

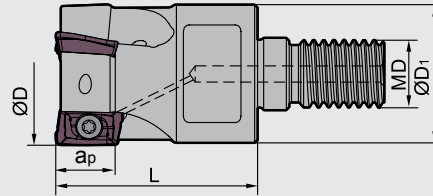
Milling · Fräsen

Indexable Milling Tools · Wendeplattenfräser

QCH - APKT



P M K N



Type Typ	Stock Lager	Dimensions (mm) Abmessungen					Insert WSP	No. of teeth Zähne (Z)	Weight Gewicht (kg)
		ØD	ØD ₁	L	a _p	MD			
QCH -16-APKT11-M8-02	●	16	12.5	25	10.5	8	APKT11T3**	2	0.028
-20-APKT11-M10-03	●	20	18	30	10.5	10		3	0.059
-25-APKT11-M12-04	●	25	21	35	10.5	12		4	0.104
-32-APKT11-M16-05	●	32	29	43	10.5	16		5	-
-40-APKT11-M16-06	●	40	29	43	10.5	16		6	-
-25-APKT16-M12-02	●	25	21	38	10.5	12		APKT1604**	2
-32-APKT16-M16-03	●	32	29	46	10.5	16	3		-
-40-APKT16-M16-04	●	40	29	46	10.5	16	4		-

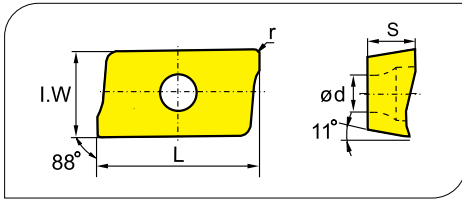
■ Spare parts · Ersatzteile

Diameter Durchmesser Ø D	No. of teeth Zähne (Z)	Insert Screw Schraube	Wrench Schlüssel
Ø16	2	I60M2.5×6.5T	WT08IP
Ø20	3		
Ø25	3		
Ø25	2	I60M4×8.4	WT15IP
Ø30	3		



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

Applicable inserts · Wendeschneidplatten



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

Insert shape / Plattenform	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	
	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																		●	●		
	APKT160408-LH	17.877	9.33	5.76	4.4	0.8																		●	●		

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**

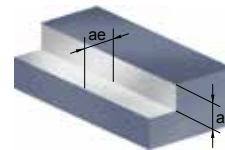
Milling · Fräsen

Indexable Milling Tools · Wendepplattenfräser

Chipbreaker Selection EMP01 · Spanbrecher Auswahl EMP01

Application Anwendung	Finishing Schlichten	Semi-Finishing Mittlere Bearbeitung	Roughing Schruppen
P	-PF	-PM	-PR
M	-PF	-PM	-PR
K	-PF	-PM	
AL	-LH		

1 Square shoulder milling 1 Eckfräsen

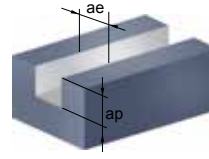


Recommended cutting data · Empfohlene Schnittdaten

Workpiece material Werkstück Material	Hardness HB Härte	Grade Sorte	Cutting data Schnittdaten					
			V(m/min)	f(mm/z)			ae(mm)	
				-PF	-PM	-PR		
P	Low-carbon steel Soft steel Niedrig legierter Kohlenstoffstahl Baustahl	YBM251 YBC301	320 (240-400)	0.1 (0.08-0.2)	0.2 (0.1-0.3)	0.25(0.2-0.35)	≤0.5D	
		YBM351	260 (180-380)	0.1 (0.08-0.2)	0.2 (0.1-0.3)	0.25(0.2-0.35)	≤0.5D	
		YBG202 YBG205	320 (200-400)	0.1 (0.08-0.2)	0.2 (0.1-0.3)	0.25(0.2-0.35)	≤0.5D	
		YBG302	280 (180-400)	0.1 (0.08-0.2)	0.2 (0.1-0.3)	0.25(0.2-0.35)	≤0.5D	
	High-carbon steel Alloy steel Hoch Leg. Kohlenstoffstahl Leg. Stahl	YBM251 YBC301	280 (210-380)	0.1 (0.08-0.2)	0.2 (0.1-0.3)	0.25(0.2-0.3)	≤0.5D	
		YBM351	240 (160-320)	0.1 (0.08-0.2)	0.2 (0.1-0.3)	0.25(0.2-0.35)	≤0.5D	
		YBG202 YBG205	280 (180-350)	0.1 (0.08-0.2)	0.2 (0.1-0.3)	0.25(0.2-0.3)	≤0.5D	
		YBG302	260 (150-380)	0.1 (0.08-0.2)	0.2 (0.1-0.3)	0.25(0.2-0.35)	≤0.5D	
	Alloy tool steel Leg. Werkzeugstahl	YBM251 YBC301	260 (180-350)	0.1 (0.08-0.2)	0.2 (0.1-0.3)	0.25(0.2-0.3)	≤0.5D	
		YBM351	220 (150-280)	0.1 (0.08-0.2)	0.2 (0.1-0.3)	0.25(0.2-0.35)	≤0.5D	
		YBG202 YBG205	260 (160-330)	0.1 (0.08-0.2)	0.2 (0.1-0.3)	0.25(0.2-0.3)	≤0.5D	
		YBG302	240 (120-350)	0.1 (0.08-0.2)	0.2 (0.1-0.3)	0.25(0.2-0.35)	≤0.5D	
M	Stainless steel Rostfreier Stahl	YBM251	200 (120-270)	0.1 (0.08-0.2)	0.2 (0.1-0.3)	0.25(0.2-0.3)	≤0.5D	
		YBM351	180 (150-300)	0.1 (0.08-0.2)	0.2 (0.1-0.3)	0.25(0.2-0.3)	≤0.5D	
		YBG202 YBG205	200 (110-300)	0.1 (0.08-0.2)	0.2 (0.1-0.3)	0.25(0.2-0.3)	≤0.5D	
		YBG302	170 (100-280)	0.1 (0.08-0.2)	0.2 (0.1-0.3)	0.25(0.2-0.3)	≤0.5D	
K	Cast iron Gusseisen	YBG102	220 (120-250)	0.1 (0.08-0.2)	0.2 (0.1-0.3)	-	≤0.5D	
		YBD152	240 (180-300)	-	0.2 (0.1-0.3)	-	≤0.5D	
		YBD252	200 (120-320)	-	0.2 (0.1-0.3)	-	≤0.5D	
N	Al alloy Al Leg.	----	YD101	300-	-LH		0.2 (0.08-0.4)	≤0.5D
			YD201	300-	-LH		0.2 (0.08-0.4)	≤0.5D

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

2 Slot milling 2 Nutenfräsen



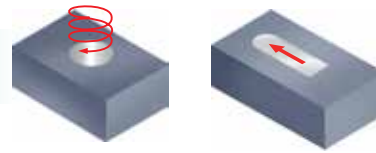
Recommended cutting data · Empfohlene Schnittdaten

Workpiece material Werkstück Material	Hardness HB Härte	Grade Sorte	Cutting data Schnittdaten					
			V(m/min)	f(mm/z)			ae(mm)	
				-PF	-PM	-PR		
P Low-carbon steel Soft steel Niedrig legierter Kohlenstoffstahl Baustahl	≤180	YBM251 YBC301	190 (170-250)	0.1 (0.08-0.15)	0.15 (0.1-0.25)	0.2 (0.2-0.3)	D	
		YBM351	150 (130-210)	0.1 (0.08-0.15)	0.15 (0.1-0.25)	0.2 (0.2-0.3)	D	
		YBG202 YBG205	190 (140-250)	0.1 (0.08-0.15)	0.15 (0.1-0.25)	0.2 (0.2-0.3)	D	
		YBG302	170 (130-250)	0.1 (0.08-0.15)	0.15 (0.1-0.25)	0.2 (0.2-0.3)	D	
	High-carbon steel Alloy steel Hoch Leg. Kohlenstoffstahl Leg. Stahl	180-280	YBM251 YBC301	170 (150-220)	0.1 (0.08-0.15)	0.15 (0.1-0.25)	0.2 (0.2-0.3)	D
			YBM351	140 (110-200)	0.1 (0.08-0.15)	0.15 (0.1-0.25)	0.2 (0.2-0.3)	D
			YBG202 YBG205	170 (130-250)	0.1 (0.08-0.15)	0.15 (0.1-0.25)	0.2 (0.2-0.3)	D
			YBG302	150 (110-230)	0.1 (0.08-0.15)	0.15 (0.1-0.25)	0.2 (0.2-0.3)	D
	Alloy tool steel Leg. Werkzeugstahl	280-350	YBM251 YBC301	150 (130-210)	0.1 (0.08-0.15)	0.15 (0.1-0.25)	0.2 (0.2-0.3)	D
			YBM351	130 (100-180)	0.1 (0.08-0.15)	0.15 (0.1-0.25)	0.2 (0.2-0.3)	D
			YBG202 YBG205	150 (110-240)	0.1 (0.08-0.15)	0.15 (0.1-0.25)	0.2 (0.2-0.3)	D
			YBG302	140 (80-210)	0.1 (0.08-0.15)	0.15 (0.1-0.25)	0.2 (0.2-0.3)	D
M Stainless steel Rostfreier Stahl	≤270	YBM251	110 (80-190)	0.1 (0.08-0.15)	0.15 (0.1-0.25)	0.2 (0.2-0.3)	D	
		YBM351	100 (80-170)	0.1 (0.08-0.15)	0.15 (0.1-0.25)	0.2 (0.2-0.3)	D	
		YBG202 YBG205	120 (80-190)	0.1 (0.08-0.15)	0.15 (0.1-0.25)	0.2 (0.2-0.3)	D	
		YBG302	100 (70-180)	0.1 (0.08-0.15)	0.15 (0.1-0.25)	0.2 (0.2-0.3)	D	
K Cast iron Gusseisen	180-250	YBG102	130 (80-180)	0.1 (0.08-0.15)	0.15 (0.1-0.25)	-	D	
		YBD152	140 (80-210)	-	0.15 (0.1-0.25)	-	D	
		YBD252	120 (80-210)	-	0.15 (0.1-0.25)	-	D	
N	---	YD101	300-	-LH			D	
		YD201	300-	0.2 (0.08-0.3)			D	

Milling · Fräsen

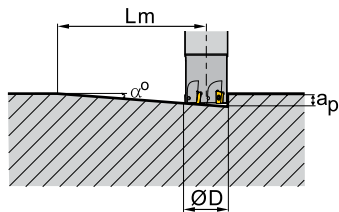
Indexable Milling Tools · Wendeplattenfräser

3 Ramp milling, helical interpolation milling
3 Tauchfräsen, Spiral Interpolationsfräsen



Recommended cutting data · Empfohlene Schnittdaten

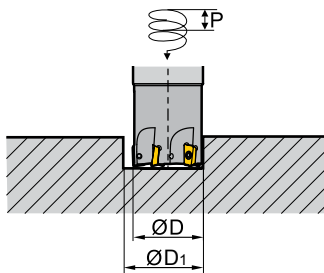
Ramp milling Tauchfräsen



$$L_m = \frac{a_p}{\tan \alpha}$$

(α: Maximum ramp angle)
(α: Maximaler Eintauchwinkel)

Helical interpolation milling Spiral-Interpolationsfräsen



$$\tan \alpha = \frac{P}{\pi D_1}$$

(α: helical angle)
(α: Spiral Winkel)

Diameter Durchmesser Ø D (mm)	APKT Ramp milling, helical interpolation milling (Inserts—11) APKT Tauchfräsen, Spiral-Interpolationsfräsen				
	Ramp milling Tauchfräsen			Helical interpolation milling Spiral-Interpolationsfräsen	
	Max. cutting depth Schnitttiefe a_p(mm)	Max. ramp angle Eintauchwinkel α°	Min. length Länge L _m (mm)	Min. diameter Durchmesser Ø D ₁ (mm)	Max. pitch Steigung (mm)
16	10.0	10.0	56.7	20.0	2.0
20	10.0	5.0	114.4	28.0	2.0
25	10.0	4.5	127.0	40.0	2.0
32	10.0	3.0	190.8	56.0	2.0
40	10.0	2.0	286.4	70.0	2.0

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

Hard alloy toolholder · Hartmetal Verlängerung

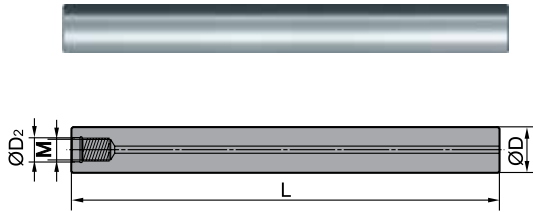


Fig 1

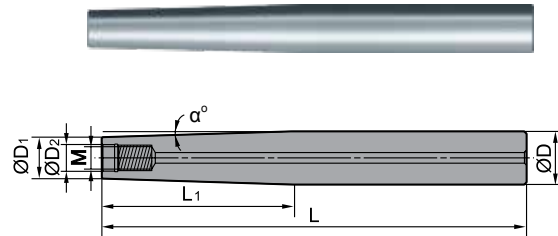


Fig 2

Type Typ	Stock Large	Flg	Dimensions (mm) Abmessungen								
			L	M	ØD ₂	ØD	ØD ₁	L ₁	α°		
G16-QCH-M8-100C	○	1	100	M8	8.5	16	--	--	--		
G16-QCH-M8-150C	○		150			16	--	--	--		
G20-QCH-M8-200C-ZJ90	○	2	200			20	15.5	90	1.3°		
G20-QCH-M8-250C-ZJ115	○		250			20	15.5	115	1°		
G20-QCH-M8-300C-ZJ135	○		300			20	15.5	135	0.85°		
G20-QCH-M10-100C	○	1	100			M10	10.5	20	--	--	--
G20-QCH-M10-150C	○		150					20	--	--	--
G20-QCH-M10-200C	○	200	20					20	--	--	
G25-QCH-M10-200C-ZJ90	○	2	200					25	19.8	90	1.6°
G25-QCH-M10-250C-ZJ115	○		250					25	19.8	115	1.25°
G25-QCH-M10-300C-ZJ135	○		300	25	19.8			135	1.1°		
G25-QCH-M12-100C	○	1	100	M12	12.5			25	--	--	--
G25-QCH-M12-150C	○		150					25	--	--	--
G25-QCH-M12-200C	○	200	25					--	--	--	
G25-QCH-M12-200C-ZJ90	○	2	200					32	24.5	90	2.3°
G25-QCH-M12-250C-ZJ115	○		250			32	24.5	115	1.75°		
G25-QCH-M12-300C-ZJ135	○		300			32	24.5	135	1.5°		
G32-QCH-M16-150C	○	1	150			M16	17	32	--	--	--
G32-QCH-M16-200C	○		200					32	--	--	--
G32-QCH-M16-250C	○	250	32					--	--	--	
G32-QCH-M16-300C	○	300	32					--	--	--	
G32-QCH-M16-200C-ZJ90	○	2	200	32	30			90	0.64°		
G32-QCH-M16-250C-ZJ115	○		250	32	30			115	0.5°		
G32-QCH-M16-300C-ZJ135	○		300	32	30			135	0.4°		

Applicable tool B11-B18
Werkzeug

Tools code key B26-B27
Werkzeug ISO

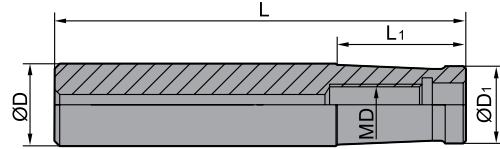
Grade selection guide B19-B23
Sortenauswahl

Technical data B215-B220
Technische Daten

Milling · Fräsen

Indexable Milling Tools · Wendeplattenfräser

Steel toolholder · Stahl Verlängerung



Type Typ	Stock Large	Dimensions (mm) Abmessungen				
		ØD	L	L ₁	ØD ₁	MD
G16-QCH-M8-80	○	16	80	25	15	M8
G16-QCH-M8-100	○	16	100	45	15	M8
G20-QCH-M10-90	○	20	90	35	18.5	M10
G20-QCH-M10-105	○	20	105	50	18.5	M10
G25-QCH-M12-90	○	25	90	30	24	M12
G25-QCH-M12-110	○	25	110	50	24	M12
G32-QCH-M16-100	○	32	100	35	28.5	M16
G32-QCH-M16-120	○	32	120	55	28.5	M16
G32-QCH-M16-115	○	32	115	40	30	M16
G32-QCH-M16-135	○	32	135	60	30	M16



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