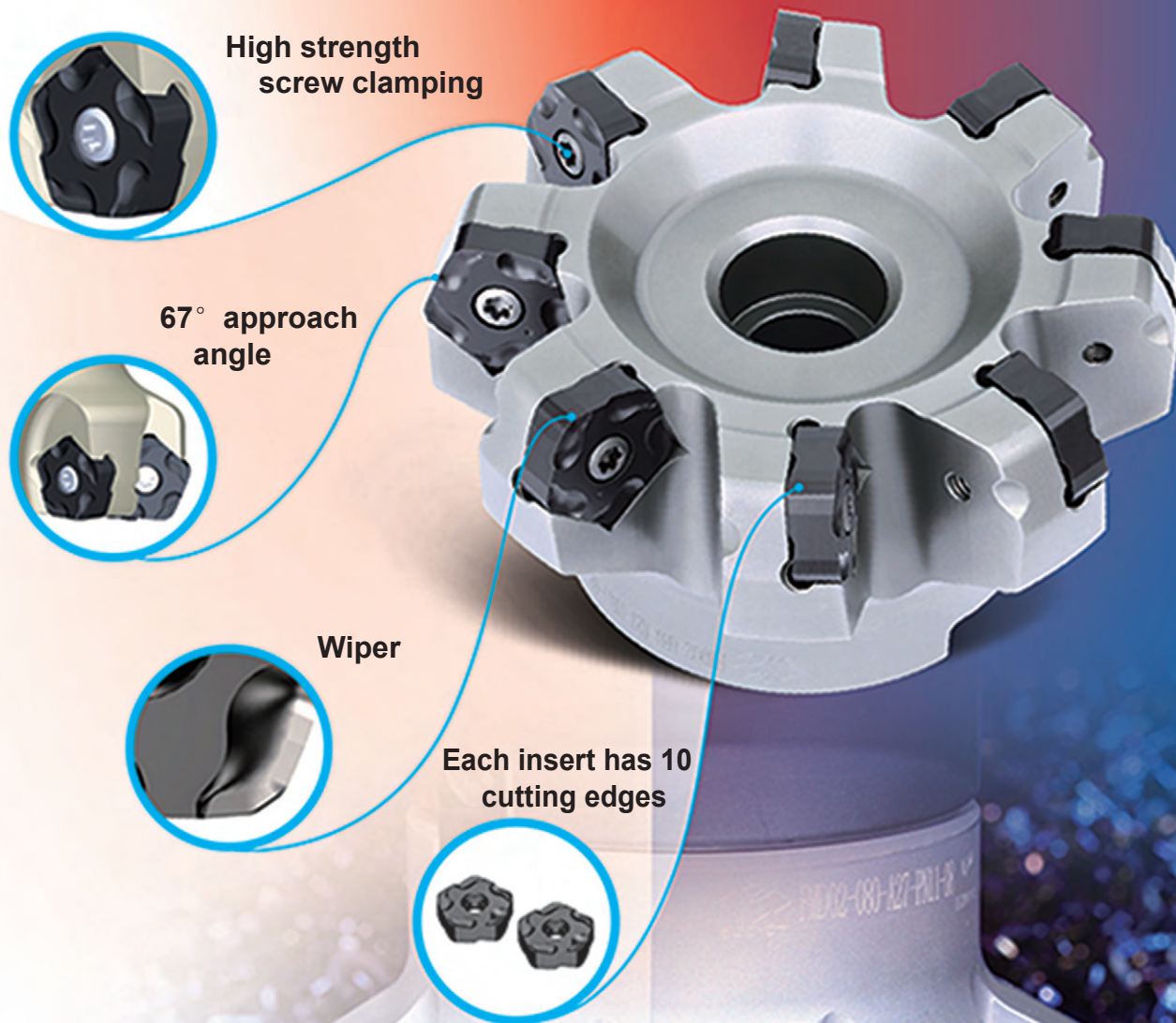




WHIRLWIND

FMD02

milling cutter series

- ▶ New generation of milling cutter for face milling mainly in automotive industry.
- ▶ Open chipbreaker and large rake angle design, suitable for machines of different power.
- ▶ Wiper insert guarantees stable good surface quality at different feed rates.
- ▶ The high precision insert pocket design, ensures high accuracy insert positioning and strong clamping of inserts for a stable machining process.
- ▶ The Pentagon insert with 10 cutting edges and offers outstanding machining economy.



Face milling tools

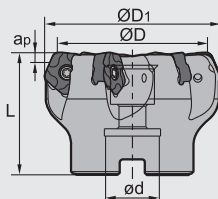
Kr:67°



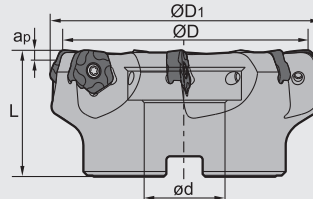
FMD02



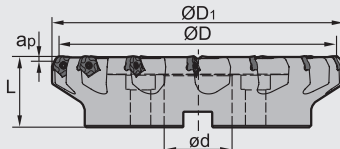
A-type coupling



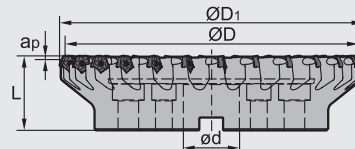
B-type coupling



C-type coupling



D-type coupling



Specification of tools

type	Stock		Basic dimensions(mm)					Number of teeth Z	Style of coupling	Weight (kg)
	R	L	ØD	ØD ₁	Ød	L	ap _{max}			
FMD02 Coarse pitch (unequal pitch)	▲	△	50	60.1	22	50	5/7.5	4	A	0.6
	▲	△	63	73.1	22	50	5/7.5	5	A	0.8
	▲	△	80	90.1	27	50	5/7.5	6	A	1.1
	▲	△	100	110.1	32	50	5/7.5	7	B	1.8
	▲	△	125	135.1	40	63	5/7.5	8	B	2.9
	▲	△	160	170.1	40	63	5/7.5	10	B	5.6
	▲	△	200	210.1	60	63	5/7.5	12	C	7.9
Close pitch	▲	△	250	260.1	60	63	5/7.5	14	C	13.4
	▲	△	50	60.1	22	50	5/7.5	5	A	0.6
	▲	△	63	73.1	22	50	5/7.5	6	A	0.9
	▲	△	80	90.1	27	50	5/7.5	8	A	1.2
	▲	△	100	110.1	32	50	5/7.5	10	B	1.9
	▲	△	125	135.1	40	63	5/7.5	12	B	3.2
	▲	△	160	170.1	40	63	5/7.5	14	B	6.4
	▲	△	200	210.1	60	63	5/7.5	16	C	8.5
	▲	△	250	260.1	60	63	5/7.5	18	C	18.0
	▲	△	315	325.1	60	80	5/7.5	26	D	24.5

▲Stock available △Make-to-order

Spare parts

Diameter ØD	Insert screw	Wrench	
			
Ø50 - Ø315	I60M4×10	WT15IS	

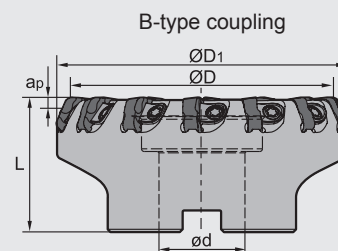
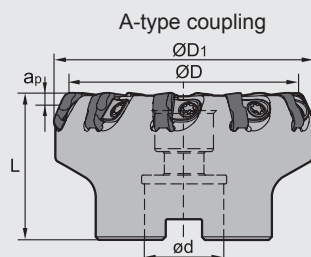
Tools code key
B24-B25

Grade selection guide
B19-B23

Technical data
B210-B216

Face milling tools

Kr:67°

FMD02 

Specification of tools

type	Stock		Basic dimensions(mm)					Number of teeth Z	Style of coupling	Weight (kg)
	R	L	ØD	ØD ₁	Ød	L	ap _{max}			
FMD02										
-080-A27-PN11-10	▲	△	80	90.1	27	50	5/7.5	10	A	1.3
Extra close pitch										
-100-B32-PN11-14	▲	△	100	110.1	32	50	5/7.5	14	B	1.6
-125-B40-PN11-18	▲	△	125	135.1	40	63	5/7.5	18	B	3.2
-160-B40-PN11-22	▲	△	160	170.1	40	63	5/7.5	22	B	5.8

▲Stock available

△Make-to-order

Indexable milling tools

Face milling tools

Spare parts

Diameter ØD	Wedge	Screw	Wrench	
				
Ø80 - Ø160	W18N	DM6×20A	WT15IT	

Tools code key

B24-B25

Grade selection guide

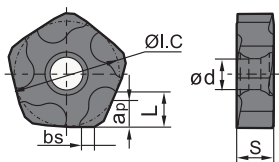
B19-B23

Technical data

B210-B216

B MILLING Indexable Milling Tools

Selection of inserts



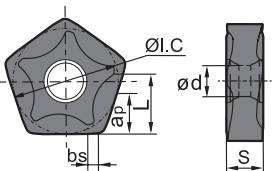
😊 Good working condition 😐 Normal working condition 😞 Bad working condition

Workpiece material	P Steel	M Stainless steel	K Cast iron	N Non-ferrous metal	S Heat resistant alloy, Ti alloy
Steel	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊
Stainless steel	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊
Cast iron	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊
Non-ferrous metal	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊
Heat resistant alloy, Ti alloy	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊

Insert shape	Type	Basic dimensions(mm)						CVD Coating						PVD Coating						Cermet		Cemented carbide					
		L	ØI.C	S	ød	bs	apmax	YBC301	YBC302	YBM251	YBM253	YBM351	YBD152	YBD252	YBG102	YBG202	YBG205	YBG320	YBG302	YBG152	YBG252	YNG151	YNG151C	YC30S	YD051	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						●														

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

Selection of inserts



😊 Good working condition 😐 Normal working condition 😞 Bad working condition

Workpiece material	P Steel	M Stainless steel	K Cast iron	N Non-ferrous metal	S Heat resistant alloy, Ti alloy
Steel	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊
Stainless steel	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊
Cast iron	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊
Non-ferrous metal	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊
Heat resistant alloy, Ti alloy	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊

Insert shape	Type	Basic dimensions(mm)						CVD Coating						PVD Coating						Cermet		Cemented carbide				
		L	ØI.C	S	ød	bs	apmax	YBC301	YBC302	YBM251	YBM253	YBM351	YBD152	YBD252	YBG102	YBG202	YBG205	YBG320	YBG302	YBG152	YBG252	YNG151	YNG151C	YC30S	YD051	YD101
	PNEG110512R-PF	7.5	15.875	5.56	4.64	1.4	7.5	★	●																	
	PNEG110512L-PF	7.5	15.875	5.56	4.64	1.4	7.5	★	●																	
	PNEG110512R-PM	7.5	15.875	5.56	4.64	1.4	7.5	★	●																	
	PNEG110512L-PM	7.5	15.875	5.56	4.64	1.4	7.5	★	●																	
	PNEG110512R-PR	7.5	15.875	5.56	4.64	1.4	7.5	★	●																	
	PNEG110512L-PR	7.5	15.875	5.56	4.64	1.4	7.5	★	●																	

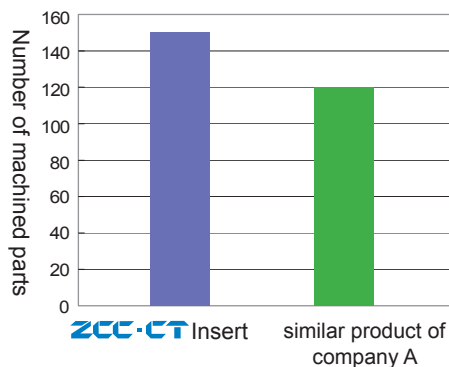
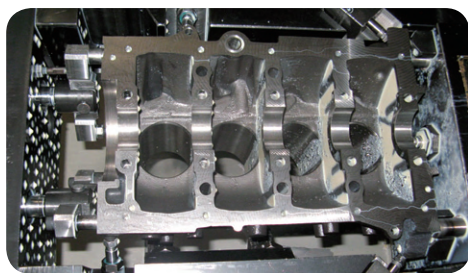
★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

➤ Recommended cutting parameters

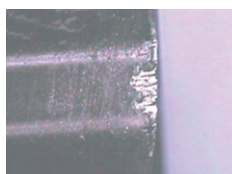
Workpiece material		Hardness HB	Insert grade	Cutting parameters				
				V(m/min)	f(mm/z)			a _p max(mm)
					PF	PM	PR	
P	Low-carbon steel, Soft steel	≤ 180	YBM253 YBC302	270 (220-350)	0.15 (0.1-0.2)	0.2(0.1-0.3)	0.3(0.2-0.4)	7.5
	High-carbon steel, Alloy steel	180-280	YBM253 YBC302	260 (200-320)	0.15 (0.1-0.2)	0.2(0.1-0.3)	0.3(0.2-0.4)	7.5
	Alloy tool steel	280-350	YBM253 YBC302	240 (180-300)	0.15 (0.1-0.2)	0.2(0.1-0.3)	0.3(0.2-0.4)	7.5
K	Cast iron	180-250	YBD152	270 (150-300)	CF	CM	CR	5
					0.15(0.1-0.2)	0.2(0.1-0.3)	0.3(0.2-0.4)	

Case for FMD02

Tool type	FMD02-100-B32-PN11-10 ZCC·CT	similar product of company A
Insert type/ grade	PNEG110512R-CR/YBD152 (10-cutting-edge inserts without clearance angle)	
Cutting parameters	D=100mm a _p =3~5mm V _c =243m/min f _z =0.15mm/z T=145~155 piece	D=100mm a _p =3~5mm V _c =243m/min f _z =0.12mm/z T=120~133 piece



● Comparison of insert abrasion



ZCC·CT insert after 80 minutes machining



Insert of company A after 48 minutes machining



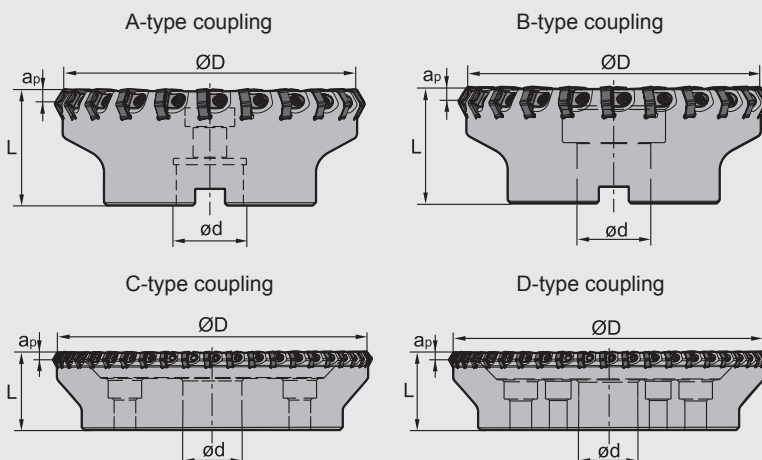
Face milling tools

Kr:55°



Face milling

FMD02 K



Specification of tools

Type	Stock		Basic dimensions(mm)				Number of teeth Z	Type of coupling	Weight (kg)
	R	L	ØD	ød	L	apmax			
FMD02 -080-A27-HN09-10	▲	△	80	27	50	6	8	A	1.1
-100-B32-HN09-14	▲	△	100	32	63	6	10	B	2.6
-125-B40-HN09-18	▲	△	125	40	70	6	14	B	3.7
-160-B40-HN09-22	▲	△	160	40	63	6	18	B	5.6
-200-C60-HN09-28	▲	△	200	60	63	6	22	C	6.3
-250-C60-HN09-36	▲	△	250	60	63	6	28	C	10.3
-315-D60-HN09-44	▲	△	315	60	63	6	32	D	21.7

▲Stock available

△Make-to-order

Spare parts

Diameter ØD	Wedge	Wedge screw	Wrench
Ø80-Ø315	W18N	DM6×20A	WT15IT



Tools code key
B24-B25

Grade selection guide
B19-B23

Technical data
B210-B216

	P	M	K	N	S
Steel	😊😊😊😊😞	😊😊😊😊😞			
Stainless steel	😞😞😞😞😞	😊😊😊😊😞			
Cast iron			😞😞😊		
Non-ferrous metal				😊😊	😊😊
Heat resistant alloy, Ti alloy					😊😊😊😊

[illegible]

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

Classification \ Function	For finishing	For semi-finishing	For roughing
K	-DF	-DM	-DR

Workpiece material		Hardness HB	Insert grade	Cutting parameters			
				V(m/min)	f(mm/z)		
					-DF	-DM	-DR
K	Cast iron	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)

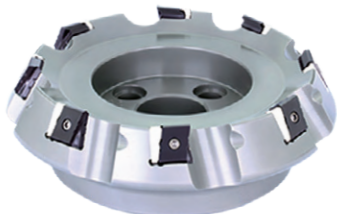
Face milling tools

Kr:60°

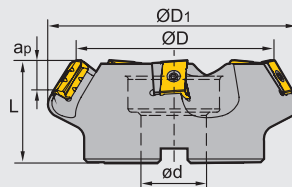


Face milling

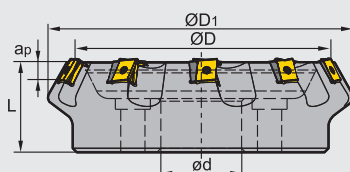
FMD03 **P** **M** **K**



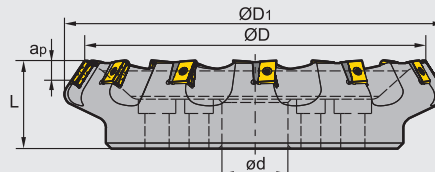
B-type coupling



C-type coupling



D-type coupling



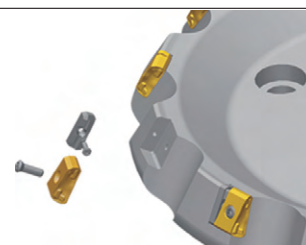
Specification of tools

type	Stock		Basic dimensions(mm)					Number of teeth Z	Applicable inserts	Style of coupling	Weight (kg)
	R	L	ØD	ØD ₁	Ød	L	apmax				
FMD03 -125-B40-LN20-06	▲	△	125	153	40	63	12	6	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	17	5	LNKT2510-ZR	B	4.5
-160-C40-LN25-06	▲	△	160	189	40	63	17	6		C	6.9
-200-C60-LN25-08	▲	△	200	229	60	70	17	8		C	10.5
-250-C60-LN25-10	▲	△	250	278	60	70	17	10		C	16.7
-315-D60-LN25-12	▲	△	315	346	60	80	17	12		D	27.3
-400-D60-LN25-16	▲	△	400	427	60	80	17	16		D	47.1

▲Stock available △Make-to-order

Spare parts

Inserts	Shim	Shim screw	Insert screw	Wrench	
LNKT2007DN-ZR	LLN20R-ZR	I60M3×7	I60M4×15	WT15IS	WT10IS
LNKT2510-ZR	LLN25R-ZR	I60M3.5×10.4	I60M5×17	WT20IT	WT15IS



Tools code key
B24-B25

Grade selection guide
B19-B23

Technical data
B210-B216

Selection of inserts

😊 Good working condition

😐 Normal working condition

😞 Bad working condition

Insert shape	Type	Basic dimensions(mm)				CVD Coating								PVD Coating								Cermet		Cemented carbide			
		L	I.W	S	ød	YBC301	YBC302	YBM251	YBM253	YBM351	YBD152	YBD252	YBG102	YBG202	YBG205	YBG302	YBG152	YBG252	YNG151	YNG151C	YC30S	YD051	YD101	YD201			
	LNKT2007DN-ZR	20	17	7.94	4.6					○	○																
	LNKT2510-ZR	25	18	9.525	5.5					○	○																

★ Recommended grade (always stock available)

● Available grade (always stock available)

○ Make-to-order

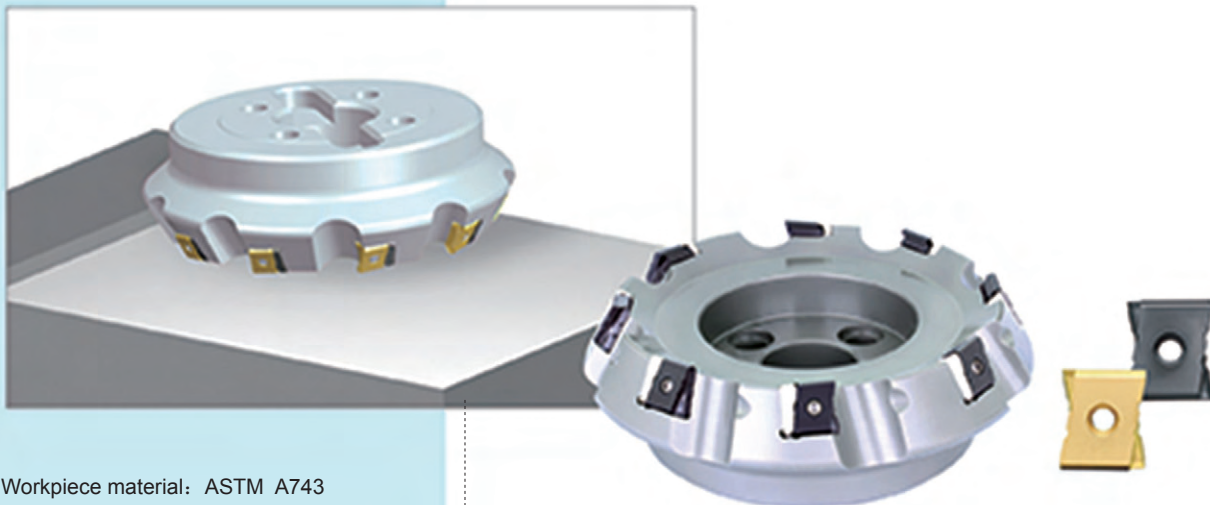
Recommended cutting parameters

	Workpiece material	Hardness HB	Insert grade	Cutting parameters	
				V(m/min)	f(mm/z)
P	Low-carbon steel, Soft steel	≤ 180	YBG302	180 (150-300)	0.5 (0.2-0.8)
			YBM351	180 (150-300)	0.5 (0.2-0.8)
	High-carbon steel, Alloy steel	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	280-350	YBG302	120 (80-250)	0.45 (0.2-0.6)
			YBM351	100 (80-250)	0.45 (0.2-0.6)
M	Stainless steel	≤ 270	YBG302	120 (80-200)	0.45 (0.2-0.6)
			YBM351	100 (80-200)	0.45 (0.2-0.6)
K	Cast iron	180-250	YBD152	220 (150-300)	0.5 (0.2-0.8)
			YBD252	210 (150-300)	0.5 (0.2-0.8)
			YBG302	200 (150-300)	0.5 (0.2-0.8)

Note: Cutting parameters can be adjusted according to the Max. power of machine.

B MILLING Indexable Milling Tools

Case for FMD03

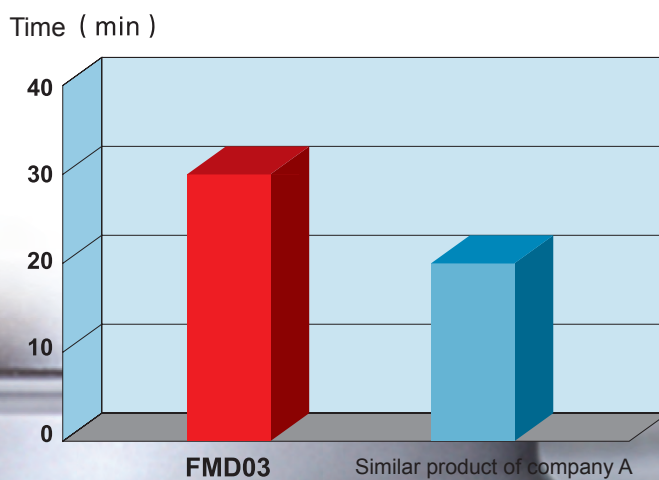


Workpiece material: ASTM A743
CA-6NM(HB200)
Cooling system: Dry cutting
Machine: NC floor type boring and milling
machine, spindle power $\geq 30\text{KW}$
Cutting parameters: $V_c=120\text{m/min}$
 $a_p=12\text{mm}$
 $f_z=0.55\text{mm/z}$
 $a_e=230\text{mm}$

Tool type: FMD03-315-D60-LN25-12

Insert type/grade: LNKT2510-ZR/YBG302

● Comparison of machining time



Face milling tools

Kr:75°

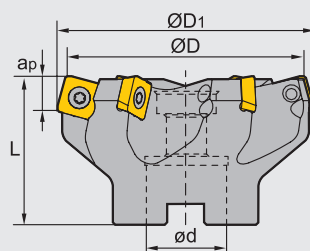


Face milling

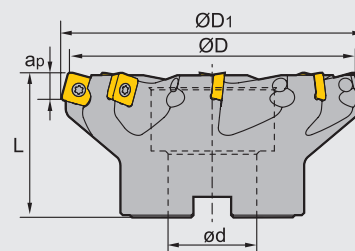
FME02 **P** **M** **K**

Specification of tools

A-type coupling



B-type coupling



Type	Stock	Basic dimensions(mm)					Number of teeth Z	Type of coupling	Weight (kg)
		ØD	ØD1	ød	L	apmax			
FME02 -050-A22-SP12-04	△	50	54	22	40	6	4	A	0.3
-063-A22-SP12-05	△	63	66	22	50	6	5	A	0.6
-080-A27-SP12-06	△	80	83	27	50	6	6	A	0.9
-100-B32-SP12-07	△	100	103	32	50	6	7	B	1.4
-125-B40-SP12-08	△	125	128	40	63	6	8	B	2.5

▲Stock available

△Make-to-order

Indexable
milling tools

Face milling tools

Spare parts

Diameter ØD	Insert screw	Wrench	
	 I60M5×13.2	 WT20IS	
Ø50-Ø125			

Tools code key

B24-B25

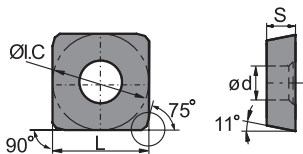
Grade selection guide

B19-B23

Technical data

B210-B216

Selection of inserts



😊 Good working condition 😐 Normal working condition 😞 Bad working condition

[illegible][illegible]

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

▶ Cutting edge treatment selection for FME02 milling inserts

Function Classification	For finishing	For semi-finishing	For roughing
P	EDFR	EDR	EDSR
M	EDFR	EDR	
K	EDFR	EDR	

➤ Recommended cutting parameters

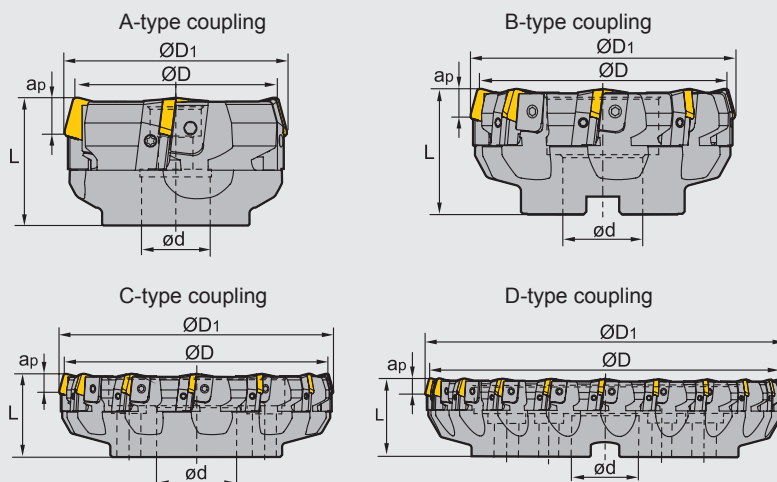
Workpiece material		Hardness HB	Insert grade	Cutting parameters	
				V(m/min)	f(mm/z)
P	Low-carbon steel、 Soft steel	≤180	YBG202	270(200-360)	0.2 (0.1-0.3)
	High-carbon steel、 Alloy steel	180-280	YBG202	240 (180-350)	0.2 (0.1-0.3)
	Alloy tool steel	280-350	YBG202	220 (170-340)	0.2 (0.1-0.3)
M	Stainless steel	≤270	YBG202	160 (110-270)	0.2 (0.1-0.3)
K	Cast iron	180-250	YBG202	160 (120-200)	0.2 (0.1-0.3)

Face milling tools

Kr:75°



Face milling

FME03 P M K


Specification of tools

Type	Stock		Basic dimensions(mm)					Number of teeth Z	Type of coupling	Weight (kg)
	R	L	ØD	ØD1	ød	L	apmax			
FME03 -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

▲Stock available

△Make-to-order

Spare parts

Diameter ØD	Inserts	Locator	Wedge	Wedge Screw	Locator screw	Wrench
Ø80-Ø100	SP12	LSP12R/L	W04R/L	WM8×17	LOM5×15.1	
Ø125-Ø315				WM8×22		
Ø80-Ø315	SP15	LSP15R/L	W04R/L	WM8×22		

Tools code key

B24-B25

Grade selection guide

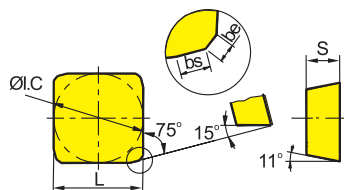
B19-B23

Technical data

B210-B216

MILLING Indexable Milling Tools

Selection of inserts



😊 Good working condition 😐 Normal working condition 😞 Bad working condition

[illegible]

Insert shape	Type	Basic dimensions(mm)					CVD Coating							PVD Coating							Cermet		Cemented carbide			
		L	ØI.C	S	be	bs	YBC301	YBC302	YBM251	YBM253	YBM351	YBD152	YBD252	YBG102	YBG202	YBG205	YB9320	YBG302	YBG152	YBG252	YNG151	YNG151C	YC30S	YD051	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	12.7	12.7	3.18	1	1.4								○	○											○
	SPKN1203EDSKR	12.7	12.7	3.18	1	1.4												○					○			
	SPKN1203EDSKL	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								○		○							○		○	
	SPKN1203EDS31R	12.7	12.7	3.18	1	1.4												○					○			
	SPKN1203EDS31L	12.7	12.7	3.18	1	1.4												○					○			
	SPKN1203EDT31R	12.7	12.7	3.18	1	1.4	●				●			○		★							●		○	
	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			●				★		★							●		●		
	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	15.875	15.875	4.76	1	1.4							○	○											○	
	SPKN1504EDSKR	15.875	15.875	4.76	1	1.4												○				○				
	SPKN1504EDSKL	15.875	15.875	4.76	1	1.4												○				○				
	SPKN1504EDTKR	15.875	15.875	4.76	1	1.4	●						★		○							●		●		
	SPKN1504EDTKL	15.875	15.875	4.76	1	1.4							○		○							○		●		
	SPKN1504EDS32R	15.875	15.875	4.76	1	1.4												○				○				
	SPKN1504EDS32L	15.875	15.875	4.76	1	1.4												○				○				
	SPKN1504EDT32R	15.875	15.875	4.76	1	1.4	●						★		○							●		●		
	SPKN1504EDT32L	15.875	15.875	4.76	1	1.4								○		○						○		●		
	SPKR1504EDR-GM	15.875	15.875	4.76	1	1.4			●				★		★							●		●		
	SPKR1504EDL-GM	15.875	15.875	4.76	1	1.4			●				★		★							●		●		

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

Ordering guide: **SPKN1203EDT3 1 R** chamfering angle 20°, chamfering width 0.15mm. For other edge shapes, see inserts code key standard.

Selection of inserts

😊 Good working condition

😐 Normal working condition

😞 Bad working condition

Workpiece material	P Steel	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊
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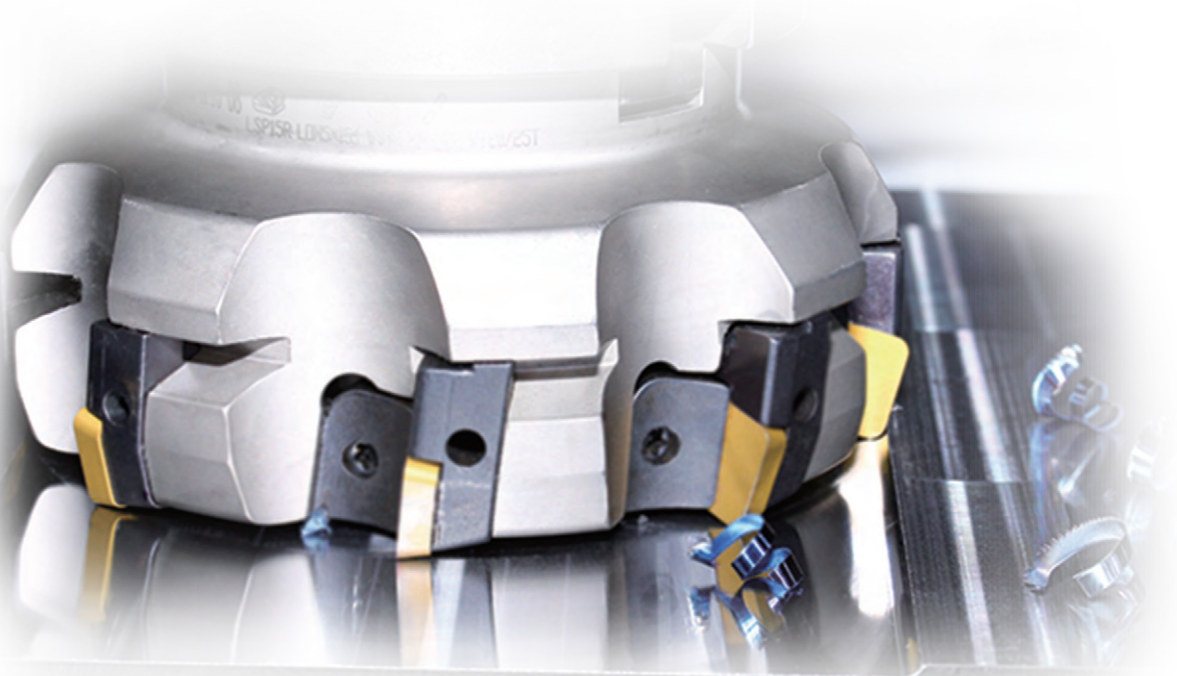
Cutting edge treatment selection for FME03 milling inserts

Treatment of cutting edge	Recommended selection
SP□□EDER/L	Honing edge is suitable for semi-finish and finish machining of steel and stainless steel.
SP□□EDFR/L	Sharp cutting edge is suitable for finish machining of cast iron materials.
SP□□EDSKR/L SP□□EDS□□R/L	After chamfering and honing, the edge has strong anti-breakage capability, suitable for rough machining of steel parts under poor working conditions.
SP□□EDTKR/L SP□□EDT□□R/L	Chamfered edge is suitable for semi-finish and finish machining of steel, stainless steel and cast iron materials.
SP□□EDR/L-GM	3D chipbreaker can reduce cutting force, reinforce the capability of chip control, and improve insert life. It is widely applied in semi-finish machining of steel, stainless steel and cast iron materials.

B MILLING Indexable Milling Tools

➤ Recommended cutting parameters

	Workpiece material	Hardness HB	Insert grade	Cutting parameters	
				V(m/min)	f(mm/z)
P	Low-carbon steel, Soft steel	≤ 180	YBG202	270 (200-360)	0.2 (0.1-0.4)
			YBG302	230 (170-350)	0.24 (0.1-0.3)
			YBM251 YBC301	270 (220-350)	0.2 (0.1-0.4)
			YBM351	220 (180-300)	0.25 (0.15-0.3)
			YC30S	140 (100-220)	0.22 (0.1-0.3)
	High-carbon steel, Alloy steel	180-280	YBG202	240 (180-350)	0.2 (0.1-0.3)
			YBG302	220 (150-330)	0.24 (0.1-0.3)
			YBM251 YBC301	240 (200-320)	0.2 (0.1-0.4)
			YBM351	200 (160-280)	0.25 (0.15-0.3)
			YC30S	120 (80-200)	0.22 (0.1-0.3)
	Alloy tool steel	280-350	YBG202	220 (170-340)	0.2 (0.1-0.3)
			YBG302	190 (130-300)	0.24 (0.1-0.3)
			YBM251 YBC301	220 (180-300)	0.2 (0.1-0.4)
			YBM351	180 (150-250)	0.25 (0.15-0.3)
			YC30S	100 (60-180)	0.22 (0.1-0.3)
M	Stainless steel	≤ 270	YBG202	160 (110-270)	0.2 (0.1-0.3)
			YBG302	140 (100-250)	0.24 (0.1-0.3)
			YBM251	150 (120-240)	0.2 (0.1-0.4)
			YBM351	140 (100-240)	0.25 (0.15-0.3)
K	Cast iron	180-250	YBG102	210 (120-300)	0.12 (0.08-0.3)
			YBG302	160 (120-200)	0.2 (0.1-0.3)
			YD201	100 (80-160)	0.24 (0.15-0.4)



Face milling tools

Kr:75°

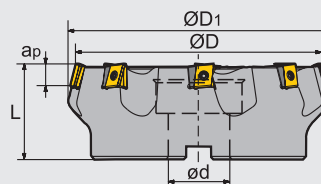


Face milling

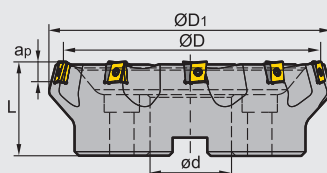
FME04 P M K



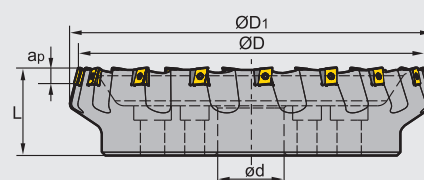
B-type coupling



C-type coupling



D-type coupling



Specification of tools

type	Stock		ØD	ØD ₁	Ød	L	ap _{max}	Number of teeth Z	Applicable inserts	Style of coupling	Weight (kg)
	R	L									
FME04 -125-B40-LN15-06	▲	△	125	137	40	63	12	6	LNKT1506EN-ZR	B	3.8
-160-B40-LN15-08	▲	△	160	170	40	63	12	8		C	6.6
-200-C60-LN15-10	▲	△	200	208	60	70	12	10		C	9.6
-250-C60-LN15-12	▲	△	250	257	60	70	12	12		C	13.4
-315-D60-LN15-16	▲	△	315	328	60	80	12	16		D	25.2

▲Stock available

△Make-to-order

Indexable
milling tools

Face milling tools

Spare parts

Diameter ØD	Shim	Shim screw	Insert screw	Wrench	
Ø125-Ø315	LLN15-ZR	I60M3×7	I60M4×12	WT15IS, WT09IS	

Tools code key

B24-B25

Grade selection guide

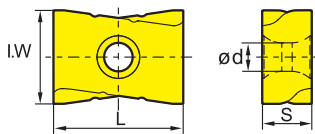
B19-B23

Technical data

B210-B216

MILLING Indexable Milling Tools

Selection of inserts



😊 Good working condition 😐 Normal working condition 😞 Bad working condition

[illegible][illegible]

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

Recommended cutting parameters

Workpiece material		Hardness HB	Insert grade	Cutting parameters	
				V(m/min)	f(mm/z)
P	Low-carbon steel、 Soft steel	≤180	YBG302	180 (150-300)	0.5 (0.2-0.8)
			YBM351	180 (150-300)	0.5 (0.2-0.8)
	High-carbon steel、 Alloy steel	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	280-350	YBG302	120 (80-250)	0.45 (0.2-0.6)
			YBM351	100 (80-250)	0.45 (0.2-0.6)
M	Stainless steel	≤270	YBG302	120 (80-200)	0.45 (0.2-0.6)
			YBM351	100 (80-200)	0.45 (0.2-0.6)
K	Cast iron	180-250	YBD152	220 (150-300)	0.5 (0.2-0.8)
			YBD252	210 (150-300)	0.5 (0.2-0.8)
			YBG302	200 (150-300)	0.5 (0.2-0.8)

Note: Cutting parameters can be adjusted according to the Max. power of machine.

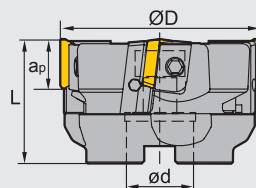


Face milling tools

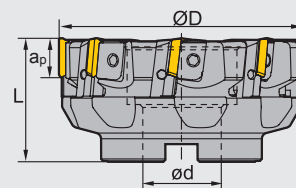
Kr:90°

**FMP01** P M K

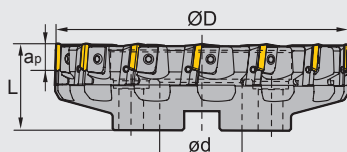
A-type coupling



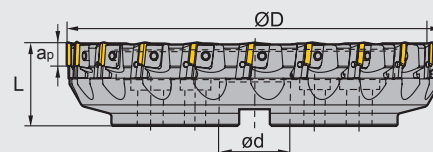
B-type coupling



C-type coupling



D-type coupling



Specification of tools

Type	Stock		Basic dimensions(mm)				Number of teeth Z	Type of coupling	Weight (kg)
	R	L	ØD	ød	L	apmax			
FMP01 -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

▲Stock available

△Make-to-order

Spare parts

Diameter ØD	Locator	Wedge	Wedge Screw	Locator screw	Wrench
Ø80 Ø100	LTP4R1/L1	W04R/L	WM8×17	LOM5×15.1	WT20T WT25T
Ø125 ~ Ø315	LTP4R/L		WM8×22		

Tools code key

B24-B25

Grade selection guide

B19-B23

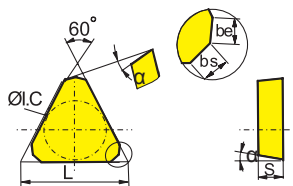
Technical data

B210-B216

Indexable
milling tools

Face milling tools

Selection of inserts



😊 Good working condition 😐 Normal working condition 😞 Bad working condition

[illegible]

Insert shape	Type	Basic dimensions(mm)						CVD Coating						PVD Coating						Cemet		Cemented carbide					
		L	ØI.C	S	be	bs	α	YBC301	YBC302	YBM251	YBM253	YBM351	YBD152	YBD252	YBG102	YBG202	YBG205	YB9320	YBG302	YBG152	YBG252	YNG151	YNG151C	YC30S	YD051	YD101	YD201
	TPKN2204PDFR	22	12.7	4.76	1.4	0.7	11°								○												○
	TPKN2204PDFL	22	12.7	4.76	1.4	0.7	11°								○												○
	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°	●																●			
	TPKN2204PDTL	22	12.7	4.76	1.4	0.7	11°	○																○			

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

 Recommended cutting parameters

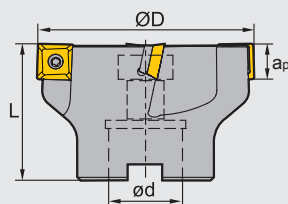
Workpiece material		Hardness HB	Insert grade	Cutting parameters	
				V(m/min)	f(mm/z)
P	Low-carbon steel, Soft steel	≤ 180	YBC301	270 (220-350)	0.2 (0.1-0.4)
			YBM351	220 (180-300)	0.2 (0.08-0.3)
			YBG202	270 (200-360)	0.2 (0.1-0.3)
			YC30S	140 (100-220)	0.22 (0.1-0.3)
	High-carbon steel, Alloy steel	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)
	Alloy tool steel	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)
M	Stainless steel	≤ 270	YBM351	140 (100-240)	0.2 (0.08-0.3)
			YBG202	140 (100-250)	0.2 (0.1-0.3)
K	Cast iron	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)

Face milling tools

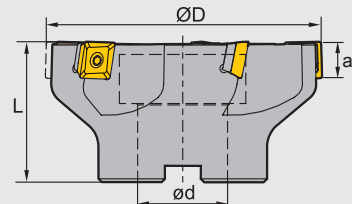
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**FMP02** P M K

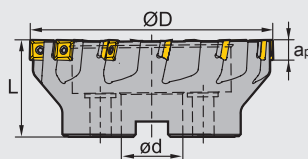
A-type coupling



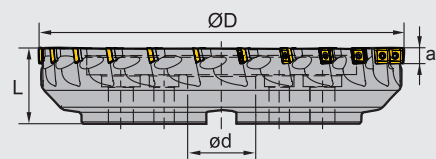
B-type coupling



C-type coupling



D-type coupling



Specification of tools

Type	Stock	Basic dimensions(mm)				Number of teeth Z	Type of coupling	Weight (kg)
		ØD	ød	L	apmax			
FMP02 -050-A22-SE09-05	▲	50	22	40	6.7	5	A	0.3
-063-A22-SE09-06	▲	63	22	40	6.7	6	A	0.5
-080-A27-SE09-08	▲	80	27	50	6.7	8	A	0.9
-100-B32-SE09-08	▲	100	32	50	6.7	8	B	1.7
-100-B32-SE09-10	△	100	32	50	6.7	10	B	1.7
-125-B40-SE09-12	△	125	40	63	6.7	12	B	2.6

▲ Stock available

△ Make-to-order

Indexable
milling tools

Face milling tools

Tools code key

B24-B25

Grade selection guide

B19-B23

Technical data

B210-B216

B MILLING Indexable Milling Tools

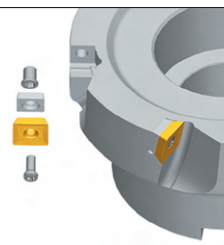
Specification of tools

Type	Stock	Basic dimensions(mm)				Number of teeth Z	Type of coupling	Weight (kg)
		ØD	ød	L	apmax			
FMP02 -050-A22-SE12-03	▲	50	22	40	10.8	3	A	0.3
-063-A22-SE12-04	▲	63	22	40	10.8	4	A	0.4
-080-A27-SE12-04	▲	80	27	50	10.8	4	A	0.9
-100-B32-SE12-05	▲	100	32	50	10.8	5	B	1.2
-125-B40-SE12-06	▲	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
-063-A22-SE12-05	▲	63	22	40	10.8	5	A	0.4
-080-A27-SE12-06	▲	80	27	50	10.8	6	A	0.8
-100-B32-SE12-07	▲	100	32	50	10.8	7	B	1.2
-125-B40-SE12-08	▲	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
-063-A22-SE12-06	▲	63	22	40	10.8	6	A	0.4
-080-A27-SE12-08	▲	80	27	50	10.8	8	A	0.8
-100-B32-SE12-10	▲	100	32	50	10.8	10	B	1.2
-125-B40-SE12-12	▲	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

▲Stock available △Make-to-order

Spare parts

Diameter ØD	Inserts	Shim	Insert screw	Shim screw	Wrench	Wrench
						
Ø50 ~ Ø125	SE09	--	I60M3×7	--	WT09IS	--
Ø50	SE12	--	I60M3.5×10	--	WT15IS	--
Ø63 ~ Ø315		S12BSX	I60M3.5×12	SM5×7XA		WH35L



Tools code key
B24-B25

Grade selection guide
B19-B23

Technical data
B210-B216

Workpiece material	Temperature (°C)									
	20	100	200	300	400	500	600	700	800	900
P Steel	😊😊😊😊😊					😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊
M Stainless steel	😞😞😞😞😞					😞😞😞😞😞	😞😞😞😞😞	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊
K Cast iron					😞😞😞				😞😞	😞😞
N Non-ferrous metal										😬😬
S Heat resistant alloy, Ti alloy					😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊	😊😊😊😊😊		

[illegible]

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

Indexable milling tools

Face milling tools

Classification \ Function	For finishing	For semi-finishing	For roughing
P	-APF	-APM	-APR
M			
K			



Features of

FMP02

Series Milling Tools



Inserts designed with new geometries and coated grades for optimized high efficiency machining in different working conditions.

Unique geometric design resulting in true 90° square shoulder cutting.



Upgraded insert structure, greatly improves tool life.

Large positive rake angle resulting in easier cutting with less tool pressure.



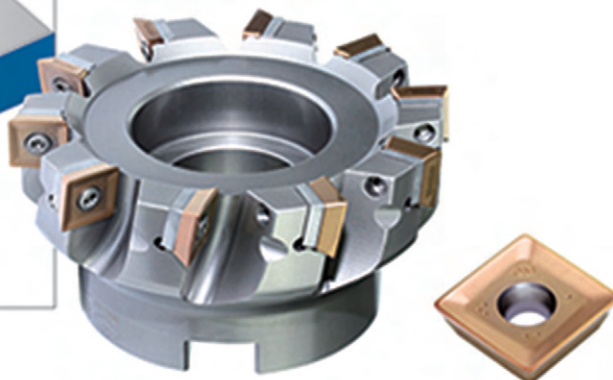
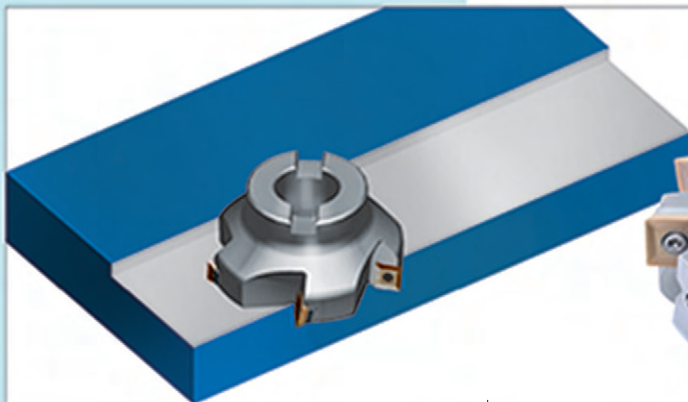
Screw down clamping resulting in better chip evacuation.

➤ Recommended cutting parameters

Workpiece material		Hardness HB	Insert grade	Cutting parameters			
				V(m/min)	f(mm/z)		
					-APF	-APM	-APR
P	Low-carbon steel, Soft steel	≤ 180	YBG202	270(200-360)	0.15(0.1-0.2)	0.2 (0.1-0.3)	0.3 (0.2-0.4)
			YB9320	270(200-360)	0.15(0.1-0.2)	0.2 (0.1-0.3)	0.3 (0.2-0.4)
	High-carbon steel, Alloy steel	180—280	YBM351	240 (200-320)	0.15(0.1-0.2)	0.2 (0.1-0.3)	0.3 (0.2-0.4)
			YBG202	240 (180-350)	0.15(0.1-0.2)	0.2 (0.1-0.3)	0.3 (0.2-0.4)
			YB9320	240 (180-350)	0.15(0.1-0.2)	0.2 (0.1-0.3)	0.3 (0.2-0.4)
	Alloy tool steel	280—350	YBM351	220 (180-300)	0.1(0.1-0.2)	0.2 (0.1-0.3)	0.3 (0.2-0.4)
			YBG202	220 (170-340)	0.1(0.1-0.2)	0.2 (0.1-0.3)	0.3 (0.2-0.4)
			YB9320	220 (170-340)	0.1(0.1-0.2)	0.2 (0.1-0.3)	0.3 (0.2-0.4)
M	Stainless steel	≤ 270	YBM351	150 (120-240)	0.1(0.1-0.2)	0.2 (0.1-0.3)	0.3 (0.2-0.4)
			YBG202	160 (110-270)	0.1(0.1-0.2)	0.2 (0.1-0.3)	0.3 (0.2-0.4)
			YB9320	160 (110-270)	0.1(0.1-0.2)	0.2 (0.1-0.3)	0.3 (0.2-0.4)
K	Cast iron	180—250	YBG202	160 (120-200)	0.15(0.1-0.2)	0.2 (0.1-0.3)	0.3 (0.2-0.4)
			YBD152	270 (150-300)	0.15(0.1-0.2)	0.2 (0.1-0.3)	0.3 (0.2-0.4)

B MILLING Indexable Milling Tools

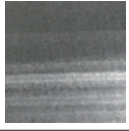
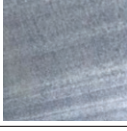
Case for FMP02



Workpiece material: 45#
 Hardness: 175-190 (HB)
 Cooling: Air cooling
 Tool: FMP02-100-B32-SE12-10
 Insert: SEET120308PER-APM (YB9320)
 Data:

Data 1: $V_c=200\text{m/min}$, $f_z=0.15\text{mm/z}$,
 $A_p=7\text{mm}$, $A_e=5\text{mm}$
 Data 2: $V_c=200\text{m/min}$, $f_z=0.25\text{mm/z}$,
 $A_p=7\text{mm}$, $A_e=5\text{mm}$

● SEET120308PER-APM Insert test vs. competitors

Chipbreaker	Data 1: $V_c=200\text{m/min}$, $f_z=0.15\text{mm/z}$ $A_p=7\text{mm}$, $A_e=5\text{mm}$		Data 2: $V_c=200\text{m/min}$, $f_z=0.25\text{mm/z}$ $A_p=7\text{mm}$, $A_e=5\text{mm}$	
	Runout value	Surface machined	Runout value	Surface machined
-APM	0.006		0.006	
Products of company A	0.012		0.012	
Products of company B	0.013		0.015	



-APM



Product of company B

Results:

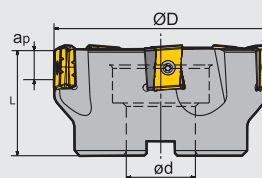
Comparing with competitors, SEET120308PER-APM inserts can get better surface quality and longer tool life.

Face milling tools

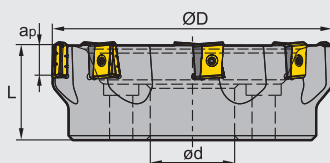
Kr:90°


FMP03 P M K

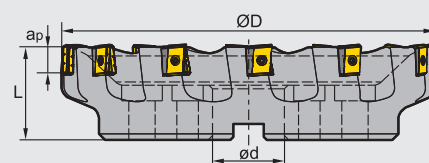

B-type coupling



C-type coupling



D-type coupling



Specification of tools

Type	Stock		ØD	Ød	L	apmax	Number of teeth Z	Applicable inserts	Style of coupling	Weight (kg)
	R	L								
FMP03 -125-B40-LN15-06	▲	△	125	40	63	13	6	LNKT1506EN-ZR	B	3.2
-160-C40-LN15-08	▲	△	160	40	63	13	8		C	5.1
-200-C60-LN15-10	▲	△	200	60	70	13	10		C	7.5
-250-C60-LN15-12	▲	△	250	60	70	13	12		C	12.2
-315-D60-LN15-16	▲	△	315	60	80	13	16		D	23.7
-125-B40-LN20-06	▲	△	125	40	63	17	6	LNKT2007DN-ZR	B	3.3
-160-C40-LN20-08	▲	△	160	40	63	17	8		C	5.3
-200-C60-LN20-10	▲	△	200	60	70	17	10		C	8.8
-250-C60-LN20-12	▲	△	250	60	70	17	12		C	14.0
-315-D60-LN20-15	▲	△	315	60	80	17	15		D	23.9
-125-B40-LN25-05	▲	△	125	40	63	22	5	LNKT2510-ZR	B	3.3
-160-C40-LN25-06	▲	△	160	40	63	22	6		C	5.1
-200-C60-LN25-08	▲	△	200	60	70	22	8		C	8.9
-250-C60-LN25-10	▲	△	250	60	70	22	10		C	12.0
-315-D60-LN25-12	▲	△	315	60	80	22	12		D	21.9

▲Stock available

△Make-to-order

Spare parts

Inserts	Shim	Shim screw	Insert screw	Wrench	
LNKT1506EN-ZR	LLN15-ZR	I60M3×7	I60M4×12	WT15IS	WT09IS
LNKT2007DN-ZR	LLN20R-ZR	I60M3×7	I60M4×15	WT15IS	WT09IS
LNKT2510-ZR	LLN25R-ZR	I60M3.5×10.4	I60M5×17	WT20IT	WT15IS

Tools code key

B24-B25

Grade selection guide

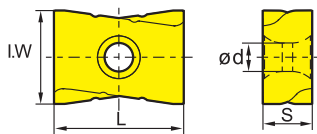
B19-B23

Technical data

B210-B216

MILLING Indexable Milling Tools

Selection of inserts



😊 Good working condition 😐 Normal working condition ☹ Bad working condition

[illegible]

Insert shape	Type	Basic dimensions(mm)				CVD Coating				PVD Coating				Cermet	Cemented carbide										
		L	I.W	S	ød	YBC301	YBC302	YBM251	YBM253	YBM351	YBD152	YBD252	YBG102	YBG202	YBG205	YBG320	YBG302	YBG152	YBG252	YNG151	YNG151C	YC30S	YD051	YD101	YD201
	LNKT1506EN-ZR	15.875	14	6.35	4.6					○	○					★									
	LNKT2007DN-ZR	20	17	7.94	4.6					○	○					★									
	LNKT2510-ZR	25	18	9.525	5.5					○		○					★								

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

➤ Recommended cutting parameters

Workpiece material		Hardness HB	Insert grade	Cutting parameters	
				V(m/min)	f(mm/z)
P	Low-carbon steel、 Soft steel	≤180	YBG302	180 (150-300)	0.5 (0.2-0.8)
			YBM351	180 (150-300)	0.5 (0.2-0.8)
	High-carbon steel、 Alloy steel	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	280-350	YBG302	120 (80-250)	0.45 (0.2-0.6)
			YBM351	100 (80-250)	0.45 (0.2-0.6)
M	Stainless steel	≤270	YBG302	120 (80-200)	0.45 (0.2-0.6)
			YBM351	100 (80-200)	0.45 (0.2-0.6)
K	Cast iron	180-250	YBD152	220 (150-300)	0.5 (0.2-0.8)
			YBD252	210 (150-300)	0.5 (0.2-0.8)
			YBG302	200 (150-300)	0.5 (0.2-0.8)

Note: Cutting parameters can be adjusted according to the Max. power of machine.

Case for FMP03



Tool type: FMP03-200-C60-LN25-08

Insert type/grade: LNKT2510-ZR/YBG302

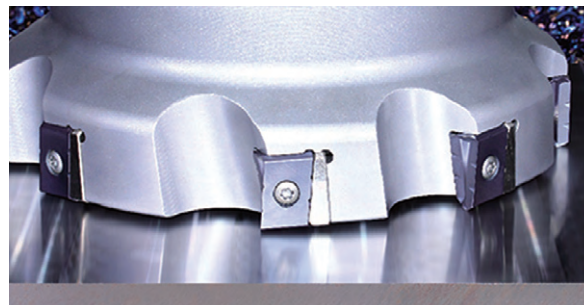
The tool operates easily and fast at high cutting depth with good chip breaking performance. Cutting efficiency is doubled, and tool life increases to 1-2 times that of the original.

Workpiece material: 45[#]

Hardness(HB): 190

Cooling system: Dry cutting

Cutting parameters: $V_c=130\text{m/min}$, $a_p=12\text{mm}$, $f_z=0.5\text{mm/z}$
 $a_e=140\text{mm}$



FMP12

Series Milling Tools

Kr:90°

- Double negative angle of the cutter, combined with unique insert structure, to achieve double positive tool angle, which is beneficial to reducing cutting force;
- 6-flute cutting double-sided slot milling inserts, enabling high-quality 90° square shoulder milling, face milling and slot milling;
- Insert with wiper enables large feed and better surface finish.

Application case

Tool specification: FMP12-080-A27-WN08-05C

Insert specification/grade: WNHU080608PNR-GM/YBD152

Part Name: Turbine Housing

Workpiece material: QT450

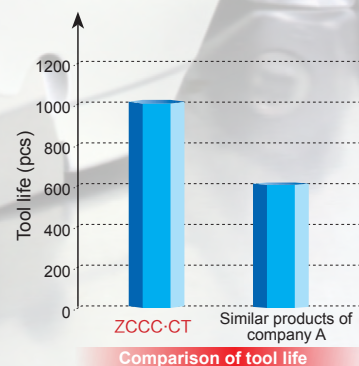
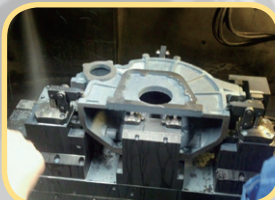
Hardness: HB230-280

Cooling :Dry cutting

Machine: Vertical machining center

Cutting data: $V_c=260\text{m/min}$, $a_p=1.0\text{mm}$, $z=0.1\text{mm/z}$, $a_e=30\text{mm}$

Milling style: Down milling Area of machining: End surface

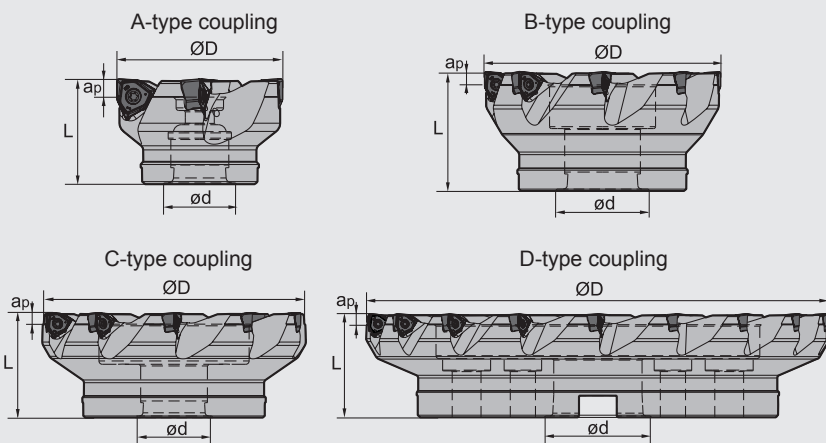


Face milling tools

Kr:90°



FMP12 P K



Specification of tools

Type	Stock	Basic dimensions(mm)				Number of teeth Z	Type of coupling
		ØD	Ød	L	apmax		
FMP12 050-A22-WN06-05C	△	50	22	40	5.7	5	A
063-A22-WN06-06C	△	63	22	40	5.7	6	A
080-A27-WN06-07C	△	80	27	50	5.7	7	A
100-B32-WN06-09	△	100	32	50	5.7	9	B
125-B40-WN06-11	△	125	40	63	5.7	11	B
160-C40-WN06-14	△	160	40	63	5.7	14	C
063-A22-WN08-04C	△	63	22	40	7.7	4	A
080-A27-WN08-05C	△	80	27	50	7.7	5	A
100-B32-WN08-06	△	100	32	50	7.7	6	B
125-B40-WN08-08	△	125	40	63	7.7	8	B
160-C40-WN08-10	△	160	40	63	7.7	10	C
200-C60-WN08-12	△	200	60	63	7.7	12	C
250-C60-WN08-14	△	250	60	63	7.7	14	C
315-D60-WN08-18	△	315	60	70	7.7	18	D

▲Stock available △Make-to-order

Spare parts

Inserts	Insert screw	Wrench	
WNHU06	I60M3×9	WT09IS	
WNHU08	I60M4×10	WT15IS	

Tools code key
B24-B25

Grade selection guide
B19-B23

Technical data
B210-B216

Face milling tools

Kr:90°



Face milling

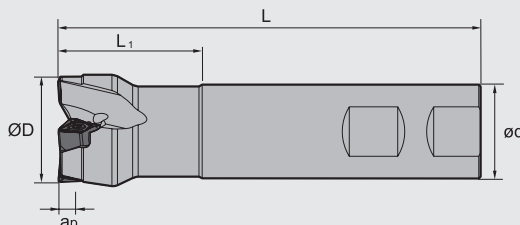


Step shoulder



Slot milling

FMP12 P K



Specification of tools

Type	Stock	Basic dimensions(mm)					Number of teeth Z	Type of coupling
		ØD	Ød	L	L ₁	apmax		
FMP12 025-XP25-WN06-02C	△	25	25	100	30	5.7	2	XP
032-XP25-WN06-03C	△	32	25	120	40	5.7	3	XP
040-XP32-WN06-04C	△	40	32	140	40	5.7	4	XP
050-XP40-WN06-05C	△	50	40	169	40	5.7	5	XP

▲Stock available

△Make-to-order

Indexable
milling tools

Face milling tools

Spare parts

Inserts	Insert screw	Wrench	
WNHU06	I60M3×9	WT09IS	
WNHU08	I60M4×10	WT15IS	

Tools code key

B24-B25

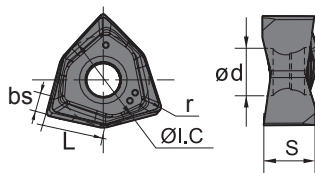
Grade selection guide

B19-B23

Technical data

B210-B216

Selection of inserts



😊 Good working condition 😐 Normal working condition 😞 Bad working condition

[illegible]

Insert shape	Type	Basic dimensions(mm)						CVD Coating						PVD Coating						Cermet		Cemented carbide					
		L	ØI.C	S	ød	bs	r	YBC301	YBC302	YBM251	YBM253	YBM351	YBD152	YBD252	YBG102	YBG202	YBG205	YBG320	YBG302	YBG152	YBG252	YNG151	YNG151C	YC30S	YD051	YD101	YD201
	WNHU060404PNR-GM	5.7	9.525	4.0	3.5	1.35	0.4				★	★				★	★										
	WNHU060408PNR-GM	5.7	9.525	4.0	3.5	1.35	0.8				★	★				★	★										
	WNHU080608PNR-GM	7.7	12.7	5.4	4.4	1.6	0.8				★	★				★	★										
	WNHU080616PNR-GM	7.7	12.7	5.4	4.4	1.6	1.6					★	★				★	★									

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

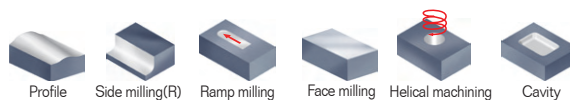
Indexable milling tools

Face milling tools

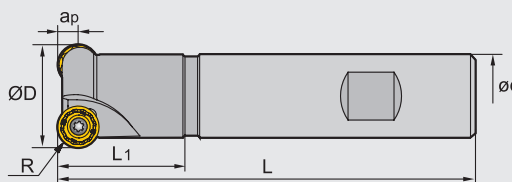
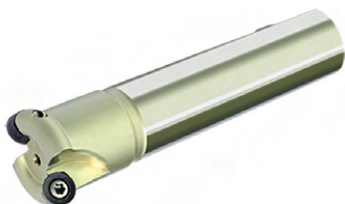
➤ Recommended cutting parameters

Workpiece material		Hardness HB	Insert grade	Cutting parameters		
				V(m/min)	f(mm/z)	ap _{max} (mm)
P	Low-carbon steel, Soft steel	≤ 180	YBM253 YBG205 YB9320	280(220-360)	0.2 (0.1-0.4)	5.7(WN06) 7.7(WN08)
	High-carbon steel, Alloy steel	180-280	YBM253 YBG205 YB9320	260 (200-340)	0.2 (0.1-0.4)	
	Alloy tool steel	280-350	YBM253 YBG205 YB9320	240 (180-320)	0.2(0.1-0.4)	
K	Cast iron	180-250	YBD152	280 (150-320)	0.2(0.1-0.4)	

Face milling tools



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



Specification of tools

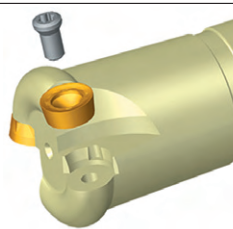
Type	Stock	Basic dimensions(mm)						Number of teeth Z	Weight (kg)
		ØD	ød	L	L1	R	apmax		
FMR01 -025-XP20-RC10-02	▲	25	20	100	30	5	5	2	0.2
-032-XP25-RC10-02	▲	32	25	120	35	5	5	2	0.5
-040-XP32-RC12-03	▲	40	32	120	40	6	6	3	0.7
-050-XP32-RC12-03	▲	50	32	120	40	6	6	3	0.8

▲Stock available △Make-to-order

Indexable
milling tools

Face milling tools

Spare parts

Diameter ØD	Insert screw	Wrench	
			
Ø25 -Ø32	I60M4×8.4	WT15S	
Ø40 -Ø50	I60M3.5×10		

Tools code key

B24-B25

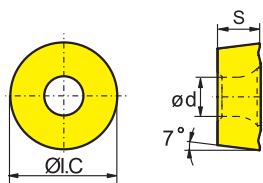
Grade selection guide

B19-B23

Technical data

B210-B216

Selection of inserts



😊 Good working condition 😐 Normal working condition 😞 Bad working condition

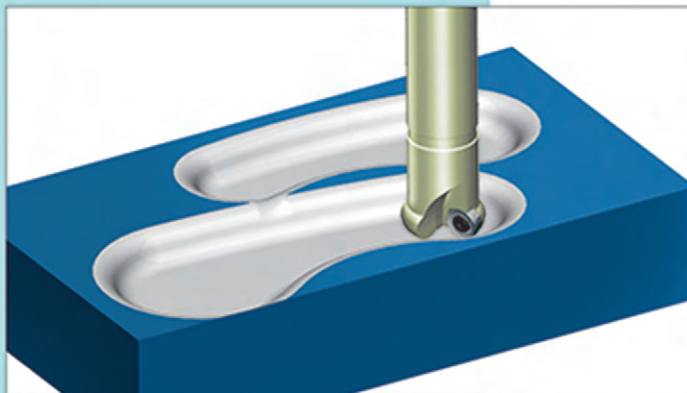
[illegible][illegible]

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

➤ Recommended cutting parameters

Workpiece material		Hardness HB	Insert grade	Cutting parameters		
				V(m/min)	f(mm/z)	
					-DM	-DR
P	Low-carbon steel、 Soft steel	≤ 180	YBM251 YBC301	270 (220-350)	0.2(0.1-0.5)	0.3 (0.2-0.8)
			YBM351 YBC302	220 (180-300)	0.25(0.1-0.5)	0.3 (0.2-0.8)
			YBG202 YBG205	270 (200-360)	0.2(0.1-0.5)	0.3 (0.2-0.8)
	High-carbon steel、 Alloy steel	180-280	YBM251 YBC301	240 (200-320)	0.2(0.1-0.5)	0.3 (0.2-0.8)
			YBM351 YBG302	200 (160-280)	0.25(0.1-0.5)	0.3 (0.2-0.8)
			YBG202 YBG205	240 (180-350)	0.2(0.1-0.5)	0.3 (0.2-0.8)
	Alloy tool steel	280-350	YBM251 YBC301	220 (180-300)	0.2(0.1-0.4)	0.3 (0.2-0.6)
			YBM351 YBG302	180 (150-250)	0.2(0.1-0.5)	0.3 (0.2-0.8)
			YBG202 YBG205	220 (170-340)	0.2(0.1-0.4)	0.3 (0.2-0.6)
M	Stainless steel	≤ 270	YBM251	150 (120-240)	0.2(0.1-0.4)	0.3 (0.2-0.6)
			YBM253 YBM351	150 (100-220)	0.2(0.1-0.4)	0.3 (0.2-0.6)
			YBG202 YBG205	160 (110-270)	0.2(0.1-0.4)	0.3 (0.2-0.6)
K	Cast iron	180-250	YBG302	210 (120-300)	0.2(0.1-0.5)	0.3 (0.2-0.8)

Case for FMR01



Workpiece material: 42CrMo (HRC35)
 Cooling system: Dry cutting
 Machine: Vertical machining center
 Cutting parameters:
 $V_c=200\text{m/min}$
 $a_p=3\text{mm}$
 $f_z=0.2\text{mm/z}$



Tool type: FMR01-025-XP20-RC10-02

Insert type/grade: RCKT10T3MO-DM/YBG202

Indexable
milling tools

Face milling tools

● Comparison of insert abrasion

ZCC-CT

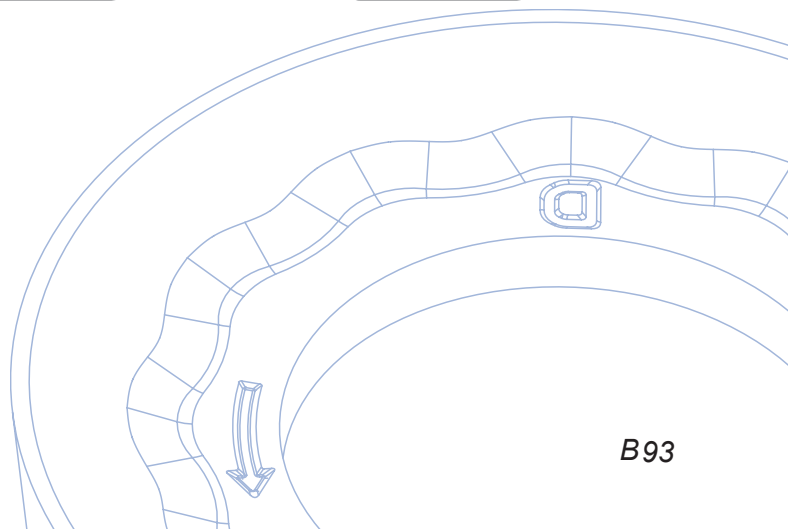


22minutes later

Similar overseas products

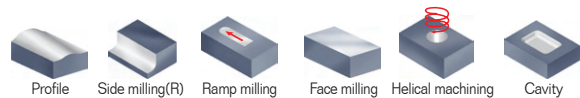


22minutes later



B MILLING Indexable Milling Tools

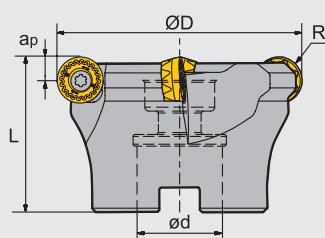
Face milling tools



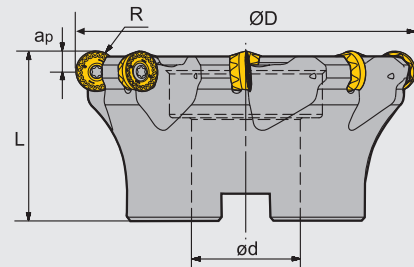
FMR02 **P** **M** **K**



A-type coupling



B-type coupling



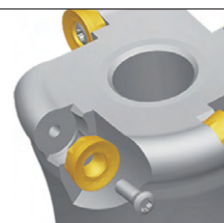
Specification of tools

Type		Stock	Basic dimensions(mm)					Number of teeth Z	Type of coupling	Weight (kg)
			ØD	ød	L	R	a _{pmax}			
FMR02 Coarse pitch	-050-A22-RC12-03	△	50	22	40	6	6	3	A	0.29
	-063-A22-RC12-04	▲	63	27	50	6	6	4	A	0.41
	-080-B27-RC12-05	▲	80	27	50	6	6	5	B	0.81
	-100-B32-RC12-06	△	100	32	50	6	6	6	B	1.25
	-063-A22-RC16-04	△	63	22	40	8	8	4	A	0.35
	-080-B27-RC16-05	△	80	27	50	8	8	5	B	0.74
	-100-B32-RC16-06	▲	100	32	50	8	8	6	B	1.18
	-125-B40-RC16-07	△	125	40	63	8	8	7	B	2.49
	-080-A27-RC20-04	△	80	27	50	10	10	4	A	0.77
	-100-B32-RC20-05	△	100	32	50	10	10	5	B	1.07
	-125-B40-RC20-06	△	125	40	63	10	10	6	B	2.42
	-160-B40-RC20-06	△	160	40	63	10	10	6	B	4.17
Close pitch	-050-A22-RC12-05	△	50	22	40	6	6	5	A	0.27
	-063-A22-RC12-06	△	63	27	50	6	6	6	A	0.38
	-080-B27-RC12-07	△	80	27	50	6	6	7	B	0.79
	-100-B32-RC12-08	△	100	32	50	6	6	8	B	1.23
	-063-A22-RC16-05	△	63	22	40	8	8	5	A	0.34
	-080-B27-RC16-07	△	80	27	50	8	8	7	B	0.72
	-100-B32-RC16-08	△	100	32	50	8	8	8	B	1.17
	-125-B40-RC16-09	△	125	40	63	8	8	9	B	2.47
	-080-A27-RC20-05	△	80	27	50	10	10	5	A	0.74
	-100-B32-RC20-06	△	100	32	50	10	10	6	B	1.07
	-125-B40-RC20-07	△	125	40	63	10	10	7	B	2.39
	-160-B40-RC20-08	△	160	40	63	10	10	8	B	4.06

▲Stock available △Make-to-order

Spare parts

Diameter ØD	Insert	Insert screw	Wrench	
Ø50 - Ø100	RC□□1204MO-□□	I60M3.5×10	WT15IS	--
Ø63 - Ø125	RC□□1606MO-□□	I60M5×13	--	WT20IT
Ø125 - Ø160	RC□□2006MO-□□	I43M6×16	--	WT25IT



Tools code key

B24-B25

Grade selection guide

B19-B23

Technical data

B210-B216

[illegible]

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

		Good working condition	Normal working condition	Bad working condition
Workpiece material	H Super hard material		😐	
	K Cast iron	😊	😊	😓
	N Non-ferrous metal			😐 😓

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

B MILLING Indexable Milling Tools

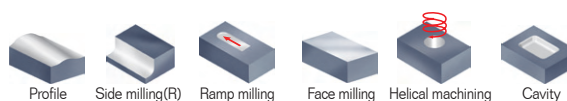
➤ Recommended cutting parameters

Workpiece material	Hardness HB	Insert grade	Cutting parameters					
			V(m/min)	f(mm/z)				
				-DM	-DR	-ER	-PCBN	
P	Low-carbon steel, Soft steel	≤HB180	YBM251 YBC301	270 (220-350)	0.2(0.1-0.5)	0.3 (0.2-0.8)		
			YBM351 YBG302	220 (180-300)	0.25(0.1-0.5)	0.3 (0.2-0.8)		
			YBG202 YBG205	270 (200-360)	0.2(0.1-0.5)	0.3 (0.2-0.8)		
	High-carbon steel, Alloy steel	HB180-280	YBM251 YBC301	240 (200-320)	0.2(0.1-0.5)	0.3 (0.2-0.8)		
			YBM351 YBG302	200 (160-280)	0.25(0.1-0.5)	0.3 (0.2-0.8)		
			YBG202 YBG205	240 (180-350)	0.2(0.1-0.5)	0.3 (0.2-0.8)		
	Alloy tool steel	HB280-350	YBM251 YBC301	220 (180-300)	0.2(0.1-0.4)	0.3 (0.2-0.6)		
			YBM351 YBG302	180 (150-250)	0.2(0.1-0.5)	0.3 (0.2-0.8)		
			YBG202 YBG205	220 (170-340)	0.2(0.1-0.4)	0.3 (0.2-0.6)		
M	Stainless steel	≤HB270	YBM251	150 (120-240)	0.2(0.1-0.4)	0.3 (0.2-0.6)		
			YBM253	150 (100-220)	0.2(0.1-0.4)	0.3 (0.2-0.6)	0.3(0.2-0.6)	
			YBM351	150 (100-220)	0.2(0.1-0.4)	0.3 (0.2-0.6)		
			YBG202 YBG205	160 (110-270)	0.2(0.1-0.4)	0.3 (0.2-0.6)		
K	Cast iron	HB180-250	YBG302	210 (120-300)	0.2(0.1-0.5)	0.3 (0.2-0.8)		
			YCB011	800 (500-1200)				0.2(0.1-0.5)
H	Hardened steel	≥HRC45	YCB012	150 (100-500)				0.15(0.1-0.5)

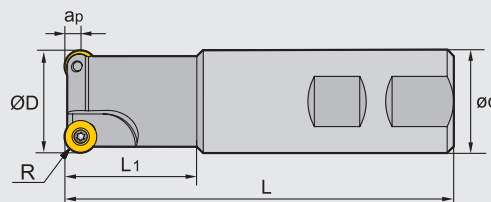
Indexable
milling tools

Face milling tools

Face milling tools



FMR03 P M K



Specification of tools

Type	Stock	Basic dimensions(mm)						Number of teeth Z	Weight (kg)
		ØD	ød	L	L1	R	apmax		
FMR03 -016-XP16-RD08-02	▲	16	16	100	25	4	4	2	0.1
-025-XP25-RD08-02	▲	25	25	100	30	4	4	2	0.3
-032-XP32-RD10-02	▲	32	32	120	40	5	5	2	0.7
-040-XP32-RD12-03	▲	40	32	120	40	6	6	3	0.7
-050-XP32-RD12-04	▲	50	32	120	40	6	6	4	0.8

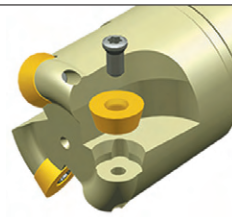
▲Stock available

△Make-to-order

Indexable
milling tools

Face milling tools

Spare parts

Diameter ØD	Insert screw	Wrench	
			
Ø16-Ø25	I60M3×7	WT09IP	
Ø32-Ø50	I60M4×10	WT15IP	

Tools code key

B24-B25

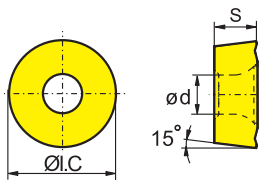
Grade selection guide

B19-B23

Technical data

B210-B216

Selection of inserts



😊 Good working condition 😐 Normal working condition 😞 Bad working condition

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★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

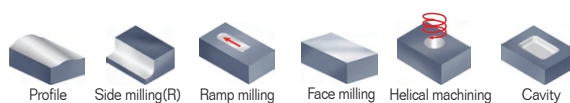
Indexable milling tools

Face milling tools

➤ Recommended cutting parameters

Workpiece material		Hardness HB	Insert grade	Cutting parameters	
				V(m/min)	f(mm/z)
P	Low-carbon steel、Soft steel	≤ 180	YBM251 YBC301	270 (220-350)	0.2 (0.08-0.45)
			YBM351 YBG302	220 (180-300)	0.25 (0.15-0.45)
			YBG202 YBG205	270 (200-360)	0.2 (0.1-0.45)
	High-carbon steel、Alloy steel	180-280	YBM251 YBC301	240 (200-320)	0.2 (0.08-0.45)
			YBM351 YBG302	200 (160-280)	0.25 (0.15-0.45)
			YBG202 YBG205	240 (180-350)	0.2 (0.1-0.45)
	Alloy tool steel	280-350	YBM251 YBC301	220 (180-300)	0.2 (0.08-0.45)
			YBM351 YBG302	180 (150-250)	0.25 (0.15-0.45)
			YBG202 YBG205	220 (170-340)	0.2 (0.1-0.45)
M	Stainless steel	≤270	YBG205	150 (120-240)	0.2 (0.08-0.45)
			YBM251	150 (120-240)	0.2 (0.08-0.45)
			YBM351	150 (100-220)	0.25 (0.1-0.45)
			YBG202 YBG205	160 (110-270)	0.2 (0.1-0.45)
K	Cast iron	180-250	YBG302	210 (120-300)	0.2 (0.1-0.45)

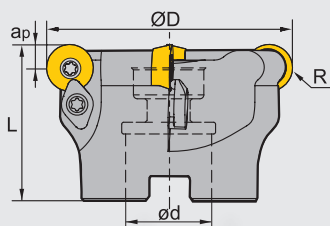
Face milling tools



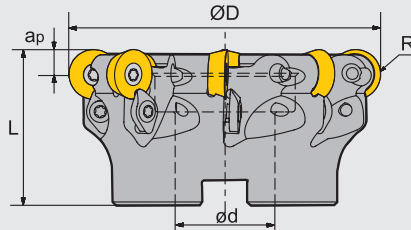
FMR04 P M K



A-type coupling



B-type coupling



Specification of tools

Type		Stock	Basic dimensions(mm)					Number of teeth Z	Type of coupling	Weight (kg)
			ØD	ød	L	R	a _p max			
FMR02 Coarse pitch	-050-A22-RD12-03	▲	50	22	40	6	6	3	A	0.25
	-063-A22-RD12-04	▲	63	22	40	6	6	4	A	0.37
	-080-B27-RD12-05	▲	80	27	50	6	6	5	B	0.77
	-063-A22-RD16-04	△	63	22	40	8	8	4	A	0.32
	-080-B27-RD16-05	△	80	27	50	8	8	5	B	0.67
	-100-B32-RD16-06	▲	100	32	50	8	8	6	B	1.18
	-125-B40-RD16-08	△	125	40	63	8	8	8	B	2.55
	-125-B40-RD20-06	▲	125	40	63	10	10	6	B	2.33
	-160-B40-RD20-07	▲	160	40	63	10	10	7	B	3.83
Close pitch	-050-A22-RD12-05	△	50	22	40	6	6	5	A	0.23
	-063-A22-RD12-06	△	63	22	40	6	6	6	A	0.48
	-080-B27-RD12-07	△	80	27	50	6	6	7	B	0.78
	-063-A22-RD16-05	△	63	22	40	8	8	5	A	0.3
	-080-B27-RD16-07	△	80	27	50	8	8	7	B	0.66
	-100-B32-RD16-08	△	100	32	50	8	8	8	B	1.18
	-125-B40-RD16-10	△	125	40	63	8	8	10	B	2.51
	-125-B40-RD20-08	△	125	40	63	10	10	8	B	2.45
	-160-B40-RD20-10	△	160	40	63	10	10	10	B	3.98

▲Stock available

△Make-to-order

Spare parts

Diameter ØD	Insert	Insert screw	Clamp	Clamp screw	Wrench	
Ø50-Ø80	RDKW1204MO	I60M3.5×10	WD-204	I60M4×10	WT15IP	--
Ø63-Ø125	RDKW1605MO	I60M5×13	WD-207	I60M5×13	--	WT20IT
Ø125-Ø160	RDKW2006MO	I43M6×16	--	--	--	WT25IT



Tools code key

B24-B25

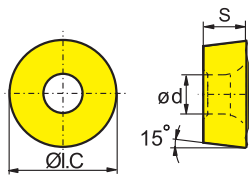
Grade selection guide

B19-B23

Technical data

B210-B216

Selection of inserts



😊 Good working condition 😐 Normal working condition 😞 Bad working condition

[illegible][illegible]

★ Recommended grade (always stock available) ● Available grade (always stock available) ○ Make-to-order

Indexable milling tools

Face milling tools

➤ Recommended cutting parameters

Workpiece material		Hardness HB	Insert grade	Cutting parameters	
				V(m/min)	f(mm/z)
P	Low-carbon steel、Soft steel	≤ 180	YBM251 YBC301	270 (220-350)	0.2 (0.08-0.45)
			YBM351 YBG302	220 (180-300)	0.25 (0.15-0.45)
			YBG202 YBG205	270 (200-360)	0.2 (0.1-0.45)
	High-carbon steel、Alloy steel	180-280	YBM251 YBC301	240 (200-320)	0.2 (0.08-0.45)
			YBM351 YBG302	200 (160-280)	0.25 (0.15-0.45)
			YBG202 YBG205	240 (180-350)	0.2 (0.1-0.45)
	Alloy tool steel	280-350	YBM251 YBC301	220 (180-300)	0.2 (0.08-0.45)
			YBM351 YBG302	180 (150-250)	0.25 (0.15-0.45)
			YBG202 YBG205	220 (170-340)	0.2 (0.1-0.45)
	M	Stainless steel	≤ 270	YBG205	150 (120-240)
YBM251				150 (120-240)	0.2 (0.08-0.45)
YBM351 YBG302				150 (100-220)	0.25 (0.1-0.45)
YBG202 YBG205				160 (110-270)	0.2 (0.1-0.45)
K	Cast iron	180-250	YBG302	210 (120-300)	0.2 (0.1-0.45)

Case for FMR04



Workpiece material: 42CrMo (HRC35)
 Cooling system: Dry cutting
 Machine: Vertical machining center
 Cutting parameters:
 $V_c=200\text{m/min}$
 $a_p=3\text{mm}$
 $f_z=0.3\text{mm/z}$



Tool type: FMR04-063-A22-RD12-04

Insert type/grade: RDKW1204MO/YBG202

Indexable
milling tools

Face milling tools

● Abrasion comparison after 90 minutes cavity milling

ZCC-CT

Similar overseas products

