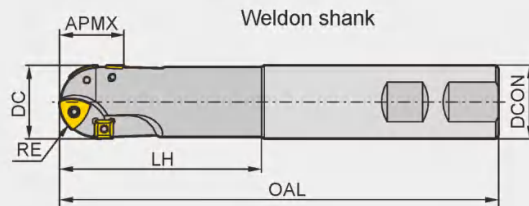


## Profile milling tools



### BMR01 P M K



### Specification of tools

Type	Stock	Basic dimensions(mm)						Applicable inserts				Weight (kg)
		RE	DC	APMX	DCON	OAL	LH	Type	Quantity	Type	Quantity	
<b>BMR01</b> -020-XP20-S	▲	10	20	20	20	125	50	ZDET08T2CYR10	2	SPMT060304	2	0.3
-020-XP20-M	▲	10	20	20	20	150	75	ZDET08T2CYR10	2	SPMT060304	2	0.3
-020-XP20-L	▲	10	20	20	20	200	100	ZDET08T2CYR10	2	SPMT060304	2	0.4
-025-XP25-S	▲	12.5	25	23	25	150	70	ZDET1103CYR12.5	2	SPMT060304	2	0.5
-025-XP25-M	▲	12.5	25	23	25	175	95	ZDET1103CYR12.5	2	SPMT060304	2	0.6
-025-XP25-L	▲	12.5	25	23	25	200	100	ZDET1103CYR12.5	2	SPMT060304	2	0.7
-032-XP32-S	▲	16	32	31	32	175	85	ZDET13T3CYR16	2	SDMT090308	2	0.9
-032-XP32-M	▲	16	32	31	32	200	100	ZDET13T3CYR16	2	SDMT090308	2	1.1
-032-XP32-L	▲	16	32	31	32	250	150	ZDET13T3CYR16	2	SDMT090308	2	1.4
-040-XP40-S	▲	20	40	41	40	175	85	ZPNT2204CY(R20)	3	SPMT120408	2	1.4
-040-XP40-M	▲	20	40	41	40	200	100	ZPNT2204CY(R20)	3	SPMT120408	2	1.7
-040-XP40-L	▲	20	40	41	40	250	150	ZPNT2204CY(R20)	3	SPMT120408	2	2.1
-050-XP40-S	▲	25	50	45	40	200	100	ZPNT2204CY(R25)	3	SPMT120408	2	1.8
-050-XP40-M	▲	25	50	45	40	300	100	ZPNT2204CY(R25)	3	SPMT120408	2	2.8
-063-XP40-S	▲	31.5	63	52	40	200	100	ZPNT2204CY(R31)	4	SPMT120408	2	3.0
-063-XP40-M	▲	31.5	63	52	40	300	100	ZPNT2204CY(R31)	4	SPMT120408	2	3.5

▲Stock available    △Make-to-order

### Spare parts

Diameter DC	Screw	Wrench	
Ø20-Ø25	I43M2.5×5.7	WT071P	--
Ø32	I43M4×8	--	WT15IS
Ø40-Ø63	I43M5×11	--	WT20IS

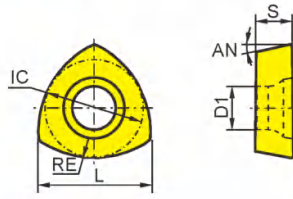


Tools code key **B26-B27**

Grade selection guide **B19-B23**

Technical data **B271-B276**

## Selection of inserts

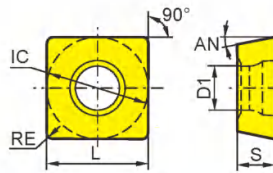


😊 Good working condition   😐 Normal working condition   😞 Bad working condition

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

Insert shape	Type	Basic dimensions(mm)						CVD Coating					PVD Coating					Cermet	Cemented carbide					
		RE	L	IC	S	D1	AN	YBC302	YBM253	YBD152	YBD203	YBD252	YBG105	YBG202	YBG205	YB9320	YBG302	YBS203	YBS303	YNG151	YNG151C	YD101	YD201	
	ZDET08T2CYR10	10	8.4	6.75	2.78	2.8	14°																	
	ZDET1103CYR12.5	12.5	10.6	8.5	3.18	2.8	14°																	
	ZDET13T3CYR16	16	13.2	10.5	3.97	4.4	14°																	
	ZPNT2204CY(R20)	20	16.1	12.7	4.76	5.56	11°																	
	ZPNT2204CY(R25)	25	16.9	12.7	4.76	5.56	11°																	
	ZPNT2204CY(R31)	31.5	17.6	12.7	4.76	5.56	11°																	

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



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

Insert shape	Type	Basic dimensions(mm)						CVD Coating					PVD Coating					Cermet	Cemented carbide					
		RE	L	IC	S	D1	AN	YBC302	YBM253	YBD152	YBD203	YBD252	YBG105	YBG202	YBG205	YB9320	YBG302	YBS203	YBS303	YNG151	YNG151C	YD101	YD201	
	SPMT060304	0.4	6.35	6.35	3.18	2.8	11°																	
	SDMT090308	0.8	9.525	9.525	3.18	4.4	15°																	
	SPMT120408	0.8	12.7	12.70	4.76	5.5	11°																	

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

## Recommended cutting parameters

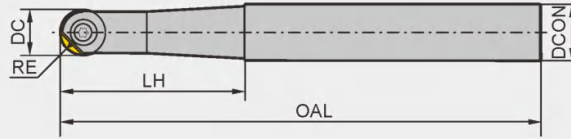
Workpiece material	Hardness HB	Insert grade	Cutting parameters		
			Vc(m/min)	fz(mm/z)	
<b>P</b> Steel	Low-carbon steel, Soft steel	YBM253	180(120-220)	0.25(0.1-0.4)	
		YBG302	160(120-220)	0.25(0.1-0.4)	
	High-carbon steel, Alloy steel	YBM253	150(100-200)	0.2(0.1-0.4)	
		YBG302	120(100-200)	0.2(0.1-0.4)	
	Alloy tool steel	280-350	YBM253	100(80-150)	0.2(0.1-0.3)
			YBG302	100(80-150)	0.2(0.1-0.3)
<b>M</b> Stainless steel	≤270	YBM253	100(80-150)	0.2(0.1-0.3)	
<b>K</b> Cast iron	180-250	YBM253	100(80-150)	0.2(0.1-0.3)	
		YBG302	150(100-180)	0.3(0.2-0.5)	



### Profile milling tools



### BMR02 P M K



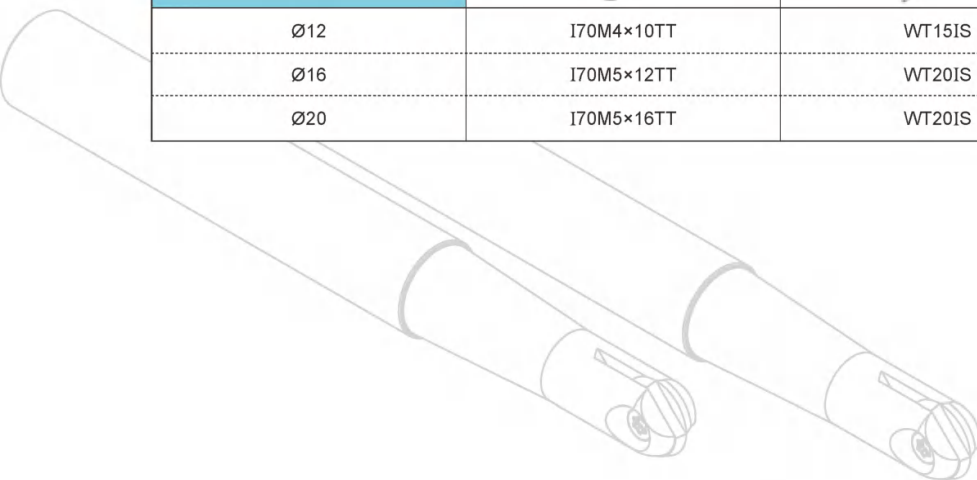
#### Specification of tools

Type	Stock	Basic dimensions(mm)					Weight (kg)
		RE	DC	DCON	OAL	LH	
<b>BMR02</b> -012-G16-S	▲	6	12	16	110	40	0.1
-012-G16-M	▲	6	12	16	130	50	0.2
-012-G16-L	▲	6	12	16	160	50	0.2
-016-G20-S	▲	8	16	20	140	45	0.3
-016-G20-M	▲	8	16	20	170	65	0.3
-016-G20-L	▲	8	16	20	200	65	0.4
-020-G25-S	▲	10	20	25	160	60	0.5
-020-G25-M	▲	10	20	25	200	80	0.6
-020-G25-L	▲	10	20	25	240	80	0.8

▲ Stock available    △ Make-to-order

#### Spare parts

Diameter DC	Screw	Wrench	
Ø12	I70M4×10TT	WT15IS	
Ø16	I70M5×12TT	WT20IS	
Ø20	I70M5×16TT	WT20IS	

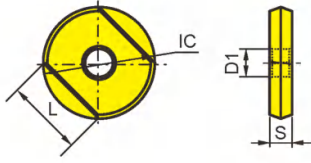


Tools code key **B26-B27**

Grade selection guide **B19-B23**

Technical data **B271-B276**

### Selection of inserts



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

Workpiece material	Working Condition																
	YBC302	YBM253	YBD152	YBD203	YBD252	YBG105	YBG202	YBG205	YB9320	YBG302	YBH053	YBS203	YBS303	YNG151	YNG151C	YD101	YD201
<b>P</b> Steel	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊
<b>M</b> Stainless steel	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊
<b>K</b> Cast iron	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊
<b>N</b> Non-ferrous metal	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊
<b>S</b> Heat resistant alloy, Ti alloy	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊

Insert shape	Type	Basic dimensions(mm)				CVD Coating					PVD Coating					Cermet	Cemented carbide						
		IC	L	S	D1	YBC302	YBM253	YBD152	YBD203	YBD252	YBG105	YBG202	YBG205	YB9320	YBG302	YBH053	YBS203	YBS303	YNG151	YNG151C	YD101	YD201	
	<b>ROHX1203</b>	12	8.5	3	4																		
	<b>ROHX1604</b>	16	11.3	4	5																		
	<b>ROHX2005</b>	20	14.1	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	Diameter			
				Ø12	Ø16	Ø20	
<b>P</b>	Carbon steel	YBH053	V(m/min)	100~200	100~200	100~200	
			f <sub>z</sub> (mm/z)	0.15~0.25	0.2~0.3	0.2~0.3	
			a <sub>pmax</sub> (mm)	0.8	1	1.25	
			a <sub>emax</sub> (mm)	0.8	1	1.25	
	Alloy steel		HB180~280	V(m/min)	80~180	80~180	80~180
			f <sub>z</sub> (mm/z)	0.15~0.25	0.2~0.3	0.2~0.3	
			a <sub>pmax</sub> (mm)	0.8	1	1.25	
			a <sub>emax</sub> (mm)	0.8	1	1.25	
	Hardened steel		HRC55~65	V(m/min)	60~100	60~100	60~100
f <sub>z</sub> (mm/z)		0.15~0.25	0.2~0.3	0.2~0.3			
a <sub>pmax</sub> (mm)		0.4	0.5	0.6			
a <sub>emax</sub> (mm)		0.4	0.5	0.6			
<b>M</b>	Stainless steel	V(m/min)	70~150	70~150	70~150		
		f <sub>z</sub> (mm/z)	0.1~0.2	0.1~0.25	0.1~0.25		
		a <sub>pmax</sub> (mm)	0.6	0.8	1		
		a <sub>emax</sub> (mm)	0.6	0.8	1		
<b>K</b>	Cast iron	V(m/min)	160~300	160~300	160~300		
		f <sub>z</sub> (mm/z)	0.2~0.3	0.25~0.35	0.25~0.35		
		a <sub>pmax</sub> (mm)	1	1.5	1.8		
		a <sub>emax</sub> (mm)	1	1.5	1.8		

Indexable milling tools

Profile milling tools



### Profile milling tools

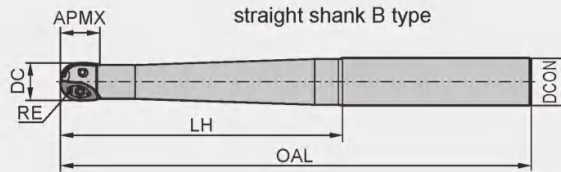
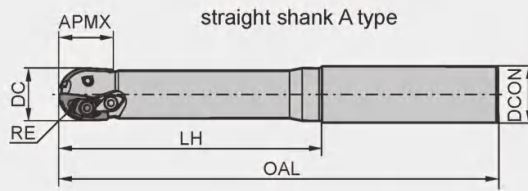
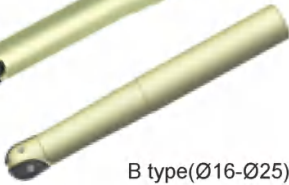


## BMR03 P M K

A type(Ø30-Ø40)



B type(Ø16-Ø25)



### Specification of tools

Type	Stock	Basic dimensions(mm)						Number of teeth Z	Weight (kg)	Type	Clamp
		RE	DC	DCON	OAL	LH	APMX				
<b>BMR03</b> -016-G20-S	▲	8	16	20	150	70	16	2	0.3	B	--
-016-G20-M	▲	8	16	20	180	80	16	2	0.4	B	
-020-G25-S	▲	10	20	25	180	80	20	2	0.5	B	
-020-G25-M	▲	10	20	25	200	100	20	2	0.6	B	
-020-G25-L	▲	10	20	25	250	150	20	2	0.7	B	
-020-G25-XL	▲	10	20	25	300	110	20	2	1.0	B	
-025-G25-S	▲	12.5	25	25	180	80	25	2	0.6	B	
-025-G25-M	▲	12.5	25	25	200	100	25	2	0.7	B	
-025-G25-L	▲	12.5	25	25	250	110	25	2	0.8	B	
-025-G25-XL	▲	12.5	25	25	300	120	25	2	1.0	B	
-030-G32-S	△	15	30	32	200	120	30	2	1.0	A	WD-208
-030-G32-M	▲	15	30	32	250	150	30	2	1.3	A	
-030-G32-L	▲	15	30	32	300	200	30	2	1.6	A	
-030-G32-XL	△	15	30	32	350	200	30	2	1.9	A	
-032-G32-S	▲	16	32	32	200	120	32	2	1.1	A	
-032-G32-M	▲	16	32	32	250	150	32	2	1.4	A	
-032-G32-L	▲	16	32	32	300	200	32	2	1.6	A	CBH5R1
-032-G32-XL	△	16	32	32	350	200	32	2	2.0	A	
-040-G40-S	△	20	40	40	200	120	40	2	1.6	A	
-040-G40-M	▲	20	40	40	250	150	40	2	2.0	A	
-040-G40-L	▲	20	40	40	300	200	40	2	2.5	A	CBH5R1
-040-G40-XL	△	20	40	40	350	200	40	2	3.0	A	

▲Stock available    △Make-to-order

Tools code key

B26-B27

Grade selection guide

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Technical data

B271-B276

Profile milling tools

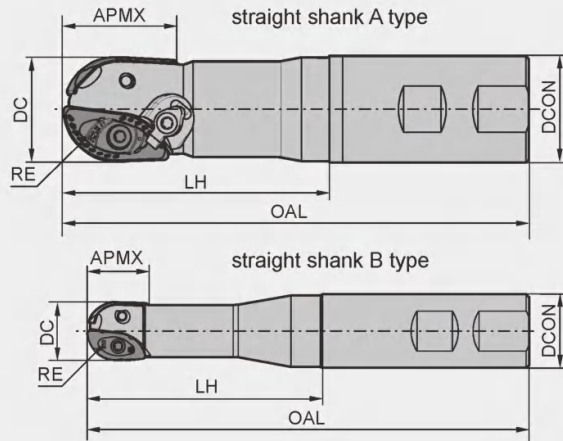


**BMR03** P M K

A type(Ø30-Ø50)



B type(Ø16-Ø25)



Specification of tools

Type	Stock	Basic dimensions(mm)						Number of teeth Z	Weight (kg)	Type	Clamp
		RE	DC	DCON	OAL	LH	APMX				
<b>BMR03</b> -016-XP20-M	▲	8	16	20	111	60	16	2	0.2	B	--
-020-XP25-M	▲	10	20	25	127	70	20	2	0.3	B	
-020-XP25-L	▲	10	20	25	150	80	20	2	0.4	B	
-025-XP25-M	▲	12.5	25	25	137	80	25	2	0.4	B	
-025-XP25-L	▲	12.5	25	25	200	100	25	2	0.6	B	
-030-XP32-M	▲	15	30	32	161	100	30	2	0.8	A	WD-208
-030-XP32-L	▲	15	30	32	250	150	30	2	1.3	A	
-032-XP32-M	▲	16	32	32	161	100	32	2	0.8	A	
-032-XP32-L	▲	16	32	32	250	120	32	2	1.3	A	CBH5R1
-040-XP40-M	▲	20	40	40	175	100	40	2	1.3	A	
-040-XP40-L	▲	20	40	40	250	120	40	2	2.0	A	
-050-XP50-M	▲	25	50	50	200	100	50	2	2.5	A	
-050-XP50-L	▲	25	50	50	250	150	50	2	3.1	A	

▲Stock available    △Make-to-order

Indexable milling tools  
Profile milling tools

Tools code key  
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### Profile milling tools

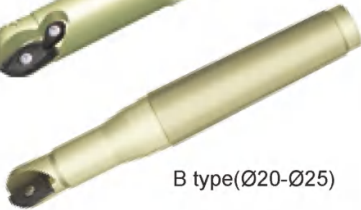


### BMR03 P M K

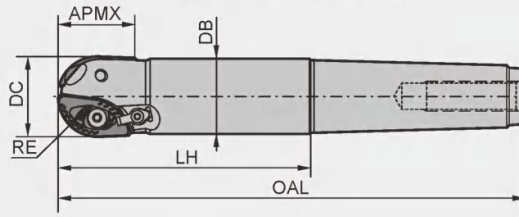
A type(Ø30-Ø50)



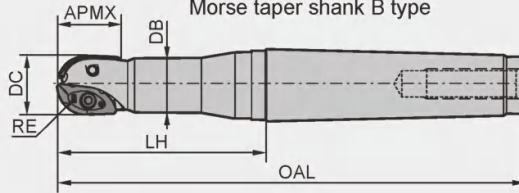
B type(Ø20-Ø25)



Morse taper shank A type



Morse taper shank B type



#### Specification of tools

Type	Stock	Basic dimensions(mm)						Number of teeth Z	Weight (kg)	Type	Clamp
		RE	DC	DB	OAL	LH	APMX				
<b>BMR03</b> -020-MT3-M	▲	10	20	18.7	156	70	20	2	0.4	B	-
-020-MT3-L	△	10	20	18.7	186	100	20	2	0.4	B	
-025-MT3-M	▲	12.5	25	23.5	156	70	25	2	0.4	B	
-025-MT3-L	△	12.5	25	23.5	186	100	25	2	0.4	B	
-030-MT4-M	▲	15	30	28.2	189	70	30	2	0.8	A	WD-208
-030-MT4-L	△	15	30	28.2	229	120	30	2	1.0	A	
-032-MT4-M	▲	16	32	29.2	179	70	32	2	0.9	A	
-032-MT4-L	△	16	32	29.2	209	100	32	2	0.9	A	
-040-MT4-M	▲	20	40	36.9	199	100	40	2	1.0	A	CBH5R1
-040-MT5-L	▲	20	40	36.9	226	90	40	2	1.8	A	
-040-MT5-XL	▲	20	40	36.9	256	120	40	2	2.0	A	
-050-MT5-M	▲	25	50	46.8	236	100	50	2	2.2	A	
-050-MT5-L	▲	25	50	46.8	286	150	50	2	2.9	A	

▲Stock available    △Make-to-order

Indexable milling tools

Profile milling tools

Tools code key

B26-B27

Grade selection guide

B19-B23

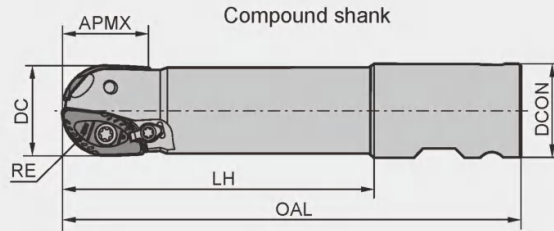
Technical data

B271-B276

Profile milling tools



**BMR03** P M K



Specification of tools

Type	Stock	Basic dimensions(mm)						Number of teeth Z	Weight (kg)	Clamp
		RE	DC	DCON	OAL	LH	APMX			
<b>BMR03</b> -040-XPX-M	▲	20	40	50.8	250	170	40	2	1.3	CBH5R1
-040-XPX-L	▲	20	40	50.8	300	220	40	2	3.1	
-040-XPX-XL	▲	20	40	50.8	350	270	40	2	3.5	
-050-XPX-M	▲	25	50	50.8	250	170	50	2	3.1	
-050-XPX-L	▲	25	50	50.8	300	200	50	2	3.8	
-050-XPX-XL	▲	25	50	50.8	350	270	50	2	4.4	

▲Stock available    △Make-to-order

Indexable milling tools  
Profile milling tools

Spare parts

Diameter DC	Clamp	Screw	Wrench	
Ø16	--	I60M2.5×6.5	--	WT07P
Ø20	--	I60M3.5×08TT	--	WT10IP
Ø25	--	I60M4×10	--	WT15S
Ø30	WD-208	I60M5×13	WT20IT	--
Ø32	WD-208	I60M5×13		
Ø40	CBH5R1	I43M6×16	WT25IT	--
Ø50	CBH5R1	I43M8×21	WT25IT	
		I43M6×16	WT30IT	

Tools code key  
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Grade selection guide  
B19-B23

Technical data  
B271-B276

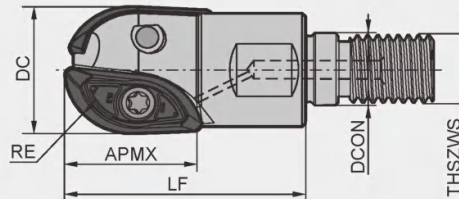


### Profile milling tools



### QCH-\*XPHT\*M\*Series

**P M K**



#### Specification of tools

Type	Stock	Basic dimensions(mm)						Applicable inserts	Number of teeth Z	Weight (kg)
		DC	RE	DCON	LF	APMX	THSZWS			
<b>QCH</b> -16-XPHT16-M10	▲	16	8	10.5	28	16	10	XPHT16R0803-GM	2	0.036
-20-XPHT20-M12	▲	20	10	12.5	30	20	12	XPHT20R10T3-GM	2	0.051
-25-XPHT25-M12	▲	25	12.5	12.5	35	25	12	XPHT25R1204-GM	2	0.071
-30-XPHT30-M16	▲	30	15	17	45	30	16	XPHT30R1506-GM	2	0.140
-32-XPHT32-M16	▲	32	16	17	45	32	16	XPHT32R1606-GM	2	0.162

▲ Stock available    △ Make-to-order

Indexable milling tools

Profile milling tools

#### Spare parts

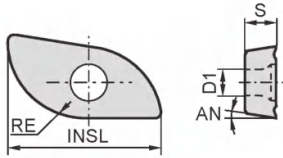
Diameter DC	Screw	Wrench			
Ø16	I60M2.5×6.5	WT07IP	--	--	
Ø20	I60M3.5×08TT	WT10IP	--	--	
Ø25	I60M4×10	WT15IP	--	--	
Ø30	I60M5×13.2	--	--	WT20IT	
Ø32	I60M5×13.2	--	--	WT20IT	

Tools code key **B26-B27**

Grade selection guide **B19-B23**

Technical data **B271-B276**

## Selection of inserts



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

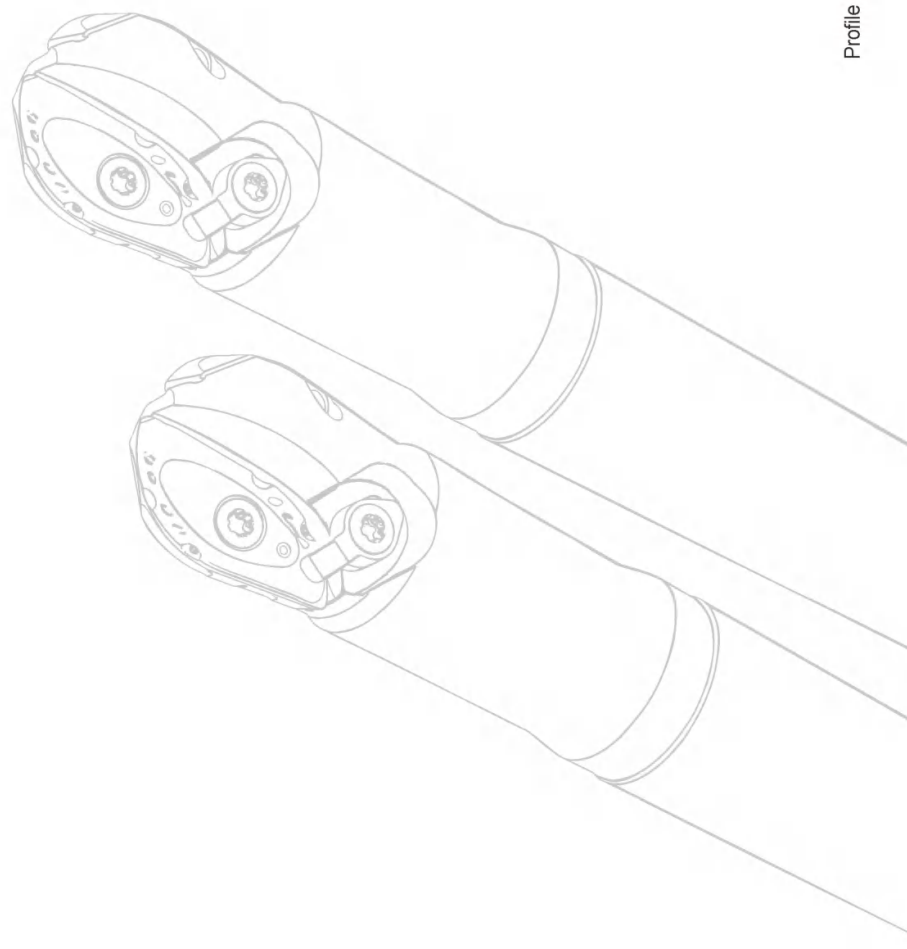
Workpiece material	Steel	Stainless steel	Cast iron	Non-ferrous metal	Heat resistant alloy, Ti alloy
P	😊😊	😊😊	😊😊	😊😊	😊😊
M	😊😊	😊😊	😊😊	😊😊	😊😊
K	😊😊	😊😊	😊😊	😊😊	😊😊
N	😊😊	😊😊	😊😊	😊😊	😊😊
S	😊😊	😊😊	😊😊	😊😊	😊😊

Insert shape	Type	Basic dimensions(mm)						CVD Coating					PVD Coating					Cermet		Cemented carbide						
		RE	D1	S	AN	INSL	Applicable tools	YBC302	YBM253	YBD152	YBD203	YBD252	YBG105	YBG202	YBG205	YB9320	YBG302	YBS203	YBS303	YNG151	YNG151C	YD101	YD201			
	XPHT16R0803-GM	8	3.1	3.18	9°	16	Ø16										★									
	XPHT20R10T3-GM	10	4.0	3.97	9°	20	Ø20										★									
	XPHT25R1204-GM	12.5	4.7	4.76	9°	25	Ø25										★									
	XPHT30R1506-GM	15	5.8	6.35	11°	30	Ø30										★									
	XPHT32R1606-GM	16	5.8	6.35	9°	32	Ø32										★									
	XPHT40R2007-GM	20	6.7	7.94	9°	40	Ø40										★									
	XPHT50R2507-GM	25	9.2	7.94	9°	50	Ø50										★									

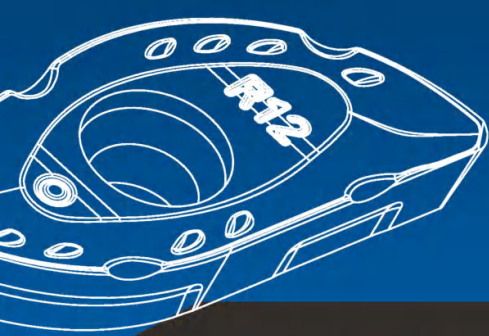
★ Recommended grade (always stock available)   ● Available grade (always stock available)   ○ Make-to-order

Indexable milling tools

Profile milling tools







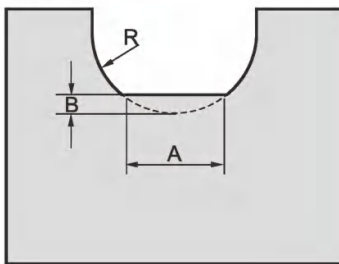
# BMRO3

## Ball Nose End Milling Tool Series

- The unique chipbreaker and big rake angle can effectively control the curling and flowing direction of chips and reduce the cutting force, improving workpiece surface quality and tool life.
- After precise grinding of periphery and locating surface, the insert can sufficiently ensure the shape accuracy of cutting edge and the precision of installation and location, improving installation security and workpiece precision after machining.
- The concave structure of the flank can effectively enhance the strength of cutting edge and prevent scraping between the clearance face and workpiece surface. Therefore, it improves the workpiece surface quality and prolongs the life of insert.
- The designs of cutting edge over center and a large negative rake angle make it possible to cut vertically, thus anti-breakage capability is enhanced.
- The rough ball nose milling cutters with large diameter adopt the top and hole clamping style, so insert clamping becomes more firm and stable. The machining is also highly efficient even under poor conditions such as long overhang and large vibration, etc.
- The adapter types include straight shank, Weldon shank, Morse taper shank and combination shank.



Slot shape after machining



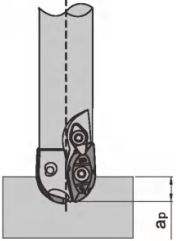
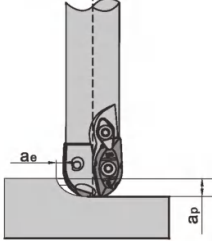
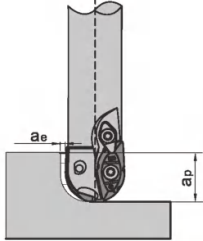
R	A	B
08	1.7	0.09
10	2.2	0.12
12.5	3.0	0.18
15	3.9	0.20
16	3.5	0.22
20	3.6	0.24
25	3.8	0.26



**Cautions:**

- The insert edge should correspond to the locating face of insert pocket in the tool. Don't install the wrong side up.
- Before screwing down the insert, confirm the good connection between insert and insert pocket.
- Select and adjust the cutting parameters according to machine power and machining conditions.
- If vibration occurs in the machining process, cutting speed should be reduced properly.

▶ Recommended cutting parameters Diameter Ø16

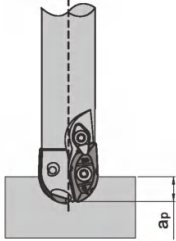
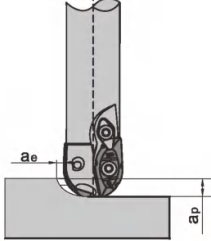
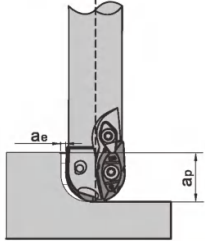
Operations						
Workpiece material	Cutting parameters	Slot milling	Side milling (slight)		Side milling (deep)	Insert grade
Medium carbon steel Hardness 150~250HB	V(m/min)	150~220	150~220	150~220	150~220	YBG302
	Fz(mm/z)	0.1~0.4	0.1~0.4	0.1~0.4	0.1~0.4	
	a <sub>p</sub> (mm)	4	4	8	16	
	a <sub>e</sub> (mm)	--	3	4	1.5	
Alloy steel Hardness 150~280HB	V(m/min)	100~150	100~150	100~150	100~150	
	Fz(mm/z)	0.1~0.4	0.1~0.4	0.1~0.4	0.1~0.4	
	a <sub>p</sub> (mm)	4	4	8	16	
	a <sub>e</sub> (mm)	--	3	4	1.5	
Die steel Hardness 150~255HB	V(m/min)	80~120	80~120	80~120	80~120	
	Fz(mm/z)	0.1~0.3	0.1~0.3	0.1~0.3	0.1~0.3	
	a <sub>p</sub> (mm)	4	4	8	16	
	a <sub>e</sub> (mm)	--	3	4	1.5	
Hardened steel Hardness 40~50HRC	V(m/min)	80~100	80~100	80~100	--	
	Fz(mm/z)	0.08~0.15	0.08~0.15	0.08~0.15	--	
	a <sub>p</sub> (mm)	4	4	8	--	
	a <sub>e</sub> (mm)	--	2	3	--	
Gray cast iron Hardness 160~260HB	V(m/min)	250~300	250~300	250~300	250~300	
	Fz(mm/z)	0.08~0.15	0.08~0.15	0.08~0.15	0.08~0.15	
	a <sub>p</sub> (mm)	4	4	8	16	
	a <sub>e</sub> (mm)	--	3	4	1.5	
Nodular cast iron Hardness 170~300HB	V(m/min)	200~250	200~250	200~250	200~250	
	Fz(mm/z)	0.08~0.15	0.08~0.15	0.08~0.15	0.08~0.15	
	a <sub>p</sub> (mm)	4	4	8	16	
	a <sub>e</sub> (mm)	--	3	4	1.5	

Note: 1. Parameters in the table shall be adjusted according to the rigidity of the machine or workpiece.

2. Wind cooling to be preferred.



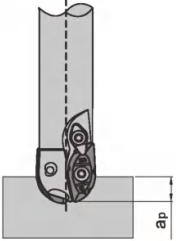
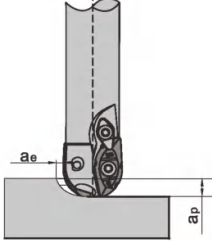
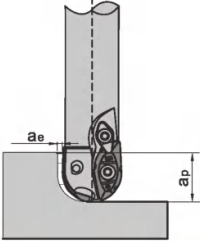
### ➤ Recommended cutting parameters Diameter Ø20

Operations						
Workpiece material	Cutting parameters	Slot milling	Side milling (slight)		Side milling (deep)	Insert grade
Medium carbon steel Hardness 150~250HB	V(m/min)	150~220	150~220	150~220	150~220	YBG302
	Fz(mm/z)	0.1~0.4	0.1~0.4	0.1~0.4	0.1~0.4	
	ap(mm)	5	5	10	20	
	ae(mm)	--	4	5	2	
Alloy steel Hardness 150~280HB	V(m/min)	100~150	100~150	100~150	100~150	
	Fz(mm/z)	0.1~0.4	0.1~0.4	0.1~0.4	0.1~0.4	
	ap(mm)	5	5	10	20	
	ae(mm)	--	4	5	2	
Die steel Hardness 150~255HB	V(m/min)	80~120	80~120	80~120	80~120	
	Fz(mm/z)	0.1~0.3	0.1~0.3	0.1~0.3	0.1~0.3	
	ap(mm)	5	5	10	20	
	ae(mm)	--	4	5	2	
Hardened steel Hardness 40~50HRC	V(m/min)	80~100	80~100	80~100	--	
	Fz(mm/z)	0.08~0.15	0.08~0.15	0.08~0.15	--	
	ap(mm)	5	5	10	--	
	ae(mm)	--	4	5	--	
Gray cast iron Hardness 160~260HB	V(m/min)	250~300	250~300	250~300	250~300	
	Fz(mm/z)	0.08~0.15	0.08~0.15	0.08~0.15	0.08~0.15	
	ap(mm)	5	5	10	20	
	ae(mm)	--	4	5	2	
Nodular cast iron Hardness 170~300HB	V(m/min)	200~250	200~250	200~250	200~250	
	Fz(mm/z)	0.08~0.15	0.08~0.15	0.08~0.15	0.08~0.15	
	ap(mm)	5	5	10	20	
	ae(mm)	--	4	5	2	

Note: 1. Parameters in the table shall be adjusted according to the rigidity of the machine or workpiece.

2. Wind cooling to be preferred.

▶ Recommended cutting parameters Diameter Ø25

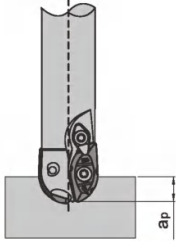
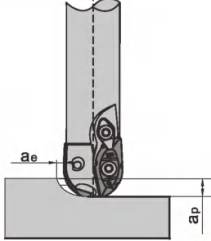
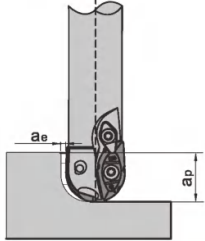
Operations						
Workpiece material	Cutting parameters	Slot milling	Side milling (slight)		Side milling (deep)	Insert grade
Medium carbon steel Hardness 150~250HB	V(m/min)	150~220	150~220	150~220	150~220	YBG302
	Fz(mm/z)	0.1~0.4	0.1~0.4	0.1~0.4	0.1~0.4	
	a <sub>p</sub> (mm)	6	6	12.5	25	
	a <sub>e</sub> (mm)	--	5	6.5	3	
Alloy steel Hardness 150~280HB	V(m/min)	100~150	100~150	100~150	100~150	
	Fz(mm/z)	0.1~0.4	0.1~0.4	0.1~0.4	0.1~0.4	
	a <sub>p</sub> (mm)	6	6	12.5	25	
	a <sub>e</sub> (mm)	--	5	6.5	3	
Die steel Hardness 150~255HB	V(m/min)	80~120	80~120	80~120	80~120	
	Fz(mm/z)	0.1~0.3	0.1~0.3	0.1~0.3	0.1~0.3	
	a <sub>p</sub> (mm)	6	6	12.5	25	
	a <sub>e</sub> (mm)	--	5	6.5	3	
Hardened steel Hardness 40~50HRC	V(m/min)	80~100	80~100	80~100	--	
	Fz(mm/z)	0.08~0.15	0.08~0.15	0.08~0.15	--	
	a <sub>p</sub> (mm)	6	6	12.5	--	
	a <sub>e</sub> (mm)	--	5	6.5	--	
Gray cast iron Hardness 160~260HB	V(m/min)	250~300	250~300	250~300	250~300	
	Fz(mm/z)	0.08~0.15	0.08~0.15	0.08~0.15	0.08~0.15	
	a <sub>p</sub> (mm)	6	6	12.5	25	
	a <sub>e</sub> (mm)	--	5	6.5	3	
Nodular cast iron Hardness 170~300HB	V(m/min)	200~250	200~250	200~250	200~250	
	Fz(mm/z)	0.08~0.15	0.08~0.15	0.08~0.15	0.08~0.15	
	a <sub>p</sub> (mm)	6	6	12.5	25	
	a <sub>e</sub> (mm)	--	5	6.5	3	

Note: 1. Parameters in the table shall be adjusted according to the rigidity of the machine or workpiece.

2. Wind cooling to be preferred.

Indexable milling tools  
Profile milling tools

### ▶ Recommended cutting parameters Diameter Ø30, Ø32

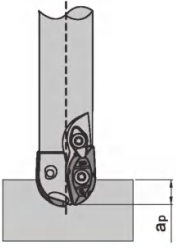
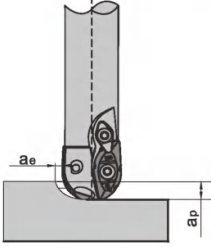
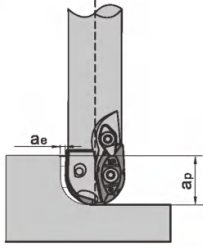
Operations						
Workpiece material	Cutting parameters	Slot milling	Side milling (slight)		Side milling (deep)	Insert grade
Medium carbon steel Hardness 150~250HB	V(m/min)	150~220	150~220	150~220	150~220	YBG302
	Fz(mm/z)	0.1~0.4	0.1~0.4	0.1~0.4	0.1~0.4	
	a <sub>p</sub> (mm)	10	10	16	28	
	a <sub>e</sub> (mm)	--	6	9	6	
Alloy steel Hardness 150~280HB	V(m/min)	100~150	100~150	100~150	100~150	
	Fz(mm/z)	0.1~0.4	0.1~0.4	0.1~0.4	0.1~0.4	
	a <sub>p</sub> (mm)	10	10	16	28	
	a <sub>e</sub> (mm)	--	6	9	6	
Die steel Hardness 150~255HB	V(m/min)	80~120	80~120	80~120	80~120	
	Fz(mm/z)	0.1~0.3	0.1~0.3	0.1~0.3	0.1~0.3	
	a <sub>p</sub> (mm)	10	10	16	28	
	a <sub>e</sub> (mm)	--	6	9	6	
Hardened steel Hardness 40~50HRC	V(m/min)	80~100	80~100	80~100	--	
	Fz(mm/z)	0.08~0.15	0.08~0.15	0.08~0.15	--	
	a <sub>p</sub> (mm)	10	10	16	--	
	a <sub>e</sub> (mm)	--	6	9	--	
Gray cast iron Hardness 160~260HB	V(m/min)	250~300	250~300	250~300	250~300	
	Fz(mm/z)	0.08~0.15	0.08~0.15	0.08~0.15	0.08~0.15	
	a <sub>p</sub> (mm)	10	10	16	28	
	a <sub>e</sub> (mm)	--	6	9	6	
Nodular cast iron Hardness 170~300HB	V(m/min)	200~250	200~250	200~250	200~250	
	Fz(mm/z)	0.08~0.15	0.08~0.15	0.08~0.15	0.08~0.15	
	a <sub>p</sub> (mm)	10	10	16	28	
	a <sub>e</sub> (mm)	--	6	9	6	

Note: 1. Parameters in the table shall be adjusted according to the rigidity of the machine or workpiece.

2. Wind cooling to be preferred.

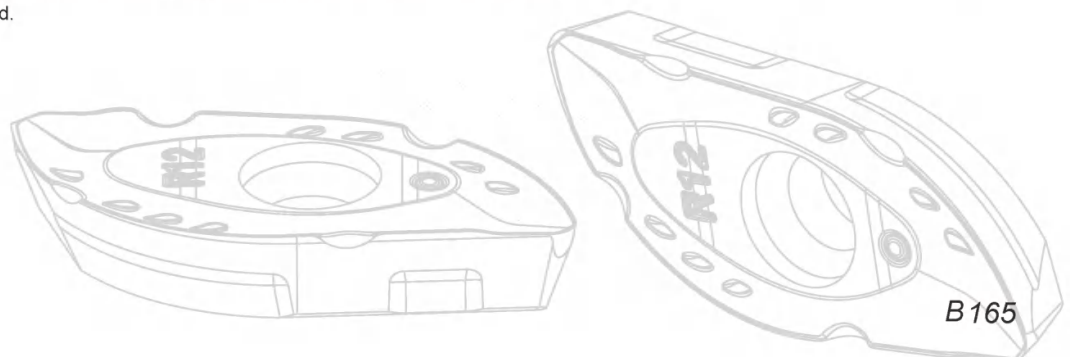


## ▶ Recommended cutting parameters Diameter Ø40

Operations						
Workpiece material	Cutting parameters	Slot milling	Side milling (slight)		Side milling (deep)	Insert grade
Medium carbon steel Hardness 150~250HB	V(m/min)	150~220	150~220	150~220	150~220	YBG302
	Fz(mm/z)	0.1~0.4	0.1~0.4	0.1~0.4	0.1~0.4	
	a <sub>p</sub> (mm)	12	10	20	35	
	a <sub>e</sub> (mm)	--	8	12	8	
Alloy steel Hardness 150~280HB	V(m/min)	100~150	100~150	100~150	100~150	
	Fz(mm/z)	0.1~0.4	0.1~0.4	0.1~0.4	0.1~0.4	
	a <sub>p</sub> (mm)	12	10	20	35	
	a <sub>e</sub> (mm)	--	8	12	8	
Die steel Hardness 150~255HB	V(m/min)	80~120	80~120	80~120	80~120	
	Fz(mm/z)	0.1~0.3	0.1~0.3	0.1~0.3	0.1~0.3	
	a <sub>p</sub> (mm)	12	10	20	35	
	a <sub>e</sub> (mm)	--	8	12	8	
Hardened steel Hardness 40~50HRC	V(m/min)	80~100	80~100	80~100	--	
	Fz(mm/z)	0.08~0.15	0.08~0.15	0.08~0.15	--	
	a <sub>p</sub> (mm)	12	10	20	--	
	a <sub>e</sub> (mm)	--	8	12	--	
Gray cast iron Hardness 160~260HB	V(m/min)	250~300	250~300	250~300	250~300	
	Fz(mm/z)	0.08~0.15	0.08~0.15	0.08~0.15	0.08~0.15	
	a <sub>p</sub> (mm)	12	10	20	35	
	a <sub>e</sub> (mm)	--	8	12	8	
Nodular cast iron Hardness 170~300HB	V(m/min)	200~250	200~250	200~250	200~250	
	Fz(mm/z)	0.08~0.15	0.08~0.15	0.08~0.15	0.08~0.15	
	a <sub>p</sub> (mm)	12	10	20	35	
	a <sub>e</sub> (mm)	--	8	12	8	

Note: 1. Parameters in the table shall be adjusted according to the rigidity of the machine or workpiece.

2. Wind cooling to be preferred.



Indexable milling tools

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B165

### ▶ Recommended cutting parameters Diameter Ø50

Operations						
Workpiece material	Cutting parameters	Slot milling	Side milling (slight)		Side milling (deep)	Insert grade
Medium carbon steel Hardness 150~250HB	V(m/min)	150~220	150~220	150~220	150~220	YBG302
	Fz(mm/z)	0.1~0.4	0.1~0.4	0.1~0.4	0.1~0.4	
	ap(mm)	15	10	25	40	
	ae(mm)	--	10	15	10	
Alloy steel Hardness 150~280HB	V(m/min)	100~150	100~150	100~150	100~150	
	Fz(mm/z)	0.1~0.4	0.1~0.4	0.1~0.4	0.1~0.4	
	ap(mm)	15	10	25	40	
	ae(mm)	--	10	15	10	
Die steel Hardness 150~255HB	V(m/min)	80~120	80~120	80~120	80~120	
	Fz(mm/z)	0.1~0.3	0.1~0.3	0.1~0.3	0.1~0.3	
	ap(mm)	15	10	25	40	
	ae(mm)	--	10	15	10	
Hardened steel Hardness 40~50HRC	V(m/min)	80~100	80~100	80~100	--	
	Fz(mm/z)	0.08~0.15	0.08~0.15	0.08~0.15	--	
	ap(mm)	15	10	25	--	
Gray cast iron Hardness 160~260HB	V(m/min)	250~300	250~300	250~300	250~300	
	Fz(mm/z)	0.08~0.15	0.08~0.15	0.08~0.15	0.08~0.15	
	ap(mm)	15	10	25	40	
Nodular cast iron Hardness 170~300HB	V(m/min)	200~250	200~250	200~250	200~250	
	Fz(mm/z)	0.08~0.15	0.08~0.15	0.08~0.15	0.08~0.15	
	ap(mm)	15	10	25	40	
	ae(mm)	--	10	15	10	

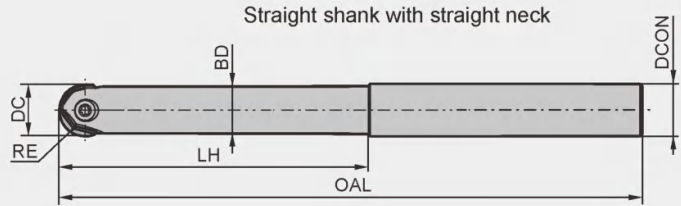
Note: 1. Parameters in the table shall be adjusted according to the rigidity of the machine or workpiece.

2. Wind cooling to be preferred.

Profile milling tools



**BMR04** P M K



Specification of tools

Type	Stock	Basic dimensions(mm)						Weight (kg)
		RE	DC	DCON	BD	LH	OAL	
<b>BMR04</b> -012-G12-M	▲	6	12	12	11	35	125	0.1
-012-G12-L	△	6	12	12	11	45	150	0.1
-016-G16-M	▲	8	16	16	14	40	150	0.2
-016-G16-L	△	8	16	16	14	55	180	0.3
-020-G20-M	▲	10	20	20	18	65	180	0.4
-020-G20-L	△	10	20	20	18	100	250	0.6
-025-G25-M	▲	12.5	25	25	23	70	200	0.7
-025-G25-L	△	12.5	25	25	23	100	250	0.9
-030-G32-M	▲	15	30	32	27	130	250	1.2
-030-G32-L	△	15	30	32	27	150	300	1.5
-032-G32-M	▲	16	32	32	29	80	250	1.4
-032-G32-L	△	16	32	32	29	109	300	1.7

▲Stock available    △Make-to-order

Indexable milling tools  
Profile milling tools

Tools code key  
B26-B27

Grade selection guide  
B19-B23

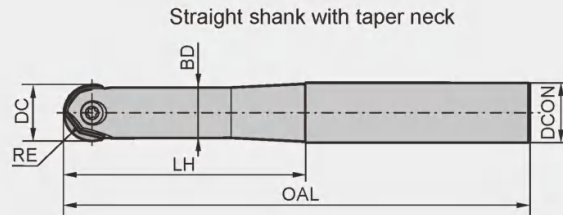
Technical data  
B271-B276



## Profile milling tools



### BMR04 P M K



### Specification of tools

Type	Stock	Basic dimensions(mm)						Weight (kg)
		RE	DC	DCON	BD	LH	OAL	
<b>BMR04</b> -012-G16-M	▲	6	12	16	11	50	125	0.2
-012-G16-L	△	6	12	16	11	60	150	0.2
-016-G20-M	▲	8	16	20	14	60	150	0.3
-016-G20-L	△	8	16	20	14	80	180	0.3
-020-G25-M	▲	10	20	25	18	75	180	0.6
-020-G25-L	△	10	20	25	18	85	200	0.6
-025-G32-M	▲	12.5	25	32	23	90	200	1.0
-025-G32-L	△	12.5	25	32	23	110	250	1.3
-030-G40-M	▲	15	30	40	27	110	250	2.0
-030-G40-L	△	15	30	40	27	125	300	2.4
-032-G40-M	▲	16	32	40	29	110	250	2.0
-032-G40-L	△	16	32	40	29	125	300	2.4

▲ Stock available    △ Make-to-order

### Spare parts

Diameter	Screw	Wrench	
Ø12	I70M4×10TT	WT15IP	--
Ø16	I70M5×12TT	WT20IP	--
Ø20	I70M5×16TT	WT20IP	--
Ø25	I70M6×20TT	WT20IP	--
Ø30	I70M8×25TT	--	WT30IT
Ø32	I70M8×25TT	--	WT30IT

Tools code key **B26-B27**

Grade selection guide **B19-B23**

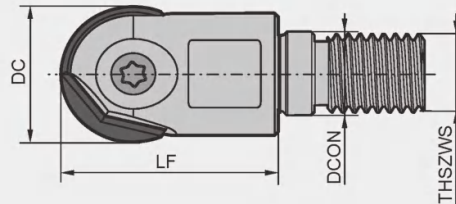
Technical data **B271-B276**

Profile milling tools



QCH-\*ZOHX\*M\*Series

P M K S N



Specification of tools

Type	Stock	Basic dimensions(mm)				Applicable inserts	Weight (kg)
		DC	DCON	LF	THSZWS		
<b>QCH</b> -16-ZOHX16-M8	▲	16	8.5	28	8	ZOHX1604-□□	0.029
-20-ZOHX20-M10	▲	20	10.5	30	10	ZOHX2005-□□	0.048
-25-ZOHX25-M12	▲	25	12.5	35	12	ZOHX2506-□□	0.087
-30-ZOHX30-M16	▲	30	17	45	16	ZOHX3007-□□	0.170
-32-ZOHX32-M16	▲	32	17	45	16	ZOHX3207-□□	0.180

▲Stock available    △Make-to-order

Indexable milling tools

Profile milling tools

Spare parts

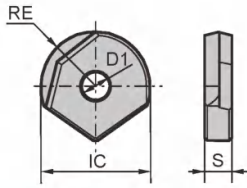
Diameter DC	Screw	Wrench	
	Ø16	I70M5×12TT	WT20IP
Ø20	I70M5×16TT	WT20IP	--
Ø25	I70M6×20TT	WT20IP	--
Ø30	I70M8×25TT	--	WT30IT
Ø32	I70M8×25TT	--	WT30IT

Tools code key  
B26-B27

Grade selection guide  
B19-B23

Technical data  
B271-B276

## Selection of inserts



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

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

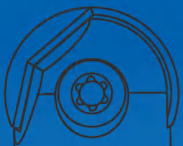
Insert shape	Type	Basic dimensions(mm)					Applicable tools ØD	CVD Coating					PVD Coating					Cermets		Cemented carbide		
		RE	IC	S	D1	YBC302		YBM253	YBD152	YBD203	YBD252	YBG105	YBG202	YBG205	YB9320	YBG302	YBH053	YBS203	YBS303	YNG151	YNG151C	YD101
	ZOHX1203-GF	6	12	3	4	Ø12										★						
	ZOHX1604-GF	8	16	4	5	Ø16										★						
	ZOHX2005-GF	10	20	5	5	Ø20										★						
	ZOHX2506-GF	12.5	25	6	6	Ø25										★						
	ZOHX3007-GF	15	30	7	8	Ø30										★						
	ZOHX3207-GF	16	32	7	8	Ø32										★						
	ZOHX1203-GM	6	12	3	4	Ø12										★						
	ZOHX1604-GM	8	16	4	5	Ø16										★						
	ZOHX2005-GM	10	20	5	5	Ø20										★						
	ZOHX2506-GM	12.5	25	6	6	Ø25										★						
	ZOHX3007-GM	15	30	7	8	Ø30										★						
	ZOHX3207-GM	16	32	7	8	Ø32										★						
	ZOHX1203-HM	6	12	3	4	Ø12										★						
	ZOHX1604-HM	8	16	4	5	Ø16										★						
	ZOHX2005-HM	10	20	5	5	Ø20										★						
	ZOHX2506-HM	12.5	25	6	6	Ø25										★						
	ZOHX3007-HM	15	30	7	8	Ø30										★						
	ZOHX3207-HM	16	32	7	8	Ø32										★						

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

Indexable milling tools

Profile milling tools



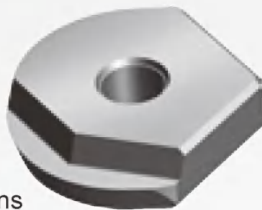


# BMR04

Ball Nose End Finishing  
Milling Tool Series

## -GM

- 0° rake angle, only one clearance angle, high edge strength, suitable for conditions requiring high cutting efficiency.



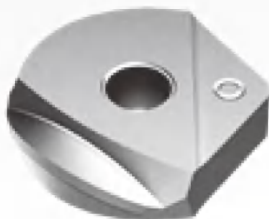
## -GF

- With positive rake angle and double clearance angle, the design of curved cutting edge combines sharpness and strength. The edge with high precision is applicable under stable machining conditions and in conditions requiring high workpiece profile precision.



## -HM

- The combination of variable rake angle and streamlined cutting edge takes full consideration of the different cutting edges
- The cutting conditions at the position take into account cutting sharpness and edge strength, Improved processing stability



The inserts are a combination of ultra-fine cemented carbide substrate and nano coating grade YBG252. With excellent cutting performance, they are suitable for semi-finish to finish machining.

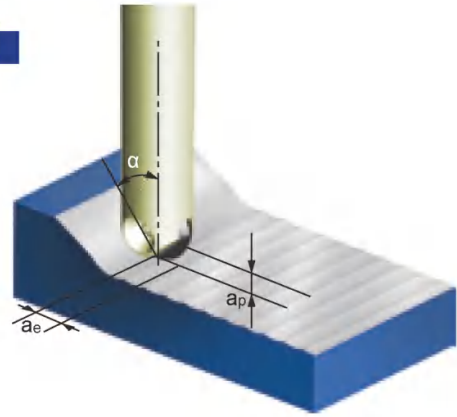
### Calculation of cutting speed for BMR02/04 series ball nose end mills

1. When the tool axial line is vertical to the surface being machined,

$$N = \frac{1000 V_c}{\pi D c} \text{ (r/min)}$$

$$Dc = 2\sqrt{a_p(D - a_p)}$$

N: rotating speed  
 Vc: actual cutting speed  
 Dc: effective cutting diameter  
 D: tool nominal diameter  
 ap: axial cutting depth



2. When there is an inclined angle between the tool axial line and the surface being machined, the recommended cutting speed should be multiplied by a factor in the table below to obtain the cutting speed used for programming.

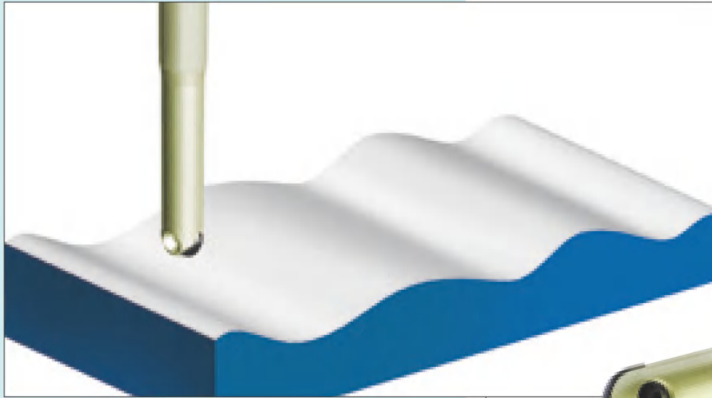
Diameter(mm)		Ø12		Ø16		Ø20		Ø25		Ø30		Ø32	
Cutting depth ap(mm)		0.2	0.5	0.2	0.5	0.5	1	0.5	1	0.5	1.5	0.5	1.5
Inclined angle α	15°	1.00	1.00	1.00	1.00	1.00	1.02	1.00	1.01	1.00	1.00	1.00	1.00
	30°	1.04	1.01	1.05	1.01	1.02	1.04	1.03	1.04	1.04	1.01	1.04	1.00
	45°	1.16	1.07	1.18	1.10	1.12	1.06	1.14	1.08	1.16	1.06	1.16	1.06
	60°	1.42	1.24	1.47	1.30	1.34	1.21	1.38	1.25	1.42	1.21	1.43	1.22
	75°	2.02	1.60	2.14	1.73	1.83	1.53	1.93	1.62	2.01	1.53	2.04	1.55
	90°	3.92	2.50	4.48	2.87	3.20	2.29	3.57	2.55	3.9	2.29	4.03	2.37

### Recommended cutting parameters

Workpiece material	Hardness HB	Insert grade	Cutting parameters	Tool specification						
				Ø12	Ø16	Ø20	Ø25	Ø30	Ø32	
<b>P</b>	Carbon steel	YBH053	V(m/min)	100~200	100~200	100~200	100~200	100~200	100~200	
			fz(mm/z)	0.15~0.25	0.2~0.3	0.2~0.3	0.25~0.35	0.25~0.35	0.25~0.35	
			apmax(mm)	0.8	1	1.25	1.5	2	2	
			aemax(mm)	0.8	1	1.25	1.5	2	2	
	Alloy steel		HB180~280	V(m/min)	80~180	80~180	80~180	80~180	80~180	80~180
			fz(mm/z)	0.15~0.25	0.2~0.3	0.2~0.3	0.25~0.35	0.25~0.35	0.25~0.35	
			apmax(mm)	0.8	1	1.25	1.5	2	2	
			aemax(mm)	0.8	1	1.25	1.5	2	2	
	Hardened steel		HRC55~65	V(m/min)	60~100	60~100	60~100	60~100	60~100	60~100
			fz(mm/z)	0.15~0.25	0.2~0.3	0.2~0.3	0.25~0.35	0.25~0.35	0.25~0.35	
			apmax(mm)	0.4	0.5	0.6	0.8	1	1	
			aemax(mm)	0.4	0.5	0.6	0.8	1	1	
<b>M</b>	Stainless steel	HB≤270	V(m/min)	70~150	70~150	70~150	70~150	70~150	70~150	
		fz(mm/z)	0.1~0.2	0.1~0.25	0.1~0.25	0.2~0.3	0.2~0.3	0.2~0.3		
		apmax(mm)	0.6	0.8	1	1.25	1.5	1.5		
		aemax(mm)	0.6	0.8	1	1.25	1.5	1.5		
<b>K</b>	Cast iron	HB180-250	V(m/min)	160~300	160~300	160~300	160~300	160~300	160~300	
		fz(mm/z)	0.2~0.3	0.25~0.35	0.25~0.35	0.3~0.4	0.3~0.4	0.3~0.4		
		apmax(mm)	1	1.5	1.8	2	2.5	2.5		
		aemax(mm)	1	1.5	1.8	2	2.5	2.5		



Case for BMR04



Workpiece material: 42CrMo (HRC35)  
 Cooling system: Dry cutting  
 Machine: Vertical machining center  
 Cutting parameters:  
 $V_c=150\text{m/min}$   
 $a_p=0.1\text{mm}$   
 $f_z=0.2\text{mm/Z}$

Tool type: BMR04-020-G25-M

Insert type/grade: ZOHX2005-GM/YBG252

Indexable milling tools

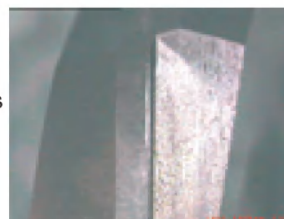
Profile milling tools

● Abrasion comparison of inserts after milling curved face

ZCC-CT

Other company product

After 60 minutes of cutting



Abrasion on the clearance face 0.08



Abrasion on the clearance face 0.10

After 120 minutes of cutting



Abrasion on the clearance face 0.12



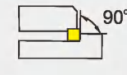
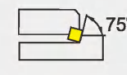
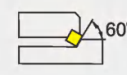
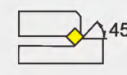
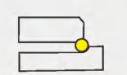
Abrasion on the clearance face 0.16





### Side and face milling tools code key

Cutter style	
<b>FM</b>	Face milling
<b>EM</b>	Square shoulder milling
<b>HM</b>	Helical end milling
<b>SM</b>	Side and face milling
<b>BM</b>	Profile milling
<b>CM</b>	Chamfer milling
<b>XM</b>	Special milling

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

Sequence number of series

Cutting diameter ØD (mm)

Cutting width of milling tools

Coupling structure and demension

<b>A</b>	A type of coupling	<b>D</b>	D type of coupling
<b>B</b>	B type of coupling	<b>K</b>	Mounting by keyway
<b>C</b>	C type of coupling		

**SM P 03 - 160 × 16 - K40**

**- M P 12 - 12 L**

Insert shape	
<b>C</b>	Diamond with 80°
<b>D</b>	Diamond with 55°
<b>R</b>	Round
<b>S</b>	Square
<b>T</b>	Regular triangle
<b>V</b>	Diamond with 35°
<b>M</b>	Diamond with 86°

Insert clearance angle	
<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	Length of cutting edge					
	Insert shape					
	<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

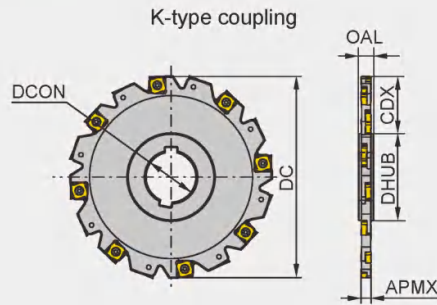
(R: Right L: Left)

Number of teeth

Side and face milling tools



SMP01 P M K



Specification of tools

Type	Stock	Basic dimensions(mm)						Applicable inserts	Number of teeth Z	Type of coupling	Weight (kg)	
		DC	DCON	DHUB	OAL	APMX	CDX					
SMP01 Mounting by keyway	-100×4-K27-SN12-10	△	100	27	45	12	4	25	XSEQ1202	10	K	0.2
	-125×4-K40-SN12-12	△	125	40	56	12	4	32		12	K	0.3
	-160×4-K40-SN12-16	△	160	40	67	12	4	44		16	K	0.5
	-100×5-K27-SN12-10	△	100	27	45	12	5	25	XSEQ1203	10	K	0.2
	-125×5-K40-SN12-12	△	125	40	56	12	5	32		12	K	0.3
	-160×5-K40-SN12-16	△	160	40	67	12	5	44		16	K	0.6
	-100×6-K27-SN12-10	△	100	27	45	12	6	25	XSEQ12T3	10	K	0.3
	-125×6-K40-SN12-12	△	125	40	56	12	6	32		12	K	0.4
	-160×6-K40-SN12-16	△	160	40	67	12	6	44		16	K	0.7
	-200×6-K50-SN12-18	△	200	50	71	12	6	62		18	K	1.1
	-250×6-K50-SN12-24	△	250	50	71	12	6	87		24	K	1.7
	-100×7-K27-SN12-10	△	100	27	45	12	7	25		XSEQ1204	10	K
-125×7-K40-SN12-12	△	125	40	56	12	7	32	12	K		0.4	
-160×7-K40-SN12-16	△	160	40	67	12	7	44	16	K		0.8	
	-200×7-K50-SN12-18	△	200	50	71	12	7	62		18	K	1.2
	-250×7-K50-SN12-24	△	250	50	71	12	7	87		24	K	1.9
	-100×8-K27-SN12-10	△	100	27	45	12	8	25		XSEQ12T4	10	K
-125×8-K40-SN12-12	△	125	40	56	12	8	32	12	K		0.5	
-160×8-K40-SN12-16	△	160	40	67	12	8	44	16	K		0.9	
	-200×8-K50-SN12-18	△	200	50	71	12	8	62		18	K	1.4
	-250×8-K50-SN12-24	△	250	50	71	12	8	87		24	K	2.2

▲Stock available    △Make-to-order

Indexable milling tools

Side and face milling tools

Tools code key  
B26-B27

Grade selection guide  
B19-B23

Technical data  
B271-B276



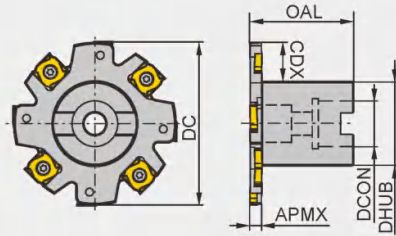
## Side and face milling tools



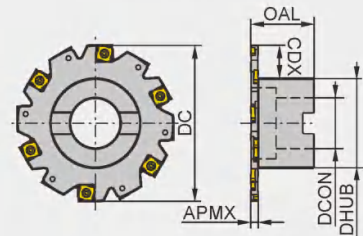
**SMP01** P M K



A-type coupling



B-type coupling



### Specification of tools

Type	Stock		Basic dimensions(mm)							Applicable inserts	Number of teeth Z	Type of coupling	Weight (kg)
	R	L	DC	DCON	DHUB	OAL	APMX	CDX					
<b>SMP01</b> Arbor mounting	-063×4-A22-SN12-06	△	△	63	22	32	40	4	14	XSEQ1202	6	A	0.2
	-080×4-A22-SN12-08	△	△	80	22	40	40	4	18		8	A	0.4
	-100×4-A27-SN12-10	△	△	100	27	48	50	4	23		10	A	0.6
	-063×5-A22-SN12-06	△	△	63	22	32	40	5	14	XSEQ1203	6	A	0.2
	-080×5-A22-SN12-08	△	△	80	22	40	40	5	18		8	A	0.4
	-100×5-A27-SN12-10	△	△	100	27	48	50	5	23		10	A	0.7
	-063×6-A22-SN12-06	△	△	63	22	32	40	6	14	XSEQ12T3	6	A	0.2
	-080×6-A22-SN12-08	△	△	80	22	40	40	6	18		8	A	0.5
	-100×6-A27-SN12-10	△	△	100	27	48	50	6	23		10	A	0.7
	-125×6-B32-SN12-12	△	△	125	32	70	50	6	30	XSEQ12T3	12	B	1.0
	-160×6-B40-SN12-16	△	△	160	40	70	50	6	41		16	B	1.3
	-063×7-A22-SN12-06	△	△	63	22	32	40	7	14		XSEQ1204	6	A
-080×7-A22-SN12-08	△	△	80	22	40	40	7	18	8	A		0.5	
-100×7-A27-SN12-10	△	△	100	27	48	50	7	23	10	A		0.7	
	-125×7-B32-SN12-12	△	△	125	32	70	50	7	30	XSEQ1204	12	B	1.1
	-160×7-B40-SN12-16	△	△	160	40	70	50	7	41		16	B	1.4
	-063×8-A22-SN12-06	△	△	63	22	32	40	8	14		XSEQ12T4	6	A
-080×8-A22-SN12-08	△	△	80	22	40	40	8	18	8	A		0.5	
-100×8-A27-SN12-10	△	△	100	27	48	50	8	23	10	A		0.8	
	-125×8-B32-SN12-12	△	△	125	32	70	50	8	30	XSEQ12T4	12	B	1.1
	-160×8-B40-SN12-16	△	△	160	40	70	50	8	41		16	B	1.5

▲Stock available    △Make-to-order

Tools code key

B26-B27

Grade selection guide



B19-B23


Technical data

B271-B276

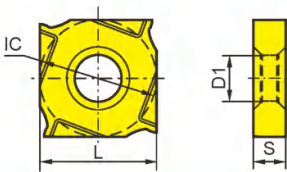


## ➤ Spare parts

Diameter DC	Edge width ap	Screw	Wrench
			
Ø63-Ø160	4	I91M4×3.2X	WT08IS/IP
Ø63-Ø160	5	I91M4×4.2X	
Ø63-Ø250	6	I91M4×5.1X	
Ø63-Ø250	7	I91M4×6.1X	
Ø63-Ø250	8	I91M4×7.1X	




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

Insert shape	Type	Basic dimensions(mm)				CVD Coating					PVD Coating				Cermet	Cemented carbide					
		IC	L	S	D1	YBC302	YBM253	YBD152	YBD203	YBD252	YBG105	YBG202	YBG205	YB9320	YBG302	YBS203	YBS303	YNG151	YNG151C	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 grade (always stock available)    ●Available grade (always stock available)    ○Make-to-order

## ➤ Recommended cutting parameters

Cutting parameters	Hardness HB	Insert grade	Cutting parameters	
			Vc(m/min)	fz(mm/z)
<b>P</b> Low-carbon steel, Soft steel	≤180	YBG302	150 (100-200)	0.15(0.1-0.3)
	180-280	YBG302	120 (80-200)	0.15(0.1-0.3)
	280-350	YBG302	100 (80-200)	0.15(0.1-0.3)
<b>M</b> Stainless steel	≤270	YBG302	100 (80-200)	0.08(0.05-0.15)
<b>K</b> Cast iron	180-250	YBG302	150 (100-250)	0.08(0.05-0.15)

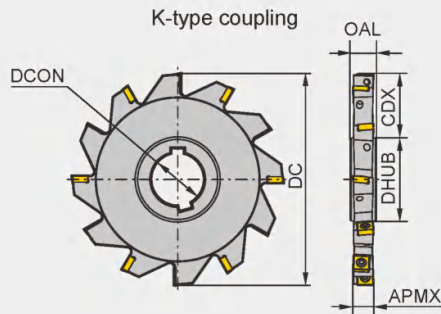
Indexable milling tools

Side and face milling tools



## Side and face milling tools

### SMP03 P M K



### Specification of tools

Type	Stock	Basic dimensions(mm)						Applicable inserts	Number of teeth Z	Type of coupling	Weight (kg)
		DC	DHUB	DCON	CDX	APMX	OAL				
<b>SMP03</b> -080×8-K27-MP06-10	△	80	43	27	17	8	12	MPHT060304-DM	10	K	0.2
Mounting by keyway -100×8-K32-MP06-14	△	100	47	32	25	8	12		14	K	0.3
-100×10-K32-MP06-14	△	100	47	32	25	10	14		14	K	0.4
-125×10-K40-MP06-16	△	125	55	40	34	10	14		16	K	0.6
-125×12-K40-MP08-12	△	125	55	40	34	12	16	MPHT080305-DM	12	K	0.7
-160×12-K40-MP08-14	△	160	62	40	47	12	16		14	K	1.3
-160×16-K40-MP12-12	△	160	62	40	49	16	20	MPHT120408-DM	12	K	1.6
-160×18-K40-MP12-12	△	160	62	40	49	18	24		12	K	1.9
-160×20-K40-MP12-12	△	160	62	40	49	20	26		12	K	2.1
-200×16-K50-MP12-14	△	200	72	50	62	16	20		14	K	2.5
-200×18-K50-MP12-14	△	200	72	50	62	18	24		14	K	2.9
-200×20-K50-MP12-14	△	200	72	50	62	20	26		14	K	3.3

▲Stock available    △Make-to-order

### Spare parts

Diameter DC	Inserts	Screw	Wrench	
Ø80-Ø125	MP06	I60M2.5x6.5	WT07IP	--
Ø125-Ø160	MP08	I60M3x7	WT09IP	--
Ø160-Ø200	MP12	I60M5x13	--	WT20IS

Tools code key **B26-B27**

Grade selection guide **B19-B23**

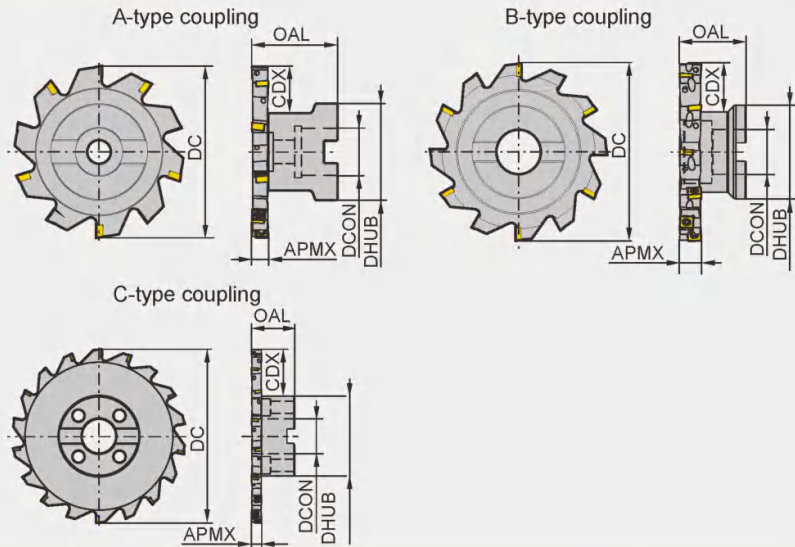
Technical data **B271-B276**



Side and face milling tools



SMP03 P M K



Specification of tools

Type	Stock		Basic dimensions(mm)						Applicable inserts	Number of teeth Z	Type of coupling	Weight (kg)
	R	L	DC	DHUB	DCON	CDX	APMX	OAL				
SMP03 Arbor mounting	△	△	80	45	22	21	8	40	MPHT060304-DM	10	A	0.4
	△	△	100	55	27	24	8	40		14	B	0.6
	△	△	100	55	27	24	10	40		14	B	0.7
	△	△	125	65	32	33	10	45		16	B	1.1
	△	△	125	65	32	33	12	45	MPHT080305-DM	12	B	1.4
	△	△	160	80	40	45	12	50		14	B	1.9
	△	△	200	92	40	53	12	50		18	C	3.2
	△	△	125	65	32	33	16	50		10	B	2.3
	△	△	160	80	40	45	16	60	MPHT120408-DM	12	B	2.3
	△	△	160	80	40	45	18	60		12	B	2.4
	△	△	200	92	40	53	16	50		14	C	3.6
	△	△	200	92	40	53	18	50		14	C	3.9
△	△	200	92	40	53	20	50		14	C	4.2	

▲Stock available    △Make-to-order

Spare parts

Diameter DC	Inserts	Screw	Wrench	
Ø80-Ø125	MP06	I60M2.5×6.5	WT07IP	--
Ø125-Ø200	MP08	I60M3×7	WT09IP	--
Ø125-Ø200	MP12	I60M5×13	--	WT20IS

Tools code key  
B26-B27

Grade selection guide  
B19-B23

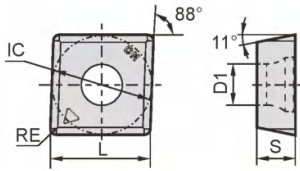
Technical data  
B271-B276

Indexable milling tools

Side and face milling tools



## Selection of inserts



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

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

Insert shape	Type	Basic dimensions(mm)					CVD Coating					PVD Coating					Cermet	Cemented carbide					
		IC	L	S	D1	RE	YBC302	YBM253	YBD152	YBD203	YBD252	YBG105	YBG202	YBG205	YB9320	YBG302	YBS203	YBS303	YNG151	YNG151C	YD101	YD201	
	MPHT060304-DM	6.35	6.35	3.18	2.8	0.4									★	★							
	MPHT080305-DM	8.3	8.3	3.18	3.4	0.5									★	★							
	MPHT120408-DM	12.7	12.7	4.76	5.56	0.8									★	★							

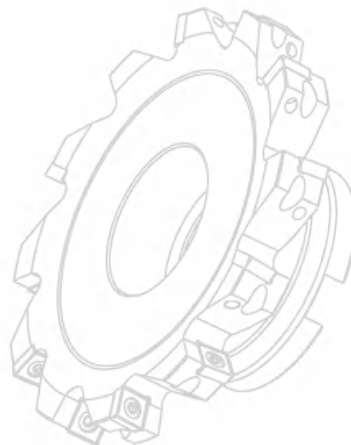
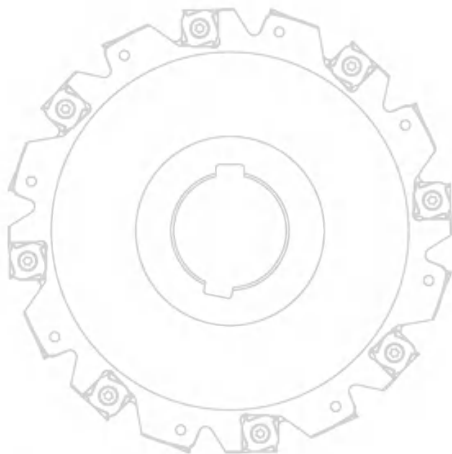
★ Recommended grade (always stock available)    ● Available grade (always stock available)    ○ Make-to-order

Indexable milling tools

Side and face milling tools

## Recommended cutting parameters

Workpiece material	Hardness HB	Insert grade	Cutting parameters	
			Vc(m/min)	fz(mm/z)
<b>P</b> Low-carbon steel, Soft steel	≤180	YBG302	150 (100-200)	0.15(0.1-0.3)
	180-280	YBG302	120 (80-200)	0.15(0.1-0.3)
	280-350	YBG302	100 (80-200)	0.15(0.1-0.3)
<b>M</b> Stainless steel	≤270	YBG302	100 (80-200)	0.08(0.05-0.15)
<b>K</b> Cast iron	180-250	YBG302	150 (100-250)	0.08(0.05-0.15)





# SMP05 Slot Milling

Groove width 1.1~4.8mm.  
 Maximum cutting depth 5mm.  
 Multi-function milling holder: slot milling, plunge milling, root cleaning

## Slot milling specification code

Slot milling

Weldon shank

Insert

Teeth

**SMP05 - 039×3.0 - XP 25 - QC 16- 03**

Minimum machining diameter(mm)

Code	Diameter
25	25
39	39
44	44

Maximum cutting width(mm)

Code	Cutting width
3.0	3.0
4.8	4.8

Cutter diameter(mm)

Code	Diameter
25	25
32	32

Cutting edge length code

Inscribed circular(mm)

16	9.525
22	12.70

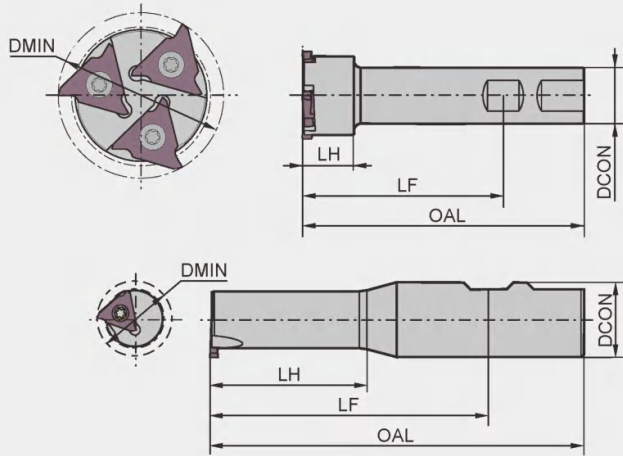


### Slot milling tool

#### SMP05



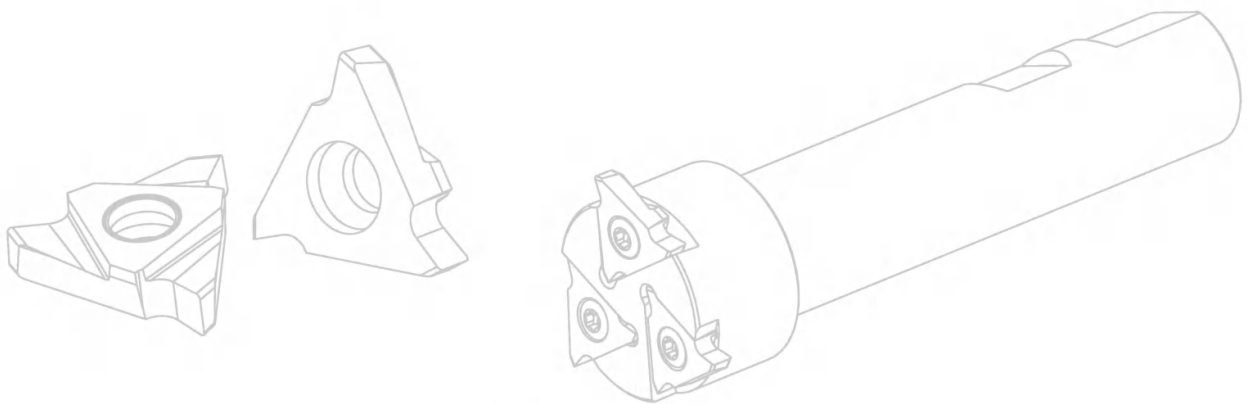
Single tooth slot milling tool



#### Specification of tools

Type	Stock	Basic dimensions(mm)					Number of teeth Z	Applicable inserts	Width(mm)
		DMIN	DCON	LH	LF	OAL			
<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	1.25-4.80

▲Stock available    △Make-to-order



#### Spare parts

Diameter DMIN	Screw	Wrench
∅25	I60M3.5×10	WT15IP
∅39	I60M3.5×10	WT15IP
∅44	I60M5×13	WT20IP

Tools code key

B26-B27

Grade selection guide

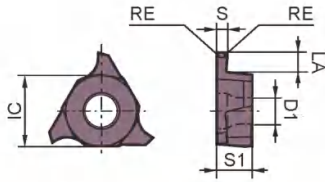
B19-B23

Technical data

B271-B276



## Selection of inserts



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

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

Insert shape	Type	Basic dimensions(mm)						CVD Coating					PVD Coating					Cermet		Cemented carbide				
		S±0.025	LA	RE	IC	S1	D1	YBC302	YBM253	YBD152	YBD203	YBD252	YBG105	YBG202	YBG205	YB9320	YBG302	YBS203	YBS303	YNG151	YNG151C	YD101	YD201	
	QC16L110-R01	1.10	2.00	R0.1	9.525	3.18	4.4							○	○									
	QC16L125-R02	1.25	2.00	R0.2	9.525	3.18	4.4							○	○									
	QC16L145-R02	1.45	2.00	R0.2	9.525	3.18	4.4							○	○									
	QC16L150-R02	1.50	2.00	R0.2	9.525	3.18	4.4							○	★									
	QC16L175-R02	1.75	2.00	R0.2	9.525	3.18	4.4							○	○									
	QC16L185-R02	1.85	2.50	R0.2	9.525	3.18	4.4							○	○									
	QC16L200-R02	2.00	2.50	R0.2	9.525	3.18	4.4							○	★									
	QC16L250-R02	2.50	2.50	R0.2	9.525	3.18	4.4							○	★									
	QC16L300-R02	3.00	3.00	R0.2	9.525	3.18	4.4							○	★									
	QC22L125-R02	1.25	2.00	R0.2	12.70	4.76	5.5							○	○									
	QC22L145-R02	1.45	2.00	R0.2	12.70	4.76	5.5							○	○									
	QC22L150-R02	1.50	3.50	R0.2	12.70	4.76	5.5							○	★									
	QC22L175-R02	1.75	3.50	R0.2	12.70	4.76	5.5							○	○									
	QC22L185-R02	1.85	3.50	R0.2	12.70	4.76	5.5							○	○									
	QC22L200-R02	2.00	3.50	R0.2	12.70	4.76	5.5							○	★									
	QC22L230-R02	2.30	3.50	R0.2	12.70	4.76	5.5							○	○									
	QC22L250-R03	2.50	4.00	R0.3	12.70	4.76	5.5							○	★									
	QC22L265-R03	2.65	4.00	R0.3	12.70	4.76	5.5							○	○									
	QC22L280-R03	2.80	4.00	R0.3	12.70	4.76	5.5							○	○									
	QC22L300-R03	3.00	4.00	R0.3	12.70	4.76	5.5							○	★									
	QC22L320-R03	3.20	4.00	R0.3	12.70	4.76	5.5							○	○									
	QC22L330-R03	3.30	4.00	R0.3	12.70	4.76	5.5							○	○									
	QC22L350-R03	3.50	5.00	R0.3	12.70	4.76	5.5							○	★									
	QC22L400-R04	4.00	5.00	R0.4	12.70	4.76	5.5							○	★									
	QC22L430-R04	4.30	5.00	R0.4	12.70	4.76	5.5							○	○									
	QC22L450-R04	4.50	5.00	R0.4	12.70	4.76	5.5							○	○									
	QC22L480-R04	4.80	5.00	R0.4	12.70	5.06	5.5							○	○									

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

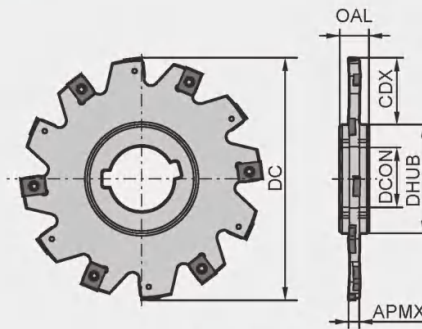
Indexable milling tools

Side and face milling tools

## Side and face milling tools



**SMP08** **P** **M** **K**



K-type coupling

### Specification of tools

Type	Stock	Basic dimensions(mm)						Applicable inserts	Number of teeth Z	Type of coupling	Weight (kg)
		DC	DCON	DHUB	OAL	APMX	CDX				
<b>SMP08</b> -063×4-K22-LN1023-08	▲	63	22	34	8	4	12.0	LNET102304-GM	8	K	0.1
-080×4-K22-LN1023-10	▲	80	22	34	8	4	21.0		10	K	0.1
-100×4-K27-LN1023-12	▲	100	27	41	12	4	27.0		12	K	0.2
-125×4-K40-LN1023-14	▲	125	40	55	12	4	32.0		14	K	0.4
-160×4-K40-LN1023-18	▲	160	40	55	12	4	50.0		18	K	0.6
-063×5-K22-LN1028-08	▲	63	22	34	8	5	13.0	LNET102804-GM	8	K	0.1
-080×5-K22-LN1028-10	▲	80	22	34	8	5	21.0		10	K	0.2
-100×5-K27-LN1028-12	▲	100	27	41	12	5	27.0		12	K	0.3
-125×5-K40-LN1028-14	▲	125	40	55	12	5	33.0		14	K	0.4
-160×5-K40-LN1028-18	▲	160	40	55	12	5	50.0		18	K	0.7
-063×6-K22-LN1033-08	▲	63	22	34	8	6	13.0	LNET103304-GM	8	K	0.1
-080×6-K22-LN1033-10	▲	80	22	34	8	6	21.5		10	K	0.2
-100×6-K27-LN1033-12	▲	100	27	41	12	6	27.0		12	K	0.3
-125×6-K40-LN1033-14	▲	125	40	55	12	6	33.0		14	K	0.5
-160×6-K40-LN1033-18	▲	160	40	55	12	6	50.0		18	K	0.8
-200×6-K50-LN1033-20	▲	200	50	69	12	6	63.0	20	K	1.2	
-250×6-K50-LN1033-24	▲	250	50	69	12	6	88.0	24	K	2.0	
-080×7-K22-LN1238-08	▲	80	22	34	12	7	20.0	LNET123804-GM	8	K	0.2
-100×7-K27-LN1238-10	▲	100	27	41	12	7	26.5		10	K	0.3
-125×7-K40-LN1238-12	▲	125	40	55	12	7	32.0		12	K	0.5
-160×7-K40-LN1238-16	▲	160	40	55	12	7	49.5		16	K	0.8
-200×7-K50-LN1238-18	▲	200	50	69	12	7	62.5		18	K	1.3
-250×7-K50-LN1238-24	▲	250	50	69	12	7	87.5		24	K	2.1

▲Stock available    △Make-to-order

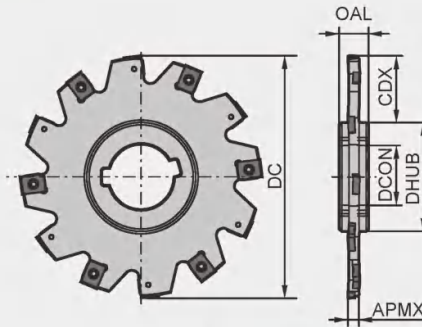
Indexable milling tools  
Side and face milling tools



Side and face milling tools



SMP08 P M K



K-type coupling

Specification of tools

Type	Stock	Basic dimensions(mm)						Applicable inserts	Number of teeth Z	Type of coupling	Weight (kg)
		DC	DCON	DHUB	OAL	APMX	CDX				
<b>SMP08</b> -080×8-K22-LN1243-08	▲	80	22	34	12	8	20.5	LNET124304-GM	8	K	0.2
-100×8-K27-LN1243-10	▲	100	27	41	12	8	27.0		10	K	0.3
-125×8-K40-LN1243-12	▲	125	40	55	12	8	32.5		12	K	0.9
-160×8-K40-LN1243-16	▲	160	40	55	12	8	50.0		16	K	0.9
-200×8-K50-LN1243-18	▲	200	50	69	12	8	63.0		18	K	1.4
-250×8-K50-LN1243-24	▲	250	50	69	12	8	83.0		24	K	2.3
-100×9-K27-LN1248-10	▲	100	27	41	12	9	27.5	LNET124804-GM	10	K	0.4
-125×9-K40-LN1248-12	▲	125	40	55	12	9	33.0		12	K	0.6
-160×9-K40-LN1248-16	▲	160	40	55	12	9	50.5		16	K	1
-200×9-K50-LN1248-18	▲	200	50	69	12	9	63.5		18	K	1.6
-250×9-K50-LN1248-24	▲	250	50	69	12	9	88.5		24	K	2.6
-100×10-K27-LN1253-10	▲	100	27	41	12	10	28.0	LNET125304-GM	10	K	0.4
-125×10-K40-LN1253-12	▲	125	40	55	12	10	33.5		12	K	0.6
-160×10-K40-LN1253-16	▲	160	40	55	12	10	51.0		16	K	1.1
-200×10-K50-LN1253-18	▲	200	50	69	12	10	64.0		18	K	1.8
-250×10-K50-LN1253-24	▲	250	50	69	12	10	89.0		24	K	2.9

▲Stock available    △Make-to-order

Spare parts

Diameter DC	Edge width a <sub>p</sub> (mm)	Screw	Wrench	
Ø63-Ø160	4	I60M2.5×3.2×B	WT06IP/IS	
	5	I60M2.5×3.9×B		
	6	I60M2.5×4.8×B		
Ø63-Ø250	7	I60M4×5.1×B	WT10IP/IS	
	8	I60M4×6.6×B		
	9	I60M4×7.6×B		
	10	I60M4×8.5×B		

Tools code key  
B26-B27

Grade selection guide  
B19-B23

Technical data  
B271-B276

Indexable milling tools

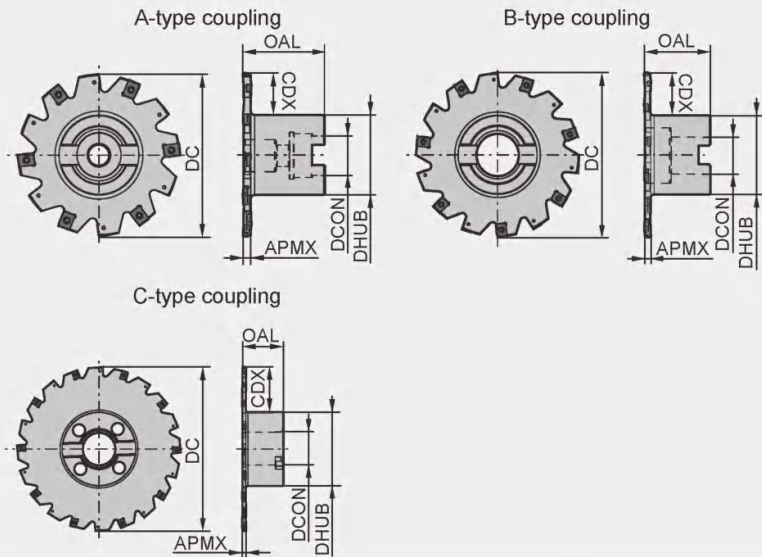
Side and face milling tools



### Side and face milling tools



**SMP08** P M K



#### Specification of tools

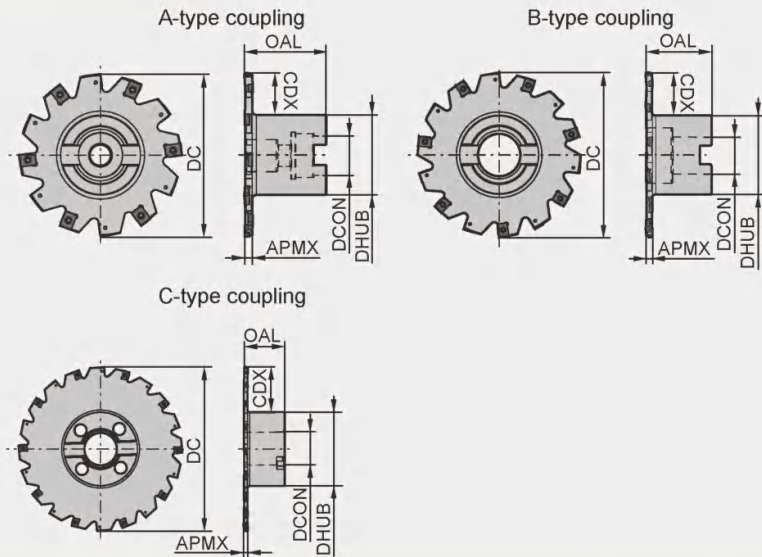
Type	Stock	Basic dimensions(mm)						Applicable inserts	Number of teeth Z	Type of coupling	Weight (kg)
		DC	DCON	DHUB	OAL	APMX	CDX				
<b>SMP08</b> -080×4-A22-LN1023-10	▲	80	22	42	50	4	18	LNET102304-GM	10	A	0.4
-100×4-A27-LN1023-12	▲	100	27	52	50	4	23		12	A	0.6
-125×4-B32-LN1023-14	▲	125	32	63	50	4	30		14	B	1.0
-160×4-B40-LN1023-18	▲	160	40	76	50	4	41		18	B	1.2
-080×5-A22-LN1028-10	▲	80	22	42	50	5	18	LNET102804-GM	10	A	0.4
-100×5-A27-LN1028-12	▲	100	27	52	50	5	23		12	A	0.6
-125×5-B32-LN1028-14	▲	125	32	63	50	5	30		14	B	1.0
-160×5-B40-LN1028-18	▲	160	40	76	50	5	41		18	B	1.2
-080×6-A22-LN1033-10	▲	80	22	42	50	6	18	LNET103304-GM	10	A	0.5
-100×6-A27-LN1033-12	▲	100	27	52	50	6	23		12	A	0.7
-125×6-B32-LN1033-14	▲	125	32	63	50	6	30		14	B	1.1
-160×6-B40-LN1033-18	▲	160	40	76	50	6	41		18	B	1.4
-200×6-C40-LN1033-20	▲	200	40	94	50	6	52		20	C	2.8
-250×6-C60-LN1033-24	▲	250	60	132	50	6	58	24	C	4.6	
-080×7-A22-LN1238-08	▲	80	22	42	50	7	18	LNET123804-GM	8	A	0.5
-100×7-A27-LN1238-10	▲	100	27	52	50	7	23		10	A	0.7
-125×7-B32-LN1238-12	▲	125	32	63	50	7	30		12	B	1.1
-160×7-B40-LN1238-16	▲	160	40	76	50	7	41		16	B	1.4
-200×7-C40-LN1238-18	▲	200	40	94	50	7	52		18	C	2.9
-250×7-C60-LN1238-24	▲	250	60	132	50	7	58		24	C	4.7

▲Stock available    △Make-to-order

Side and face milling tools



SMP08 P M K



Specification of tools

Type	Stock	Basic dimensions(mm)						Applicable inserts	Number of teeth Z	Type of coupling	Weight (kg)
		DC	DCON	DHUB	OAL	APMX	CDX				
SMP08 -080×8-A22-LN1243-08	▲	80	22	42	50	8	18	LNET124304-GM	A	0.5	
	▲	100	27	52	50	8	23		A	0.7	
	▲	125	32	63	50	8	30		B	1.1	
	▲	160	40	76	50	8	41		B	1.4	
	▲	200	40	94	50	8	52		C	2.9	
	▲	250	60	132	50	8	58		C	4.7	
-100×9-A27-LN1248-10	▲	100	27	52	50	9	23	LNET124804-GM	A	0.7	
	▲	125	32	63	50	9	30		B	1.1	
	▲	160	40	76	50	9	41		B	1.5	
	▲	200	40	94	50	9	52		C	3	
	▲	250	60	132	50	9	58		C	4.8	
	▲	100	27	52	50	10	23		LNET125304-GM	A	0.7
▲	125	32	63	50	10	30	B	1.1			
▲	160	40	76	50	10	41	B	1.5			
▲	200	40	94	50	10	52	C	3			
▲	250	60	132	50	10	58	C	5			

▲Stock available    △Make-to-order

Spare parts

Diameter DC	Edge width a <sub>p</sub> (mm)	Screw	Wrench	
Ø63-Ø160	4	I60M2.5×3.2×B	WT06IP/IS	
	5	I60M2.5×3.9×B		
	6	I60M2.5×4.8×B		
Ø63-Ø250	7	I60M4×5.1×B	WT10IP/IS	
	8	I60M4×6.6×B		
	9	I60M4×7.6×B		
	10	I60M4×8.5×B		

Tools code key B26-B27

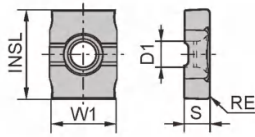
Grade selection guide B19-B23

Technical data B271-B276

Indexable milling tools  
Side and face milling tools



## Selection of inserts



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

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

Insert shape	Type	Basic dimensions(mm)					CVD Coating					PVD Coating					Cermets		Cemented carbide				
		W1	INSL	S	D1	RE	YBC302	YBM253	YBD152	YBD203	YBD252	YBG105	YBG202	YBG205	YB9320	YBG302	YBS203	YBS303	YNG151	YNG151C	YD101	YD201	
	LNET102304-GM	7.5	10	2.3	2.9	0.4									★			●					
	LNET102804-GM	7.5	10	2.8	2.9	0.4									★			●					
	LNET103304-GM	7.5	10	3.3	2.9	0.4									★			●					
	LNET123804-GM	10	13	3.8	4.4	0.4									★			●					
	LNET124304-GM	10	13	4.3	4.4	0.4									★			●					
	LNET124804-GM	10	13	4.8	4.4	0.4									★			●					
	LNET125304-GM	10	13	5.3	4.4	0.4									★			●					

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

Indexable milling tools

Side and face milling tools

## Recommended cutting parameters

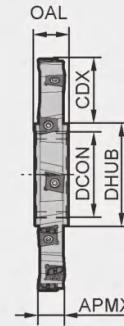
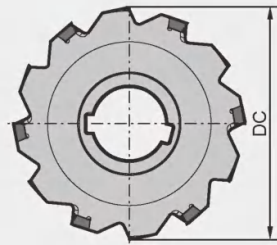
	Workpiece material	Hardness HB	Insert grade	Cutting parameters	
				Vc(m/min)	fz(mm/z)
<b>P</b>	Low-carbon steel, Soft steel	≤ 180	YB9320	150(100-200)	0.12(0.1-0.3)
	High-carbon steel, Alloy steel	180-280	YB9320	120(80-200)	0.12(0.1-0.3)
	Alloy tool steel	280-350	YB9320	100(80-200)	0.12(0.1-0.3)
<b>M</b>	Stainless steel	≤ 270	YB9320	100(80-200)	0.08(0.05-0.15)
<b>K</b>	Cast iron, Ductile iron, High nickel cast iron	180-250	YB9320	150(100-250)	0.08(0.05-0.15)



Side and face milling tools



SMP09 P M K



K-type coupling

Specification of tools

Type	Stock	Basic dimensions(mm)						Applicable inserts	Number of teeth Z	Type of coupling	Weight (kg)
		DC	DCON	DHUB	OAL	APMX	CDX				
<b>SMP09</b> -080×10-K27-LN10-08	△	80	27	43	14	10	17	LNGX1005□□-GM	8	K	0.2
-100×10-K32-LN10-10	△	100	32	47	14	10	25		10	K	0.37
-125×10-K40-LN10-12	△	125	40	55	14	10	34		12	K	0.5
-160×10-K40-LN10-14	△	160	40	62	14	10	47		14	K	1
-200×10-K50-LN10-16	△	200	50	72	14	10	62		16	K	1.6
-100×12-K32-LN14-08	△	100	32	47	16	12	25	LNGX1407□□-GM	8	K	0.4
-125×12-K40-LN14-10	△	125	40	55	16	12	34		10	K	0.6
-160×12-K40-LN14-12	△	160	40	62	16	12	47		12	K	1.1
-200×12-K50-LN14-14	△	200	50	72	16	12	62		14	K	1.8
-100×14-K32-LN10-10	△	100	32	47	18	14	25	LNGX1005□□-GM	10	K	0.4
-125×14-K40-LN10-12	△	125	40	55	18	14	34		12	K	0.9
-160×14-K40-LN10-14	△	160	40	62	18	14	47		14	K	1.6
-200×14-K50-LN10-16	△	200	50	72	18	14	62		16	K	2.5
-125×16-K40-LN10-12	△	125	40	55	20	16	34	LNGX1005□□-GM	12	K	1
-160×16-K40-LN10-14	△	160	40	62	20	16	47		14	K	1.8
-200×16-K50-LN10-16	△	200	50	72	20	16	62		16	K	2.9

▲Stock available    △Make-to-order

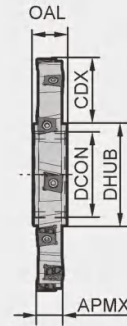
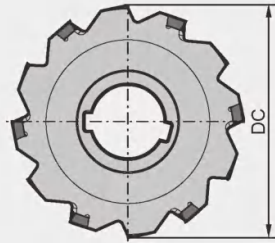
Indexable milling tools

Side and face milling tools



## Side and face milling tools

**SMP09** **P** **M** **K**



K-type coupling

### Specification of tools

Type	Stock	Basic dimensions(mm)						Applicable inserts	Number of teeth Z	Type of coupling	Weight (kg)
		DC	DCON	DHUB	OAL	APMX	CDX				
<b>SMP09</b> -125×18-K40-LN10-12	△	125	40	55	24	18	34	LNGX1005□□-GM	12	K	1.2
-160×18-K40-LN10-14	△	160	40	62	24	18	47		14	K	2.1
-200×18-K50-LN10-16	△	200	50	72	24	18	62		16	K	3.4
-250×18-K50-LN10-18	△	250	50	80	24	18	83		18	K	5.5
-125×20-K40-LN14-10	△	125	40	55	26	20	34	LNGX1407□□-GM	10	K	1.2
-160×20-K40-LN14-12	△	160	40	62	26	20	47		12	K	2.1
-200×20-K50-LN14-14	△	200	50	72	26	20	62		14	K	3.5
-250×20-K50-LN14-16	△	250	50	80	26	20	83		16	K	5.8
-160×25-K40-LN14-12	△	160	40	62	30	25	47	LNGX1407□□-GM	12	K	2.8
-200×25-K50-LN14-14	△	200	50	72	30	25	62		14	K	4.5
-250×25-K50-LN14-16	△	250	50	80	30	25	83		16	K	7.5

▲Stock available    △Make-to-order

### Spare parts

Diameter DC	Edge width $a_p$ (mm)	Inserts	Screw	Wrench	
Ø80-Ø200	10	LNGX1005□□-GM	I60M3.5×8TT	WP10IS	
Ø100-Ø200	12	LNGX1407□□-GM	I60M4×10	WP15IS	
Ø100-Ø250	14-18	LNGX1005□□-GM	I60M3.5×8TT	WP10IS	
Ø125-Ø315	20-25	LNGX1407□□-GM	I60M4×12	WP15IS	

Tools code key **B26-B27**

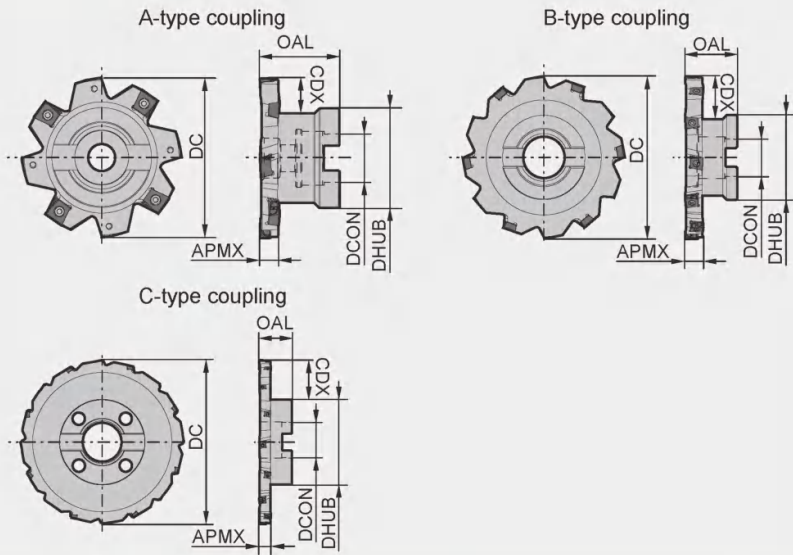
Grade selection guide **B19-B23**

Technical data **B271-B276**

Side and face milling tools



SMP09 P M K



Specification of tools

Type	Stock	Basic dimensions(mm)						Applicable inserts	Number of teeth Z	Type of coupling	Weight (kg)
		DC	DCON	DHUB	OAL	APMX	CDX				
<b>SMP09</b> -080×10-A22-LN10-08	△	80	22	45	40	10	20	LNGX1005□□-GM	8	A	0.4
-100×10-B27-LN10-10	△	100	27	55	45	10	24		10	B	0.6
-125×10-B32-LN10-12	△	125	32	65	45	10	33		12	B	1
-160×10-B40-LN10-14	△	160	40	80	50	10	42		14	B	2
-200×10-C40-LN10-16	△	200	40	92	50	10	53		16	C	2.9
-100×12-B27-LN14-08	△	100	27	55	45	12	24	LNGX1407□□-GM	8	B	0.6
-125×12-B32-LN14-10	△	125	32	65	45	12	33		10	B	1
-160×12-B40-LN14-12	△	160	40	80	50	12	42		12	B	2.1
-200×12-C40-LN14-14	△	200	40	92	50	12	53		14	C	2.9
-100×14-B27-LN10-10	△	100	27	55	50	14	24	LNGX1005□□-G	10	B	0.7
-125×14-B32-LN10-12	△	125	32	65	50	14	33		12	B	1.2
-160×14-B40-LN10-14	△	160	40	80	50	14	42		14	B	2.4
-200×14-C40-LN10-16	△	200	40	92	50	14	53		16	C	3.6
-125×16-B32-LN10-12	△	125	32	65	50	16	33	LNGX1005□□-GM	12	B	1.4
-160×16-B40-LN10-14	△	160	40	80	50	16	42		14	B	2.6
-200×16-C40-LN10-16	△	200	40	92	50	16	53		16	C	4

▲Stock available    △Make-to-order

Indexable milling tools

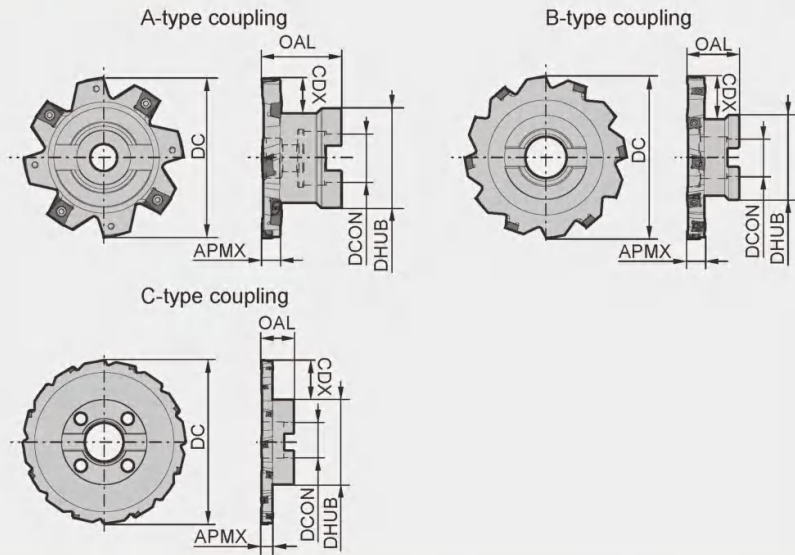
Side and face milling tools



## Side and face milling tools



### SMP09 P M K



### Specification of tools

Type	Stock	Basic dimensions(mm)						Applicable inserts	Number of teeth Z	Type of coupling	Weight (kg)
		DC	DCON	DHUB	OAL	APMX	CDX				
<b>SMP09</b> -125×18-B32-LN10-12	△	125	32	65	50	18	33	LNGX1005□□-GM	12	B	1.5
-160×18-B40-LN10-14	△	160	40	80	50	18	42		14	B	2.9
-200×18-C40-LN10-16	△	200	40	92	50	18	53		16	C	4.3
-250×18-C60-LN10-18	△	250	60	132	50	18	58		18	C	7.2
-125×20-B32-LN14-10	△	125	32	65	50	20	33	LNGX1407□□-GM	10	B	1.6
-160×20-B40-LN14-12	△	160	40	80	50	20	42		12	B	2.7
-200×20-C40-LN14-14	△	200	40	92	50	20	53		14	C	4.6
-250×20-C60-LN14-16	△	250	60	132	50	20	58		16	C	7.4
-160×25-B40-LN14-12	△	160	40	80	50	25	42	LNGX1407□□-GM	12	B	3.2
-200×25-C40-LN14-14	△	200	40	92	50	25	53		14	C	5.2
-250×25-C60-LN14-16	△	250	60	132	50	25	58		16	C	8.6
-315×25-C60-LN14-20	△	315	60	132	50	25	90		20	C	13.2

▲Stock available    △Make-to-order

### Spare parts

Diameter DC	Edge width $a_p$ (mm)	Inserts	Screw	Wrench	
Ø80-Ø200	10	LNGX1005□□-GM	I60M3.5×8TT	WP10IS	
Ø100-Ø200	12	LNGX1407□□-GM	I60M4×10	WP15IS	
Ø100-Ø250	14-18	LNGX1005□□-GM	I60M3.5×8TT	WP10IS	
Ø125-Ø315	20-25	LNGX1407□□-GM	I60M4×12	WP15IS	

Tools code key

B26-B27

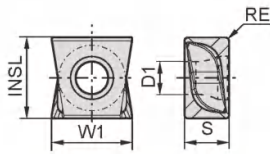
Grade selection guide

B19-B23

Technical data

B271-B276

## Selection of inserts



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

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

Insert shape	Type	Basic dimensions(mm)					CVD Coating					PVD Coating			Cermet	Cemented carbide							
		W1	INSL	S	D1	RE	YBC302	YBM253	YBD152	YBD203	YBD252	YBG105	YBG202	YBG205	YB9320	YBG302	YBS203	YBS303	YNG151	YNG151C	YD101	YD201	
	LNGX100504-GM	9.9	10	5.5	4.1	0.4								★		●							
	LNGX100508-GM	9.9	10	5.5	4.1	0.8								★		●							
	LNGX100512-GM	9.9	10	5.5	4.1	1.2								★		●							
	LNGX100516-GM	9.9	10	5.5	4.1	1.6								★		●							
	LNGX100520-GM	9.9	10	5.5	4.1	2.0								★		●							
	LNGX100524-GM	9.9	10	5.5	4.1	2.4								★		●							
	LNGX100530-GM	9.9	10	5.5	4.1	3.0								★		●							
	LNGX100540-GM	9.9	10	5.5	4.1	4.0								★		●							
	LNGX140704-GM	13.4	14	7.5	4.4	0.4									★		●						
	LNGX140708-GM	13.4	14	7.5	4.4	0.8									★		●						
	LNGX140712-GM	13.4	14	7.5	4.4	1.2									★		●						
	LNGX140716-GM	13.4	14	7.5	4.4	1.6									★		●						
	LNGX140720-GM	13.4	14	7.5	4.4	2.0									★		●						
	LNGX140724-GM	13.4	14	7.5	4.4	2.4									★		●						
	LNGX140730-GM	13.4	14	7.5	4.4	3.0									★		●						
	LNGX140740-GM	13.4	14	7.5	4.4	4.0									★		●						
LNGX140750-GM	13.4	14	7.5	4.4	5.0									★		●							

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

Indexable milling tools

Side and face milling tools

## Recommended cutting parameters

	Workpiece material	Hardness HB	Insert grade	Cutting parameters	
				Vc(m/min)	fz(mm/z)
<b>P</b>	Low-carbon steel, Soft steel	≤ 180	YB9320 YBM253	150(100-200)	0.12(0.1-0.3)
	High-carbon steel, Alloy steel	180-280	YB9320 YBM253	120(80-200)	0.12(0.1-0.3)
	Alloy tool steel	280-350	YB9320 YBM253	100(80-200)	0.12(0.1-0.3)
<b>M</b>	Stainless steel	≤ 270	YB9320 YBM253	100(80-200)	0.08(0.05-0.15)
<b>K</b>	Cast iron, Ductile iron, High nickel cast iron	180-250	YB9320 YBM253	150(100-250)	0.08(0.05-0.15)



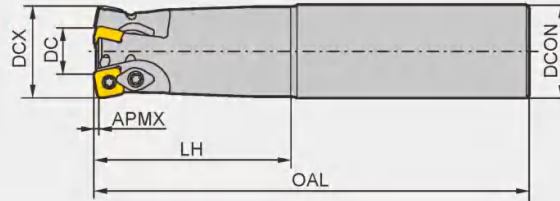
### High feed milling tools



## XMR01 P M K S



S-type insert, straight shank



### Specification of tools

Type	Stock	Basic dimensions(mm)						Number of teeth Z	Weight (kg)
		DCX	APMX	DC	LH	OAL	DCON		
<b>XMR01</b> -020-G20-SD06-02	▲	20	0.8	11.1	50	130	20	2	0.26
-020-G20-SD06-02CL	△	20	0.8	11.1	100	180	20	2	0.364
-020-G20-SD06-02CXL	△	20	0.8	11.1	130	250	20	2	0.522
-025-G25-SD06-03	▲	25	0.8	16.1	60	140	25	3	0.46
-025-G25-SD06-03CL	△	25	0.8	16.1	120	200	25	3	0.670
-025-G25-SD06-03CXL	△	25	0.8	16.1	130	250	25	3	0.850
-025-G25-SD09-02	▲	25	1.4	11.24	60	140	25	2	0.5
-025-G25-SD09-02CL	△	25	1.4	11.24	120	200	25	2	0.636
-025-G25-SD09-02CXL	△	25	1.4	11.24	180	300	25	3	0.980
-032-G32-SD09-03	▲	32	1.4	18.24	90	150	32	3	0.8
-032-G32-SD09-03CL	△	32	1.4	18.24	120	200	32	3	1.006
-032-G32-SD09-03CXL	△	32	1.4	18.24	180	300	32	3	1.551
-035-G32-SD09-03	▲	35	1.4	18.24	70	150	32	3	0.8
-035-G32-SD09-03CL	△	35	1.4	18.24	120	200	32	3	1.037
-035-G32-SD09-03CXL	△	35	1.4	18.24	180	300	32	3	1.582
-032-G32-SD12-02	▲	32	1.8	14.46	90	150	32	2	0.8
-032-G32-SD12-02CL	△	32	1.8	14.46	120	200	32	2	1.002
-032-G32-SD12-02CXL	△	32	1.8	14.46	180	300	32	2	1.547
-040-G40-SD12-03	▲	40	1.8	22.46	70	150	40	3	1.3
-040-G40-SD12-03CL	△	40	1.8	22.46	70	250	40	3	2.118
-040-G40-SD12-03CXL	△	40	1.8	22.46	70	300	40	3	2.579
-040-G40-SD15-02	▲	40	2.2	16.6	70	200	40	2	1.6
-040-G40-SD15-02CL	△	40	2.2	16.6	70	250	40	2	2.061
-040-G40-SD15-02CXL	△	40	2.2	16.6	70	300	40	2	3.522

▲ Stock available    △ Make-to-order

### XMR01-020-G20-SD06QL-02CL/CXL

Standard toolholder ser<sup>y</sup>      Long ser<sup>y</sup>      Extended ser<sup>y</sup>

### Spare parts

Tool type	Screw	Clamp Screw	Clamp	Wrench	
	XMR01□□-SD06□□	I60M2.2×5.5	--	--	WT07IP
XMR01□□-SD09□□	I60M3.5×08TT	I60M4×8.4	WD-204	WT10IP	WT15IP
XMR01□□-SD12□□	I60M4×8.4			WT15IP	
XMR01□□-SD15□□	I60M5×13		WD-208	WT20IP	--



Tools code key

B26-B27

Grade selection guide

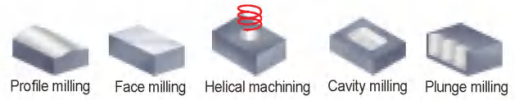
B19-B23

Technical data

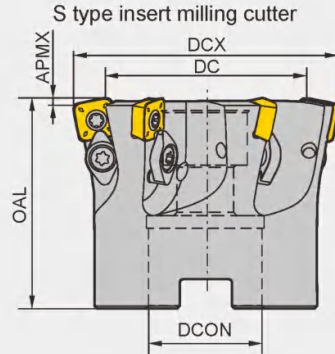
B271-B276



High feed milling tools



XMR01 P M K S



Specification of tools

Type	Stock	Basic dimensions(mm)					Number of teeth Z	Type of coupling	Weight (kg)
		DCX	APMX	DC	OAL	DCON			
<b>XMR01</b> -050-A22-SD06-07C	▲	50	0.8	38.4	40	22	7	A	0.36
-063-A22-SD06-10C	▲	63	0.8	51.4	40	22	10	A	0.53
-063-A27-SD06-10C	▲	63	0.8	51.4	50	27	10	A	0.57
-050-A22-SD09-04C	▲	50	1.4	32.4	40	22	4	A	0.3
-063-A22-SD09-06C	▲	63	1.4	45.4	40	22	6	A	0.5
-063-A27-SD09-06C	▲	63	1.4	45.4	50	27	6	A	0.6
-063-A22-SD12-05C	▲	63	1.8	39.6	40	22	5	A	0.5
-063-A27-SD12-05C	▲	63	1.8	39.6	50	27	5	A	0.6
-080-A27-SD12-05C	▲	80	1.8	56.6	50	27	5	A	0.9
-100-B32-SD12-06	▲	100	1.8	76.6	50	32	6	B	1.8
-080-A27-SD15-05C	▲	80	2.2	52	50	27	5	A	0.78
-080-A32-SD15-05	▲	80	2.2	52	50	32	5	A	0.72
-100-B32-SD15-07	▲	100	2.2	72	50	32	7	B	1.2
-125-B40-SD15-09	▲	125	2.2	97	63	40	9	B	2.9
-160-B40-SD15-12	▲	160	2.2	132	63	40	12	B	4.4

▲Stock available    △Make-to-order

Spare parts

Tool type	Screw	Clamp Screw	Clamp	Wrench	
	XMR01□□-SD06□□	I60M2.2×5.5	--	--	WT07IP
XMR01□□-SD09□□	I60M3.5×08TT	I60M4×8.4	WD-204	WT10IP	WT15IP
XMR01□□-SD12□□	I60M4×8.4			WT15IP	
XMR01□□-SD15□□	I60M5×13		WD-208	WT20IP	--

Tools code key  
B26-B27

Grade selection guide  
B19-B23

Technical data  
B271-B276

Indexable milling tools

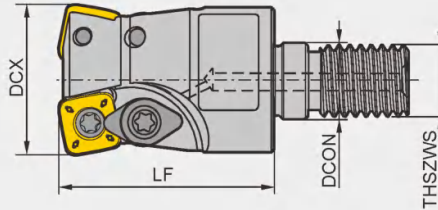
High feed milling tools

### High feed milling tools



### QCH-\*SDMT\*M\*Series

**P M K**



#### Specification of tools

Type	Stock	Basic dimensions(mm)				Applicable inserts	Number of teeth Z	Weight (kg)	
		DCX	DCON	LF	THSZWS				
<b>QCH</b>	-16-SDMT06-M8-02	▲	16	8.5	28	8	SDMT06T208-□□	2	0.031
	-20-SDMT06-M10-03	▲	20	10.5	30	10		3	0.050
	-25-SDMT06-M12-04	▲	25	12.5	35	12		4	0.090
	-32-SDMT06-M16-06	▲	32	17	45	16		6	0.219
	-25-SDMT09-M12-02	▲	25	12.5	35	12	SDMT09T312-□□	2	0.088
	-30-SDMT09-M16-03	▲	30	17	45	16		3	0.176
	-35-SDMT09-M16-03	▲	35	17	45	16		3	0.216
	-35-SDMT09-M16-05	▲	35	17	45	16		5	0.219
	-40-SDMT09-M16-04	▲	40	17	45	16	SDMT120412-□□	4	0.230
	-32-SDMT12-M16-03	▲	32	17	45	16		2	0.175
	-35-SDMT12-M16-02	▲	35	17	45	16		2	0.200
	-35-SDMT12-M16-03	▲	35	17	45	16		3	0.201
-40-SDMT12-M16-03	▲	40	17	45	16	3	0.214		

▲Stock available    △Make-to-order

#### Spare parts

Diameter DCX	Inserts	Screw	Clamp	Clamp screw	Wrench	
Ø16-Ø32	SDMT06	I60M2.2×5.5	--	--	WT07IP	
Ø25-Ø40	SDMT09	I60M3×08TT	WD-204	I60M4×8.4	WT10IP WT15IP	
Ø32-Ø40	SDMT12	I60M4×8.4	WD-204	I60M4×8.4	WT15IP	

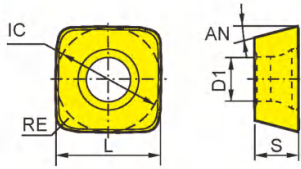
Tools code key **B26-B27**

Grade selection guide **B19-B23**

Technical data **B271-B276**



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

Insert shape	Type	Basic dimensions(mm)						CVD Coating					PVD Coating					Cermet		Cemented carbide			
		IC	L	RE	S	D1	AN	YBC302	YBM253	YBD152	YBD203	YBD252	YBG105	YBG202	YBG205	YB9320	YBG302	YBS203	YBS303	YNG151	YNG151C	YD101	YD201
	SDMT06T208-DM	6.35	6.35	0.8	2.58	2.5	15°	★	★						●	●		●					
	SDMT09T312-DM	9.525	9.525	1.2	3.97	4.0	15°	★	★						●	●							
	SDMT120412-DM	12.7	12.7	1.2	4.76	4.4	15°	★	★					★	●	●							
	SDMT150520-DM	15.875	15.875	2.0	5.56	5.5	15°	★	★						●	●	●						
	SDMT06T208-PM	6.35	6.35	0.8	2.58	2.5	15°	★	●					●				●					
	SDMT09T312-PM	9.525	9.525	1.2	3.97	4.0	15°	★	●					●									
	SDMT120412-PM	12.7	12.7	1.2	4.76	4.4	15°	★	●					●									
	SDMT150520-PM	15.875	15.875	2.0	5.56	5.5	15°	★	●					●									
	SDMT06T208-NM	6.35	6.35	0.8	2.58	2.5	15°		●									●					
	SDMT09T312-NM	9.525	9.525	1.2	3.97	4.0	15°		●									●					
	SDMT120412-NM	12.7	12.7	1.2	4.76	4.4	15°		●						●			●					
	SDMT150520-NM	15.875	15.875	2.0	5.56	5.5	15°		●						●			●					

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

### Chipbreaker introduction:

- PM chipbreaker has sharp cutting edge, it is more suitable for machining with power shortage and for relatively adhesive materials, such as stainless steel and Ti alloy, etc.
- DM chipbreaker has blunt cutting edge and is relatively suitable for machining of hard materials such as hardened steel and cast iron, etc.

Indexable milling tools

High feed milling tools





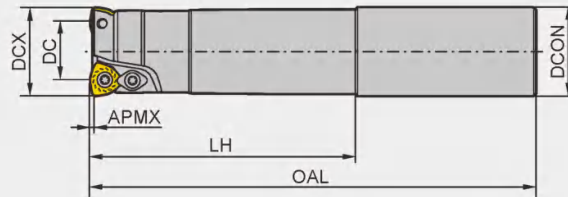
## High feed milling tools



### XMR01 P M K



W-type insert, straight shank



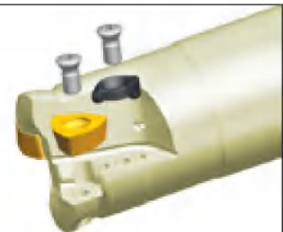
#### Specification of tools

Type	Stock	Basic dimensions(mm)						Number of teeth Z	Weight (kg)
		DCX	APMX	DC	LH	OAL	DCON		
<b>XMR01</b> -020-G20-WP05-02-M	△	20	1.5	12.4	50	130	20	2	0.2
-020-G20-WP05-02-L	△	20	1.5	12.4	100	180	20	2	0.3
-020-G20-WP05-02-XL	△	20	1.5	12.4	130	250	20	2	0.8
-025-G25-WP06-02-M	△	25	1.5	16.3	60	140	25	2	0.4
-025-G25-WP06-02-L	△	25	1.5	16.3	120	200	25	2	0.6
-025-G25-WP06-02-XL	△	25	1.5	16.3	180	300	25	2	1.0
-032-G32-WP06-03-M	△	32	1.5	23.3	70	150	32	3	0.8
-032-G32-WP06-03-L	△	32	1.5	23.3	120	200	32	3	1.0
-032-G32-WP06-03-XL	△	32	1.5	23.3	180	300	32	3	1.6
-040-G32-WP06-03-M	△	40	1.5	31.3	50	150	32	3	0.9
-040-G32-WP06-03-L	△	40	1.5	31.3	50	250	32	3	1.5
-040-G32-WP06-03-XL	△	40	1.5	31.3	50	300	32	3	1.8
-040-G32-WP08-02-M	△	40	1.5	28.68	50	150	32	2	0.9
-040-G32-WP08-02-L	△	40	1.5	28.68	50	250	32	2	1.5
-040-G32-WP08-02-XL	△	40	1.5	28.68	50	300	32	2	1.9
-050-G32-WP09-02-M	△	50	3.0	36.4	50	150	32	2	1.9
-050-G32-WP09-02-L	△	50	3.0	36.4	50	250	32	2	2.5

▲Stock available    △Make-to-order

#### Spare parts

Diameter	Clamp/Insert screw	Clamp	Wrench	
XMR01□□-WP05□□	I60M3.5×08TT	--	WT10P	--
XMR01□□-WP06□□	I60M4×8.4	--	WT15P	--
XMR01□□-WP08□□	I60M5×13	WD-208	--	WT20IT
XMR01□□-WP09□□				

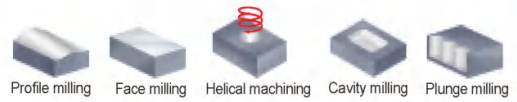


Tools code key → B26-B27

Grade selection guide → B19-B23

Technical data → B271-B276

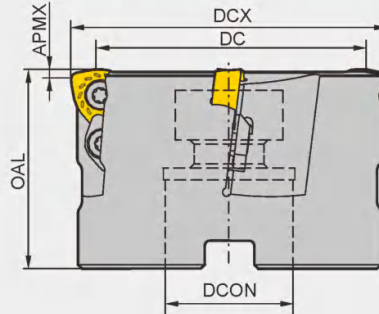
High feed milling tools



XMR01 P M K



W-type insert, arbor mounting



Specification of tools

Type	Stock	Basic dimensions(mm)					Number of teeth Z	Type of coupling	Weight (kg)
		DCX	APMX	DC	OAL	DCON			
<b>XMR01</b> -050-A22-WP06-04	△	50	1.5	41.3	40	22	4	A	0.4
-050-A22-WP08-03	△	50	1.5	38.68	50	22	3	A	0.4
-063-A22-WP08-04C	△	63	1.5	51.68	50	22	4	A	0.7
-063-A27-WP08-04C	△	63	1.5	51.68	50	27	4	A	0.7
-080-A27-WP08-05C	△	80	1.5	68.68	63	27	5	A	1.5
-100-B32-WP08-06	△	100	1.5	88.68	63	32	6	B	2.2
-125-B40-WP08-07	△	125	1.5	113.68	63	40	7	B	3.5
-160-B40-WP08-08	△	160	1.5	148.68	63	40	8	B	6.0
-063-A22-WP09-03C	△	63	3.0	49.4	50	22	3	A	0.7
-080-A27-WP09-04C	△	80	3.0	66.4	63	27	4	A	1.4
-100-B32-WP09-05	△	100	3.0	86.4	63	32	5	B	2.1
-125-B40-WP09-06	△	125	3.0	111.4	63	40	6	B	3.7
-160-B40-WP09-07	△	160	3.0	146.4	63	40	7	B	6.3

▲Stock available    △Make-to-order

Spare parts

Diameter	Clamp/Insert screw	Clamp	Wrench	
XMR01□□-WP06□□	I60M4×8.4	--	WT15S	--
XMR01□□-WP08□□	I60M5×13	WD-208	--	WT20IT
XMR01□□-WP09□□	I60M5×13	WD-208	--	

Tools code key  
B26-B27

Grade selection guide  
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Technical data  
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Indexable milling tools

High feed milling tools

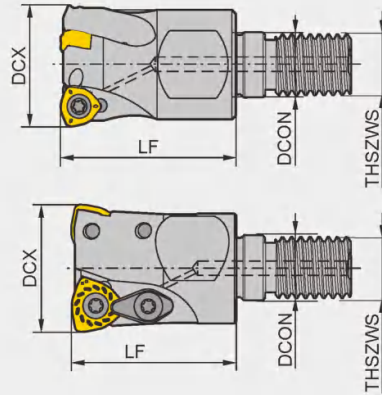
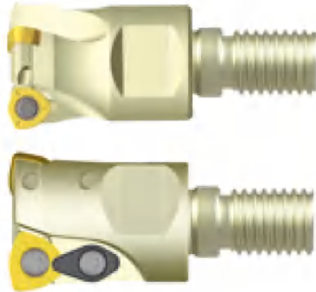


### High feed milling tools



### QCH-\*WPGT\*M\*Series

**P M K**



#### Specification of tools

Type	Stock	Basic dimensions(mm)				Applicable inserts	Number of teeth Z	Weight (kg)	
		DCX	DCON	LF	THSZWS				
<b>QCH</b>	-20-WPGT05-M10-02	△	20	10.5	30	WPGT050315ZSR	2	0.056	
	-20-WPGT05-M10-03	△	20	10.5	30		3	0.055	
	-22-WPGT05-M10-02	△	22	10.5	30		2	0.062	
	-22-WPGT05-M10-03	△	22	10.5	30		3	0.060	
	-25-WPGT05-M12-03	△	25	12.5	35		3	0.106	
	-28-WPGT05-M12-03	△	28	12.5	35		3	0.110	
		-25-WPGT06-M12-02	△	25	12.5	35	WPGT060415ZSR	2	0.097
		-28-WPGT06-M12-02	△	28	12.5	35		2	0.109
		-30-WPGT06-M16-03	△	30	17	45		3	0.197
		-32-WPGT06-M16-03	△	32	17	45		3	0.185
		-35-WPGT06-M16-03	△	35	17	45		3	0.201
		-40-WPGT06-M16-04	△	40	17	45		4	0.240
	-42-WPGT06-M16-04	△	42	17	45	4	0.270		
	-30-WPGT08-M16-02	△	30	17	45	WPGT080615ZSR	2	0.176	
	-32-WPGT08-M16-02	△	32	17	45		2	0.179	
	-35-WPGT08-M16-02	△	35	17	45		2	0.196	
-40-WPGT08-M16-03	△	40	17	45	3		0.220		

▲Stock available    △Make-to-order

#### Spare parts

Diameter DCX	Inserts	Screw	Clamp	Wrench	
Ø20-Ø28	WPGT05	I60M3.5×6.5TT	--	WT10P	
Ø25-Ø42	WPGT06	I60M4×8.4	--	WT15P	
Ø30-Ø40	WPGT08	I60M4×8.4	--	WT15P	

Tools code key

B26-B27

Grade selection guide

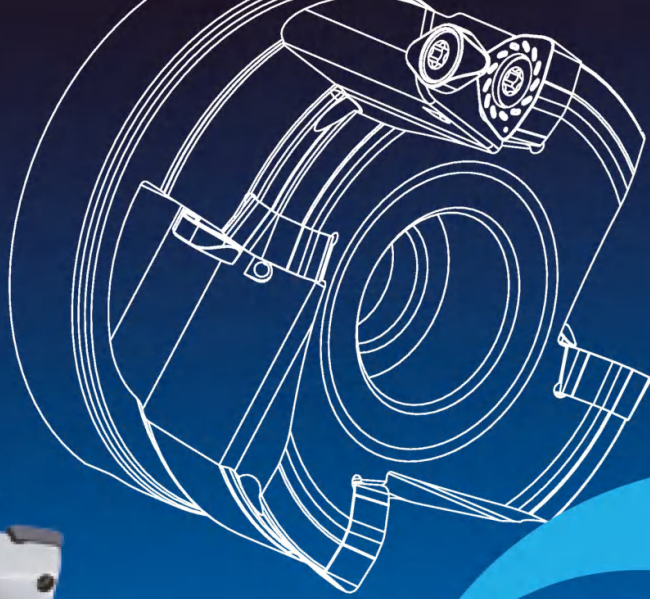
B19-B23

Technical data

B271-B276

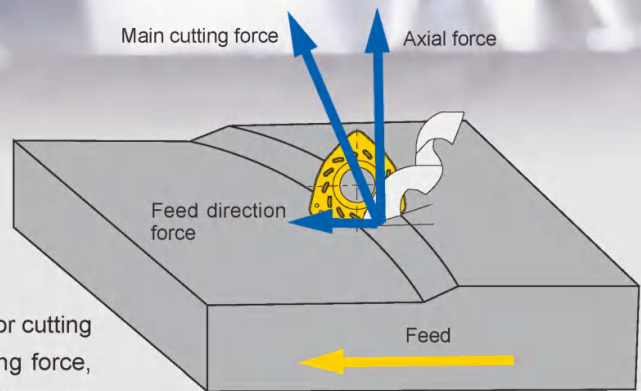
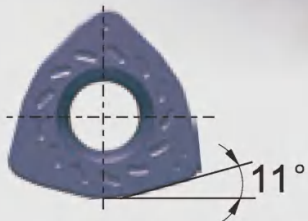






# XMR01

## Milling Tool Series

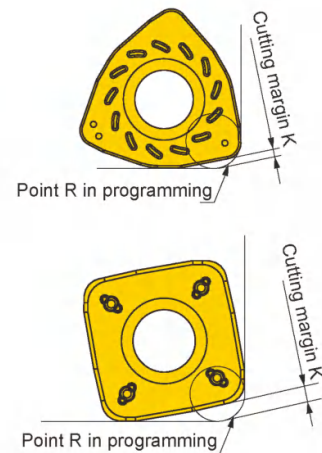


The main feature of high feed tools is to resolve the major cutting force to the axial direction, greatly reducing the radial cutting force, thus improve tool's vibration resistance. In addition, this structure can effectively reduce vibration in long-overhang milling operation.



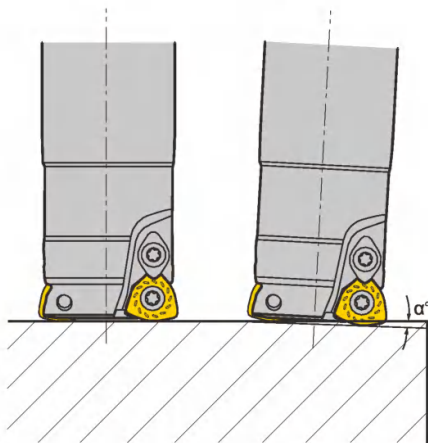
## Approximate R in machining program

Applicable insert	Approximate R(mm)	Cutting margin K(mm)
WPGT050315ZSR/-PM	2	0.5
WPGT060415ZSR/-PM	2.5	0.7
WPGT080615ZSR/-PM	2.5	0.7
WPGT090725ZSR/-PM	4.5	1.2
SDMT06T208-DM/-PM/NM	1.6	0.5
SDMT09T312-DM/-PM/NM	2.5	0.87
SDMT120412-DM/-PM/NM	4.0	0.93
SDMT150520-DM/-PM	4.0	1.38

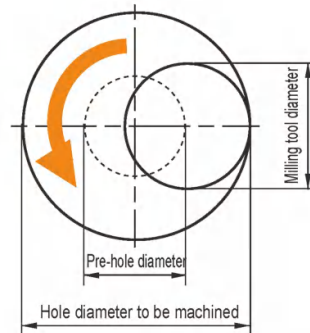


## Different machining styles

### Ramp milling



### Helical interpolation milling



- Reduce the feed rate in ramp and helical machining operations.
- Set the axial feed rate below 0.2mm/rev in drilling operation.
- Be careful ! Long chips may fly off in drilling operation.
- The cutting depth of each rotation must not exceed the maximum cutting depth ( $a_p$ ).
- The S-type insert can be used for plunge milling in addition to the machining operations mentioned above.

## Selection guide for XMR01 series

XMR01 series tools (with SD□□ inserts) have perfect edge strength and good economical efficiency, advantageous in face milling.

XMR01 series tools (with WP□□ inserts) has good capability of chip removal, proficient in cavity milling.



### ➤ Recommended cutting parameters


Workpiece material	Hardness HB	Insert grade	Cutting speed (m/min)	Ø20/Ø25		Ø30/Ø32/Ø35	
				Axial cutting depth	Feed rate per tooth	Axial cutting depth	Feed rate per tooth
<b>P</b> Soft steel Carbon Steel	≤HB180	YBC302 YBM253	170(120-220)	0.6~1.5	0.6~1.2	0.6~1.2	0.5~1.4
	HB180-280	YBG205 YB9320	150(100-200)				
	Alloy steel Alloy tool steel	HB280-350	YBC302 YBM253 YBG205 YB9320				
pre-hardened steel	≤HRC35	YBC302 YBM253 YBG205 YB9320	120(80-160)	0.4~1.0	0.5~1.0	0.4~1.0	0.5~1.0
<b>M</b> Stainless steel	≤HB270	YBM253	120(80-160)	0.6~1.0	0.6~1.0	0.8~1.2	0.8~1.2
		YBG205 YB9320	120(80-190)				
<b>K</b> Common cast iron	Tensile strength ≤350MPa	YBG302	150(100-200)	0.6~1.0	0.6~1.4	0.6~1.2	0.6~1.6
	Nodular cast iron	YBG302	120(80-160)	0.4~0.8	0.5~1.2	0.4~1.0	0.5~1.4
<b>S</b> Difficult-to-machine materials	≤400	YBS203	80(60-120)	0.6~1.0	0.6~1.0	0.8~1.2	0.8~1.2
		YBS303	60(45-110)	0.4~0.8	0.4~0.8	0.4~1.0	0.4~0.8

Indexable  
milling tools

High feed milling tools

### ➤ Recommended cutting parameters

Workpiece material	Hardness HB	Insert grade	Cutting speed (m/min)	Ø40/Ø50		Ø63/Ø80		Ø100/Ø125/Ø160	
				Axial cutting depth	Feed rate per tooth	Axial cutting depth	Feed rate per tooth	Axial cutting depth	Feed rate per tooth
<b>P</b> Soft steel Carbon Steel	≤HB180	YBC302 YBM253	170(120-220)	0.6~1.5	0.8~1.5	0.6~1.5	0.8~1.5	0.6~1.5	0.5~1.5
	HB180-280	YBG205 YB9320	150(100-200)						
	Alloy steel Alloy tool steel	HB280-350	YBC302 YBM253 YBG205 YB9320						
pre-hardened steel	≤HRC35	YBC302 YBM253 YBG205 YB9320	120(80-160)	0.4~1.0	0.5~1.0	0.4~1.3	0.5~1.0	0.4~1.3	0.5~1.0
<b>M</b> Stainless steel	≤HB270	YBM253	120(80-160)	0.8~1.2	0.8~1.2	1.1~1.5	0.9~1.3	1.0~1.5	0.8~1.3
		YBG205 YB9320	120(80-190)						
<b>K</b> Common cast iron	Tensile strength ≤350MPa	YBG302	150(100-200)	0.6~1.5	0.8~1.6	0.6~1.5	0.8~1.7	0.6~1.5	0.6~1.7
	Nodular cast iron	YBG302	120(80-160)	0.4~1.2	0.6~1.4	0.6~1.3	0.6~1.5	0.4~1.3	0.5~1.5
<b>S</b> Difficult-to-machine materials	≤400	YBS203	80(60-120)	0.8~1.2	0.6~1.0	1.1~1.5	0.6~1.2	1.0~1.5	0.4~1.2
		YBS303	60(45-110)	0.4~1.0	0.4~1.0	0.6~1.2	0.6~1.0	0.4~1.0	0.4~0.8



After reasonable calculation and optimization, the axial and radial inclination angles effectively reduce the machining resistance of the tool.

The whole cutting tool can realize stable processing with excellent impact resistance and strong vibration resistance.

Screw clamping achieves high positioning accuracy and good economy.



# XMRO03

## High Feed Milling Tool Series

1 8 cutting edges on both sides achieve economical and cost-effective machining.



2 Large rake angle design, low cutting resistance, special edge shape and tool combination achieve a large chip space, leading to excellent chip removal performance.

3 Due to the good versatility, it can be used for large-feed processing of various steels, as well as processing viscous materials such as stainless steel and titanium alloy.

4  $4 \times 2 = 8$  cutting edges



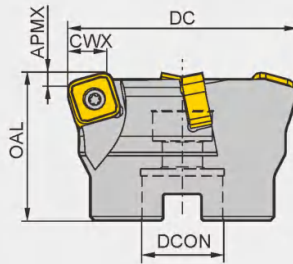
## High feed milling tools



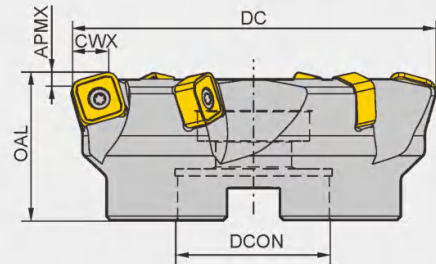
### XMR03 P M



A-type coupling



B-type coupling




### Specification of tools

Type	Stock	Basic dimensions(mm)					Number of teeth Z	Type of coupling	Weight (kg)	
		DC	APMX	CWX	OAL	DCON				
<b>XMR03</b> Coarse pitch	-050-A22-SN12-03	▲	50	1.8	9.8	40	22	3	A	0.289
	-063-A22-SN12-04	▲	63	1.8	9.8	40	22	4	A	0.482
	-080-A27-SN12-05	▲	80	1.8	9.8	50	27	5	A	1.014
	-100-B32-SN12-06	▲	100	1.8	9.8	50	32	6	B	1.45
	-125-B40-SN12-07	▲	125	1.8	9.8	63	40	7	B	2.7
Close pitch	-050-A22-SN12-04	△	50	1.8	9.8	40	22	4	A	0.319
	-063-A22-SN12-05	△	63	1.8	9.8	40	22	5	A	0.512
	-080-A27-SN12-06	△	80	1.8	9.8	50	27	6	A	1.044
	-100-B32-SN12-07	△	100	1.8	9.8	50	32	7	B	1.48
	-125-B40-SN12-08	△	125	1.8	9.8	63	40	8	B	2.73
Extra close pitch	-050-A22-SN12-05	△	50	1.8	9.8	40	22	5	A	0.354
	-063-A22-SN12-06	△	63	1.8	9.8	40	22	6	A	0.547
	-080-A27-SN12-07	△	80	1.8	9.8	50	27	7	A	1.079
	-100-B32-SN12-08	△	100	1.8	9.8	50	32	8	B	1.435
	-125-B40-SN12-09	△	125	1.8	9.8	63	40	9	B	2.765

▲ Stock available    △ Make-to-order

### Spare parts

Diameter	Insert screw	Wrench
XMR03□□-SD12□□	I60M4×10	WT15IP



Tools code key  
B26-B27

Grade selection guide  
B19-B23

Technical data  
B271-B276

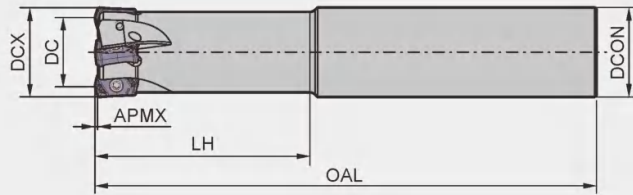




### High feed milling tools



## XMR12 P M



#### Specification of tools

Type	Stock	Basic dimensions(mm)						Number of teeth Z	Weight (kg)
		DCX	DC	APMX	OAL	LH	DCON		
<b>XMR12</b> -016-G16-EN12-02C	▲	16	10.4	1	100	30	16	2	0.12
-017-G16-EN12-02C	▲	17	11.4	1	100	30	16	2	0.13
-018-G16-EN12-02C	▲	18	12.4	1	100	30	16	2	0.13
-020-G20-EN12-03C	▲	20	14.4	1	130	50	20	3	0.25
-022-G20-EN12-03C	▲	22	16.4	1	130	50	20	3	0.27
-025-G25-EN12-04C	▲	25	19.4	1	140	60	25	4	0.44
-028-G25-EN12-04C	▲	28	22.4	1	140	60	25	4	0.48
-030-G32-EN12-04C	▲	30	24.4	1	150	70	32	4	0.74
-032-G32-EN12-05C	▲	32	26.4	1	150	70	32	5	0.79
-033-G32-EN12-05C	▲	33	27.4	1	150	70	32	5	0.81
-035-G32-EN12-05C	▲	35	29.4	1	150	35	32	5	0.86

▲Stock available    △Make-to-order

**Note:** The dimensions in the above table are based on ENMX1206XR-GM inserts. The values of DCX, OAL and LH for ENMX120608-GM or ENMX1206R30-GM inserts are shown in the table below:

ENMX1206XR-GM	ENMX120608-GM	ENMX1206R30-GM
LH	LH+0.11	LH+0.11
OAL	OAL+0.11	OAL+0.11
DCX	DCX-0.4	DCX-0.4

#### Spare parts

Tool model	Insert screw	Wrench	
XMR12-□□-G□□-EN12-□□□	I60M2.5×6.5	WT07IP	

Tools code key **B26-B27**

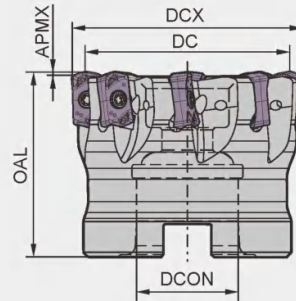
Grade selection guide **B19-B23**

Technical data **B271-B276**

High feed milling tools



XMR12 P M



Specification of tools

Type	Stock	Basic dimensions(mm)					Number of teeth Z	Weight (kg)
		DCX	DC	APMX	OAL	DCON		
<b>XMR12</b> -040-A16-EN12-06C	▲	40	34.4	1	40	16	6	0.42
-050-A22-EN12-08C	▲	50	44.4	1	40	22	8	0.32
-063-A22-EN12-10C	▲	63	57.4	1	40	22	10	0.48

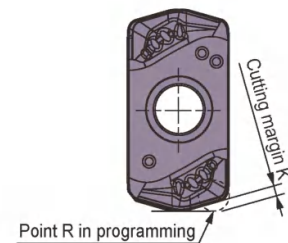
▲Stock available    △Make-to-order

Note: The dimensions in the above table are based on ENMX1206XR-GM inserts. The values of DCX, OAL for ENMX120608-GM or ENMX1206R30-GM inserts are shown in the table below:


ENMX1206XR-GM	ENMX120608-GM	ENMX1206R30-GM
OAL	OAL+0.11	OAL+0.11
DCX	DCX-0.4	DCX-0.4

Approximate R in machining program

Applicable insert	Approximate R(mm)	Cutting margin K(mm)
ENMX1206XR-GM	1	0.5
	1.5	0.4
	2	0.3



Spare parts

Tool model	Insert screw	Wrench	
	XMR12-□□-A□□-EN12-□□□	 I60M2.5×6.5	

Tools code key **B26-B27**

Grade selection guide **B19-B23**

Technical data **B271-B276**

Indexable milling tools

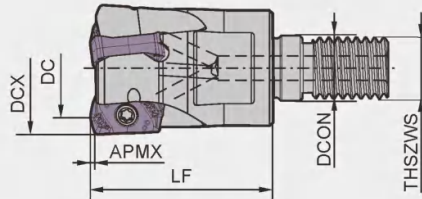
High feed milling tools



### High feed milling tools



### QCH-\*EN\*M\*Series



#### Specification of tools

Type	Stock	Basic dimensions(mm)						Number of teeth Z	Weight (kg)
		DCX	DC	APMX	LF	DCON	THSZWS		
<b>QCH</b> -16-EN12-M8-02(XMR12)	▲	16	10.4	1	28	8.5	8	2	0.025
-17-EN12-M8-02(XMR12)	▲	17	11.4	1	28	8.5	8	2	0.029
-18-EN12-M8-02(XMR12)	▲	18	12.4	1	28	8.5	8	2	0.033
-20-EN12-M10-03(XMR12)	▲	20	14.4	1	30	10.5	10	3	0.046
-22-EN12-M10-03(XMR12)	▲	22	16.4	1	30	10.5	10	3	0.057
-25-EN12-M12-04(XMR12)	▲	25	19.4	1	35	12.5	12	4	0.090
-28-EN12-M12-04(XMR12)	▲	28	22.4	1	35	12.5	12	4	0.104
-30-EN12-M16-05(XMR12)	▲	30	24.4	1	40	17	16	5	0.189
-32-EN12-M16-05(XMR12)	▲	32	26.4	1	40	17	16	5	0.196
-33-EN12-M16-05(XMR12)	▲	33	27.5	1	40	17	16	5	0.199

▲Stock available    △Make-to-order

**Note:** The dimensions in the above table are based on ENMX1206XR-GM inserts. The values of DCX and LF for ENMX120608-GM or ENMX1206R30-GM inserts are shown in the table below:

ENMX1206XR-GM	ENMX120608-GM	ENMX1206R30-GM
LF	LF+0.11	LF+0.11
DCX	DCX-0.4	DCX-0.4

#### Spare parts

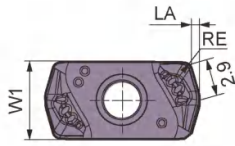
Tool model	Insert screw	Wrench
XMR12-□□-EN12-M□□-□□	I60M2.5×6.5	WT07IP

Tools code key → B26-B27

Grade selection guide → B19-B23

Technical data → B271-B276

## Selection of inserts



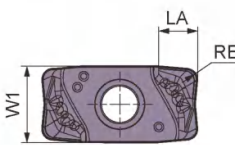
😊 Good working condition    😐 Normal working condition    😞 Bad working condition

Workpiece material	P Steel	M Stainless steel	K Cast iron	N Non-ferrous metal	S Heat resistant alloy, Ti alloy	CVD Coating					PVD Coating			Cermet	Cemented carbide		
						YBC302	YBM253	YBD152	YBD203	YBD252	YBG105	YBG202	YBG205H	YB9320	YBG302	YBS203	YBS303
P	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊
M	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊
K	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊
N	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊
S	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊

Insert shape	Type	Basic dimensions(mm)			CVD Coating					PVD Coating			Cermet	Cemented carbide						
		W1	RE	LA	YBC302	YBM253	YBD152	YBD203	YBD252	YBG105	YBG202	YBG205H	YB9320	YBG302	YBS203	YBS303	YNG151	YNG151C	YD101	YD201
	<b>ENMX1206XR-GM</b>	6	0.6	1							●									

★ 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	CVD Coating					PVD Coating			Cermet	Cemented carbide					
						YBC302	YBM253	YBD152	YBD203	YBD252	YBG105	YBG202	YBG205H	YB9320	YBG302	YBS203	YBS303	YNG151	YNG151C	YD101
P	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊
M	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊
K	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊
N	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊
S	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊	😊😊

Insert shape	Type	Basic dimensions(mm)			CVD Coating					PVD Coating			Cermet	Cemented carbide						
		W1	RE	LA	YBC302	YBM253	YBD152	YBD203	YBD252	YBG105	YBG202	YBG205H	YB9320	YBG302	YBS203	YBS303	YNG151	YNG151C	YD101	YD201
	<b>ENMX120608-GM</b>	6	0.8	3							●									

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

Indexable milling tools

High feed milling tools





## 2. Square shoulder milling

### ➤ Recommended cutting parameters

	Workpiece material	Hardness HB	Insert grade	Cutting parameters	
				Cutting speed (m/min)	f(mm/z)
<b>P</b>	Low-carbon steel, Soft steel	≤HB180	YBG205H	260(160-300)	0.1-0.35
	Alloy steel, Alloy tool steel	HB180-280	YBG205H	240(160-240)	0.1-0.35
	Pre-hardened steel	≤HRC35	YBG205H	200(120-240)	0.1-0.35
<b>M</b>	Stainless steel	≤HB200	YBG205H	160(100-230)	0.1-0.3
<b>K</b>	Cast iron	HB150-250	YBG205H	220(140-250)	0.1-0.3

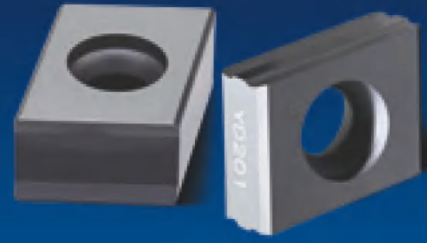
## 3. Profile milling

### ➤ Recommended cutting parameters

	Workpiece material	Hardness HB	Insert grade	Cutting parameters	
				Cutting speed (m/min)	f(mm/z)
<b>P</b>	Low-carbon steel, Soft steel	≤HB180	YBG205H	150-250	0.2-0.6
	Alloy steel, alloy tool steel	HB180-280	YBG205H	150-250	0.2-0.6
	Pre-hardened steel	≤HRC35	YBG205H	100-200	0.15-0.4
<b>M</b>	Stainless steel	≤HB200	YBG205H	100-200	0.2-0.6
<b>K</b>	Cast iron	HB150-250	YBG205H	150-250	0.2-0.6

# XMP01

## Boring and Milling Tools

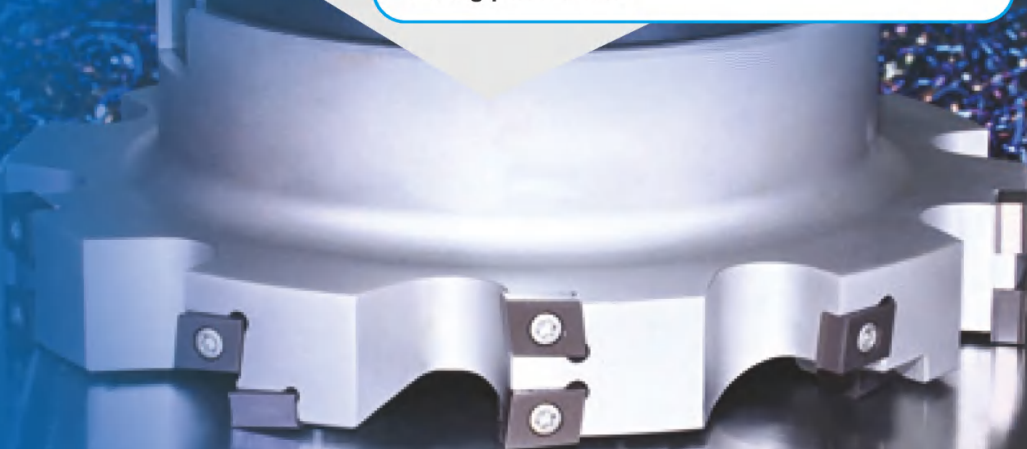


Composite milling tools, mainly used for boring and milling of large diameter holes and cavities



Highly versatile, can be used as a face and side milling tool

Vertical mounted inserts with two chipbreaker options for machining materials with different cutting performance

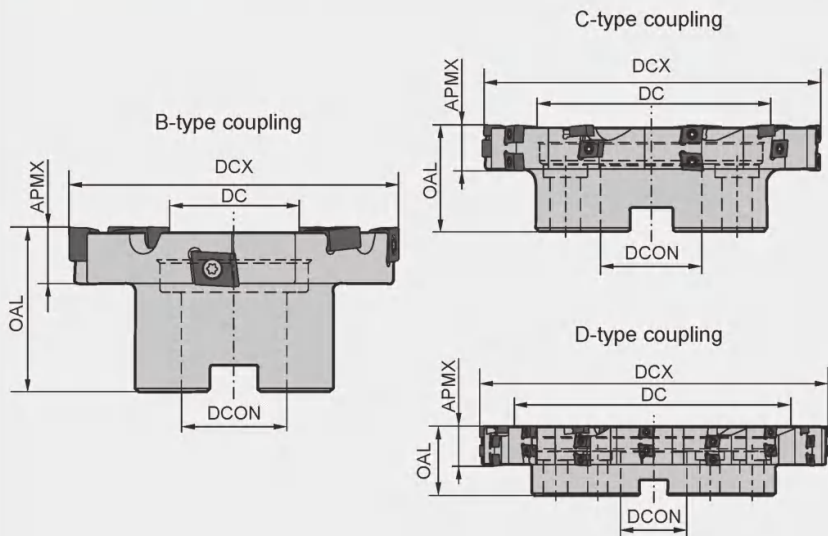


Boring and milling tools

KAPR:90°



XMP01 P M K



Specification of tools

Type	Stock	Basic dimensions(mm)					Number of teeth Z	Zeff (Peripheral/End teeth)	Type of coupling	Weight (kg)
		DCX	DCON	OAL	DC	APMX				
<b>XMP01</b> -080X18-B27-CNE1210-08	△	80	27	50	42	18	8	2/2	B	0.67
-100X18-B32-CNE1210-08	△	100	32	50	62	18	8	2/2	B	0.99
-125X27-B40-CNE1210-15	△	125	40	63	71	27	15	3/2	B	2.46
-160X27-C40-CNE1210-18	△	160	40	63	106	27	18	4/2	C	3.7
-200X27-C60-CNE1210-21	△	200	60	63	146	27	21	5/2	C	5.46
-250X36-C60-CNE1210-32	△	250	40	63	178	36	32	6/2	C	9.79
-315X36-D60-CNE1210-42	△	315	60	63	225	36	42	8/2	D	17.65
-400X36-D60-CNE1210-52	△	400	60	63	294	36	52	10/2	D	27.36

Note: APMX, DCX values can be customised within a certain range according to customer requirements; Zeff means the effective number of teeth

▲Stock available    △Make-to-order

Spare parts

Diameter DCX	Inserts	Screws	Wrench
Ø80-Ø400	CNE121006*	I60M4×12	WT15IP



Tools code key B26-B27

Grade selection guide B19-B23

Technical data B271-B276

Indexable milling tools

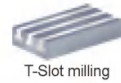
Boring and milling tools





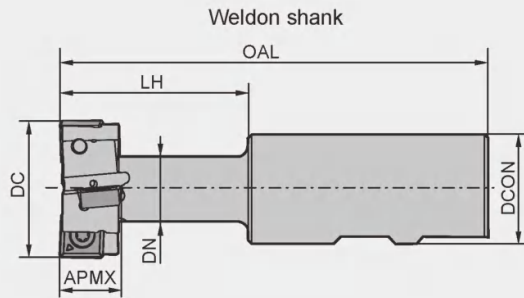
T-slot milling tools

KAPR:90°



T-Slot milling

TMP01 **K**



Specification of tools

Type	Stock	Basic dimensions(mm)						Number of teeth Z	Number of insert	T-slot specification
		DC	DCON	DN	OAL	LH	APMX			
<b>TMP01</b> -021-XP25-MP06-01	▲	21	25	10	100	32	9	1	2	12
-025-XP25-MP06-01	▲	25	25	12	100	35	11	1	2	14
-032-XP32-MP08-02	▲	32	32	15	110	45	14	2	4	18
-040-XP32-MP12-02	▲	40	32	19	125	55	18	2	4	22
-050-XP40-MP12-02	▲	50	40	25	140	65	22	2	4	28
-060-XP50-MP12-02	▲	60	50	32	160	80	28	2	6	36

▲Stock available    △Make-to-order

Indexable milling tools

T-slot milling tools

Spare parts

Tool type	Screw	Wrench	
TMP01-021-XP25-MP06-01	I60M2.5×5.5	WT071P	--
TMP01-025-XP25-MP06-01	I60M2.5×5.5		
TMP01-032-XP32-MP08-02	I60M3×7	WT101P	--
TMP01-040-XP32-MP12-02	I60M5×10	--	WT201T
TMP01-050-XP40-MP12-02	I60M5×10		
TMP01-060-XP50-MP12-02	I60M5×10		

Caution: When installing inserts, make sure the insert nose marked with "DM" or "Δ" is pointing to the slot.

Tools code key  
B26-B27

Grade selection guide  
B19-B23

Technical data  
B271-B276



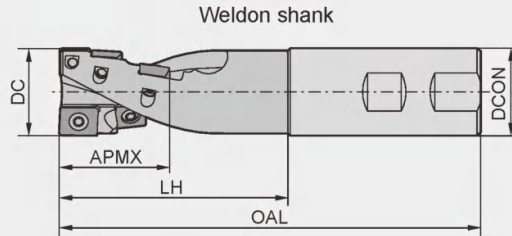
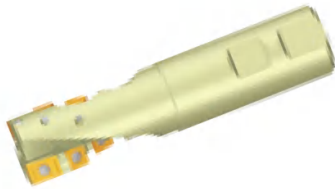


Helical milling tools

KAPR:90°



HMP01 P K



Specification of tools

Type	Stock		Basic dimensions(mm)					Number of teeth Z	Number of inserts		Shank type
	R	L	DC	DCON	APMX	LH	OAL		APKT 150412-PM/KM	SPMT 120408-PM/KM	
<b>HMP01</b> -040×55-XP40-SP12-02	△	△	40	40	55	95	175	2	1	5	Weldon shank
-050×55-XP40-SP12-04	△	△	50	40	55	95	175	4	2	10	Weldon shank

▲Stock available    △Make-to-order

Spare parts

Diameter DC	Screw	Wrench
Ø40	I60M5×10	WT20T
Ø50	I60M5×13	WT20T



Tools code key B26-B27

Grade selection guide B19-B23

Technical data B271-B276

Indexable milling tools

Helical milling tools

### Helical milling tools

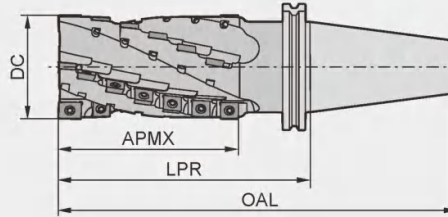
KAPR:90°



### HMP01 P K



JT shank/ BT shank ( JT shank shown)



#### Specification of tools

Type	Stock		Basic dimensions(mm)				Number of teeth Z	Number of inserts		Shank type
	R	L	DC	APMX	LPR	OAL		APKT 150412-PM/KM	SPMT 120408-PM/KM	
<b>HMP01</b> -050×84-JT50-SP12-04	△	△	50	84	145	246.75	4	2	16	JT
-063×74-JT50-SP12-04	△	△	63	74	135	236.75	4	2	14	JT
-063×104-JT50-SP12-04	△	△	63	104	165	266.75	4	2	20	JT
-063×134-JT50-SP12-04	△	△	63	134	195	296.75	4	2	26	JT
-080×104-JT50-SP12-04	△	△	80	104	165	266.75	4	2	20	JT
-080×144-JT50-SP12-04	△	△	80	144	205	306.75	4	2	28	JT
-050×84-BT50-SP12-04	△	△	50	84	145	246.8	4	2	16	BT
-063×74-BT50-SP12-04	△	△	63	74	135	236.8	4	2	14	BT
-063×104-BT50-SP12-04	△	△	63	104	165	266.8	4	2	20	BT
-063×134-BT50-SP12-04	△	△	63	134	195	296.8	4	2	26	BT
-080×104-BT50-SP12-04	△	△	80	104	165	266.8	4	2	20	BT
-080×144-BT50-SP12-04	△	△	80	144	205	306.8	4	2	28	BT

▲Stock available    △Make-to-order

#### Spare parts

Diameter DC	Screw	Wrench	
Ø50	I60M5×13	WT20IS	
Ø63	I60M5×13	WT20IS	
Ø80	I60M5×13	WT20IS	

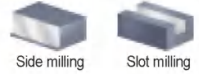
Tools code key **B26-B27**

Grade selection guide **B19-B23**

Technical data **B271-B276**

Interchangeable helical end mills

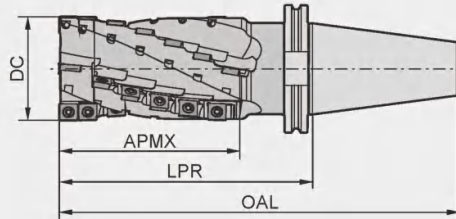
KAPR:90°



HMP01 EC P K



JT shank/ BT shank ( JT shank shown)



Specification of tools

Type	Stock		Basic dimensions(mm)				Number of teeth Z	Number of inserts		Shank type
	R	L	DC	APMX	LPR	OAL		APKT 150412-PM/KM	SPMT 120408-PM/KM	
<b>HMP01</b> -050×84EC-JT50-SP12-04	△	△	50	84	145	246.75	4	2	16	JT
-063×74EC-JT50-SP12-04	△	△	63	74	135	236.75	4	2	14	JT
-063×104EC-JT50-SP12-04	△	△	63	104	165	266.75	4	2	20	JT
-063×134EC-JT50-SP12-04	△	△	63	134	195	296.75	4	2	26	JT
-080×104EC-JT50-SP12-04	△	△	80	104	165	266.75	4	2	20	JT
-080×144EC-JT50-SP12-04	△	△	80	144	205	306.75	4	2	28	JT
-050×84EC-BT50-SP12-04	△	△	50	84	145	246.8	4	2	16	BT
-063×74EC-BT50-SP12-04	△	△	63	74	135	236.8	4	2	14	BT
-063×104EC-BT50-SP12-04	△	△	63	104	165	266.8	4	2	20	BT
-063×134EC-BT50-SP12-04	△	△	63	134	195	296.8	4	2	26	BT
-080×104EC-BT50-SP12-04	△	△	80	104	165	266.8	4	2	20	BT
-080×144EC-BT50-SP12-04	△	△	80	144	205	306.8	4	2	28	BT

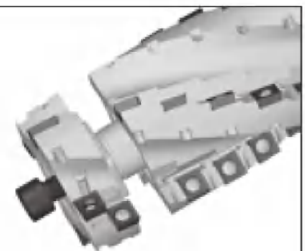
▲Stock available    △Make-to-order

Indexable milling tools

Interchangeable helical end mills

Spare parts

Diameter DC	Insert screw	Screw of interchangeable head	Wrench of insert screw	Wrench of interchangeable head	Interchangeable head
Ø50	I60M5×13	M10×50	WT20IS	WH80L	050EC
Ø63	I60M5×13	M10×50	WT20IS	WH80L	063EC
Ø80	I60M5×13	M12×55	WT20IS	WH100L	080EC



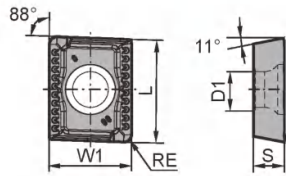
Tools code key B26-B27

Grade selection guide B19-B23

Technical data B271-B276



## Selection of inserts



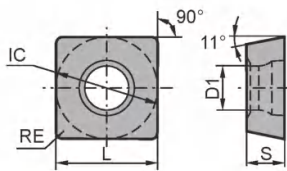
😊 Good working condition   🟡 Normal working condition   🟠 Bad working condition

Workpiece material	Working Condition															
	YBC302	YBM253	YBD152	YBD203	YBD252	YBG105	YBG202	YBG205	YB9320	YBG302	YBS203	YBS303	YNG151	YNG151C	YD101	YD201
<b>P</b> Steel	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊
<b>M</b> Stainless steel	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊
<b>K</b> Cast iron	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊
<b>N</b> Non-ferrous metal	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊
<b>S</b> Heat resistant alloy, Ti alloy	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊

Insert shape	Type	Basic dimensions(mm)					CVD Coating					PVD Coating			Cermet	Cemented carbide						
		L	W1	S	D1	RE	YBC302	YBM253	YBD152	YBD203	YBD252	YBG105	YBG202	YBG205	YB9320	YBG302	YBS203	YBS303	YNG151	YNG151C	YD101	YD201
	APKT150412-PM	16.33	12.7	4.76	5.4	1.2	★								●							
	APKT150412-KM	16.33	12.7	4.76	5.4	1.2									●							

★ 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

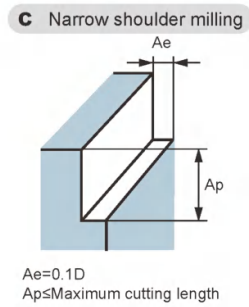
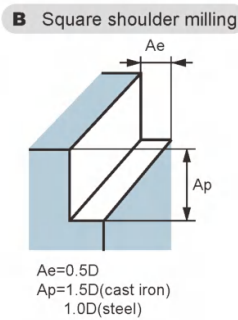
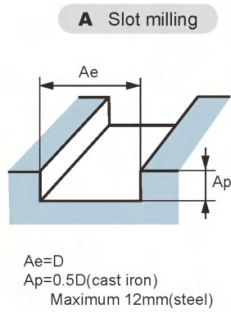
Workpiece material	Working Condition															
	YBC302	YBM253	YBD152	YBD203	YBD252	YBG105	YBG202	YBG205	YB9320	YBG302	YBS203	YBS303	YNG151	YNG151C	YD101	YD201
<b>P</b> Steel	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊
<b>M</b> Stainless steel	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊
<b>K</b> Cast iron	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊
<b>N</b> Non-ferrous metal	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊
<b>S</b> Heat resistant alloy, Ti alloy	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊	😊

Insert shape	Type	Basic dimensions(mm)					CVD Coating					PVD Coating			Cermet	Cemented carbide						
		L	IC	S	D1	RE	YBC302	YBM253	YBD152	YBD203	YBD252	YBG105	YBG202	YBG205	YB9320	YBG302	YBS203	YBS303	YNG151	YNG151C	YD101	YD201
	SPMT120408-PM	12.7	12.7	4.76	5.5	0.8	★								●							
	SPMT120408-KM	12.7	12.7	4.76	5.5	0.8									●							

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

## Chipbreaker selection for HMP01 milling inserts

Classification	Function	For semi-finishing	For roughing
<b>P</b>		-PM	-PM
<b>K</b>		-KM	-KM

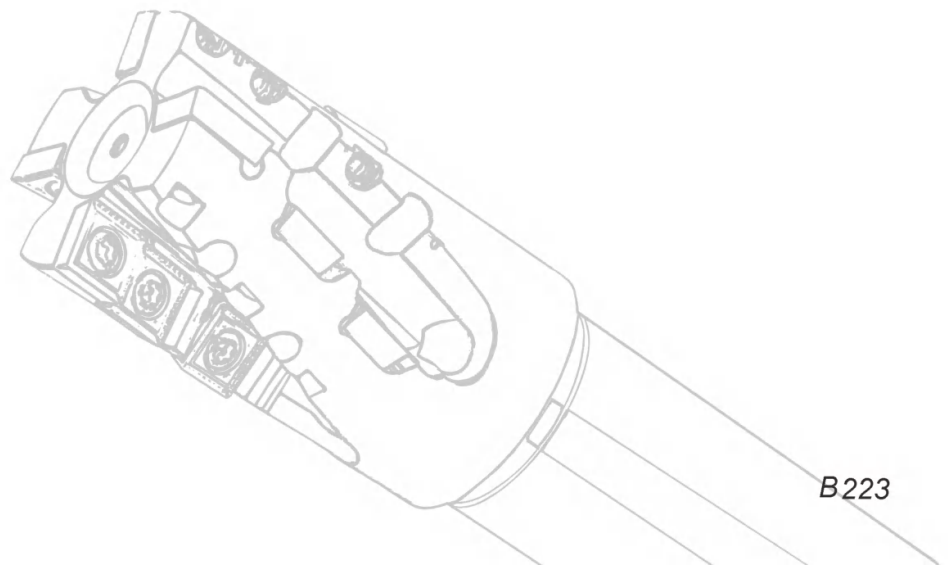


## ➤ Recommended cutting parameters

	Workpiece material	Hardness HB	Insert grade	Cutting parameters		Operation (figure)
				Cutting speed(m/min)	Feed speed(mm/z)	
<b>P</b>	Low-carbon steel, Soft steel	$\leq 180$	YBM253 YBG302	80(60-90)	0.25(0.1-0.35)	A
				90(70-120)	0.3(0.15-0.4)	B
				90(70-120)	0.3(0.15-0.4)	C
	High-carbon steel, Alloy steel	180-280	YBM253 YBG302	70(60-100)	0.2(0.1-0.35)	A
				80(60-120)	0.25(0.15-0.35)	B
				90(70-120)	0.25(0.15-0.35)	C
	Alloy tool steel	280-350	YBM253 YBG302	50(40-80)	0.15(0.08-0.25)	A
				60(50-100)	0.2(0.1-0.35)	B
				70(50-100)	0.2(0.1-0.35)	C
<b>K</b>	Cast iron	180-250	YBG152 YBG302	70(50-100)	0.2(0.1-0.35)	A
				80(60-120)	0.25(0.15-0.35)	B
				90(80-120)	0.25(0.15-0.35)	C

Indexable milling tools

Interchangeable helical end mills



### Chamfer milling tools

KAPR:30°



Chamfering

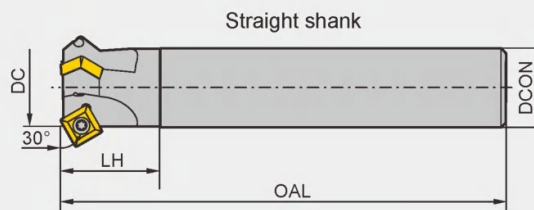


Face milling



Hole stomata chamfering

**CMZ01** P M K






#### Specification of tools

Type	Stock	Basic dimensions(mm)				Number of teeth Z	Weight (kg)	
		DC	DCON	OAL	LH			
<b>CMZ01</b> Straight shank	-012-G20-SP12-01	△	12	20	100	40	1	0.2
	-025-G25-SP12-02	△	25	25	120	40	2	0.8
	-032-G32-SP12-03	△	32	32	180	40	3	1.1

▲Stock available    △Make-to-order

#### Spare parts

Diameter DC	Screw	Wrench
Ø12-Ø32	 I43M5×11	 WT20IS



Tools code key

B26-B27

Grade selection guide

B19-B23

Technical data

B271-B276

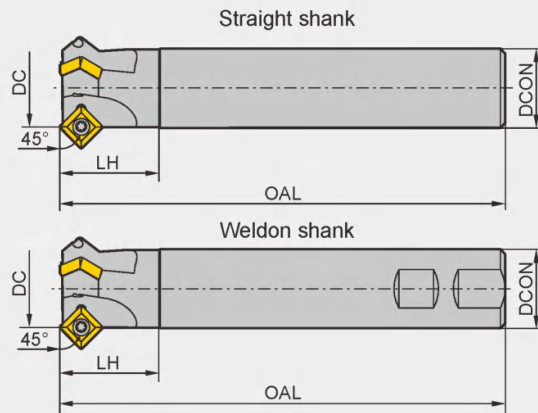


Chamfer milling tools

KAPR:45°



CMA01 P M K



Specification of tools

Type	Stock	Basic dimensions(mm)				Number of teeth Z	Weight (kg)	
		DC	DCON	OAL	LH			
CMA01 Straight shank	-012-G20-SP12-01	▲	12	20	100	40	1	0.2
	-025-G25-SP12-02	▲	25	25	120	40	2	0.8
	-032-G32-SP12-03	▲	32	32	180	40	3	1.1
Weldon shank	-012-XP20-SP12-01	▲	12	20	100	40	1	0.2
	-025-XP25-SP12-02	▲	25	25	120	40	2	0.6
	-032-XP32-SP12-03	▲	32	32	180	40	3	1.0

▲Stock available    △Make-to-order

Indexable milling tools

Chamfer milling tools

Spare parts

Diameter DC	Screw	Wrench
	Ø12-Ø32	I43M5×11

Tools code key B26-B27

Grade selection guide B19-B23

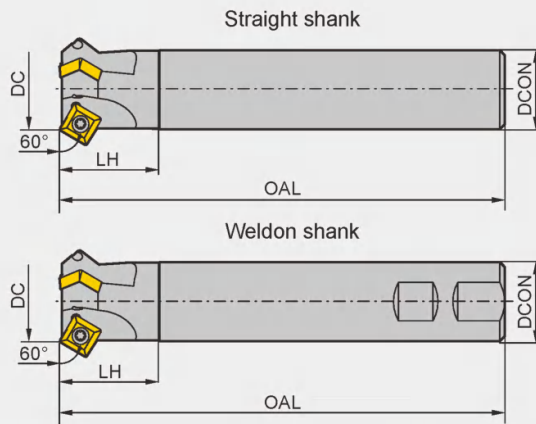
Technical data B271-B276

### Chamfer milling tools

KAPR:60°



**CMD01** P M K




#### Specification of tools

Type	Stock	Basic dimensions(mm)				Number of teeth Z	Weight (kg)	
		DC	DCON	OAL	LH			
<b>CMD01</b> Straight shank	-012-G20-SP12-01	▲	12	20	100	40	1	0.2
	-025-G25-SP12-02	▲	25	25	120	40	2	0.8
	-036-G32-SP12-03	▲	36	32	180	40	3	1.0
Weldon shank	-012-XP20-SP12-01	▲	12	20	100	40	1	0.2
	-025-XP25-SP12-02	▲	25	25	120	40	2	0.6
	-036-XP32-SP12-03	▲	36	32	180	40	3	1.0

▲Stock available    △Make-to-order

#### Spare parts

Diameter DC	Screw	Wrench
	Ø12-Ø36	I43M5×11



Tools code key **B26-B27**

Grade selection guide **B19-B23**

Technical data **B271-B276**





# Interchangeable Milling Tools

## Interchangeable cutters head

### Screw interface

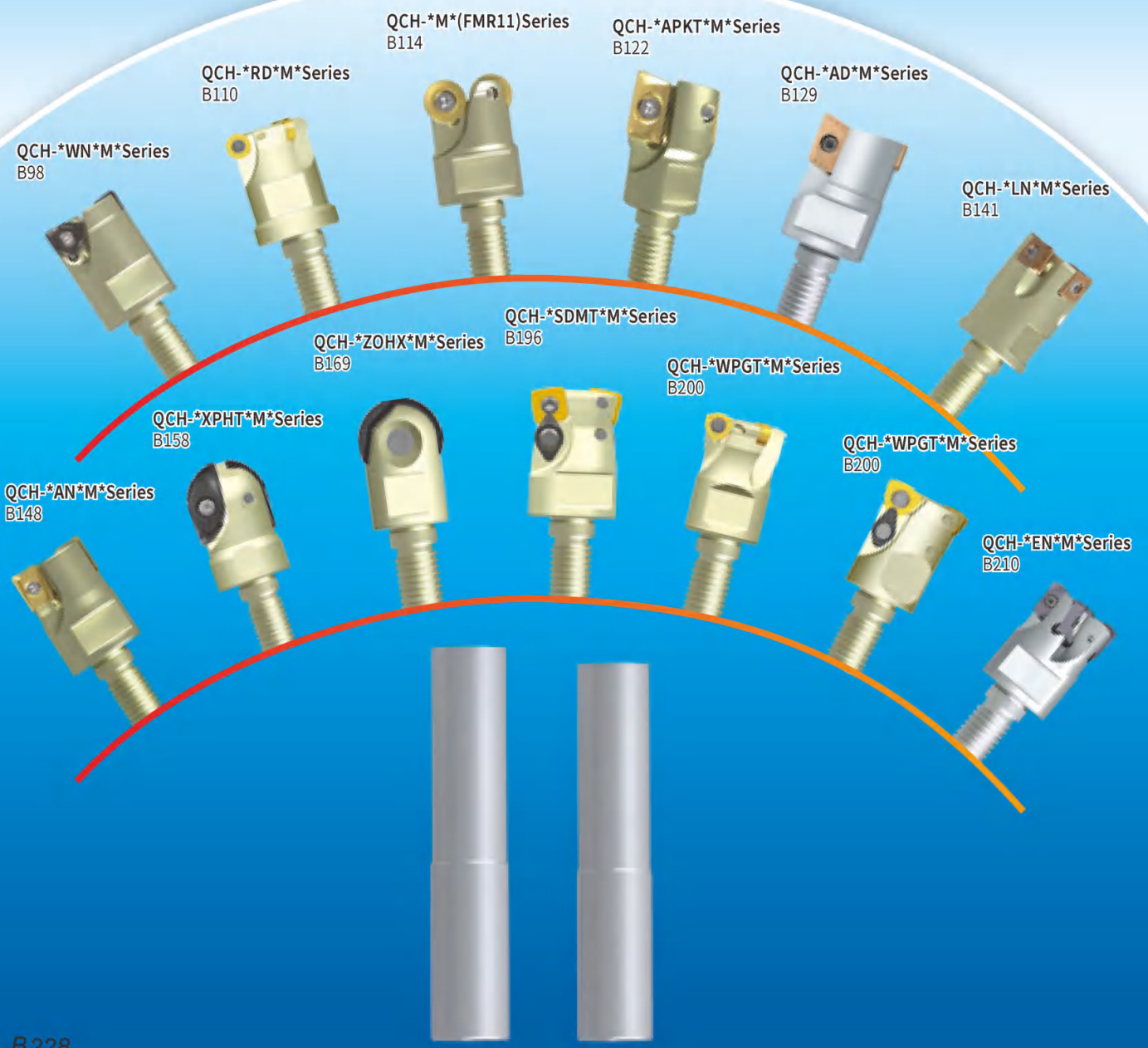
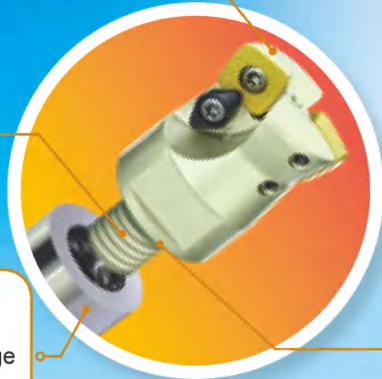
High precision, double threaded, taper contact provides good accuracy and stability for the tool

### Interchangeable shanks

Steel shanks, cemented carbide shanks, and tooling systems are available for large overhangs and large feeds

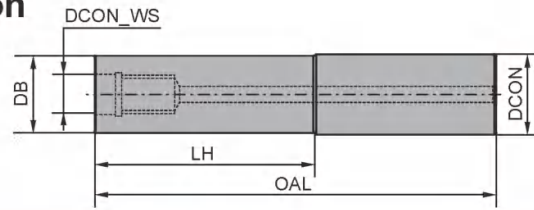
### High precision positioning surface

Guaranteeing the perfect combination of toolholder and cutter head



Interchangeable tool holder selection

Cemented carbide shank

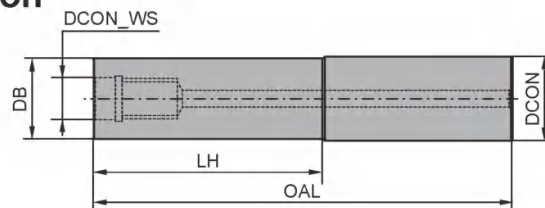


Type	Stock	Basic dimensions(mm)					
		DCON_WS	OAL	LH	DCON	DB	
<b>M8</b>	G16-QCH-M8-100C	△	8.5	100	45	16	15
	G16-QCH-M8-150C	▲	8.5	150	95	16	15
	G16-QCH-M8-200C	△	8.5	200	145	16	15
<b>M10</b>	G20-QCH-M10-100C	△	10.5	100	45	20	19
	G20-QCH-M10-150C	▲	10.5	150	95	20	19
	G20-QCH-M10-200C	△	10.5	200	145	20	19
<b>M12</b>	G25-QCH-M12-120C	△	12.5	120	55	25	24
	G25-QCH-M12-170C	▲	12.5	170	105	25	24
	G25-QCH-M12-220C	△	12.5	220	155	25	24
<b>M16</b>	G32-QCH-M16-150C	△	17	150	85	32	30
	G32-QCH-M16-200C	▲	17	200	135	32	30
	G32-QCH-M16-300C	△	17	300	235	32	30

▲Stock available △Make-to-order

Interchangeable tool holder selection

Steel shank

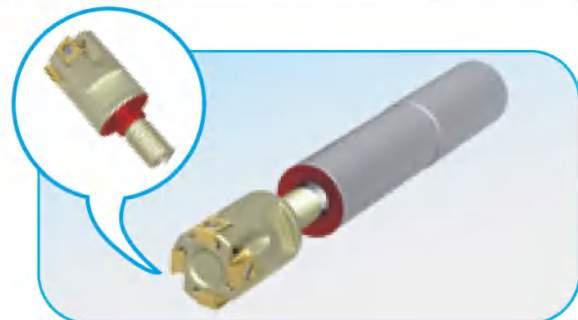


Type	Stock	Basic dimensions(mm)					
		DCON_WS	OAL	LH	DCON	DB	
<b>M8</b>	G16-QCH-M8-100S	▲	8.5	100	52	16	15
	G16-QCH-M8-150S	▲	8.5	150	102	16	15
<b>M10</b>	G20-QCH-M10-100S	▲	10.5	100	50	20	19
	G20-QCH-M10-150S	▲	10.5	150	100	20	19
<b>M12</b>	G25-QCH-M12-125S	▲	12.5	125	71	25	24
	G25-QCH-M12-150S	▲	12.5	150	96	25	24
	G25-QCH-M12-200S	▲	12.5	200	144	25	24
<b>M16</b>	G32-QCH-M16-150S	▲	17	150	90	32	30
	G32-QCH-M16-200S	▲	17	200	140	32	30
	G32-QCH-M16-230S	▲	17	230	170	32	30

▲Stock available △Make-to-order

Installation Notes:

1. Before installation, clean the mounting parts of the cutter head and the shank. Ensure that the contact surfaces are tightly fitted after installation.
2. High temperatures are generated when the tool is cutting. Do not touch the cutter with your hands immediately after use to prevent burns.
3. Carbide inserts are very sharp. Be careful when changing inserts to avoid injured.



Indexable milling tools  
Interchangeable milling cutters