.35 | 50 | 22  | 4                        | A              | 0.4                       |
| -050-A22-WP06-04C             | ●              | 50                             | 1.5 | 4.35 | 50 | 22  | 4                        | A              | 0.4                       |
| -050-A22-WP08-03              | ○              | 50                             | 1.5 | 5.66 | 50 | 22  | 3                        | A              | 0.4                       |
| -050-A22-WP08-03C             | ○              | 50                             | 1.5 | 5.66 | 50 | 22  | 3                        | A              | 0.4                       |
| -063-A22-WP08-04              | ●              | 63                             | 1.5 | 5.66 | 50 | 22  | 4                        | A              | 0.7                       |
| -063-A22-WP08-04C             | ●              | 63                             | 1.5 | 5.66 | 50 | 22  | 4                        | A              | 0.7                       |
| -063-A27-WP08-04              | ●              | 63                             | 1.5 | 5.66 | 50 | 27  | 4                        | A              | 0.7                       |
| -063-A27-WP08-04C             | ●              | 63                             | 1.5 | 5.66 | 50 | 27  | 4                        | A              | 0.7                       |
| -080-A27-WP08-05              | ●              | 80                             | 1.5 | 5.66 | 63 | 27  | 5                        | A              | 1.5                       |
| -080-A27-WP08-05C             | ●              | 80                             | 1.5 | 5.66 | 63 | 27  | 5                        | A              | 1.5                       |
| -100-B32-WP08-06              | ○              | 100                            | 1.5 | 5.66 | 63 | 32  | 6                        | B              | 2.2                       |
| -100-B32-WP08-06C             | ○              | 100                            | 1.5 | 5.66 | 63 | 32  | 6                        | B              | 2.2                       |
| -125-B40-WP08-07              | ●              | 125                            | 1.5 | 5.66 | 63 | 40  | 7                        | B              | 3.5                       |
| -125-B40-WP08-07C             | ●              | 125                            | 1.5 | 5.66 | 63 | 40  | 7                        | B              | 3.5                       |
| -160-B40-WP08-08              | ○              | 160                            | 1.5 | 5.66 | 63 | 40  | 8                        | B              | 6.0                       |
| -160-B40-WP08-08C             | ○              | 160                            | 1.5 | 5.66 | 63 | 40  | 8                        | B              | 6.0                       |
| -063-A22-WP09-03              | ○              | 63                             | 3.0 | 6.8  | 50 | 22  | 3                        | A              | 0.7                       |
| -063-A22-WP09-03C             | ○              | 63                             | 3.0 | 6.8  | 50 | 22  | 3                        | A              | 0.7                       |
| -080-A27-WP09-04              | ○              | 80                             | 3.0 | 6.8  | 63 | 27  | 4                        | A              | 1.4                       |
| -080-A27-WP09-04C             | ○              | 80                             | 3.0 | 6.8  | 63 | 27  | 4                        | A              | 1.4                       |
| -100-B32-WP09-05              | ○              | 100                            | 3.0 | 6.8  | 63 | 32  | 5                        | B              | 2.1                       |
| -100-B32-WP09-05C             | ○              | 100                            | 3.0 | 6.8  | 63 | 32  | 5                        | B              | 2.1                       |
| -125-B40-WP09-06              | ○              | 125                            | 3.0 | 6.8  | 63 | 40  | 6                        | B              | 3.7                       |
| -125-B40-WP09-06C             | ○              | 125                            | 3.0 | 6.8  | 63 | 40  | 6                        | B              | 3.7                       |
| -160-B40-WP09-07              | ○              | 160                            | 3.0 | 6.8  | 63 | 40  | 7                        | B              | 6.3                       |
| -160-B40-WP09-07C             | ○              | 160                            | 3.0 | 6.8  | 63 | 40  | 7                        | B              | 6.3                       |

### Spare parts · Ersatzteile

| Tool<br>Werkzeug | Clamp / Insert Screw<br>Pratze / WSP Schraube | Clamp<br>Pratze | Wrench<br>Schlüssel |        |
|------------------|---|-----------------|---------------------|--------|
|                  |   |                 |                     |        |
| XMR01**-WP06**   | I60M4×8.4                                     | --              | WT15S               | --     |
| XMR01**-WP08**   | I60M5×13                                      | WD-208          | --                  | WT20IT |
| XMR01**-WP09**   | I60M5×13                                      | WD-208          | --                  | --     |



Applicable tool  
Werkzeug **B11-B18**

Tools code key  
Werkzeug ISO **B26-B27**

Grade selection guide  
Sortenauswahl **B19-B23**

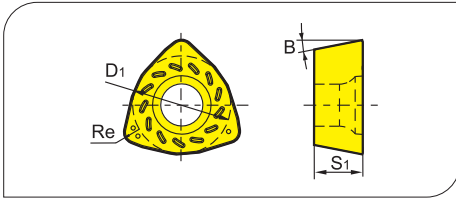
Technical data  
Technische Daten **B215-B220**

# Milling · Fräsen

## Indexable Milling Tools · Wendepplattenfräser

■ Applicable inserts · Wendschneidplatten

● Ideal Machining Condition  
Gute Bearbeitungsbedingungen  
● Normal Machining Condition  
Normale Bearbeitungsbedingungen  
● Unfavorable Machining Condition  
Ungünstige Bearbeitungsbedingungen

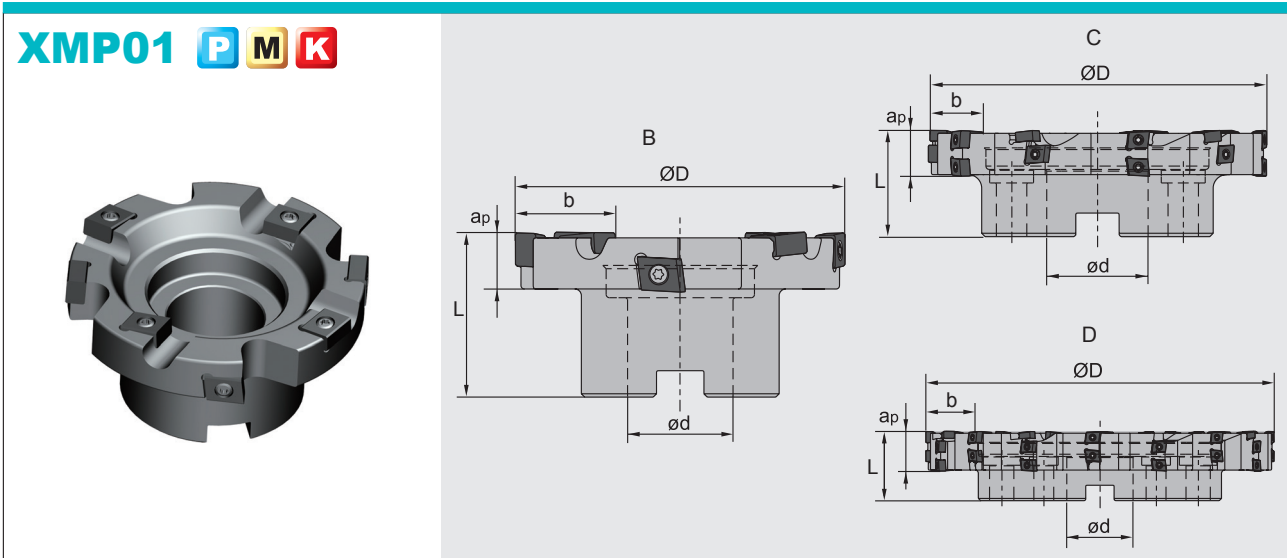
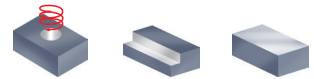


| Workpiece Material<br>Werkstoffe         | P | M | K | N | S |
|--|---|---|---|---|---|
| Steel<br>Stahl                           | ● | ● | ● | ● | ● |
| Stainless Steel<br>Rostfreier Stahl      | ● | ● | ● | ● | ● |
| Cast iron<br>Gusseisen                   | ● | ● | ● | ● | ● |
| Non-ferrite material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

| Insert<br>WSP | Type<br>Typ      | Dimensions (mm)<br>Abmessungen |     |      |       | CVD Coating<br>CVD Beschicht. |        |        |        |        |        | PVD Coating<br>PVD Beschicht. |        |        |        |        | Cermet<br>Cermet | Carbide uncoat.<br>unbe. Hartmetall |        |        |        |         |       |       |       |  |
|---------------|------------------|--------------------------------|-----|------|-------|-------------------------------|--------|--------|--------|--------|--------|-------------------------------|--------|--------|--------|--------|------------------|-------------------------------------|--------|--------|--------|---------|-------|-------|-------|--|
|               |                  | B                              | Re  | S1   | D1    | YBC301                        | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152                        | YBD252 | YBG102 | YBG202 | YBG205 |                  | YBG212                              | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |  |
|               | WPGT050315ZSR    | 11°                            | 1.5 | 3.5  | 7.94  | ●                             |        |        |        |        | ●      |                               |        |        |        |        | ○                |                                     |        |        |        |         |       |       |       |  |
|               | WPGT060415ZSR    | 11°                            | 1.5 | 4.2  | 9.525 | ●                             |        |        |        |        | ●      |                               |        |        |        |        | ●                | ○                                   |        |        |        |         |       |       |       |  |
|               | WPGT080615ZSR    | 11°                            | 1.5 | 6.35 | 12.85 | ●                             |        |        |        |        | ●      |                               |        |        |        |        | ●                | ○                                   |        |        |        |         |       |       |       |  |
|               | WPGT090725ZSR    | 11°                            | 2.5 | 7    | 15    | ●                             |        |        |        |        | ●      |                               |        |        |        |        |                  | ○                                   |        |        |        |         |       |       |       |  |
|               | WPGT050315ZSR-PM | 11°                            | 1.5 | 3.5  | 7.94  | ●                             |        |        |        |        | ○      |                               |        |        |        |        | ●                |                                     |        |        |        |         |       |       |       |  |
|               | WPGT060415ZSR-PM | 11°                            | 1.5 | 4.2  | 9.525 | ●                             |        |        |        |        | ○      |                               |        |        |        |        | ●                |                                     |        |        |        |         |       |       |       |  |
|               | WPGT080615ZSR-PM | 11°                            | 1.5 | 6.35 | 12.85 | ●                             |        |        |        |        | ○      |                               |        |        |        |        | ●                |                                     |        |        |        |         |       |       |       |  |
|               | WPGT090725ZSR-PM | 11°                            | 2.5 | 7    | 15    | ●                             |        |        |        |        | ○      |                               |        |        |        |        |                  | ●                                   |        |        |        |         |       |       |       |  |

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

### Boring milling cutters · Bohren und Fräsen



### Specification of tools · Werkzeug Beschreibung

| Type<br>Typ                         | Stock<br>Lager | Dimensions (mm)<br>Abmessungen |    |    |    |      | No. of<br>teeth<br>Zähne<br>Z | Zeff<br>( peripheral<br>teeth/end teeth )<br>( Eckplatte /<br>Planplatte ) | Coupling<br>Aufnahme | Weight<br>Gewicht<br>(kg) |
|-------------------------------------|----------------|--------------------------------|----|----|----|------|-------------------------------|--|----------------------|---------------------------|
|                                     |                | ØD                             | ød | L  | b  | ap   |                               |  |                      |                           |
| <b>XMP01</b> -080X18-B27-CNE1210-08 | ●              | 80                             | 27 | 50 | 18 | 15   | 8                             | 2/2  | B                    | 0.67                      |
| -100X18-B32-CNE1210-08              | ●              | 100                            | 32 | 50 | 18 | 20   | 8                             | 2/2  | A                    | 0.99                      |
| -125X27-B40-CNE1210-15              | ●              | 125                            | 40 | 63 | 27 | 22.5 | 15                            | 3/2  | B                    | 2.46                      |
| -160X27-C40-CNE1210-18              | ●              | 160                            | 40 | 63 | 27 | 25   | 18                            | 4/2  | C                    | 3.7                       |
| -200X27-C60-CNE1210-21              | ●              | 200                            | 60 | 63 | 27 | 31.5 | 21                            | 5/2  | C                    | 5.46                      |
| -250X36-C60-CNE1210-32              | ○              | 250                            | 40 | 63 | 36 | 56.5 | 32                            | 6/2  | C                    | 9.79                      |
| -315X36-D60-CNE1210-42              | ○              | 315                            | 60 | 63 | 36 | 47.5 | 42                            | 8/2  | D                    | 17.65                     |
| -400X36-D60-CNE1210-52              | ○              | 400                            | 60 | 63 | 36 | 90   | 52                            | 10/2   | D                    | 27.36                     |

Remark: (1) special ap,b,D possible on request of the Customers  
(1) besondere ap,b,D möglich nach Anfrageen

(2) Zeff means the effective teeth  
(2) Zeff bedeutet die wirkungsvolle zähne

### Spare parts · Ersatzteile

| Diameter<br>Durchmesser<br>φD | Insert<br>WSP | Clamp Screw<br>Schraube | Wrench<br>Schlüssel |  |
|-------------------------------|---------------|-------------------------|---------------------|--|
|                               |               |                         |                     |  |
| Ø80-Ø400                      | CNE121006*    | I60M4X12                | WT15IP              |  |
|                               |               |                         |                     |  |

Applicable tool  
Werkzeug **B11-B18**

Tools code key  
Werkzeug ISO **B26-B27**

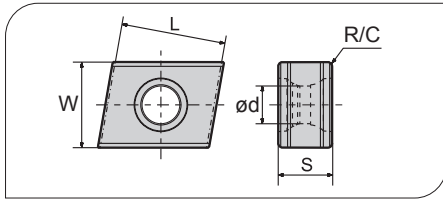
Grade selection guide  
Sortenauswahl **B19-B23**

Technical data  
Technische Daten **B215-B220**

# Milling · Fräsen

## Indexable Milling Tools · Wendepplattenfräser

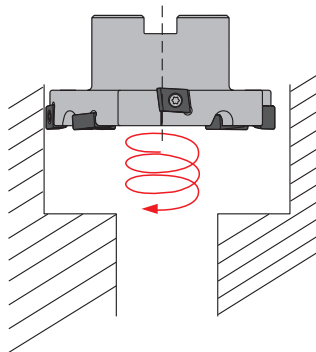
### Applicable inserts · Wendeschneidplatten



- Ideal Machining Condition / Gute Bearbeitungsbedingungen
- Normal Machining Condition / Normale Bearbeitungsbedingungen
- Unfavorable Machining Condition / Ungünstige Bearbeitungsbedingungen

| Workpiece Material / Werkstoffe         | P | M | K | N | S | YBC301 | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152 | YBD252 | YBG102 | YBG202 | YBG205 | YBG212 | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |
|---|---|---|---|---|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|-------|-------|-------|
| P Steel Stahl                           | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     |
| M Stainless Steel Rostfreier Stahl      | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     |
| K Cast iron Gusseisen                   | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     |
| N Non-ferrite material Ne Metalle       | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     |
| S Heat-resistant steel Warmfester Stahl | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     |

| Insert WSP | Type Typ          | Dimensions (mm) Abmessungen |      |      |     |     | CVD Coating CVD Beschicht. |        |        |        |        |        | PVD Coating PVD Beschicht. |        |        |        |        | Cermet Cermet | Carbide uncoat. unbe. Hartmetall |        |        |        |         |       |       |       |
|------------|-------------------|-----------------------------|------|------|-----|-----|----------------------------|--------|--------|--------|--------|--------|----------------------------|--------|--------|--------|--------|---------------|----------------------------------|--------|--------|--------|---------|-------|-------|-------|
|            |                   | L                           | W    | S    | R/C | ød  | YBC301                     | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152                     | YBD252 | YBG102 | YBG202 | YBG205 |               | YBG212                           | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |
|            | <b>CNE121006A</b> | 12.8                        | 10.0 | 6.35 | 0.4 | 4.4 |                            |        |        |        | ●      | ○      |                            |        |        |        |        |               |                                  |        |        |        |         |       |       |       |
|            | <b>CNE121006B</b> | 12.0                        | 10.0 | 6.35 | 0.6 | 4.4 |                            |        |        | ○      | ●      |        |                            |        |        |        |        |               |                                  |        |        |        |         |       |       |       |



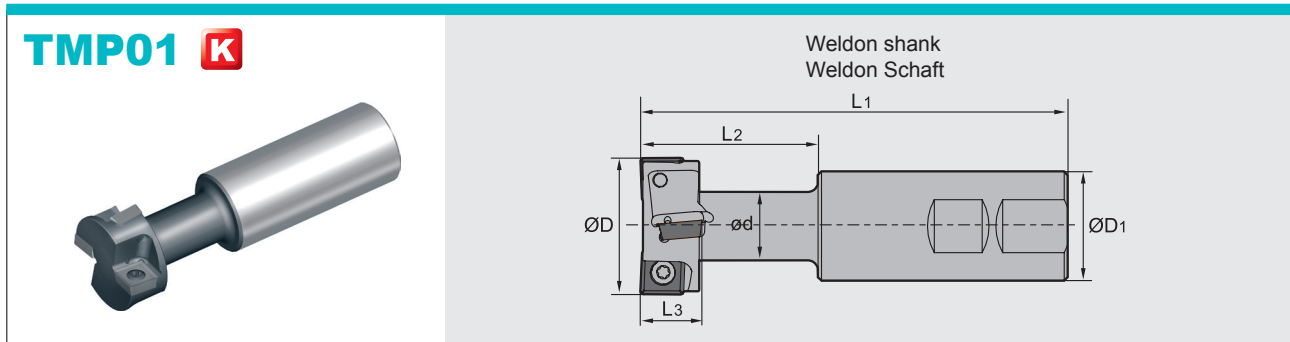
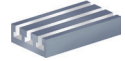
### Recommended cutting data · Empfohlene Schnittdaten

| Workpiece material / Werkstückstoff   | Hardness HB / Härte | Grade / Sorte | Cutting data / Schnittdaten |                |                   |            |  |
|---|---------------------|---------------|-----------------------------|----------------|-------------------|------------|--|
|   |                     |               | V (m/min)                   | f (mm/zeff)    | a <sub>pmax</sub> |            |  |
|   |                     |               |                             |                | CNE121006A        | CNE121006B |  |
| <b>P</b> Low-carbon steel / Soft steel / Niedriglegierter Kohlenstoffstahl / Baustahl | ≤180                | YBM253        | 270 (220-350)               | 0.2 (0.15-0.3) | 15-90             | 15-90      |  |
|   | 180-280             | YBM253        | 260 (200-320)               | 0.2 (0.15-0.3) | 15-90             | 15-90      |  |
|   | 280-350             | YBM253        | 240 (180-300)               | 0.2 (0.15-0.3) | 15-90             | 15-90      |  |
| <b>M</b> stainless steel / Edelstahl  | ≤270                | YBM253        | 230 (180-300)               | 0.2 (0.1-0.3)  | 15-90             | 15-90      |  |
| <b>K</b> Cast iron / Gusseisen  | 180-250             | YBD152        | 270 (150-300)               | 0.2 (0.15-0.3) | 15-90             | 15-90      |  |

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

### T-slot milling tools · T-Nuten Fräser




Kr:90°



### ■ Specification of tools · Werkzeug-Beschreibung

| Type<br>Typ  | Stock<br>Lager    | Dimensions (mm)<br>Abmessungen |                  |     |                |                |                |    | No. of<br>teeth<br>Zähne | Number<br>of insert<br>Anzahl<br>WSP | T-slot<br>specification<br>für T-Nuten |
|--------------|-------------------|--------------------------------|------------------|-----|----------------|----------------|----------------|----|--------------------------|--------------------------------------|--|
|              |                   | Ø D                            | Ø D <sub>1</sub> | ø d | L <sub>1</sub> | L <sub>2</sub> | L <sub>3</sub> |    |                          |                                      |  |
| <b>TMP01</b> | -021-XP25-MP06-01 | ●                              | 21               | 25  | 10             | 100            | 32             | 9  | 1                        | 2                                    | 12                                     |
|              | -025-XP25-MP06-01 | ●                              | 25               | 25  | 12             | 100            | 35             | 11 | 1                        | 2                                    | 14                                     |
|              | -032-XP32-MP08-02 | ●                              | 32               | 32  | 15             | 110            | 45             | 14 | 2                        | 4                                    | 18                                     |
|              | -040-XP32-MP12-02 | ●                              | 40               | 32  | 19             | 125            | 55             | 18 | 2                        | 4                                    | 22                                     |
|              | -050-XP40-MP12-02 | ●                              | 50               | 40  | 25             | 140            | 65             | 22 | 2                        | 4                                    | 28                                     |
|              | -060-XP50-MP12-02 | ●                              | 60               | 50  | 32             | 160            | 80             | 28 | 2                        | 6                                    | 36                                     |

### ■ Spare parts · Ersatzteile

| Tool<br>Werkzeug       | Screw<br>Schraube   | Wrench<br>Schlüssel   |  |
|------------------------|---|---|--|
|                        |  |  |  |
| TMP01-021-XP25-MP06-01 | I60M2.5×5.5   | WT07IP  | --   |
| TMP01-025-XP25-MP06-01 | I60M2.5×5.5   |   |  |
| TMP01-032-XP32-MP08-02 | I60M3×7   | WT10IP  | --   |
| TMP01-040-XP32-MP12-02 | I60M5×10  | --  | WT20IT   |
| TMP01-050-XP40-MP12-02 | I60M5×10  |   |  |
| TMP01-060-XP50-MP12-02 | I60M5×10  |   |  |

Applicable tool  
Werkzeug [B11-B18](#)

Tools code key  
Werkzeug ISO [B26-B27](#)

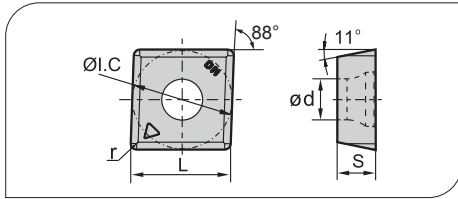
Grade selection guide  
Sortenauswahl [B19-B23](#)

Technical data  
Technische Daten [B215-B220](#)

# Milling · Fräsen

## Indexable Milling Tools · Wendepplattenfräser

### Applicable inserts · Wendeschneidplatten



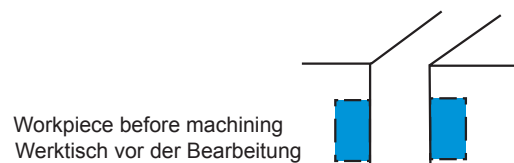
- Ideal Machining Condition / Gute Bearbeitungsbedingungen
- Normal Machining Condition / Normale Bearbeitungsbedingungen
- Unfavorable Machining Condition / Ungünstige Bearbeitungsbedingungen

| Workpiece Material / Werkstoff                   | P | M | K | N | S | YBC301 | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152 | YBD252 | YBG102 | YBG202 | YBG205 | YBG302 | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |
|--|---|---|---|---|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|-------|-------|-------|
| <b>P</b> Steel / Stahl                           | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     |
| <b>M</b> Stainless Steel / Rostfreier Stahl      | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     |
| <b>K</b> Cast iron / Gusseisen                   | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     |
| <b>N</b> Non-ferrite material / Ne Metalle       | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     |
| <b>S</b> Heat-resistant steel / Warmfester Stahl | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     |

| Insert WSP | Type Typ             | Dimensions (mm) / Abmessungen |      |      |      |     | CVD Coating / CVD Beschicht. |        |        |        |        |        | PVD Coating / PVD Beschicht. |        |        |        | Cermet / Cermet | Carbide uncoat. / unbe. Hartmetall |        |        |        |        |         |       |       |       |
|------------|----------------------|-------------------------------|------|------|------|-----|------------------------------|--------|--------|--------|--------|--------|------------------------------|--------|--------|--------|-----------------|------------------------------------|--------|--------|--------|--------|---------|-------|-------|-------|
|            |                      | I.C                           | L    | s    | d    | r   | YBC301                       | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152                       | YBD252 | YBG102 | YBG202 |                 | YBG205                             | YBG302 | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |
|            | <b>MPHT060304-DM</b> | 6.35                          | 6.35 | 3.18 | 2.8  | 0.4 | ●                            | ○      |        |        |        |        |                              |        |        |        |                 | ●                                  |        |        |        |        |         |       |       |       |
|            | <b>MPHT080305-DM</b> | 8.3                           | 8.3  | 3.18 | 3.4  | 0.5 | ●                            | ○      |        |        |        |        |                              |        |        |        |                 | ●                                  |        |        |        |        |         |       |       |       |
|            | <b>MPHT120408-DM</b> | 12.7                          | 12.7 | 4.76 | 5.56 | 0.8 | ●                            | ○      |        |        |        |        |                              |        |        |        |                 | ●                                  |        |        |        |        |         |       |       |       |

### Recommended Cutting data · Schnittdaten

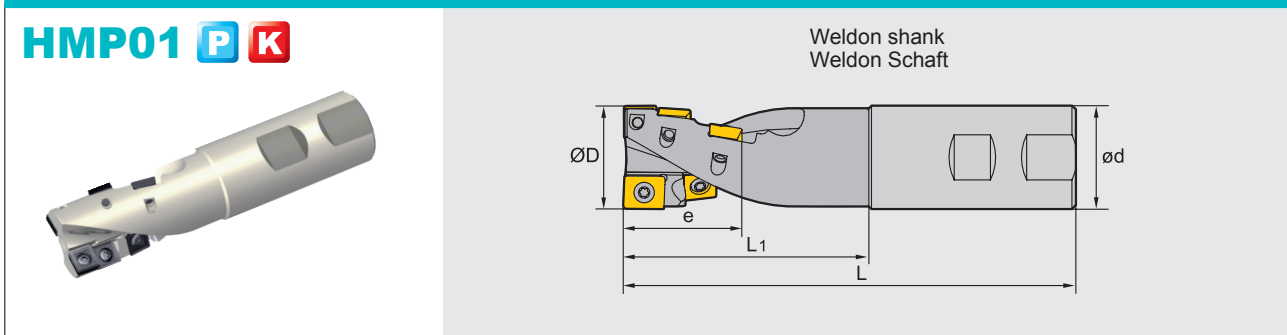
| Workpiece material / Werkstückstoff | Grade / Sorte | Cutting data / Schnittdaten |          |                           |
|-------------------------------------|---------------|-----------------------------|----------|---------------------------|
|                                     |               | V(m/min)                    | f(mm/z)  | Cooling / Kühlung         |
| <b>K</b>                            | YBG302        | 80~160                      | 0.05~0.2 | Wet / Dry / Nass/ Trocken |



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

### Helical end mill · Walzenstirnfräser

Kr:90°

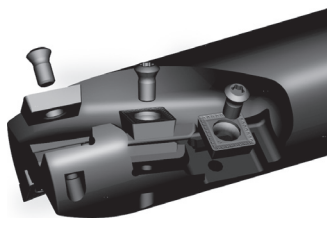


### ■ Specification of tools · Werkzeug-Beschreibung

| Type<br>Typ  | Stock<br>Lager       |   | Dimensions (mm)<br>Abmessungen |     |    |                |    | Number of flute<br>Anzahl<br>Zahnreihen<br>Z | Number of insert<br>Anzahl WSP |                   | Shank type<br>Schaft |        |
|--------------|----------------------|---|--------------------------------|-----|----|----------------|----|--|--------------------------------|-------------------|----------------------|--------|
|              | R                    | L | Ø D                            | ø d | e  | L <sub>1</sub> | L  |  | APKT<br>150412-**              | SPMT<br>120408-** |                      |        |
| <b>HMP01</b> | -040×55-XP40-SP12-02 | ● | ○                              | 40  | 40 | 55             | 95 | 175  | 2                              | 1                 | 5                    | Weldon |
|              | -050×55-XP40-SP12-04 | ● | ○                              | 50  | 40 | 55             | 95 | 175  | 4                              | 2                 | 10                   | Weldon |

### ■ Spare parts · Ersatzteile

| Diameter<br>Durchmesser<br>Ø D | Screw<br>Schraube | Wrench<br>Schlüssel |
|--------------------------------|-------------------|---------------------|
| Ø40                            | I60M5×10          | WT20IS              |
| Ø50                            | I60M5×13          | WT20IS              |



Applicable tool  
Werkzeug [B11-B18](#)

Tools code key  
Werkzeug ISO [B26-B27](#)

Grade selection guide  
Sortenauswahl [B19-B23](#)

Technical data  
Technische Daten [B215-B220](#)

### Helical end mill · Walzenstirnfräser

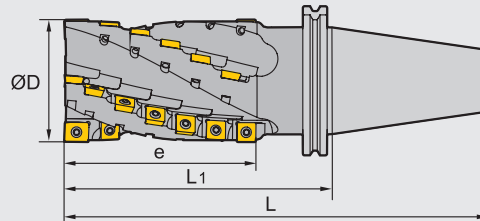
**Kr:90°**



**HMP01** **P** **K**



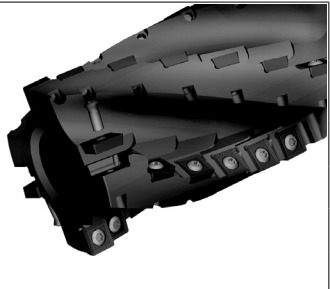


JT shank/BT shank (figure is JT shank)  
JT Schaft/BT Schaft (Abb. is JT shank)



### Specification of tools · Werkzeug-Beschreibung

| Type<br>Typ  | Stock<br>Lager        |   | Dimensions (mm)<br>Abmessungen |    |                |     | Number of<br>flute<br>Anzahl<br>Zahnreihen<br>Z | Number of insert<br>Anzahl WSP |                   | Shank<br>type<br>Schaft |    |
|--------------|-----------------------|---|--------------------------------|----|----------------|-----|---|--------------------------------|-------------------|-------------------------|----|
|              | R                     | L | Ø D                            | e  | L <sub>1</sub> | L   |   | APKT<br>150412-**              | SPMT<br>120408-** |                         |    |
| <b>HMP01</b> | -050×84-JT50-SP12-04  | ○ | ○                              | 50 | 84             | 145 | 246.75  | 4                              | 2                 | 16                      | JT |
|              | -063×74-JT50-SP12-04  | ○ | ○                              | 63 | 74             | 135 | 236.75  | 4                              | 2                 | 14                      | JT |
|              | -063×104-JT50-SP12-04 | ● | ○                              | 63 | 104            | 165 | 266.75  | 4                              | 2                 | 20                      | JT |
|              | -063×134-JT50-SP12-04 | ○ | ○                              | 63 | 134            | 195 | 296.75  | 4                              | 2                 | 26                      | JT |
|              | -080×104-JT50-SP12-04 | ○ | ○                              | 80 | 104            | 165 | 266.75  | 4                              | 2                 | 20                      | JT |
|              | -080×144-JT50-SP12-04 | ○ | ○                              | 80 | 144            | 205 | 306.75  | 4                              | 2                 | 28                      | JT |
|              | -050×84-BT50-SP12-04  | ○ | ○                              | 50 | 84             | 145 | 246.8   | 4                              | 2                 | 16                      | BT |
|              | -063×74-BT50-SP12-04  | ○ | ○                              | 63 | 74             | 135 | 236.8   | 4                              | 2                 | 14                      | BT |
|              | -063×104-BT50-SP12-04 | ○ | ○                              | 63 | 104            | 165 | 266.8   | 4                              | 2                 | 20                      | BT |
|              | -063×134-BT50-SP12-04 | ○ | ○                              | 63 | 134            | 195 | 296.8   | 4                              | 2                 | 26                      | BT |
|              | -080×104-BT50-SP12-04 | ○ | ○                              | 80 | 104            | 165 | 266.8   | 4                              | 2                 | 20                      | BT |
|              | -080×144-BT50-SP12-04 | ○ | ○                              | 80 | 144            | 205 | 306.8   | 4                              | 2                 | 28                      | BT |

### Spare parts · Ersatzteile

| Diameter<br>Durchmesser<br>Ø D | Screw<br>Schraube  | Wrench<br>Schlüssel  |  |
|--------------------------------|--|--|---|
| Ø50                            |  I60M5×13 |  WT20IS |   |
| Ø63                            | I60M5×13   | WT20IS   |   |
| Ø80                            | I60M5×13   | WT20IS   |   |

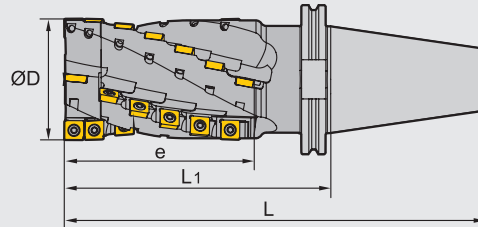
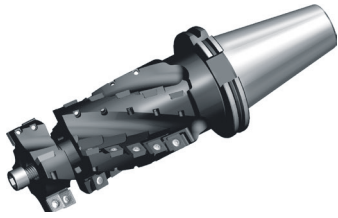
● Ex Stock / ab Lager ○ On demand / auf Anfrage

Helical endmills with interchangeable heads  
Walzenstirnfräser mit austauschbarem Kopf

Kr:90°



**HMP01 EC P K**



### Specification of tools · Werkzeug-Beschreibung

| Type<br>Typ  | Stock<br>Lager          |   | Dimensions (mm)<br>Abmessungen |    |     |     | Number of flute<br>Anzahl<br>Zahnreihen<br>Z | Number of insert<br>Anzahl WSP |                   | Shank<br>type<br>Schaft |    |
|--------------|-------------------------|---|--------------------------------|----|-----|-----|--|--------------------------------|-------------------|-------------------------|----|
|              | R                       | L | Ø D                            | e  | L1  | L   |  | APKT<br>150412-**              | SPMT<br>120408-** |                         |    |
| <b>HMP01</b> | -050×84EC-JT50-SP12-04  | ● | ○                              | 50 | 84  | 145 | 246.75                                       | 4                              | 2                 | 16                      | JT |
|              | -063×74EC-JT50-SP12-04  | ○ | ○                              | 63 | 74  | 135 | 236.75                                       | 4                              | 2                 | 14                      | JT |
|              | -063×104EC-JT50-SP12-04 | ○ | ○                              | 63 | 104 | 165 | 266.75                                       | 4                              | 2                 | 20                      | JT |
|              | -063×134EC-JT50-SP12-04 | ● | ○                              | 63 | 134 | 195 | 296.75                                       | 4                              | 2                 | 26                      | JT |
|              | -080×104EC-JT50-SP12-04 | ○ | ○                              | 80 | 104 | 165 | 266.75                                       | 4                              | 2                 | 20                      | JT |
|              | -080×144EC-JT50-SP12-04 | ○ | ○                              | 80 | 144 | 205 | 306.75                                       | 4                              | 2                 | 28                      | JT |
|              | -050×84EC-BT50-SP12-04  | ○ | ○                              | 50 | 84  | 145 | 246.8  | 4                              | 2                 | 16                      | BT |
|              | -063×74EC-BT50-SP12-04  | ○ | ○                              | 63 | 74  | 135 | 236.8  | 4                              | 2                 | 14                      | BT |
|              | -063×104EC-BT50-SP12-04 | ○ | ○                              | 63 | 104 | 165 | 266.8  | 4                              | 2                 | 20                      | BT |
|              | -063×134EC-BT50-SP12-04 | ○ | ○                              | 63 | 134 | 195 | 296.8  | 4                              | 2                 | 26                      | BT |
|              | -080×104EC-BT50-SP12-04 | ○ | ○                              | 80 | 104 | 165 | 266.8  | 4                              | 2                 | 20                      | BT |
|              | -080×144EC-BT50-SP12-04 | ○ | ○                              | 80 | 144 | 205 | 306.8  | 4                              | 2                 | 28                      | BT |

### Spare parts · Ersatzteile

| Diameter<br>Durchmesser<br>Ø D | Insert Screw<br>WSP Schraube | Screw of head<br>Schraube für Kopf | Wrench<br>of insert Screw<br>Schlüssel f. WSP | Wrench of head<br>Schlüssel für Kopf | Interchangeable head<br>Austauschbarer Kopf |  |
|--------------------------------|------------------------------|------------------------------------|---|--------------------------------------|---|--|
| Ø50                            | I60M5×13                     | M10×50                             | WT20IS  | WH80L                                | 050EC                                       |  |
| Ø63                            | I60M5×13                     | M10×50                             | WT20IS  | WH80L                                | 063EC                                       |  |
| Ø80                            | I60M5×13                     | M12×55                             | WT20IS  | WH100L                               | 080EC                                       |  |
|                                |                              |                                    |   |                                      |   |  |

Applicable tool **B11-B18**  
Werkzeug

Tools code key **B26-B27**  
Werkzeug ISO

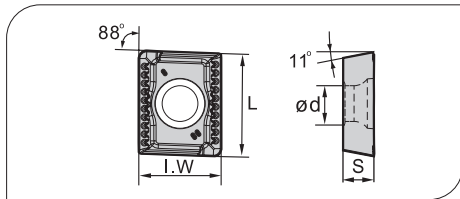
Grade selection guide **B19-B23**  
Sortenauswahl

Technical data **B215-B220**  
Technische Daten

# Milling - Fräsen

## Indexable Milling Tools - Wendepplattenfräser

### Applicable inserts · Wendeschneidplatten

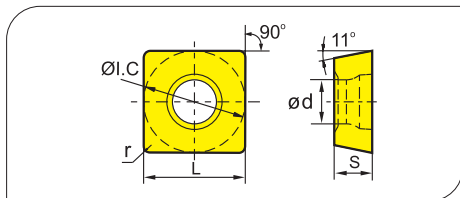


- Ideal Machining Condition / Gute Bearbeitungsbedingungen
- Normal Machining Condition / Normale Bearbeitungsbedingungen
- Unfavorable Machining Condition / Ungünstige Bearbeitungsbedingungen

| Workpiece Material / Werkstoffe           | P | M | K | N | S | YBC301 | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152 | YBD252 | YBG102 | YBG202 | YBG205 | YBG302 | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |
|---|---|---|---|---|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|-------|-------|-------|
| P Steel / Stahl                           | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     |
| M Stainless Steel / Rostfreier Stahl      | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     |
| K Cast iron / Gusseisen                   | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     |
| N Non-ferrite material / Ne Metalle       | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     |
| S Heat-resistant steel / Warmfester Stahl | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     |

| Insert WSP | Type Typ      | Dimensions (mm) / Abmessungen |      |      |     |     | CVD Coating / CVD Beschicht. |        |        |        |        |        | PVD Coating / PVD Beschicht. |        |        |        | Cermet / Cermet | Carbide uncoat. / unbe. Hartmetall |        |        |        |        |         |       |       |       |
|------------|---------------|-------------------------------|------|------|-----|-----|------------------------------|--------|--------|--------|--------|--------|------------------------------|--------|--------|--------|-----------------|------------------------------------|--------|--------|--------|--------|---------|-------|-------|-------|
|            |               | L                             | I.W  | S    | d   | r   | YBC301                       | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152                       | YBD252 | YBG102 | YBG202 |                 | YBG205                             | YBG302 | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |
|            | APKT150412-PM | 16.33                         | 12.7 | 4.76 | 5.4 | 1.2 |                              |        |        |        | ●      |        |                              |        |        |        |                 | ●                                  |        |        |        |        |         |       |       |       |
|            | APKT150412-KM | 16.33                         | 12.7 | 4.76 | 5.4 | 1.2 |                              |        |        |        |        |        |                              |        |        |        |                 | ○                                  | ●      |        |        |        |         |       |       |       |

### Applicable inserts · Wendeschneidplatten



- Ideal Machining Condition / Gute Bearbeitungsbedingungen
- Normal Machining Condition / Normale Bearbeitungsbedingungen
- Unfavorable Machining Condition / Ungünstige Bearbeitungsbedingungen

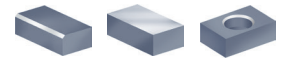
| Workpiece Material / Werkstoffe           | P | M | K | N | S | YBC301 | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152 | YBD252 | YBG102 | YBG202 | YBG205 | YBG302 | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |
|---|---|---|---|---|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|-------|-------|-------|
| P Steel / Stahl                           | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     |
| M Stainless Steel / Rostfreier Stahl      | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     |
| K Cast iron / Gusseisen                   | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     |
| N Non-ferrite material / Ne Metalle       | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     |
| S Heat-resistant steel / Warmfester Stahl | ● | ● | ● | ● | ● | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●      | ●       | ●     | ●     | ●     |

| Insert WSP | Type Typ      | Dimensions (mm) / Abmessungen |      |      |     |     | CVD Coating / CVD Beschicht. |        |        |        |        |        | PVD Coating / PVD Beschicht. |        |        |        | Cermet / Cermet | Carbide uncoat. / unbe. Hartmetall |        |        |        |        |         |       |       |       |
|------------|---------------|-------------------------------|------|------|-----|-----|------------------------------|--------|--------|--------|--------|--------|------------------------------|--------|--------|--------|-----------------|------------------------------------|--------|--------|--------|--------|---------|-------|-------|-------|
|            |               | L                             | I.W  | S    | d   | r   | YBC301                       | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152                       | YBD252 | YBG102 | YBG202 |                 | YBG205                             | YBG302 | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |
|            | SPMT120408-PM | 12.7                          | 12.7 | 4.76 | 5.5 | 0.8 |                              |        |        |        | ●      |        |                              |        |        |        |                 | ●                                  |        |        |        |        |         |       |       |       |
|            | SPMT120408-KM | 12.7                          | 12.7 | 4.76 | 5.5 | 0.8 |                              |        |        |        |        |        |                              |        |        |        |                 | ○                                  | ●      |        |        |        |         |       |       |       |

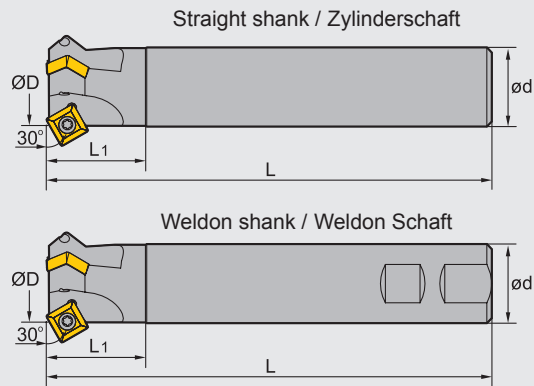
● Ex Stock / ab Lager ○ On demand / auf Anfrage

### Chamfer milling tools · Fasfräser

Kr:30°



**CMZ01** P M K

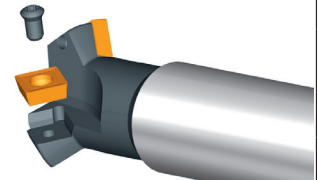


#### ■ Specification of tools · Werkzeug-Beschreibung

|                                     | Type<br>Typ       | Stock<br>Lager | Dimensions (mm)<br>Abmessungen |     |     |                | No. of teeth<br>Zähne | Weight<br>Gewicht<br>(kg) |
|-------------------------------------|-------------------|----------------|--------------------------------|-----|-----|----------------|-----------------------|---------------------------|
|                                     |                   |                | Ø D                            | ø d | L   | L <sub>1</sub> |                       |                           |
| <b>CMZ01</b><br>Zylinder-<br>schaft | -012-G20-SP12-01  | ●              | 12                             | 20  | 100 | 40             | 1                     | 0.2                       |
|                                     | -025-G25-SP12-02  | ●              | 25                             | 25  | 120 | 40             | 2                     | 0.8                       |
|                                     | -032-G32-SP12-03  | ●              | 32                             | 32  | 180 | 40             | 3                     | 1.1                       |
| Weldon<br>Schaft                    | -012-XP20-SP12-01 | ●              | 12                             | 20  | 100 | 40             | 1                     | 0.2                       |
|                                     | -025-XP25-SP12-02 | ●              | 25                             | 25  | 120 | 40             | 2                     | 0.6                       |
| Weldon<br>Schaft                    | -032-XP32-SP12-03 | ●              | 32                             | 32  | 180 | 40             | 3                     | 1.0                       |

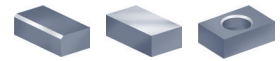
#### ■ Spare parts · Ersatzteile

| Diameter<br>Durchmesser<br>Ø D | Screw<br>Schraube | Wrench<br>Schlüssel |
|--------------------------------|-------------------|---------------------|
| Ø12-Ø32                        | I43M5×11          | WT20IS              |



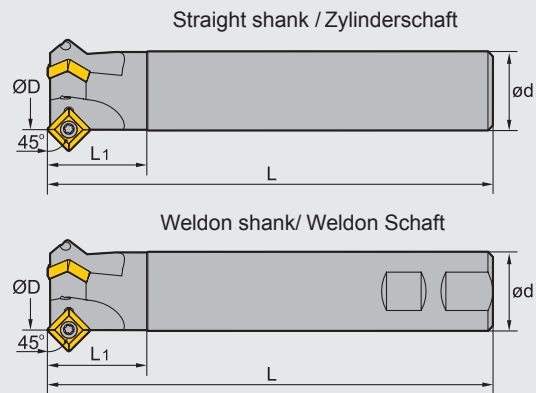
● Ex Stock / ab Lager ○ On demand / auf Anfrage

Kr:45°



### Chamfer milling tools · Fasfräser



**CMA01** P M K

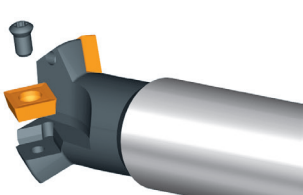


### ■ Specification of tools · Werkzeug-Beschreibung

|                                   | Type<br>Typ       | Stock<br>Lager | Dimensions (mm)<br>Abmessungen |     |     |                | No. of teeth<br>Zähne | Weight<br>Gewicht<br>(kg) |
|-----------------------------------|-------------------|----------------|--------------------------------|-----|-----|----------------|-----------------------|---------------------------|
|                                   |                   |                | Ø D                            | ø d | L   | L <sub>1</sub> |                       |                           |
| <b>CMA01</b><br>Straight<br>shank | -012-G20-SP12-01  | ●              | 12                             | 20  | 100 | 40             | 1                     | 0.2                       |
|                                   | -025-G25-SP12-02  | ●              | 25                             | 25  | 120 | 40             | 2                     | 0.8                       |
| Zylinder<br>Schaft                | -032-G32-SP12-03  | ●              | 32                             | 32  | 180 | 40             | 3                     | 1.1                       |
| Weldon<br>shank                   | -012-XP20-SP12-01 | ●              | 12                             | 20  | 100 | 40             | 1                     | 0.2                       |
| Weldon<br>Schaft                  | -025-XP25-SP12-02 | ●              | 25                             | 25  | 120 | 40             | 2                     | 0.6                       |
|                                   | -032-XP32-SP12-03 | ●              | 32                             | 32  | 100 | 40             | 3                     | 1.0                       |

### ■ Spare parts · Ersatzteile

| Diameter<br>Durchmesser<br>Ø D | Screw<br>Schraube   | Wrench<br>Schlüssel   |
|--------------------------------|---|---|
| Ø12-Ø32                        | <br>I43M5×11 | <br>WT20IS |



Applicable tool  
Werkzeug [B11-B18](#)

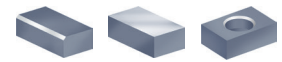
Tools code key  
Werkzeug ISO [B26-B27](#)

Grade selection guide  
Sortenauswahl [B19-B23](#)

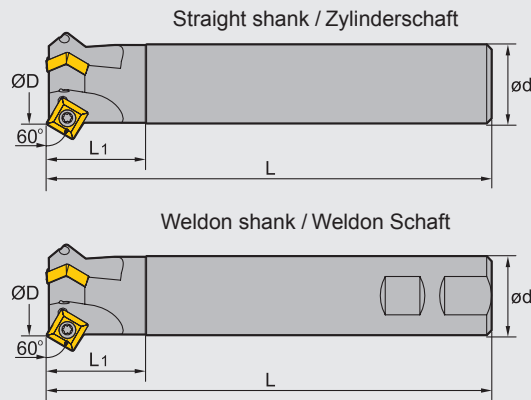
Technical data  
Technische Daten [B215-B220](#)

### Chamfer milling tools · Fasfräser

Kr:60°





**CMD01** P M K

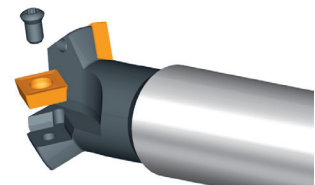


#### ■ Specification of tools · Werkzeug-Beschreibung

|                                   | Type<br>Typ        | Stock<br>Lager    | Dimensions (mm)<br>Abmessungen |     |     |                | No. of teeth<br>Zähne | Weight<br>Gewicht<br>(kg) |
|-----------------------------------|--------------------|-------------------|--------------------------------|-----|-----|----------------|-----------------------|---------------------------|
|                                   |                    |                   | Ø D                            | ø d | L   | L <sub>1</sub> |                       |                           |
| <b>CMD01</b><br>Straight<br>shank | -012-G20-SP12-01   | ●                 | 12                             | 20  | 100 | 40             | 1                     | 0.2                       |
|                                   | -025-G25-SP12-02   | ●                 | 25                             | 25  | 120 | 40             | 2                     | 0.8                       |
|                                   | Zylinder<br>Schaft | -036-G32-SP12-03  | ●                              | 36  | 32  | 180            | 40                    | 3                         |
| Weldon<br>shank                   | -012-XP20-SP12-01  | ●                 | 12                             | 20  | 100 | 40             | 1                     | 0.2                       |
|                                   | -025-XP25-SP12-02  | ●                 | 25                             | 25  | 120 | 40             | 2                     | 0.6                       |
|                                   | Weldon<br>Schaft   | -036-XP32-SP12-03 | ●                              | 36  | 32  | 180            | 40                    | 3                         |

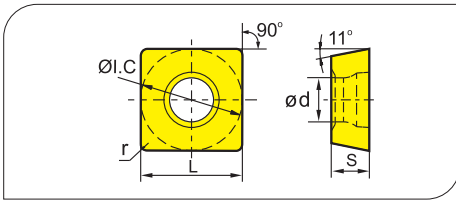
#### ■ Spare parts · Ersatzteile

| Diameter<br>Durchmesser<br>Ø D | Screw<br>Schraube   | Wrench<br>Schlüssel   |
|--------------------------------|---|---|
| Ø12-Ø32                        | <br>I43M5×11 | <br>WT20IS |



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

### Applicable inserts · Wendeschneidplatten



- Ideal Machining Condition / Gute Bearbeitungsbedingungen
- Normal Machining Condition / Normale Bearbeitungsbedingungen
- Unfavorable Machining Condition / Ungünstige Bearbeitungsbedingungen

| Workpiece Material / Werkstoff                   | P | M | K | N | S | YBC301 | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152 | YBD252 | YBG102 | YBG202 | YBG205 | YBG302 | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |   |
|--|---|---|---|---|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|-------|-------|-------|---|
| <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 WSP | Type Typ          | Dimensions (mm) / Abmessungen |      |     |      |     | CVD Coating / CVD Beschicht. |        |        |        |        |        | PVD Coating / PVD Beschicht. |        |        | Cermet / Cermet | Carbide uncoat. / unbe. Hartmetall |        |        |        |        |        |         |       |       |       |
|------------|-------------------|-------------------------------|------|-----|------|-----|------------------------------|--------|--------|--------|--------|--------|------------------------------|--------|--------|-----------------|------------------------------------|--------|--------|--------|--------|--------|---------|-------|-------|-------|
|            |                   | I.C                           | L    | r   | S    | d   | YBC301                       | YBC302 | YBC401 | YBM251 | YBM253 | YBM351 | YBD152                       | YBD252 | YBG102 |                 | YBG202                             | YBG205 | YBG302 | YBG152 | YBG252 | YNG151 | YNG151C | YC30S | YD101 | YD201 |
|            | <b>SPMT120408</b> | 12.7                          | 12.7 | 0.8 | 4.76 | 5.5 | ●                            | ○      | ●      |        |        |        |                              |        |        |                 |                                    | ●      |        |        |        |        |         |       |       |       |

### Recommended Cutting data · Schnittdaten

| Workpiece material / Werkstückstoff | Hardness HB / Härte   | Grade / Sorte              | Cutting data / Schnittdaten            |                              |               |
|-------------------------------------|---|----------------------------|--|------------------------------|---------------|
|                                     |   |                            | Cutting speed / Schnittgeschw. (m/min) | Feed speed / Vorschub (mm/z) |               |
| <b>P</b>                            | Low-carbon steel / Soft steel / niedriglegierter Kohlenstoffstahl / Baustahl  | YBM251<br>YBC301           | 180(100—250)                           | 0.25 (0.1-0.4)               |               |
|                                     |   | YBM351<br>YBG302<br>YBC401 | 150(100—200)                           | 0.3 (0.1-0.5)                |               |
|                                     |   | YC30S                      | 120(80—150)                            | 0.4 (0.1-0.5)                |               |
|                                     | High-carbon steel / hochlegierter Kohlenstoffstahl / Alloy steel / Leg. Stahl | 180—280                    | YBM251<br>YBC301                       | 160(100—220)                 | 0.3 (0.1-0.4) |
|                                     |   | YBM351<br>YBG302<br>YBC401 | 130(100—180)                           | 0.3 (0.1-0.5)                |               |
|                                     |   | YC30S                      | 100(60—150)                            | 0.4 (0.1-0.5)                |               |
|                                     | Alloy tool steel / Leg. Werkzeugstahl   | 280—350                    | YBM251<br>YBC301                       | 120(80—180)                  | 0.3 (0.1-0.4) |
|                                     |   | YBM351<br>YBG302           | 100(80—150)                            | 0.3 (0.1-0.5)                |               |
|                                     |   | YC30S                      | 80(60—120)                             | 0.4 (0.1-0.5)                |               |
| <b>M</b>                            | Stainless steel / Rostfreier Stahl  | YBM251<br>YBC301           | 120(80—180)                            | 0.3 (0.1-0.4)                |               |
|                                     |   | YBM351<br>YBG302<br>YBC401 | 100(80—150)                            | 0.3 (0.1-0.5)                |               |
|                                     |   | YC30S                      | 80(60—120)                             | 0.4 (0.1-0.5)                |               |
| <b>K</b>                            | Cast iron / Gusseisen   | 180-250                    | YBG302                                 | 130(100—180)                 | 0.4 (0.1-0.5) |

Applicable tool / Werkzeug **B11-B18**

Tools code key / Werkzeug ISO **B26-B27**

Grade selection guide / Sortenauswahl **B19-B23**

Technical data / Technische Daten **B215-B220**