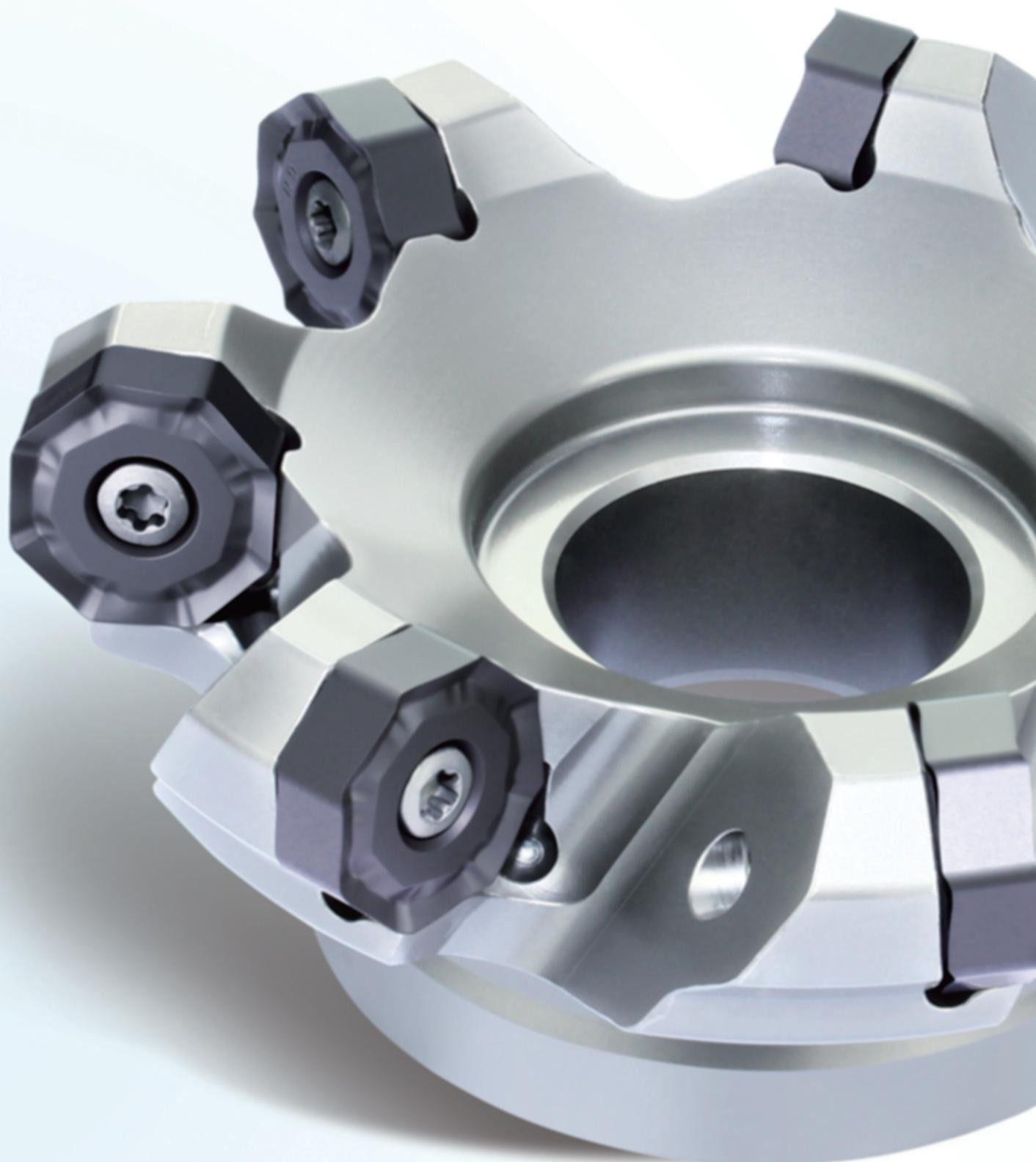


New Champion in Milling **YBC302**
Black Diamond Series grade







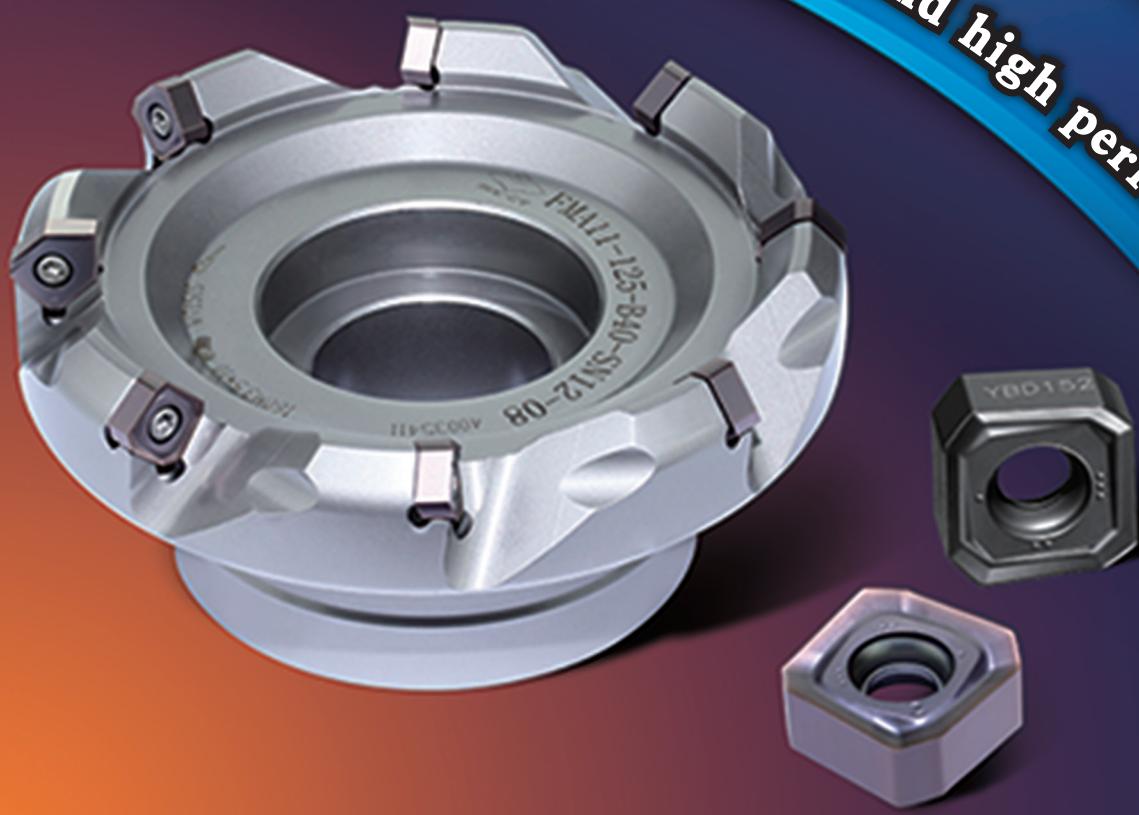
Milling Tools

Indexable milling tools



FMA11 series

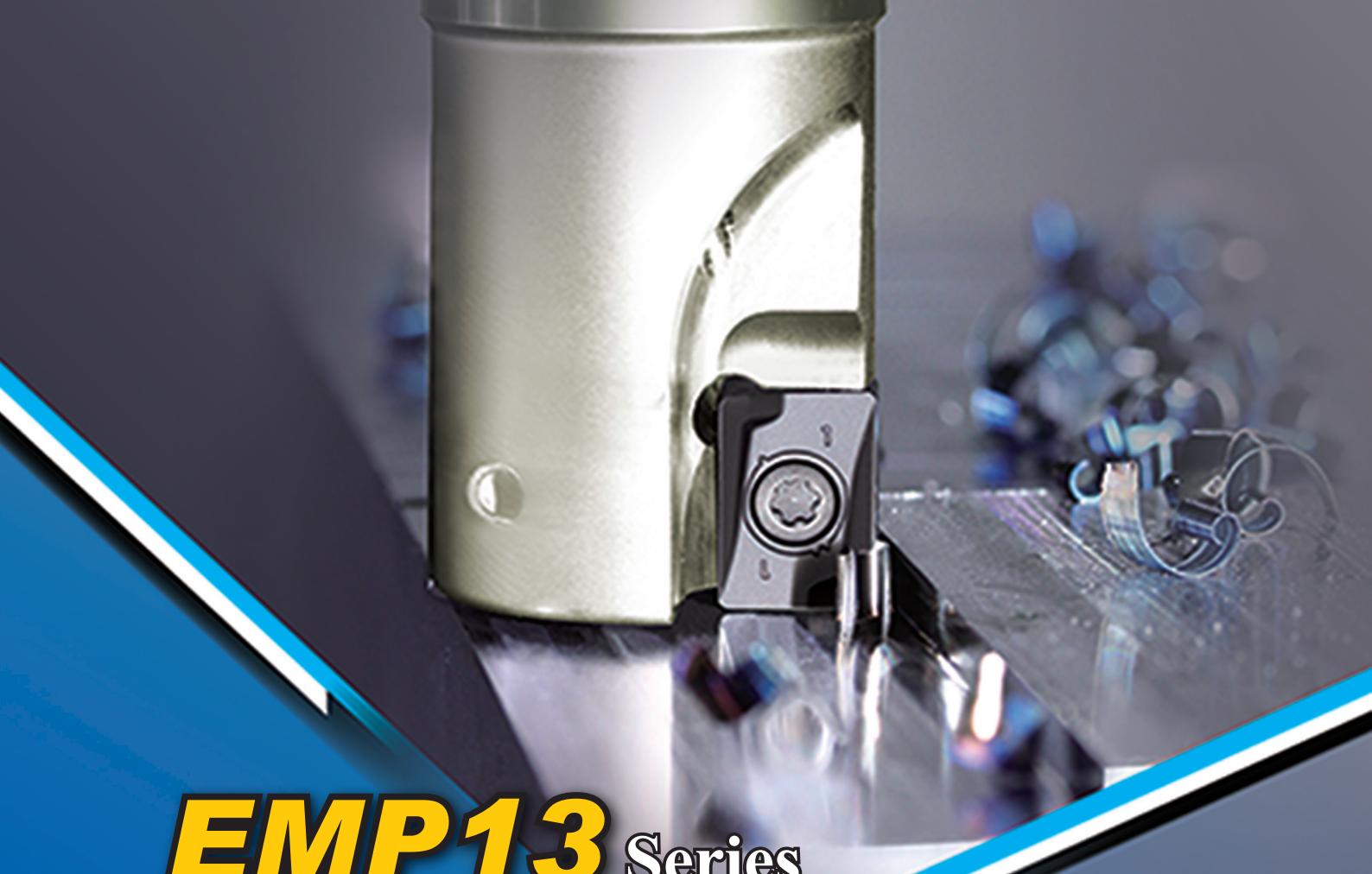
With outstanding economy and high performance





FMA12 series

**High Performance Face Mill with 16 edges
for outstanding economy**



EMP13 Series

Achieving high quality 90°square
shoulding milling



Milling



Indexable Milling Tools • B1-B216

Indexable milling tools B3-B177

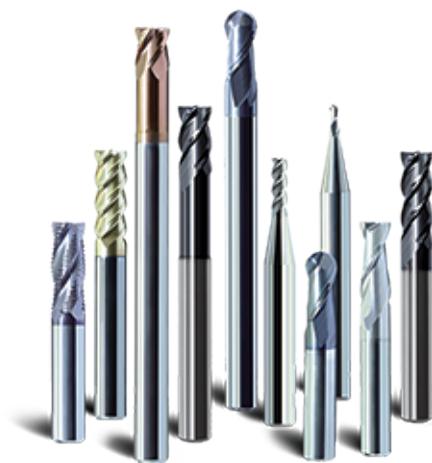
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Solid Carbide End Mills • B217-B480

Solid carbide end mills B217-B476

Technical information B477-B480





WHIRLWIND **FMD02**

milling cutter series



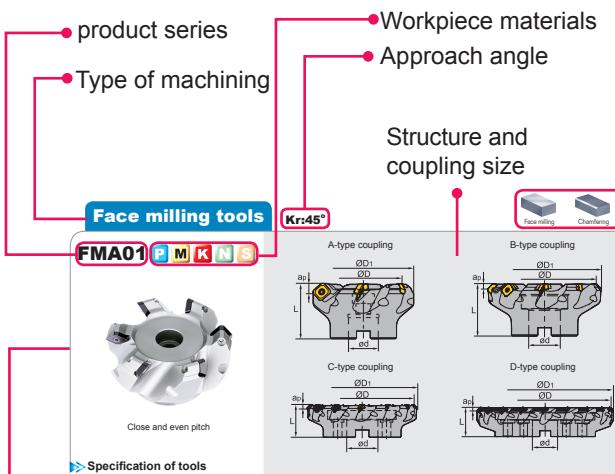
How to choose the right indexable milling tools

■ Classification of milling tools

According to types of machining operation

Applicable machining operations

For face milling, chamfering, shoulder milling etc.



► Specification of tools

Type	Stock		Basic dimensions(mm)				Number of teeth Z	Type of coupling	Weight (kg)
	R	L	ØD	ØD ₁	ød	L			
FMA01									
-050-A22-SE12-04	▲	△	50	61	22	40	6	A	0.3
-063-A22-SE12-05	▲	△	63	74	22	40	6	A	0.5
-080-A22-SE12-06	▲	△	80	91	27	50	6	A	1.2
-100-B32-SE12-07	▲	△	100	107	32	50	6	B	1.2
-100-B32-SE18-04	▲	△	100	120	32	63	10.4	B	2.22
-125-B40-SE12-08	▲	△	125	136	40	60	6	B	2.6
-125-B40-SE18-05	▲	△	125	145	40	63	10.4	B	3.15
-160-B40-SE12-10	▲	△	160	170	40	63	6	B	4.3
-160-B40-SE18-06	▲	△	160	180	40	63	10.4	B	5.01
-200-C60-SE12-12	▲	△	200	210	60	63	6	C	7.6
-200-C60-SE18-08	▲	△	200	220	60	63	10.4	C	6.9
-250-C60-SE12-14	▲	△	250	260	60	63	6	C	13.5
-250-C60-SE18-10	▲	△	250	270	60	63	10.4	C	13.1
-315-D60-SE12-18	▲	△	315	325	60	70	6	D	20.8
-315-D60-SE18-12	▲	△	315	335	60	80	10.4	D	24.5

▲ Stock available △ Make-to-order

Diameter ØD	Insert screw	Shim	Shim screw	Wrench	Wrench	Tool image
Ø50-Ø100	I60M3.5+10	—	—	WT15IS	—	
Ø125-Ø315	I60M3.5+12	S13BS	SMS5+7XA	—	WH35L	
Ø100-Ø315	I60M5+17	S18BS	SMB5+9XA	WT20IT	WH50L	

Tools code key (B24-B25) Grade selection guide (B19-B23) Technical data (B210-B216)

Spare parts

Tools specification
Tool shape, dimensions, stock, etc

Tool shape

Assembly of tools and spare parts

Tools code key, reference to grade selection, technical data

► Selection of inserts

Insert shape	Type	Basic dimensions(mm)					CVD Coating	PVD Coating	Cermet	Cemented carbide
		L	ØL	C	S	ød				
SEET12T3-DF	13.4	13.4	3.97	4.1	2.55	—	● ★ ●	●	○	YBG301
SEET12T3-CF	13.4	13.4	3.97	4.1	2.55	—	○	★	○	YBG302
SEET12T3-EF	13.4	13.4	3.97	4.1	2.55	—	●	●	○	YBG303
SEET12T3-DM	13.4	13.4	3.97	4.1	2.55	—	● ★ ●	●	●	YBG304
SEET18T6-DM	18.0	18.0	6.1	5.5	1.0	—	● ●	●	●	YBG305
SEET12T3-CM	13.4	13.4	3.97	4.1	2.55	—	●	●	●	YBG306
SEET12T3-EM	13.4	13.4	3.97	4.1	2.55	—	●	●	●	YBG307
SEET12T3-DR	13.4	13.4	3.97	4.1	2.55	—	● ★	●	●	YBG308
SEET12T3-CR	13.4	13.4	3.97	4.1	2.55	—	●	●	●	YBG309
SEET12T3-LH	13.4	13.4	3.97	4.1	2.55	—	—	—	○	YBG310
SEET12T3-W	17.82	13.4	3.97	4.1	9.46	500	★ ●	★	●	YBG311

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

► Chipbreaker selection for FMA01 milling inserts

Classification	Function	For finishing		For semi-finishing		For roughing	
		For	semi-finishing	For	semi-finishing	For	roughing
P	-DF						-DR
M, S	-EF						-EM
K	-CF						-CR
N							-LH

Chipbreaker selection

How to choose indexable milling inserts

■ Detailed information for indexable milling inserts

Listed according to insert shape

Select insert grade according to workpiece material and working condition.

Prior to selecting grade, please refer to the working condition suitable for the workpiece material.

Good working condition: machine works well and stably. There are high requirements for dimensional precision of components and quality surface.

Normal working condition: machine works normally. There are certain requirements for dimensional precision of components and surface quality.

Bad working condition: machine works with bad stability. There are high requirements for high metal removal rate.

Insert shape	Type	Basic dimensions(mm)					CVD Coating		PVD Coating		Cermet	Cemented carbide									
		L	I.W	S	ød	r	YBC301	YBC302	YBM251	YBM253	YBM351	YBD152	YBD252	YG6102	YG6202	YG6252	YNG151	YNG151C	YBS920	YG612	YD051
APKT11T304-APF		12.24	6.64	3.6	2.8	0.4								★							
APKT11T308-APF		12.24	6.64	3.6	2.8	0.8								★							
APKT160408-APF		17.877	9.33	5.76	4.4	0.8								★							
APKT11T304-APM		12.24	6.64	3.6	2.8	0.4								★							
APKT11T308-APM		12.24	6.64	3.6	2.8	0.8								★							
APKT11T312-APM		12.24	6.64	3.6	2.8	1.2								★							
APKT11T316-APM		12.24	6.64	3.6	2.8	1.6								★							
APKT11T320-APM		12.24	6.64	3.6	2.8	2								★							
APKT160408-APM		17.877	9.33	5.76	4.4	0.8								★							
APKT160416-APM		17.877	9.33	5.76	4.4	1.6								★							
APKT160420-APM		17.877	9.33	5.76	4.4	2								★							
APKT160424-APM		17.877	9.33	5.76	4.4	2.4								★							
APKT160430-APM		17.877	9.33	5.76	4.4	3								★							
APKT11T304-ALH		12.24	6.64	3.6	2.8	0.4									★	★					
APKT11T308-ALH		12.24	6.64	3.6	2.8	0.8									★	○					
APKT160408-ALH		17.877	9.33	5.76	4.4	0.8									★	★					

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

Stock condition

Insert dimension

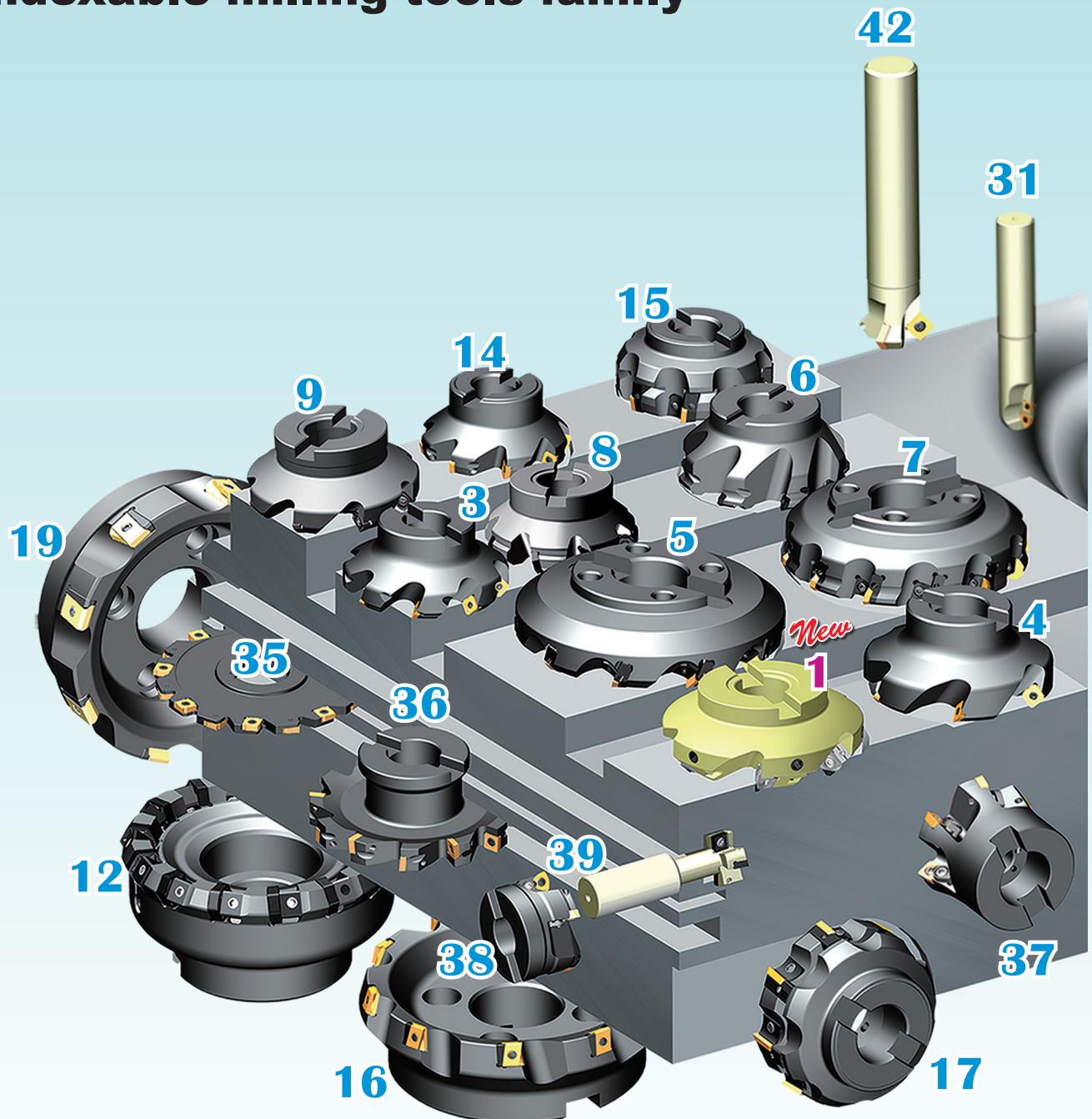
Insert type

MILLING

Indexable Milling Tools

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- B9-B16** Indexable milling tools overview
- B19** Milling insert grades overview
- B20-B23** Grade classification for milling inserts
- B24-B25** Indexable milling tools code key
- B26-B177**
 - B26-B30 High-speed High-precision milling tools series
 - B31-B101 Face milling tool series
 - B102-B124 Square shoulder milling tool series
 - B125-B146 Profile milling tool series
 - B147-B153 Side and face milling series
 - B154-B162 Special milling tool series (high feed rate)
 - B163-B165 Boring millers
 - B166-B167 T-slot milling tool series
 - B168-B172 Helical end mill series
 - B173-B177 Chamfer milling tool series
- B178-B179** Indexable milling inserts overview
- B180-B181** Indexable milling inserts code key
- B182-B209** Indexable milling inserts specification
- B210-B216** Technical information

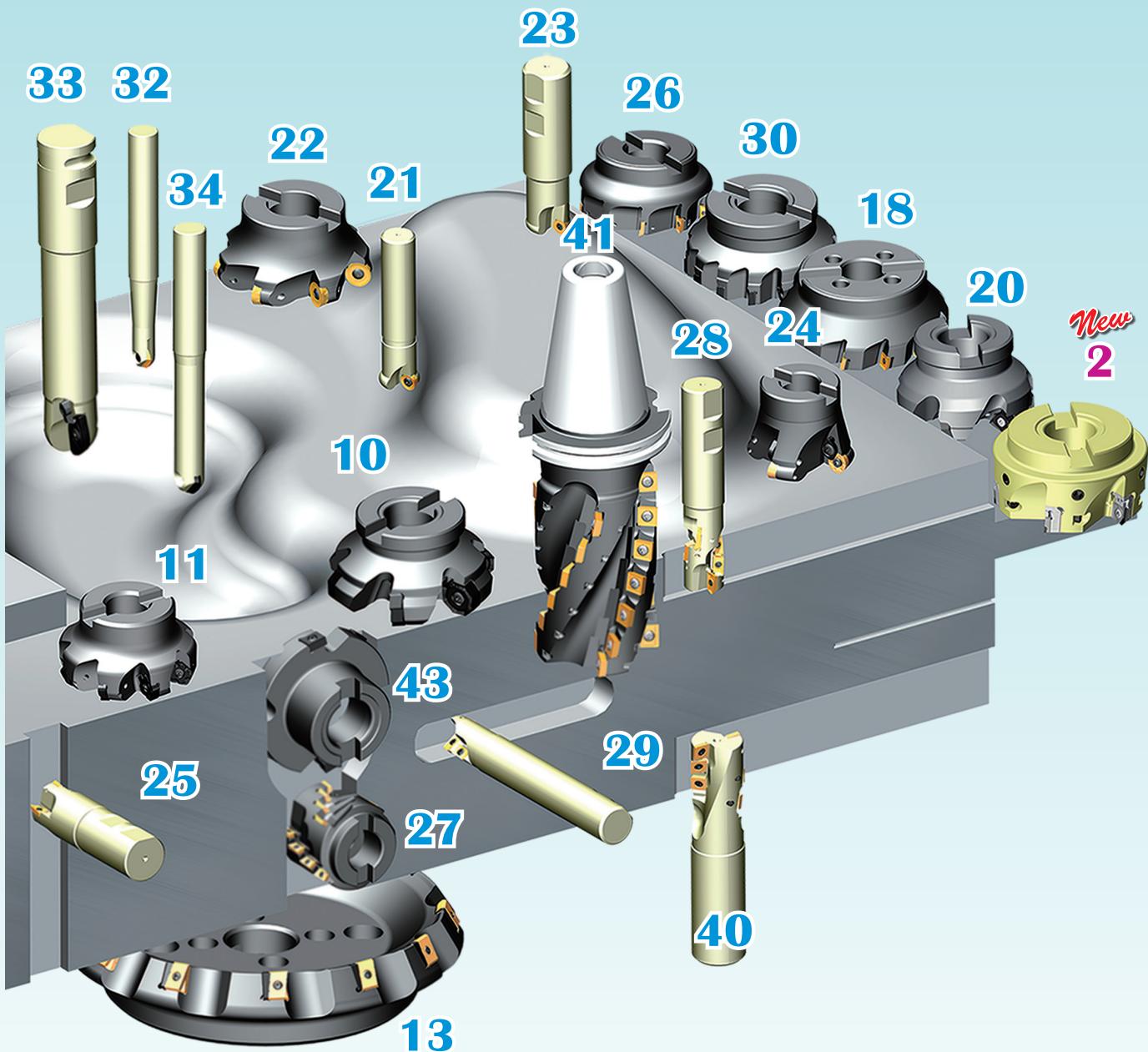
Indexable milling tools family



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Heavy mill cutter series
FMD03 FME04 FMPO3

Indexable milling tools overview

Operating pattern	Series/Shape	Approach angle / Max. cutting depth.	Applicable insert	Application overview	Features
High-speed high-precision milling tools	AMA01 	Kr=45° ap _{max} =6.6	SEHT12T3AFFN-AL	High-speed high-precision milling of Aluminum alloy, alloy steel, cast iron, hardened steel.	<ul style="list-style-type: none"> Diameter range Ø50-Ø500 Aluminum alloy body with high strength, light weight Unique tool clamping design Elastic runout adjustment structure, high pressure internal cooling, and high-precision cutting inserts enable high-quality, high-precision, high-efficiency, and high-stability machining of various materials.
		Kr=45° ap _{max} =2.0	SEHT12T308AFFN-CBN		
		Kr=45° ap _{max} =2.5	SEHT12T308AFFN-PCD		
	AMP01 	Kr=90° ap _{max} =12	APHT12T304PPFR-AL		
		Kr=90° ap _{max} =1.0	APHT12T304-W		
		Kr=90° ap _{max} =2.0	APHT12T304PPFR-CBN		
		Kr=90° ap _{max} =3.0	APHT12T304PPFR-PCD		
Face milling	FMA01 	Kr=45° ap _{max} =6.0	SEET12T3-DF/DM/DR SEET12T3-CF/CM/CR SEET12T3-EF/EM SEET12T3-LH/W	General face milling of the following materials: steel, alloy steel, stainless steel, cast iron, aluminum alloy, high-temperature alloy	<ul style="list-style-type: none"> Diameter range Ø50-Ø315. Large rake angle makes cutting easier and faster. Wide applications can be achieved by using available inserts with different chipbreakers. Adopting inserts with wiper can improve surface quality.
		Kr=45° ap _{max} =10.4	SEET18T6-DM		
	FMA02 	Kr=45° ap _{max} =6.0	SEET12T3-DF/DM/DR SEET12T3-CF/CM/CR SEET12T3-EF/EM SEET12T3-LH/W	General face milling of the following materials: steel, alloy steel, stainless steel, cast iron, aluminum alloy, high-temperature alloy	<ul style="list-style-type: none"> Diameter range Ø50-Ø125. Large rake angle makes cutting easier and faster. Wide applications can be achieved by using available inserts with different chipbreakers. Coarse and differential pitch, reducing vibration.
		Kr=45° ap _{max} =10.4	SEET18T6-DM		
	FMA03 	Kr=45° ap _{max} =5.5	SEON1203AF□□ SEOR1203AF□□	General face milling of steel, stainless steel, cast iron	<ul style="list-style-type: none"> Diameter range Ø80-Ø315. large rake angle makes cutting easier and faster. Top clamping achieves better vibration resistance.
		Kr=45° ap _{max} =7.5	SEON1504AF□□ SEOR1504AF□□		
	FMA04 	Kr=45° ap _{max} =3.5	OFKT05T3-DF/DM OFKT05T3-LH	Face milling of steel, alloy steel, cast iron, aluminum alloy	<ul style="list-style-type: none"> Diameter range Ø50-Ø160. High-economy milling tool with 8 cutting edges. Screw clamping, high precision.
		Kr=45° ap _{max} =5.0	OFKR0704-DF/DM	Face milling of steel, alloy steel and cast iron	<ul style="list-style-type: none"> Diameter range Ø125-Ø315. High-economy milling tool with 8 cutting edges. Top clamping makes it easy to assemble and disassemble.
	FMA07 	Kr=45° ap _{max} =4.0	ONHU060408-PF/PM/W	General face milling of steel and cast iron	<ul style="list-style-type: none"> Diameter range Ø25-Ø50. High-economy milling tool with 16 cutting edges.
		Kr=45° ap _{max} =5.0	ONHU08T508-PF/PM/W	General face milling of steel and cast iron	<ul style="list-style-type: none"> Diameter range Ø50-Ø315. High-economy milling tool with 16 cutting edges.

Indexable milling tools overview

Operating pattern	Series/Shape	Approach angle / Max. cutting depth.	Applicable insert	Application overview	Features
Face milling	FMA11 	Kr=45° $a_{pmax}=5.5$	SNEG1205ANR-GM/HGR/W	General face milling of steel and cast iron	<ul style="list-style-type: none"> Diameter range Ø63- Ø315. Double-sided chipbreaker milling insert has eight cutting edges and high economy. Large rake angle design and unique chip breaker structure of insert lead to low power consumption. Double negative rake angle structure and super thick insert has higher safety and outstanding toughness, which can realize great depth cutting. Insert has excellent machining performance with wiper edge.
		Kr=45° $a_{pmax}=7.0$	SNEG1506ANR-GM/HGR/W		
		Kr=45° $a_{pmax}=9.0$	SNEG1907ANR-HGR		
	FMA12 	Kr=45° $a_{pmax}=5.0$	ONHU08T624R-GM	General face milling of steel and cast iron	<ul style="list-style-type: none"> Diameter range Ø80-Ø315. High Performance Face Mill with 16 edges for outstanding economy. Double negative rake angle, in combination with helical insert structure, achieves double positive axial angle, which will help reduce cutting resistance and improve chip evacuation. Unique 3-dimentional edge.
		B52-B53 B57 B60-61 B64 B66 B69 B71	PNEG110512R/L-CF/ CM/CR PNEG110512R/L-PF/ PM/PR	General face milling of steel and cast iron	<ul style="list-style-type: none"> Diameter range Ø50-Ø315. High-economy milling tool with 10 cutting edges.
	FMD02 				
	Kr=55° $a_{pmax}=6.0$	HNEX090512-DF/DM HNEX090512-DR	Face milling of cast iron	<ul style="list-style-type: none"> Diameter range Ø80-Ø315. High-economy milling tool with 12 cutting edges. Top clamping makes it easy to assemble and disassemble. 	
	FMD03 	Kr=60° $a_{pmax}=12.0$	LNKT2007DN-ZR	Heavy-duty face milling of steel and alloy steel	<ul style="list-style-type: none"> Diameter range Ø125-Ø400. Double positive rake angles can reduce cutting forces. Inserts are mounted upright, suitable for heavy machining with high cutting depth. Easy to assemble and clamp inserts.
		Kr=60° $a_{pmax}=17.0$	LNKT2510-ZR		
	FME02 	Kr=75° $a_{pmax}=6.0$	SPKW1204EDFR SPKW1204EDSR SPKT1204EDR	Face milling of steel, alloy steel and cast iron	<ul style="list-style-type: none"> Diameter range Ø50-Ø125. Kr 75°, general face milling. Wide applications can be achieved by using inserts with different chipbreakers.
		B66 B69 B71	SP□N1203(1504)ED□□ SP□R1203(1504)ED□□	Face milling of steel, alloy steel and cast iron	<ul style="list-style-type: none"> Diameter range Ø80-Ø315. Kr 75°, general face milling. Top clamping makes it easy to assemble and disassemble.

Indexable milling tools overview

Operating pattern	Series/Shape	Approach angle / Max. cutting depth.	Applicable insert	Application overview	Features
Face milling	FME04 	Kr=75° $a_p\max=12.0$ B75	LNKT1506EN-ZR	Heavy-duty face milling of steel and alloy steel	<ul style="list-style-type: none"> Diameter range Ø125-Ø315. Double positive rake angles can reduce the cutting force. Inserts are mounted upright, suitable for heavy machining at high cutting depth. Easy to assemble and clamp inserts.
	FMP01 	Kr=90° $a_p\max=18.0$ B77	TPDN2204PD□ TPKN2204PDF□ TPKN2204PDT□	Face milling of steel, alloy steel and cast iron	<ul style="list-style-type: none"> Diameter range Ø80-Ø315. Kr 90°, for square shoulder milling. Top clamping makes it easy to assemble and disassemble.
	FMP02 	Kr=90° $a_p\max=6.7$ B79	SEET09T308PER-APF/APM SEET09T308PER-APR	Face milling of steel, alloy steel, stainless steel and cast iron	<ul style="list-style-type: none"> Diameter range Ø50-Ø315. Kr 90°, for square shoulder milling. Different pitches: coarse pitch, close pitch and extra close pitch. High precision insert, high work-piece surface quality. Optimized chipbreaker and grade, suitable for finishing, semi-finishing and roughing.
		Kr=90° $a_p\max=10.8$	SEET120308PER-APF/APM SEET120308PER-APR		
	FMP03 	Kr=90° $a_p\max=13.0$ B85	LNKT1506EN-ZR	Heavy-duty face milling of steel and alloy steel	<ul style="list-style-type: none"> Diameter range Ø125-Ø315. Double positive rake angles can reduce the cutting force. Inserts are mounted upright, suitable for heavy machining at high cutting depth. Easy to assemble and clamp inserts.
		Kr=90° $a_p\max=17.0$	LNKT2007DN-ZR		
		Kr=90° $a_p\max=22.0$	LNKT2510-ZR		
	FMP12 	Kr=90° $a_p\max=5.7$ B88	WNHU060404PNR-GM WNHU060408PNR-GM	Steel, alloy steel, cast iron	<ul style="list-style-type: none"> Diameter range Ø50-Ø315 90° approach angle can be used for shoulder milling, face milling, groove milling, etc.; -Six-flute double-sided groove milling inserts with wiper for large feed machining; double negative angle of the tool body combined with unique insert structure to achieve double positive tool angle, reducing cutting forces.
		Kr=90° $a_p\max=7.7$	WNHU080608PNR-GM WNHU080616PNR-GM		
	FMP12 	Kr=90° $a_p\max=5.7$ B89	WNHU060404PNR-GM WNHU060408PNR-GM		<ul style="list-style-type: none"> Diameter range Ø25-Ø50 90° approach angle can be used for shoulder milling, face milling, groove milling, etc.; -six-flute double-sided groove milling inserts with wiper for large feed machining; Double negative angle of cutter body combined with unique insert structure to achieve double positive tool angle, reducing cutting forces.
	FMR01 	$a_p\max=5.0$	RCKT10T3MO-DM	Cavity profile milling of steel, alloy steel, stainless steel and cast iron	<ul style="list-style-type: none"> Diameter range Ø25-Ø50. R-type inserts have extra-strong cutting edges. Suitable for machining of curved surface of die. Economical milling tools with screw clamping.
		$a_p\max=6.0$	RCKT1204MO-DM/DR/ER		
	FMR02 	$a_p\max=6.0$	RCKT1204MO-DM/DR /ER/PCBN	Face milling and cavity profile milling of steel, alloy steel, stainless steel and cast iron	<ul style="list-style-type: none"> Diameter range Ø50-Ø160. R-type inserts have extra-strong cutting edges. Suitable for machining of curved surface of die. Economical milling tools with screw clamping.
		$a_p\max=8.0$	RCKT1606MO-DM/DR/ER		
		$a_p\max=10.0$	RCKT2006MO-DR/ER		

Indexable milling tools overview

Operating pattern	Series/Shape	Approach angle / Max. cutting depth.	Applicable insert	Application overview	Features
Face milling	FMR03 	$a_p\max=4.0$	RDKW0803MO	Cavity profile milling of steel, alloy steel, stainless steel and cast iron	<ul style="list-style-type: none"> Diameter range Ø16-Ø50. R-type inserts have extra-strong cutting edges. Suitable for machining of curved surface of die. Economical milling tools with screw clamping.
		$a_p\max=5.0$	RDKW10T3MO		
		$a_p\max=6.0$	RDKW1204MO		
	FMR04 	$a_p\max=6.0$	RDKW1204MO	Face milling and cavity profile milling of steel, alloy steel, stainless steel and cast iron	<ul style="list-style-type: none"> Diameter range Ø50-Ø160. R-type inserts have extra-strong cutting edges. Suitable for machining of curved surface of die.
		$a_p\max=8.0$	RDKW1605MO		
		$a_p\max=10.0$	RDKW2006MO		
	EMP01 	$Kr=90^\circ$ $a_p\max=10.5$	APKT11T3□□-APF/APM APKT11T3□□-ALH	Multi-function milling of steel, alloy steel, stainless steel, cast iron and aluminum alloy	<ul style="list-style-type: none"> Two mounting styles: Straight shank and Weldon shank, diameter range Ø12-Ø63. Kr 90°, for square shoulder milling, slot milling, ramp milling, etc. Inserts with wiper, also suitable for face milling. Inserts with 3D helical cutting edge, less cutting force.
		$Kr=90^\circ$ $a_p\max=15.5$	APKT160408- APF/PM APKT160408-ALH		
Square shoulder milling	EMP02 	$Kr=90^\circ$ $a_p\max=11.5$	APKT11T3□□- APF/APM APKT11T3□□-ALH	Face milling of steel, alloy steel, stainless steel, cast iron and aluminum alloy	<ul style="list-style-type: none"> Diameter range Ø50-Ø160. Kr 90°, for square shoulder milling, slot milling, ramp milling, etc. Inserts with wiper, also suitable for face milling. Inserts with 3D helical cutting edge, less cutting force.
		$Kr=90^\circ$ $a_p\max=15.5$	APKT160408- APF/APM APKT160408-ALH		
	EMP03 	$Kr=90^\circ$ $a_p\max=39.0$	APKT11T3□□-APF/APM APKT11T3□□-ALH	Milling of steel, alloy steel, stainless steel, cast iron and aluminum alloy at high cutting depth	<ul style="list-style-type: none"> Diameter range Ø50-Ø100. End mills with positive helical angle, good chip removal. For side face milling and slot machining. Close pitch, high machining efficiency.
	EMP04 	$Kr=90^\circ$ $a_p\max=29.4-58.0$	APKT11T3□□-APF/APM APKT11T3□□-ALH	Multi-function drilling and milling of steel, alloy steel, stainless steel and cast iron	<ul style="list-style-type: none"> Diameter range Ø20-Ø40. End mills with positive helical angle, good chip removal. For side face milling and slot machining. Close pitch, high machining efficiency.
	EMP05 	$Kr=90^\circ$ $a_p\max=20-40$	APMT1135PDR APMT160408PDER	Face milling of steel, alloy steel, stainless steel, cast iron and Al alloy	<ul style="list-style-type: none"> Diameter range Ø25-Ø40. End edge over center, for drilling directly.

Operating pattern	Series/Shape	Approach angle / Max. cutting depth.	Applicable insert	Application overview	Features
Square shoulder milling	EMP13 	Kr=90° $a_p\max=11.2$ B120	ANGX1105□□PNR-GM/ LH	Multi-functional milling of steel, alloy steel, stainless steel and cast iron	<ul style="list-style-type: none"> Diameter range Ø25-Ø160. Designed with extra thick insert in combination with double negative tool body, achieving double positive cutting angle, reducing cutting force, as well as greatly improving impact resistance. Properly designed cutting edge with high precision control can achieve high quality 90°square shoulder milling.
		Kr=90° $a_p\max=14.5$ B121	ANGX1506□□PNR-GM/LH		
		Kr=90° $a_p\max=43\sim64$ B122	ANGX1105□□PNR-GM/ LH		
		Kr=90° $a_p\max=43\sim53$ B123	ANGX1506□□PNR-GM/LH		
Profile milling	BMR01 	Cutting depth: see the detailed information about tool specifications	ZDET□□CYR□□ ZPNT2204CYR□□ SPMT060304 SDMT□□	Profile machining of steel, stainless steel and cast iron	<ul style="list-style-type: none"> Diameter range Ø20-Ø63. Very suitable for rough machining large mold. Ball nose cutter with 3-cutting-edge inserts, perfect economical efficiency.
	BMR02 		ROHX□□	Profile machining of steel, stainless steel and cast iron	<ul style="list-style-type: none"> Diameter range Ø12-Ø20. For profile finish machining. Stable assembly. Insert with two cutting edges, perfect economical efficiency.
	BMR03 	Cutting depth: see the detailed information about tool specifications	XPHT□□R□□- GM	Profile machining of steel, stainless steel and cast iron	<ul style="list-style-type: none"> Diameter range Ø16-Ø50. For profile finish machining. Stable assembly. Insert with two cutting edges, perfect economical efficiency.
					

Indexable milling tools overview

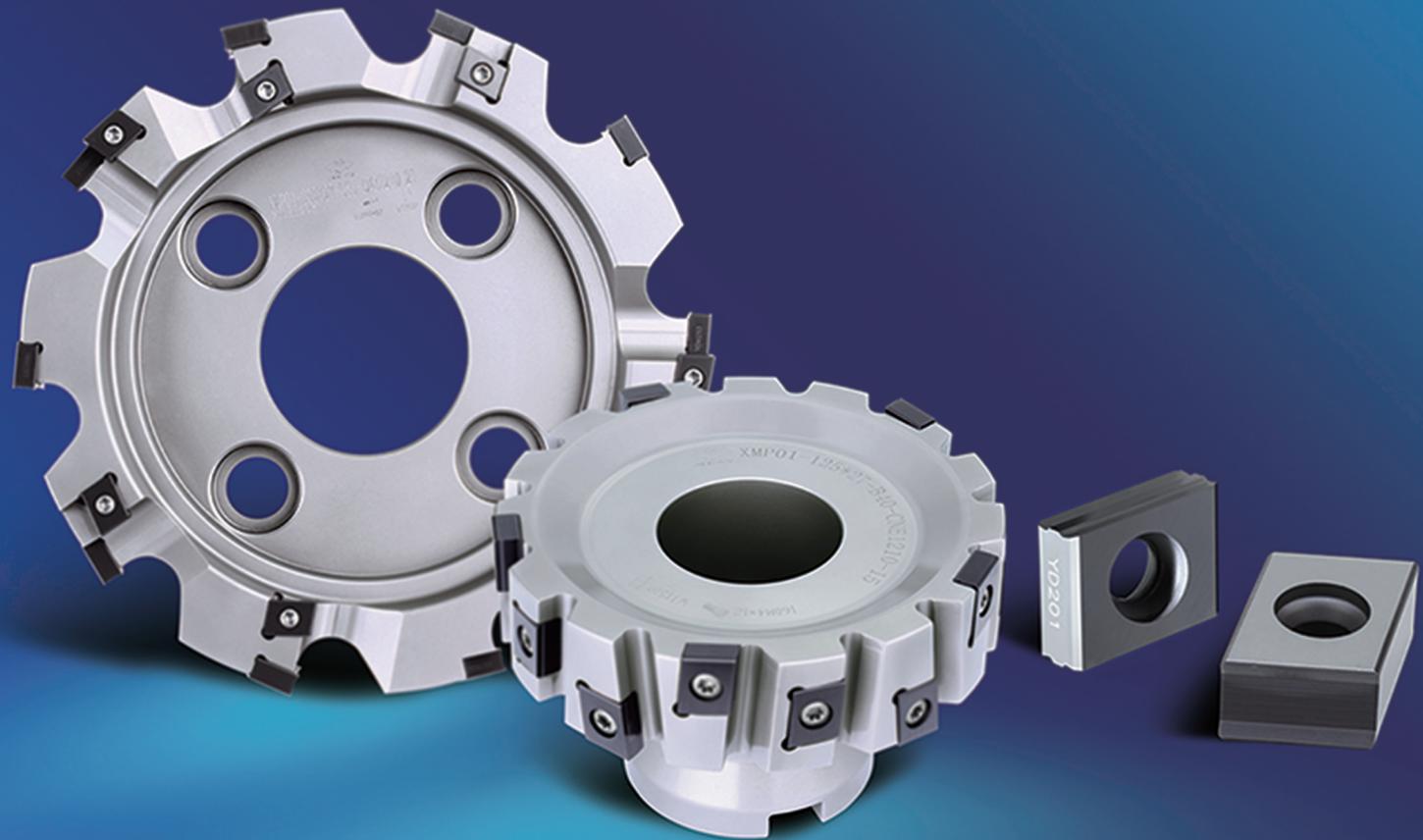
Operating pattern	Series/Shape	Approach angle / Max. cutting depth.	Applicable insert	Application overview	Features
Profile milling	BMR04  B141  B142	Cutting depth: see the detailed information about tool specifications	ZOHX□□	Profile machining of steel, stainless steel and cast iron	<ul style="list-style-type: none"> Diameter range $\varnothing 12\text{--}\varnothing 32$. High precision, for finish profile machining Two types of chipbreaker, used in different machining conditions. High assembling precision, good stability.
Side and face milling	SMP01  B148  B149	Cutting depth: see the detailed information about tool specifications	XSEQ12□□	Slot milling of steel, stainless steel and cast iron	<ul style="list-style-type: none"> Diameter range $\varnothing 63\text{--}\varnothing 250$. Two mounting styles: mounting by keyway and arbor mounting. Groove width range : 8, 10, 12, 16, 18, 20mm.
	SMP03  B151  B152	Cutting depth: see the detailed information about tool specifications	MPHT□□	Slot milling of steel, stainless steel and cast iron	<ul style="list-style-type: none"> Diameter range $\varnothing 80\text{--}\varnothing 200$. Two mounting styles: mounting by keyway and arbor mounting. Groove width range : 8, 10, 12, 16, 18, 20mm.
Special milling (high feed)	XMR01  B154  B155	Cutting depth: see the detailed information about tool specifications	SDMT□□-DM/PM	Slot milling of steel, stainless steel and cast iron	<ul style="list-style-type: none"> Diameter range $\varnothing 20\text{--}\varnothing 160$. Two mounting types: straight shank and arbor mounting. Cutting forces are resolved effectively, achieving cutting with high feed rate. For plunge milling. Double clamping, firm and reliable.
			WP GT□□ZSR WP GT□□ZSR-PM	Face and cavity profile milling of steel, stainless steel and cast iron in cavity applications	<ul style="list-style-type: none"> Diameter range $\varnothing 20\text{--}\varnothing 160$. Two mounting types: straight shank and arbor mounting. Cutting forces are resolved effectively, achieving cutting with high feed rate. Double clamping, firm and reliable.

Indexable milling tools overview

Operating pattern	Series/Shape	Approach angle / Max. cutting depth.	Applicable insert	Application overview	Features
Boring millers	XMP01 	Kr=90° ap _{max} =18~36 B164	CNE121006A/B	Flat Milling, Side Milling, Flute Milling, and Bored Hole-making for Steel/ Alloy Steel/ Cast Iron.	<ul style="list-style-type: none"> Diameter range Ø80-Ø400. Inserts are vertically loaded with 90 degrees approach angle. Both axial and radial cutting width could be adjusted according to customers' demands. Opened chip pocket, which lead to unobstructed chip removal. It has large width of bottom edges, which helps to strengthen the capability of helical interpolation milling holes. It is generally loaded inserts for two kinds chipbreaker, while fits for different machining conditions.
T-slot milling	TMP01 	Kr=90° B166	MPHT□□	Machining T slot in cast iron	<ul style="list-style-type: none"> Diameter range Ø21-Ø60. Machining T-slot with nominal size 12, 14, 18, 22, 28, 36. 86° rhombic inserts with positive angle.
Helical end mills	HMP01 	Kr=90° ap _{max} =55 B168	APKT150412-PM/KM SPMT120408-PM/KM	Milling of steel, alloy steel and cast iron at high cutting depth.	<ul style="list-style-type: none"> Diameter range Ø40, Ø80. Coarse and differential pitch, less vibration. Holistic structure with good rigidity, interchangeable heads achieve high economical efficiency.
		Kr=90° ap _{max} =74~144 B169			
	HMP01 EC 	Kr=90° ap _{max} =74~144 B170			

Indexable milling tools overview

Operating pattern	Series/Shape	Approach angle / Max. cutting depth.	Applicable insert	Application overview	Features
Chamfer milling	CMZ01 	Kr=30° B173			
	CMA01 	Kr=45° B174	SPMT120408	Chamfer machining of steel, alloy steel, stainless steel and cast iron	<ul style="list-style-type: none"> • Diameter range Ø12, Ø25, Ø32, Ø36. • With the function of milling small surface.
	CMD01 	Kr=60° B175			



XMP01

Boring millers





A collection of profile milling tools and carbide inserts. The tools are made of a light-colored metal and feature a hexagonal shank with a screw-on collet. The shank is engraved with part numbers: BMR04-025-632-M, BMR04-025-632-M, and BMR04-025-632-M. The carbide inserts are shown in the foreground, featuring a central hole and a serrated edge. The background is a dark blue gradient.

**Profile milling tools
series**

Milling insert grades overview

Workpiece material	ISO code	Coating		Cermet	Cemented carbide	PCBN and PCD material
		CVD	PVD			
P Steel	P01					
	P10					
	P20	YBC301	YBC302	YNG151	YNG151C	
	P30		YBM251	YBG202	YBG205	YBG302
	P40		YBM351	YBG205	YBG220	YBG252
M Stainless steel	M01					
	M10	YBM251	YBC302	YNG151	YNG151C	
	M20		YBM253	YBG202	YBG205	YBG252
	M30		YBM351	YBG205	YBG220	YBG302
	M40			YBG202	YBG252	YC30S
K Cast iron	K01					
	K10	YBD152		YNG151	YNG151C	
	K20		YBD252	YBG102	YBG152	YD051
	K30			YBG252	YNG151C	YD201
	K40					YCB011
N Non ferrous metal	N01					
	N10					
	N20					
	N30				YD101	YCD011
S Heat resistant alloy & Ti alloy	S01					
	S10			YBG202		
	S20					
	S30					
H Super hard material	H01					
	H10					
	H20					
	H30					YCB012

Grade classification for milling inserts

Coated Cemented Carbide



Grade	Coating structure	Micro-structure	ISO applied range	Application field
YBC301	Combination of high-toughness, high-strength substrate and coating composed of TiCN, thin Al ₂ O ₃ and TiN		P15~35	Suitable for semi-finish and rough milling of P-type material
YBC302	Combination of high toughness, high strength substrate and coating composed of TiCN, thin Al ₂ O ₃ and TiN		P15~35	Suitable for rough and semi-finish milling of P-type, M-type, whose hardness is below HRC45 and under
			M10~30	
YBM251	Combination of high-toughness, high-strength substrate and coating composed of TiCN, thin Al ₂ O ₃ and TiN		P15~40	Suitable for semi-finish and rough milling of P- and M-type material
			M10~30	
YBM253	Combination of high-toughness gradient substrate and coating composed of TiCN and ultra fine Al ₂ O ₃		M10~30	Suitable for rough milling of M-type material
YBM351	Combination of high-toughness substrate and coating composed of TiCN, thin Al ₂ O ₃ and TiN		P25~40	Suitable for rough milling of P- and M-type material
			M20~35	
YBD152	Good combination of substrate with high wear-resistance and coating composed of TiCN and thick Al ₂ O ₃		K05~25	Suitable for finish and semi-finish milling of K-type material
YBD252	Good combination of substrate with high wear-resistance and coating composed of TiCN and thick Al ₂ O ₃		K15~35	Suitable for rough and semi-finish milling of K-type material

Application case

Component shape



Machine and cooling

NC plane milling machine, wet machining

Vertical machining center, dry machining

Horizontal machining center, dry machining

Workpiece material and hardness

Casting stainless steel HB220-260

45# Forged steel HB240-270

HT250 HB220

Type of machining

Milling surface

Milling surface

Milling surface

Applicable tool

FMA04-200-C60-OF07-12

FMA01-125-B40-SE12-08

FMP02-100-B32-SE12-07

Applicable insert

YBM251/OFKR0704-DM

YBM351/SEET12T3-DR

YBD252/SEET120308PER-APM

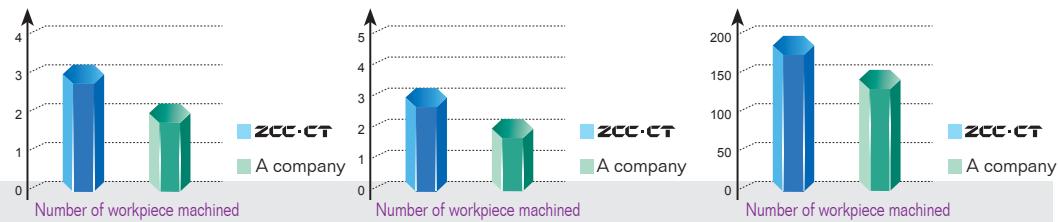
Cutting parameters

Vc=120m/min, fz=0.15mm/z, ap=2mm

Vc=212m/min, fz=0.2mm/z, ap=3mm

Vc=160m/min, fz=0.2mm/z, ap=1.5mm

Application results



Coated Cemented Carbide PVD

Grade	Coating structure	ISO applied range	Application field
YBG102	fine carbide substrate + Nano coating	K05~K20	Suitable for finish and semi-finish milling of K-type material
YBG202	Substrate with excellent deformation resistance + Nano coating	P10~30	PVD grade with wide application, widely applied in semi-finish milling of P-, M- and S-type material
		M10~30	
		S05~20	
YBG205	Ultra fine carbide substrate + Nano coating	P10~30	Suitable for finishing and semi-finish milling of P- and M- material
		M10~30	
YBG302	Substrate with good toughness and strength + Nano coating	P25~40	Suitable for rough milling of P- and M-type material
		M25~40	
YBG152	Substrate with moderate hardness and strength + Nano coating	K20~35	Suitable for rough and semi-finish milling of K-type material
YB9320	Substrate with high toughness + TiAlN based multi Nano coating	P10~30	PVD grade with wide application, widely applied in finishing and semi-finish milling of P-, M- and S- material
		M10~30	

Application case

Component shape



Machine and cooling

Machining center, dry cutting

Plane milling machine, dry cutting

Workpiece material and hardness

Nodular cast iron HB 220

7CrSiMoV HRC25

Type of machining

Milling surface

Cavity milling

Applicable tool

EMP02-050-A22-AP11-06

BMR03-050-MT5-M

Applicable insert

YBG102/APKT11T308-APM

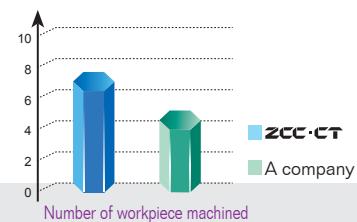
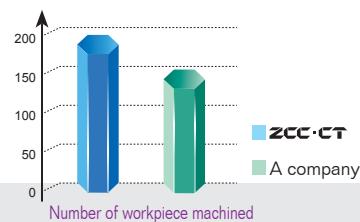
YBG302/XPHT50R2507- GM

Cutting parameters

Vc=235m/min, fz=0.15mm/z, ap=1~3mm

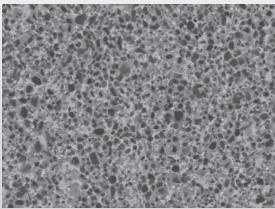
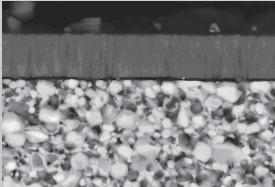
Vc=120m/min, fz=0.25mm/z, ap=8mm

Application results



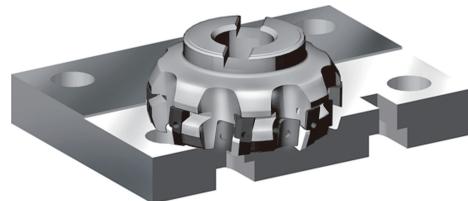
Grade classification for milling inserts

Germet

Grade	Coating structure	ISO applied range	Application field
YNG151		P05~20	Wide application in finish milling of P-, M-, and K-type material
		M05~20	
		K05~20	
YNG151C		P01~20	Wide application in finish milling of P-, M-, and K-type material
		M01~20	
		K01~20	

Application case

Component shape



Machine and cooling

Machining center, dry cutting

Machining center, dry cutting

Workpiece material and hardness

45# HB 170~220

NAK80 HRC42~48

Type of machining

Finish milling surface

Finish milling surface

Applicable tool

FMA03-160-B40-SE12-08

FME03-160-B40-SP12-10

Applicable insert

YNG151/SEEN1203AFTN

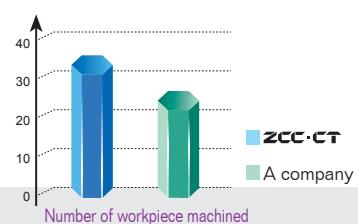
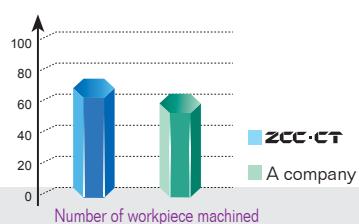
YNG151C/SPEN1203EDER

Cutting parameters

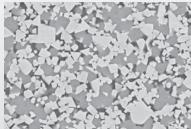
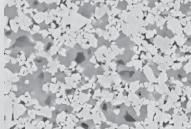
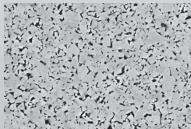
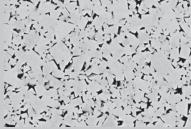
Vc=400m/min, fz=0.1mm/z, ap=0.3mm

Vc=420m/min, fz=0.12mm/z, ap=0.35mm

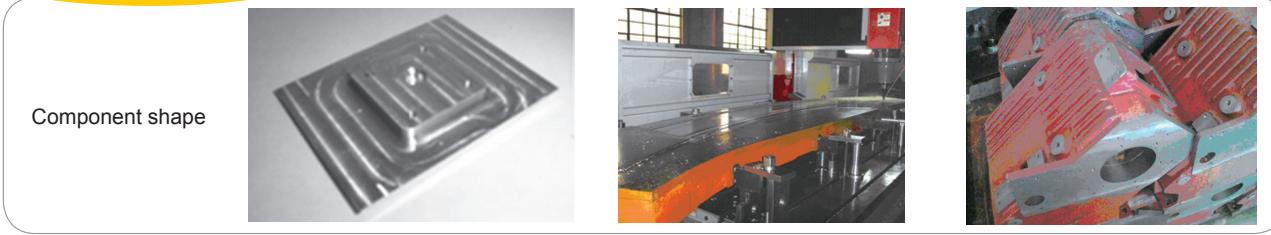
Application results



Cemented Carbide

Grade	Coating structure	ISO applied range	Application field
YC30S		P25~40	Suitable for rough milling of P- and M-type material
		M25~40	
YD051		K05~20	Suitable for finish milling of K-type material
YD101		N05~25	Suitable for rough milling of N-type material
		K15~35	
YD201		N15~30	Suitable for rough and semi-finish milling of K-type material, and for rough milling of N-type material

Application case



Machine and cooling	Vertical machining center, wet machining	Plane milling machine, wet machining	plane milling machine, dry cutting
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Workpiece material and hardness	Aluminum alloy HB100	40CrMnMo HB240	HT250 HB220
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Type of machining	Milling surface	Milling surface	Milling surface
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Applicable tool	FMA01-100-B32-SE12-07	FMP01-100-B32-TP22-06	FME03-160-B40-SP15-10
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Applicable insert	YD101/SEET12T3-LH	YC30S/TPKN2204PDR	YD201/SPKN1504EDTR
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Cutting parameters	Vc=300-350m/min, ap=1~2mm, fz=0.2mm/z	Vc=170m/min, ap=5~7mm fz=0.3mm/z	Vc=100-130m/min, ap=7mm, fz=0.35mm/z
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