

# Milling · Fräsen

Indexable Milling Tools · Wendeplattenfräser

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

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

Approach angle 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 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 Mit Passfeder
<b>C</b>	C type / C Typ		

**SM P 03 - 160 × 16 - K40**

**- M P 12 - 12 L**

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

Insert clearance angle 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 Durchmesse Innenkreis	Length of cutting edge Schneidkantenlänge					
	Insert · WSP					
	<b>C</b>	<b>D</b>	<b>R</b>	<b>S</b>	<b>T</b>	<b>V</b>
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)

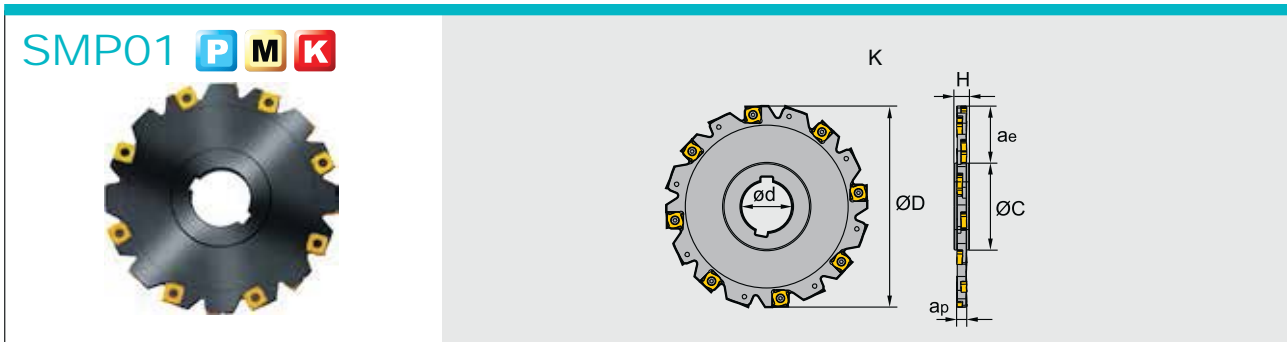
Number of teeth  
Zähnezahl

**B**

Milling Tools  
Fräser



### Side and face milling tools · Scheibenfräser



### Specification of tools · Werkzeug Beschreibung

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

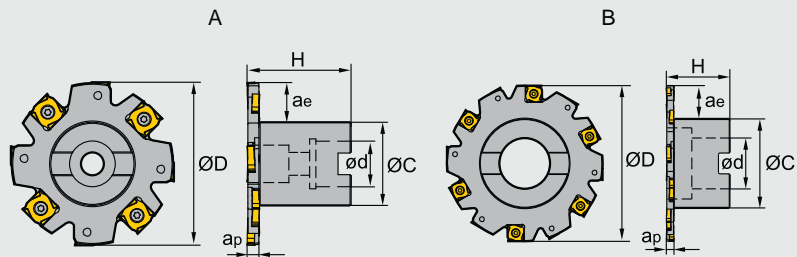
Grade selection guide  
Sortenauswahl **B19-B23**

Technical data  
Technische Daten **B215-B220**

### Side and face milling tools · Scheibenfräser



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



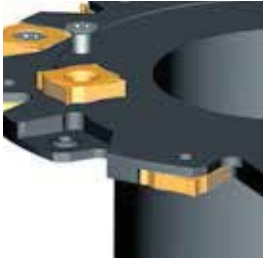


### Specification of tools · Werkzeug Beschreibung

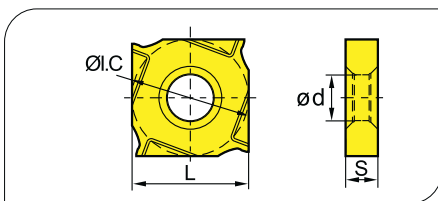
Type Typ	Stock Lager	Dimensions (mm) Abmessungen								Inserts WSP	No. of teeth Zähne	Coupling Aufnahme	Weight Gewicht (kg)
		R	L	Ø D	Ø d	Ø c	H	ap	ae <sub>max</sub>				
SMP01 Arbor mounting	-063x4-A22-SN12-06	●	○	63	22	32	40	4	14	XSEQ1202	6	A	0.2
	-080x4-A22-SN12-08	●	○	80	22	40	40	4	18		8	A	0.4
	-100x4-A27-SN12-10	●	○	100	27	48	50	4	23		10	A	0.6
Arbor Aufnahme	-063x5-A22-SN12-06	○	○	63	22	32	40	5	14	XSEQ1203	6	A	0.2
	-080x5-A22-SN12-08	●	○	80	22	40	40	5	18		8	A	0.4
	-100x5-A27-SN12-10	●	○	100	27	48	50	5	23		10	A	0.7
	-063x6-A22-SN12-06	○	○	63	22	32	40	6	14	XSEQ12T3	6	A	0.2
	-080x6-A22-SN12-08	●	○	80	22	40	40	6	18		8	A	0.5
	-100x6-A27-SN12-10	●	○	100	27	48	50	6	23		10	A	0.7
	-125x6-B40-SN12-12	○	○	125	40	70	50	6	30	XSEQ1204	12	B	1.0
	-160x6-B40-SN12-16	○	○	160	40	70	60	6	41		16	B	1.3
	-063x7-A22-SN12-06	○	○	63	22	32	40	7	14		XSEQ1204	6	A
-080x7-A22-SN12-08	○	○	80	22	40	40	7	18	8	A		0.5	
-100x7-A27-SN12-10	○	○	100	27	48	50	7	23	10	A		0.7	
	-125x7-B40-SN12-12	○	○	125	40	70	50	7	30	XSEQ12T4	12	B	1.1
	-160x7-B40-SN12-16	○	○	160	40	70	60	7	41		16	B	1.4
	-063x8-A22-SN12-06	○	○	63	22	32	40	8	14		XSEQ12T4	6	A
-080x8-A22-SN12-08	●	○	80	22	40	40	8	18	8	A		0.5	
-100x8-A27-SN12-10	●	○	100	27	48	50	8	23	10	A		0.8	
	-125x8-B40-SN12-12	●	○	125	40	70	50	8	30	XSEQ12T4	12	B	1.1
	-160x8-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 Durchmesser Ø D	Cutting width Schnittbreite a <sub>p</sub>	Screw Schraube	Wrench Schlüssel	SMP01 <b>P</b> <b>M</b> <b>K</b>
				
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 Werkstoff	P	M	K	N	S
Steel Stahl	●	●	●	●	●
Stainless Steel Rostfreier Stahl	●	●	●	●	●
Cast iron Gusseisen	●	●	●	●	●
Non-ferite 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										
		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 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	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 Hochleg. Kohlenstoffstahl 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 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 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 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**

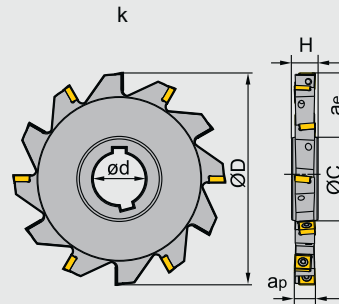
# Milling · Fräsen

Indexable Milling Tools · Wendepplattenfräser

## Side and face milling tools · Scheibenfräser






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



### ■ Specification of tools ·

Type Typ	Stock Lager	Dimensions (mm) Abmessungen							Inserts WSP	No. of teeth Zähne	Coupling Aufnahme	Weight Gewicht (kg)	
		ØD	øc	ød	ae <sub>max</sub>	ap	H						
SMP03 Arbor mounting	○	-080x8-K27-MP06-10	80	44.0	27	17.6	8	12	MPHT060304-DM	10	K	0.2	
	●	-100x8-K32-MP06-14	100	49.0	32	25.1	8	12		14	K	0.3	
Arbor Aufnahme	●	-100x10-K32-MP06-14	100	49.0	32	25.1	10	14		MPHT080305-DM	14	K	0.4
	○	-125x10-K40-MP06-16	125	57.0	40	33.6	10	14			16	K	0.6
	○	-125x12-K40-MP08-12	125	58.3	40	32.6	12	16		12	K	0.7	
	●	-160x12-K40-MP08-14	160	64.3	40	31.5	12	16		14	K	1.3	
	○	-160x16-K40-MP12-12	160	64.6	40	47.6	16	20		MPHT120408-DM	12	K	1.6
	○	-160x18-K40-MP12-12	160	65.3	40	47.3	18	24			12	K	1.9
○	-160x20-K40-MP12-12	160	65.3	40	47.3	20	26	12			K	2.1	
○	-200x16-K50-MP12-14	200	74.6	50	62.6	16	20	14			K	2.5	
○	-200x18-K50-MP12-14	200	75.3	50	62.3	18	24	14	K	2.9			
●	-200x20-K50-MP12-14	200	75.3	50	62.3	20	26	14	K	3.3			

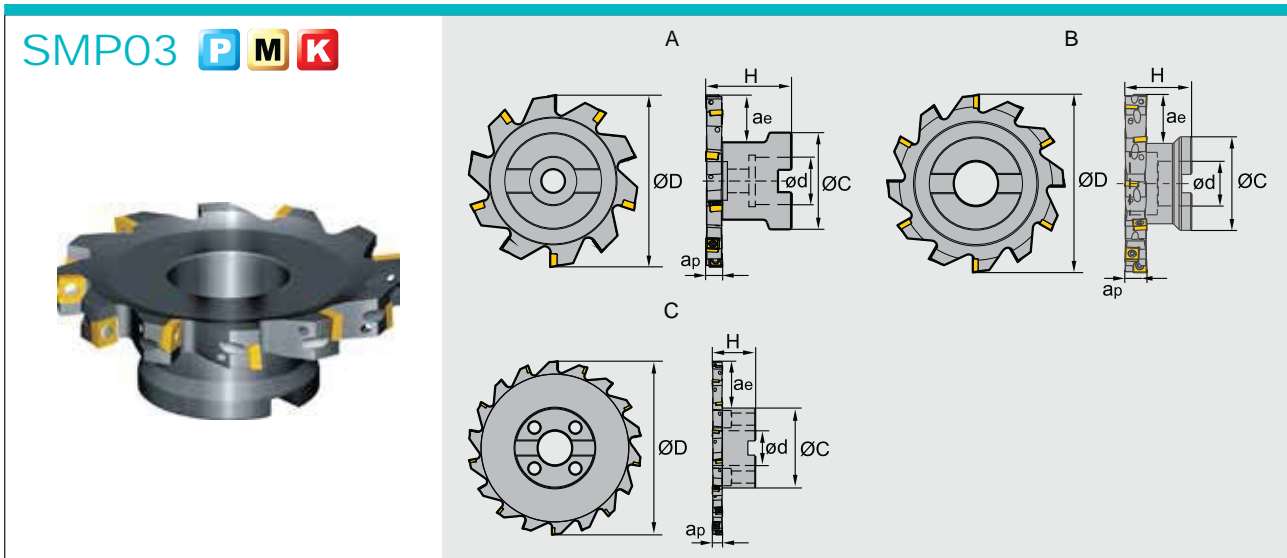
### ■ Spare parts · Ersatzteile

Diameter Durchmesser Ø D	Insert WSP	Screw Schraube	Wrench 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 Typ	Stock Lager	Dimensions (mm) Abmessungen							Inserts WSP	No. of teeth Zähne	Coupling Aufnahme	Weight Gewicht (kg)		
		R	L	$\varnothing D$	$\varnothing c$	$\varnothing d$	$a_{e\max}$	$a_p$					H	
SMPO3 Arbor mounting	-080x8-A22-MP06-10	○	○	80	45	22	21	8	40	MPHT060304-DM	10	A	0.4	
	-100x8-B27-MP06-14	○	○	100	55	27	24.5	8	40		14	B	0.6	
Arbor Aufnahme	-100x10-B27-MP06-14	●	○	100	55	27	24.5	10	40		14	B	0.7	
	-125x10-B32-MP06-16	○	○	125	65	32	33.3	10	45		16	B	1.1	
	-125x12-B32-MP08-12	○	○	125	65	32	33	12	45		MPHT080305-DM	12	B	1.4
	-160x12-B40-MP08-14	○	○	160	80	40	44	12	50			14	B	1.9
	-200x12-C40-MP08-18	○	○	200	92	40	52	12	50		18	C	3.2	
	-125x16-B32-MP12-10	○	○	125	65	32	33	16	50		MPHT120408-DM	10	B	2.3
	-160x16-B40-MP12-12	○	○	160	80	40	45	16	60			12	B	2.3
	-160x18-B40-MP12-12	○	○	160	80	40	45	18	60			12	B	2.4
	-200x16-C40-MP12-14	○	○	200	92	40	52	16	50			14	C	3.6
	-200x18-C40-MP12-14	○	○	200	92	40	52	18	50			14	C	3.9
-200x20-C40-MP12-14	○	○	200	92	40	52	20	50	14	C		4.2		

### Spare parts · Ersatzteile

Diameter Durchmesser $\varnothing D$	Insert WSP	Screw Schraube	Wrench Schlüssel	
				
$\varnothing 80$ - $\varnothing 125$	MP06	I60M2.5x6.5	WT07IP	
$\varnothing 125$ - $\varnothing 200$	MP08	I60M3x7	WT09P	
$\varnothing 125$ - $\varnothing 200$	MP12	I60M5x13		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](#)

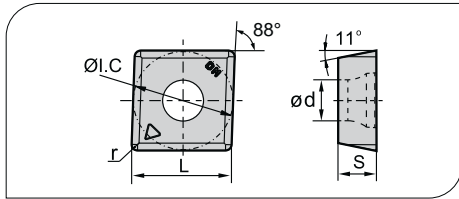
# B

Milling Tools  
Fräser

# 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							
		I.C	L	S	d	r	YBC301	YBC302	YBC401	YBM251	YBM253	YBM351	YBD152	YBD252	YBG102	YBG202		YBG205	YBG302	YBG152	YBG252	YNG151	YNG151C	YC30S	YD101
	MPHT060304-DM	6.35	6.35	3.18	2.8	0.4	●	○										●							
	MPHT080305-DM	8.3	8.3	3.18	5.56	0.5	●	○										●							
	MPHT120408-DM	12.7	12.7	4.76	5.56	0.8	●	○										●							

### Recommended Cutting data · Schnittdaten

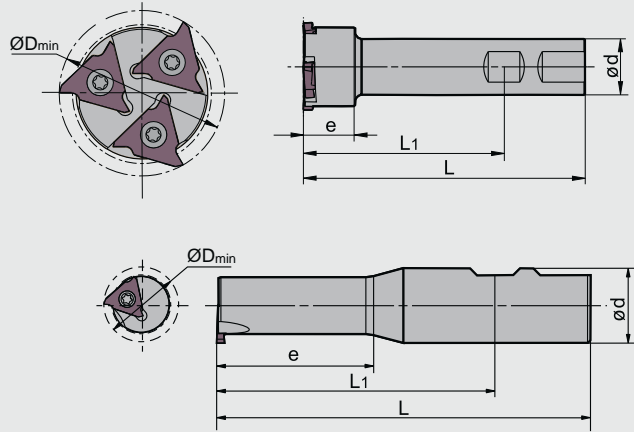
Workpiece material / Werkstückstoff	Hardness HB / Härte	Grade / Sorte	Cutting data / Schnittdaten	
			V(m/min)	f(mm/z)
P Low-carbon steel / Soft steel / Niedriglegierter Kohlenstoffstahl / Baustahl	≤180	YBM251 / YBG202	180 (100-250)	0.1(0.08-0.25)
		YBG302	150 (100-200)	0.15(0.1-0.3)
	180-280	YBM251 / YBG202	150 (80-250)	0.1(0.08-0.25)
		YBG302	120 (80-200)	0.15(0.1-0.3)
	280-350	YBM251 / YBG202	120 (80-250)	0.1(0.08-0.25)
		YBG302	100 (80-200)	0.15(0.1-0.3)
M 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)
K 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 Typ	Stock Lager	Dimensions (mm) Abmessungen					No. of teeth Zähne	Inserts WSP	W(mm)
		ØD <sub>min</sub>	ød	e	L <sub>1</sub>	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 Durchmesser Ø D	Screw Schraube	Wrench Schlüssel
Ø25	I60M3.5×10	WT15IP
Ø39	I60M3.5×10	WT15IP
Ø44	I60M5×13	WT20IP



Applicable tool **B11-B18**  
Werkzeug

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

Grade selection guide **B19-B23**  
Sortenauswahl

Technical data **B215-B220**  
Technische Daten



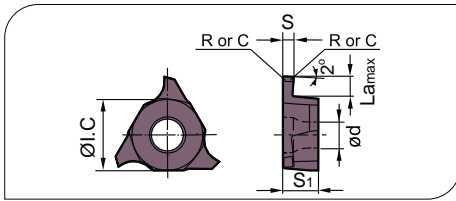
# Milling · Fräsen

## Indexable Milling Tools · Wendeplattenfräser

B

Milling Tools  
Fräser

### Applicable inserts · Wendschneidplatten



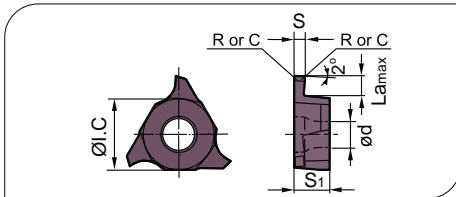
- Ideal Machining Condition / Gute Bearbeitungsbedingungen
- Normal Machining Condition / Normale Bearbeitungsbedingungen
- Unfavorable Machining Condition / Ungünstige Bearbeitungsbedingungen

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-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							
		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
	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 - Wendschneidplatten



Workpiece Material Werkstoffe	Ideal Machining Condition Gute Bearbeitungsbedingungen		Normal Machining Condition Normale Bearbeitungsbedingungen		Unfavorable Machining Condition Ungünstige Bearbeitungsbedingungen	
	●	●	●	●	●	●
<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.		Cermets Cermet	Carbide uncoat. unbe. Hartmetall									
		S±0.025	L <sub>max</sub>	R/C	ØI.C	S <sub>1</sub>	ød	YBC301	YBC302	YBC401	YBM251	YBM253	YBM651	YBD152	YBD252		YBG102	YBG202	YBG205	YBG302	YBG152	YBG252	YNG151	YNG151C	YC30S	YD101
	<b>QC22L125-R02</b>	1.25	2.00	R0.2	12.70	4.76	5.5									○	●									
	<b>QC22L145-R02</b>	1.45	2.00	R0.2	12.70	4.76	5.5									○	●									
	<b>QC22L150-R02</b>	1.50	3.50	R0.2	12.70	4.76	5.5									○	●									
	<b>QC22L175-R02</b>	1.75	3.50	R0.2	12.70	4.76	5.5									○	●									
	<b>QC22L185-R02</b>	1.85	3.50	R0.2	12.70	4.76	5.5									○	●									
	<b>QC22L200-R02</b>	2.00	3.50	R0.2	12.70	4.76	5.5									○	●									
	<b>QC22L230-R02</b>	2.30	3.50	R0.2	12.70	4.76	5.5									○	●									
	<b>QC22L250-R03</b>	2.50	4.00	R0.3	12.70	4.76	5.5									○	●									
	<b>QC22L265-R03</b>	2.65	4.00	R0.3	12.70	4.76	5.5									○	●									
	<b>QC22L280-R03</b>	2.80	4.00	R0.3	12.70	4.76	5.5									○	●									
	<b>QC22L300-R03</b>	3.00	4.00	R0.3	12.70	4.76	5.5									○	●									
	<b>QC22L320-R03</b>	3.20	4.00	R0.3	12.70	4.76	5.5									○	●									
	<b>QC22L330-R03</b>	3.30	4.00	R0.3	12.70	4.76	5.5									○	●									
	<b>QC22L350-R03</b>	3.50	5.00	R0.3	12.70	4.76	5.5									○	●									
	<b>QC22L400-R04</b>	4.00	5.00	R0.4	12.70	4.76	5.5									○	○									
	<b>QC22L430-R04</b>	4.30	5.00	R0.4	12.70	4.76	5.5									○	○									
	<b>QC22L450-R04</b>	4.50	5.00	R0.4	12.70	4.76	5.5									○	○									
	<b>QC22L480-R04</b>	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**