

Milling Tools

Indexable milling tools

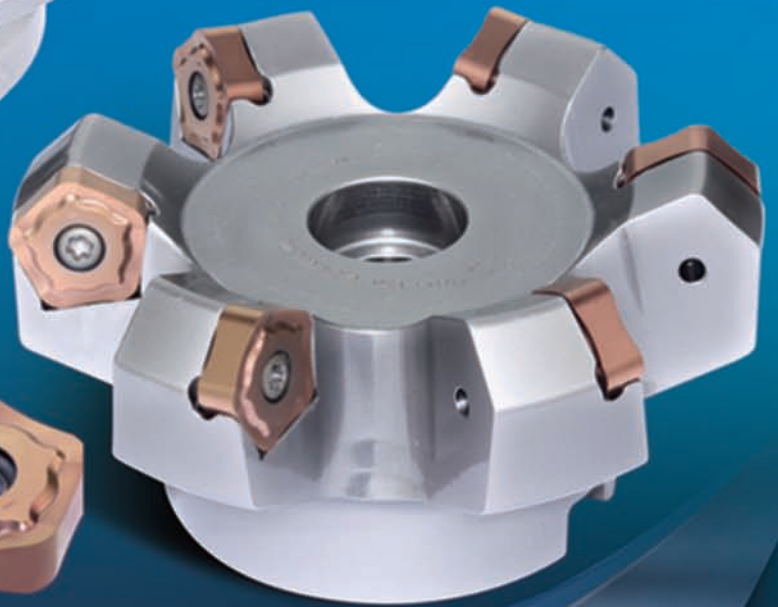
FMA 11 series

With outstanding economy and high performance



FMA12 series

High Performance Face Milling
with 16 edges for outstanding
economy Milling



FMA14 series





*New generation of the
tangential milling cutter*

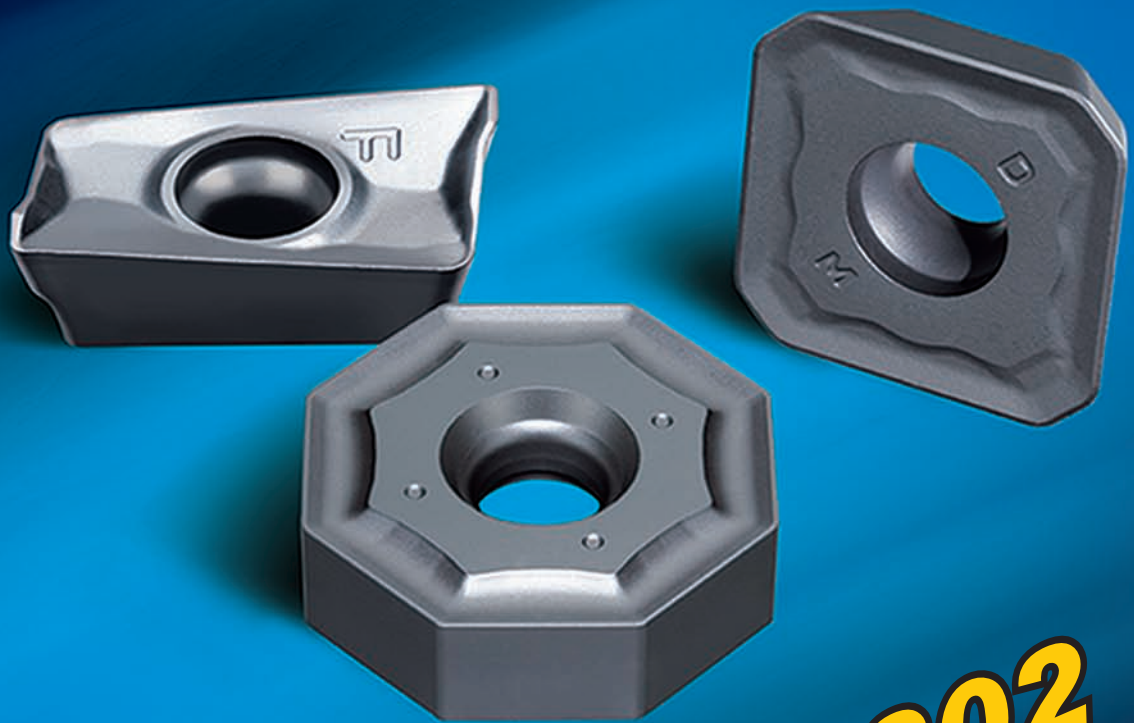
EMP09 series

Milling



- Indexable Milling Tools** ● B1-B240
 - Indexable milling tools B3-B201
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 - Technical information ● B234-B240

- Solid Carbide End Mills** ● B241-B569
 - Solid carbide end mills B241-B562
 - Technical information B563-B569
 - Interchangeable modular ● B570-B590
 - endmills



New Champion in Milling
Black Diamond Series grade
YBC302



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.

Product series

Type of machining

Workpiece materials

Approach angle

Structure and coupling size

Inserts specification

Insert shape, type, dimensions, grade, stock, etc.

Face milling tools

FMA01 **P M K N S** **Kr:45°**

Specification of tools

Type	Stock		Basic dimensions(mm)					Number of teeth Z	Type of coupling	Weight (kg)
	R	L	ØD	ØD ₁	ed	L	apmax			
FMA01										
-050-A22-SE12-04	▲	△	50	61	22	40	6	4	A	0.3
-063-A22-SE12-05	▲	△	63	74	22	40	6	5	A	0.5
-080-A27-SE12-06	▲	△	80	91	27	50	6	6	A	1.2
-100-B32-SE12-07	▲	△	100	107	32	50	6	7	B	1.52
-125-B40-SE12-08	▲	△	125	136	40	63	6	8	B	2.6
-160-B40-SE12-07	▲	△	160	174	40	63	6	7	B	4.548
-160-B40-SE12-10	▲	△	160	170	40	63	6	10	B	4.92
-200-C60-SE12-08	▲	△	200	214	60	63	6	8	C	6.175
-200-C60-SE12-12	▲	△	200	210	60	63	6	12	C	7.6
-250-C60-SE12-10	▲	△	250	264	60	63	6	10	C	12.598
-250-C60-SE12-14	▲	△	250	260	60	63	6	14	C	13.5
-315-D60-SE12-18	▲	△	315	325	60	70	6	18	D	20.8
-100-B32-SE18-04	▲	△	100	120	32	63	10.4	4	B	2.22
-125-B40-SE18-05	▲	△	125	145	40	63	10.4	5	B	3.15
-160-B40-SE18-06	▲	△	160	180	40	63	10.4	6	B	5.01
-200-C60-SE18-08	▲	△	200	220	60	63	10.4	8	C	6.9
-250-C60-SE18-10	▲	△	250	270	60	63	10.4	10	C	13.1
-315-D60-SE18-12	▲	△	315	335	60	80	10.4	12	D	24.5

▲ Stock available △ Make-to-order

Spare parts

Diameter ØD	Insert	Insert screw	Shim	Shim screw	Wrench	Wrench
Ø50-Ø100	SEET12□□□□	Ø60M3 5-10	-	-	WT15S	-
Ø50-Ø315	SEET12□□□□	Ø60M3 5-12	S13BS	SM5-7XA	-	WH95L
Ø100-Ø315	SEET18□□□□	Ø60M5-17	S18BS	SM8-9XA	WT20T	WH50L

Tools code key: B24-B25 Grade selection guide: B19-B23 Technical data: B29-B240

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		Cemented carbide
		L	ØC	S	ed	bs	R					
SEET12T3-DF	SEET12T3-DF	13.4	13.4	3.97	4.1	2.55	--	●	●	●	●	
	SEET12T3-CF	13.4	13.4	3.97	4.1	2.55	--		○	●	●	
	SEET12T3-EF	13.4	13.4	3.97	4.1	2.55	--			●	●	●
SEET12T3-DM	SEET12T3-DM	13.4	13.4	3.97	4.1	2.55	--	●	●	●	●	
	SEET12T3-CM	13.4	13.4	3.97	4.1	2.55	--			●	●	
	SEET12T3-EM	13.4	13.4	3.97	4.1	2.55	--	●	●	●	●	●
SEET18T6-DM	SEET18T6-DM	18.0	18.0	6.1	5.5	1.5	--	○	○	○	○	
	SEET18T6-EM	18.0	18.0	6.1	5.5	1.5	--			○	○	
	SEET12T3-DR	13.4	13.4	3.97	4.1	2.55	--	●	●	●	●	
SEET12T3-CR	SEET12T3-CR	13.4	13.4	3.97	4.1	2.55	--	●	●	●	●	
	SEET12T3-LH	13.4	13.4	3.97	4.1	2.55	--					○
SEET12T3-W	SEET12T3-W	17.82	13.4	3.97	4.1	9.48	500	●	●	●	●	●
	SEET18T6-W	24.78	18.0	6.1	5.5	11.0	500					○

● 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
P		-DF	-DM	-DR
M, S		-EF	-EM	
K		-CF	-CM	-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.

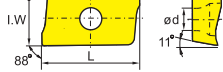
😐 Normal working condition: machine works normally. There are certain requirements for dimensional precision of components and surface quality.

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

Insert shape and size

Insert shape

AP□□



Workpiece material	Good working condition	Normal working condition	Bad working condition
Steel	😊😊😊😊😊	😐😐😐😐😐	😞😞😞😞😞
Stainless steel	😊😊😊😊😊	😐😐😐😐😐	😞😞😞😞😞
Cast iron	😊😊😊😊😊	😐😐😐😐😐	😞😞😞😞😞
Non-ferrous metal	😊😊😊😊😊	😐😐😐😐😐	😞😞😞😞😞
Heat resistant alloy, Ti alloy	😊😊😊😊😊	😐😐😐😐😐	😞😞😞😞😞

Insert shape	Type	Basic dimensions(mm)					CVD Coating				PVD Coating				Cemented carbide												
		L	I.W	S	ød	r	YBC301	YBC302	YBM251	YBM253	YBM351	YBD152	YBD252	YBG102	YBG202	YBG205	YBG302	YBG152	YBC252	YBS203	YBS303	YNG151C	YCA05	YD051	YD101	XD201	
	APKT070204-APF	7.32	4.34	2.38	2	0.4	●	●																			
	APKT11T304-APF	12.24	6.6	3.6	2.8	0.4	●	●																			
	APKT11T308-APF	12.24	6.6	3.6	2.8	0.8	●	●																			
	APKT160408-APF	17.877	9.33	5.76	4.4	0.8	●	●																			
	APKT070204-APM	7.32	4.34	2.38	2	0.4			●	●																	
	APKT11T304-APM	12.24	6.6	3.6	2.8	0.4			●	●																	
	APKT11T308-APM	12.24	6.6	3.6	2.8	0.8			●	●																	
	APKT11T312-APM	12.24	6.6	3.6	2.8	1.2					●																
	APKT11T316-APM	12.24	6.6	3.6	2.8	1.6						●															
	APKT11T320-APM	12.24	6.6	3.6	2.8	2.0							●														
	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	2.0																					
	APKT160424-APM	17.877	9.33	5.76	4.4	2.4																					
	APKT160430-APM	17.877	9.33	5.76	4.4	3.0																					
	APKT11T304-ALH	12.24	6.6	3.6	2.8	0.4																				★	★
	APKT11T308-ALH	12.24	6.6	3.6	2.8	0.8																				★	○
	APKT160408-ALH	17.877	9.33	5.76	4.4	0.8																				★	★

Insert grade

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

Stock condition

Insert shape

Insert dimension

Insert type



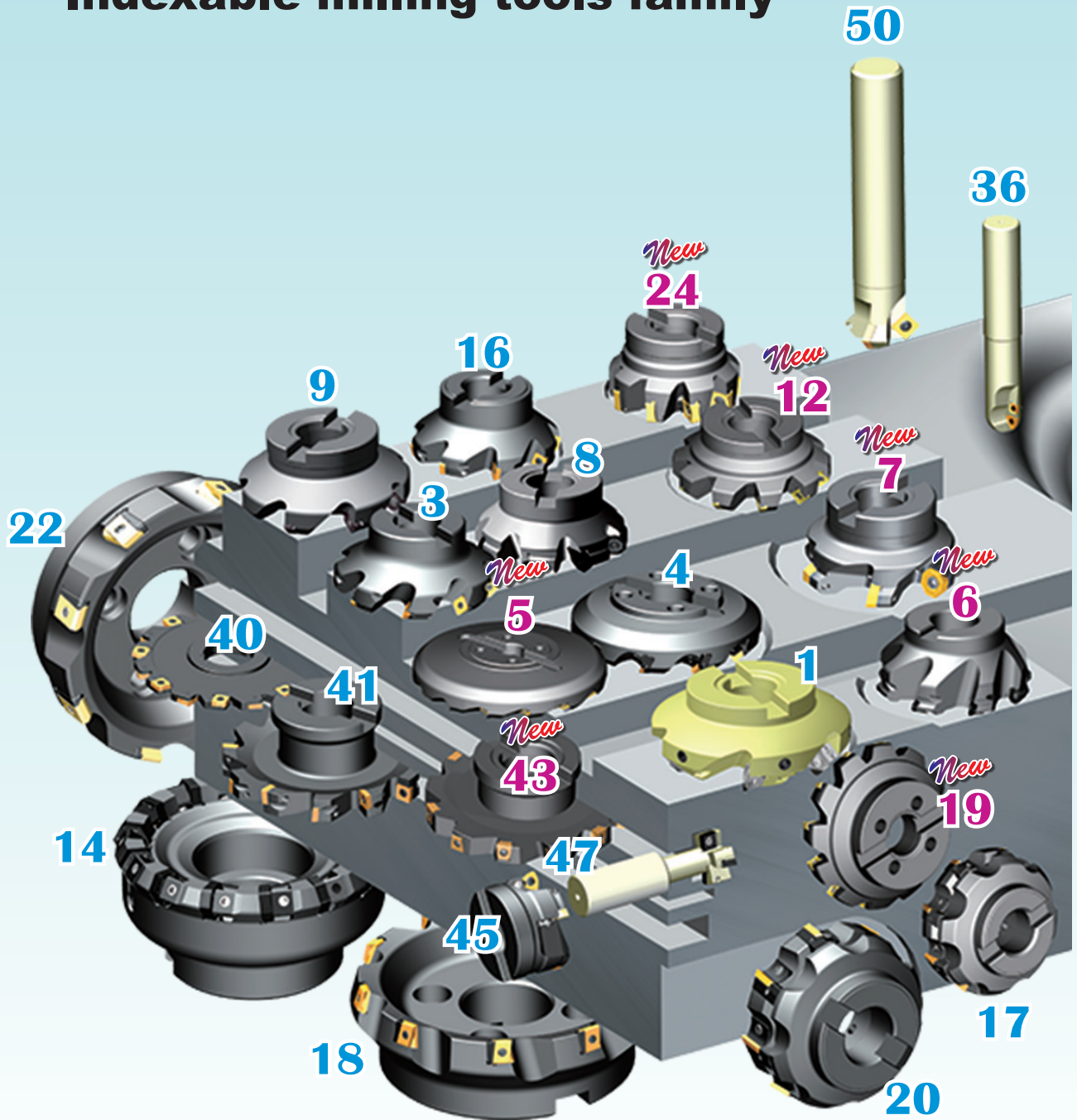
MILLING

Indexable Milling Tools

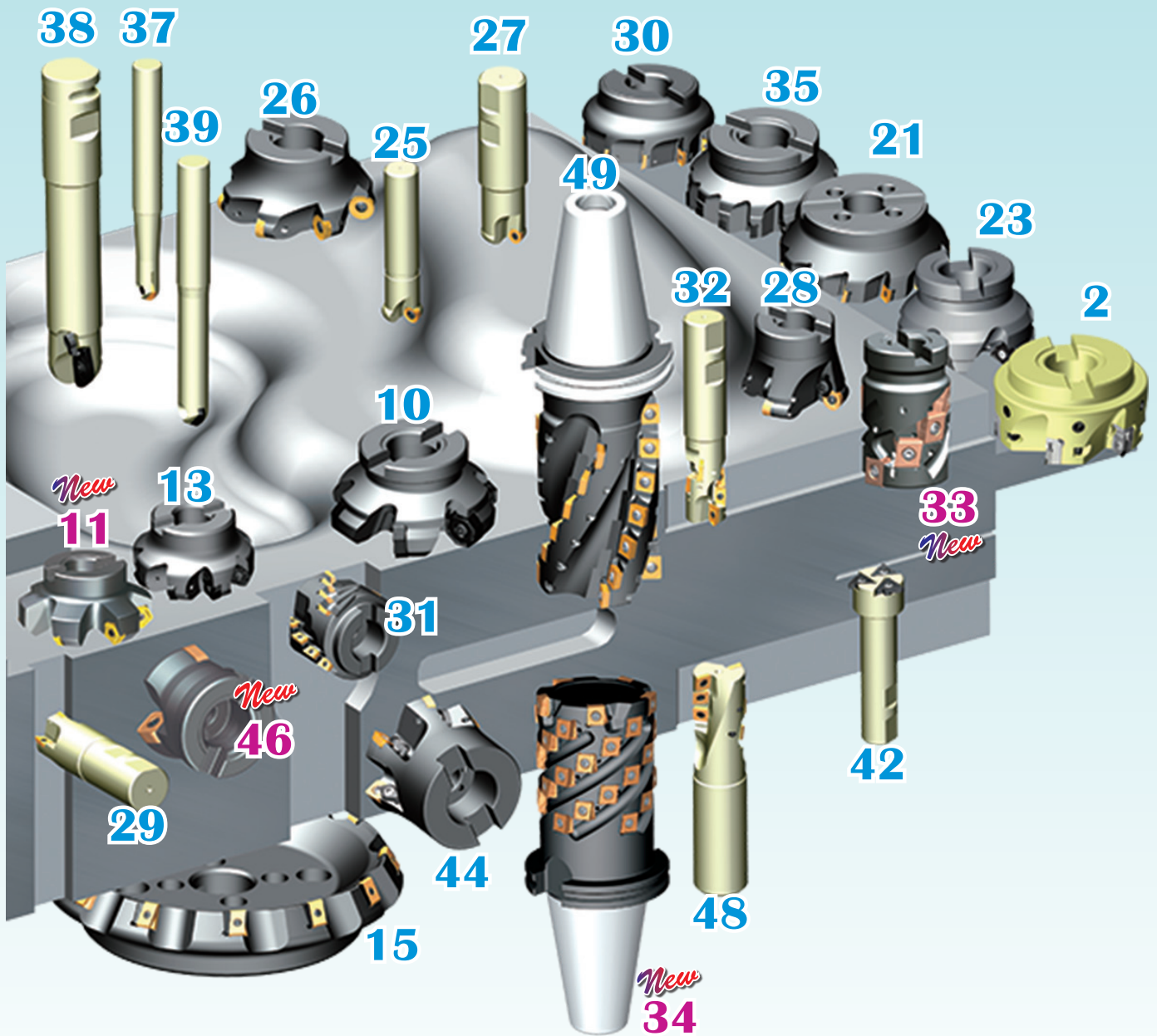
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Indexable milling tools family



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2	AMP01	B29	11	FMA14	B59	20	FMP01	B83
3	FMA01	B31	12	FMA17	B61	21	FMP02	B85
4	FMA03	B36	13	FMD02(PN11)	B64	22	FMP03	B90
5	FMA03A	B37	14	FMD02(HN09)	B69	23	FMP12	B93
6	FMA04(OFKT05□□)	B40	15	FMD03	B71	24	FMP17	B96
7	FMA04(ODH/MT06□□)	B42	16	FME02	B73	25	FMR01	B99
8	FMA07	B46	17	FME03	B75	26	FMR02	B102
9	FMA11	B51	18	FME04	B79	27	FMR03	B106



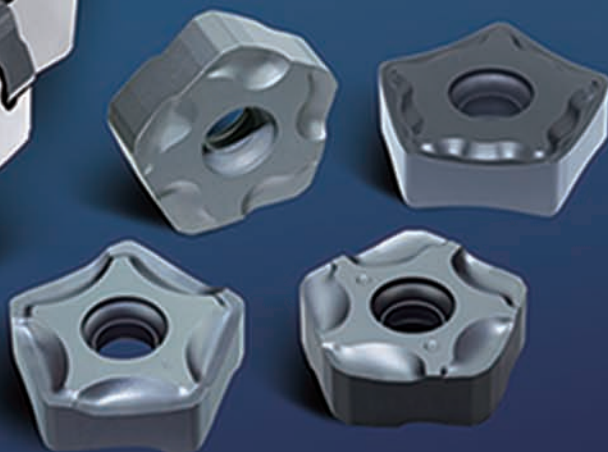
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29	EMP01	B112	37	BMR02	B143	46	XMR03	B189
30	EMP02	B118	38	BMR03	B145	47	TMP01	B191
31	EMP03	B121	39	BMR04	B157	48	HMP01(Ø40-Ø50)	B193
32	EMP04	B122	40	SMP01	B164	49	HMP01(Ø50-Ø80)	B194
33	EMP09	B126	41	SMP03	B167		HMP01 EC(Ø50-Ø80)	B195
34	EMP09 BT	B131	42	SMP05	B171	50	CM□01	B198
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35	EMP13	B136	44	XMR01(SDMT□□)	B178			










WHIRLWIND









FMD02

milling cutter series











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° a _{pmax} =6.6	SEHT12T3AFFN-AL	High-speed high-precision milling of Aluminum alloy, cast iron.	<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° a _{pmax} =2.0	SEHT12T308AFFN-CBN				
		Kr=45° a _{pmax} =2.5	SEHT12T308AFFN-PCD				
	AMP01 	B27	Kr=90° a _{pmax} =12			APHT12T304PPFR-AL	
			Kr=90° a _{pmax} =1.0			APHT12T304-W	
			Kr=90° a _{pmax} =2.0			APHT12T304PPFR-CBN	
			Kr=90° a _{pmax} =3.0			APHT12T304PPFR-PCD	
	Face milling	FMA01 	B31-32			Kr=45° a _{pmax} =6.0	SEET12T3-DF/DM/DR SEET12T3-CF/CM/CR SEET12T3-EF/EM SEET12T3-LH/W
Kr=45° a _{pmax} =10.4				SEET18T6-DM/EM/W			
FMA03 		B36	Kr=45° a _{pmax} =5.5	SE□□1203A□□□□	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° a _{pmax} =7.5	SE□□1504A□□□□			
FMA03A <i>New</i> 		B37	Kr=45° a _{pmax} =5.5	SE□□1203A□□□□		<ul style="list-style-type: none"> • Diameter range Ø80-Ø350. • Large rake angle makes cutting easier and faster. • Top clamping makes it easy to assemble and better vibration resistance. • Good rigidity of the tool system. The first choice for mold surface milling to achieve high surface quality. 	
			Kr=45° a _{pmax} =7.5	SE□□1504A□□□□			
FMA04 		B40	Kr=45° a _{pmax} =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. 	
			<i>New</i> 	B42			Kr=45° a _{pmax} =4.0









Operating pattern	Series/Shape	Approach angle / Max. cutting depth.	Applicable insert	Application overview	Features	
Face milling	FMA07 	$Kr=45^\circ$ $a_{pmax}=4.0$	ONHU060408-PF/PM	General face milling of steel and cast iron	<ul style="list-style-type: none"> Diameter range $\varnothing 25\text{-}\varnothing 50$. High-economy milling tool with 16 cutting edges. 	
	B47					
		$Kr=45^\circ$ $a_{pmax}=5.0$	ONHU08T508-PF/PM/W	General face milling of steel and cast iron	<ul style="list-style-type: none"> Diameter range $\varnothing 50\text{-}\varnothing 315$. High-economy milling tool with 16 cutting edges. 	
	B46					
	FMA11 	$Kr=45^\circ$ $a_{pmax}=5.5$	SNEG1205ANR-GM/HGR/W	General face milling of steel, cast iron and high-temperature alloy	<ul style="list-style-type: none"> Diameter range $\varnothing 63\text{-}\varnothing 315$. 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. 	
		$Kr=45^\circ$ $a_{pmax}=7.0$	SNEG1506ANR-GM/HGR/W			
		$Kr=45^\circ$ $a_{pmax}=9.0$	SNEG1907ANR-HGR			
	B51-52					
	FMA12 <i>New</i> 	$Kr=45^\circ$ $a_{pmax}=4.0$	ONHU0604□□ANN-GL/GM/GH ONMU0604□□-GH/GM	General face milling of steel, cast iron and high-temperature alloy	<ul style="list-style-type: none"> Diameter range $\varnothing 50\text{-}\varnothing 400$. 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-dimensional edge. 	
		$Kr=45^\circ$ $a_{pmax}=5.5$	ONMU09□□□□-GM/GH ONHU09□□□□ANN-GM/GH/GL			
	B55-56					
	FMA14 <i>New</i> 	$Kr=45^\circ$ $a_{pmax}=5.5$	PNEG110512-GL PNEG110530-GM PNEG110530-GH	General face milling of steel, stainless steel, cast iron	<ul style="list-style-type: none"> Diameter range $\varnothing 50\text{-}\varnothing 315$. High economy effect milling cutter with 10 cutting edges. The balanced design with 45 clearance angle. High anti-vibration ability which ensure the good surface quality. 	
	B59					
	FMA17 <i>New</i> 	$Kr=45^\circ$ $a_{pmax}=6.5$	SNGX1205ANN-GL/GM/GH SNMX1205ANN-GM SNMX120512-GL/GM/GH	General face milling of steel, cast iron and high-temperature alloy	<ul style="list-style-type: none"> Diameter range $\varnothing 50\text{-}\varnothing 400$. Double-sided chipbreaker milling insert has eight cutting edges and high economy; Same inserts for right and left cutters. Coarse pitch and close pitch are available. Diversified chipbreaker matching different coating for a wide range of application. 	
B61						
FMD02 	$Kr=67^\circ$ $a_{pmax}=5.0$	PNEG110512R/L-CF/CM/CR	General face milling of steel and cast iron	<ul style="list-style-type: none"> Diameter range $\varnothing 50\text{-}\varnothing 315$. High-economy milling tool with 10 cutting edges. 		
	$Kr=67^\circ$ $a_{pmax}=7.5$	PNEG110512R/L-PF/PM/PR				
	$Kr=67^\circ$ $a_{pmax}=6.5$	PNEG110512-KH/KM/KL				
B64-65						
	$Kr=55^\circ$ $a_{pmax}=6.0$	HNEX090512-DF/DM HNEX090512-DR	Face milling of cast iron	<ul style="list-style-type: none"> Diameter range $\varnothing 80\text{-}\varnothing 315$. High-economy milling tool with 12 cutting edges. Top clamping makes it easy to assemble and disassemble. 		
B69						










Indexable milling tools overview

Operating pattern	Series/Shape	Approach angle / Max. cutting depth.	Applicable insert	Application overview	Features
Face milling	FMD03  B71	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  B73	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.
	FME03  B75	Kr=75° a _{pmax} =6.0	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.
		Kr=75° a _{pmax} =8.0	SP□N1504ED□□ SP□R1504ED□□		
	FME04  B79	Kr=75° a _{pmax} =12.0	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.
	FME17 <i>New</i>  B81	Kr=75° a _{pmax} =8.0	SNGX1205ENN-GL/GM/GH SNMX120512-GL/GM/GH	General face milling of steel, cast iron and high-temperature alloy	<ul style="list-style-type: none"> Diameter range Ø50-Ø400. Double-sided chipbreaker milling insert has eight cutting edges and high economy; Same inserts for right and left cutters. Coarse pitch and close pitch are available. Diversified chipbreaker matching different coating for a wide range of application.
	FMP01  B83	Kr=90° a _{pmax} =18.0	TPKN2204PD□ 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  B85	Kr=90° a _{pmax} =6.7	SEET09T308PER-APF/ APM/APR	Face milling of steel, alloy steel, stainless steel, cast iron and high-temperature alloy	<ul style="list-style-type: none"> Diameter range Ø40-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 _{pmax} =10.8	SEET120308PER-APF/ APM/APR		
FMP03  B90	Kr=90° a _{pmax} =13.0	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 _{pmax} =17.0	LNKT2007DN-ZR			
	Kr=90° a _{pmax} =22.0	LNKT2510-ZR			

Indexable milling tools











Indexable milling tools overview

Operating pattern	Series/Shape	Approach angle / Max. cutting depth.	Applicable insert	Application overview	Features
Face milling	FMP12  B93	$K_r=90^\circ$ $a_{pmax}=5.7$	WNHU0604□□PNR-GM WNMU060408PNN-GM	Steel, alloy steel, cast iron and aluminum alloy	<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.
		$K_r=90^\circ$ $a_{pmax}=7.7$	WNHU0806□□PNR-GM WNMU080608PNN-GM WNHU080616PNR-LH		
	FMP12  B94	$K_r=90^\circ$ $a_{pmax}=5.7$	WNHU0604□□PNR-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. 	
	FMP17 <i>New</i>  B96-97	$K_r=88^\circ$ $a_{pmax}=10.5$	SNGX1205PNN-GL/GM/GH SNMX120512-GL/GM/GH SNCU120420-W4		General face milling of steel, cast iron and high-temperature alloy
	FMR01  B99	$a_{pmax}=5.0$	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.
		$a_{pmax}=6.0$	RCKT1204MO-DM/DR/ER/NM		
	FMR02  B102	$a_{pmax}=6.0$	RCKT1204MO-DM/DR/ER/NM	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.
		$a_{pmax}=8.0$	RCKT1606MO-DM/DR/ER/NM		
		$a_{pmax}=10.0$	RCKT2006MO-DR/ER		
	FMR03  B106	$a_{pmax}=4.0$	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.
$a_{pmax}=5.0$		RDKW10T3MO RDKT10T3MO-NM			
$a_{pmax}=6.0$		RDKW1204MO			
FMR04  B109	$a_{pmax}=6.0$	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. 	
	$a_{pmax}=8.0$	RDKW1605MO			
	$a_{pmax}=10.0$	RDKW2006MO			
Square shoulder milling	EMP01  B112-114	$K_r=90^\circ$ $a_{pmax}=6.0$	APKT070204-APF/APM	Multi-function milling of steel, alloy steel, stainless steel, cast iron, aluminum alloy and high-temperature alloy	<ul style="list-style-type: none"> Two mounting styles: Straight shank and Weldon shank, diameter range Ø10-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.
		$K_r=90^\circ$ $a_{pmax}=10.5$	APKT11T3□□-APF/APM APKT11T3□□-ALH		
		$K_r=90^\circ$ $a_{pmax}=15.5$	APKT160408- APF/APM APKT160408-ALH		






Operating pattern	Series/Shape	Approach angle / Max. cutting depth.	Applicable insert	Application overview	Features
Square shoulder milling	EMP02  B118	$K_r=90^\circ$ $a_{pmax}=11.5$	APKT11T3□□-APF/APM APKT11T3□□-ALH	Face milling of steel, alloy steel, stainless steel, cast iron, aluminum alloy and high-temperature alloy	<ul style="list-style-type: none"> Diameter range $\varnothing 50$-$\varnothing 160$. $K_r 90^\circ$, 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.
		$K_r=90^\circ$ $a_{pmax}=15.5$	APKT160408-APF/APM APKT160408-ALH		
	EMP03  B121	$K_r=90^\circ$ $a_{pmax}=39.0$	APKT11T3□□-APF/APM APKT11T3□□-ALH	Milling of steel, alloy steel, stainless steel, cast iron, aluminum alloy and high-temperature alloy at high cutting depth	<ul style="list-style-type: none"> Diameter range $\varnothing 50$-$\varnothing 100$. End mills with positive helical angle, good chip removal. For side face milling and slot machining. Close pitch, high machining efficiency.
	EMP04  B122	$K_r=90^\circ$ $a_{pmax}=29.4\sim 58.0$	APKT11T3□□-APF/APM APKT11T3□□-ALH	Multi-function drilling and milling of steel alloy steel, stainless steel, cast iron and high-temperature alloy	<ul style="list-style-type: none"> Diameter range $\varnothing 20$-$\varnothing 40$. End mills with positive helical angle, good chip removal. For side face milling and slot machining. Close pitch, high machining efficiency.
	EMP09 <i>New</i>  B126	$K_r=90^\circ$ $a_{pmax}=8.0$	LNKT0804□□PNR-GM/GL LNMT080404PNR-GM	Multiple functional milling of steel, alloy steel, stainless steel, cast iron and high-temperature alloy	<ul style="list-style-type: none"> Diameter range $\varnothing 20$-$\varnothing 40$. straight shank and tapered shank types. The tangential inserts with 90-degree clearance angel can be used in square shoulder milling and slotting which can stand more cutting forces.
		$K_r=90^\circ$ $a_{pmax}=11.5$	LNKT1206□□PNR-GM/GL LNMT120608PNR-GM		
	 B127-128	$K_r=90^\circ$ $a_{pmax}=8.0$	LNKT0804□□PNR-GM/GL LNMT080404PNR-GM	face milling of steel, alloy steel, stainless steel, cast iron and high-temperature alloy	<ul style="list-style-type: none"> Diameter range $\varnothing 40$-$\varnothing 160$. The tangential inserts with 90-degree clearance angel can be used in square shoulder milling and face milling with good rigidity..
		$K_r=90^\circ$ $a_{pmax}=11.5$	LNKT1206□□PNR-GM/GL LNMT120608PNR-GM		
	 B129	$K_r=90^\circ$ $a_{pmax}=33\sim 63$	LNKT1206□□PNR-GM/GL LNMT120608PNR-GM		<ul style="list-style-type: none"> Diameter range $\varnothing 32$-$\varnothing 100$. Used in side milling and slotting.. The helical cutting edge design lead to light cut.
		$K_r=90^\circ$ $a_{pmax}=30\sim 53$	LNKT0804□□PNR-GM/GL LNMT080404PNR-GM LNKT1206□□PNR-GM/GL LNMT120608PNR-GM		
	 B130		LNKT0804□□PNR-GM/GL LNMT080404PNR-GM		<ul style="list-style-type: none"> Diameter range $\varnothing 25$-$\varnothing 50$. High strength on the cutting edge with sharp cutting edge. Used in side milling and slotting. The tangential inserts could stand more cutting forces.
			LNKT1206□□PNR-GM/GL LNMT120608PNR-GM		
	EMP09 BT <i>New</i>  B131	$K_r=90^\circ$ $a_{pmax}=63\sim 125$	LNKT1206□□PNR-GM/GL LNMT120608PNR-GM	large cutting depth milling of steel, alloy steel, stainless steel, cast iron and high-temperature alloy	<ul style="list-style-type: none"> Diameter range $\varnothing 50$-$\varnothing 80$. High strength on the cutting edge with sharp cutting edge. Used in side milling and slotting. The tangential inserts could stand more cutting forces.
	EMP09 JT <i>New</i>  B132	$K_r=90^\circ$ $a_{pmax}=85\sim 125$			

Indexable milling tools

Indexable milling tools overview

Operating pattern	Series/Shape	Approach angle / Max. cutting depth.	Applicable insert	Application overview	Features
Square shoulder milling	EMP13  B136	$K_r=90^\circ$ $a_{pmax}=11.2$	AN□X1105□□PNR-GM/LH	Multi-functional milling of steel, alloy steel, stainless steel, cast iron and aluminum alloy	<ul style="list-style-type: none"> • Diameter range Ø25-Ø160. • Designed with extra thick insert in combination with double negative tool angle, 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.
	 B137	$K_r=90^\circ$ $a_{pmax}=14.5$	AN□X1506□□PNR-GM/LH		
	 B138	$K_r=90^\circ$ $a_{pmax}=43\sim64$	AN□X1105□□PNR-GM/LH AN□X1506□□PNR-GM/LH		
	 B139	$K_r=90^\circ$ $a_{pmax}=43\sim53$	AN□X1506□□PNR-GM/LH		
Profile milling	BMR01  B141	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  B143		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  B145  B146  B147  B148		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  B157 B158		ZOHX□□	Profile machining of steel, stainless steel and cast iron	<ul style="list-style-type: none"> • Diameter range Ø12-Ø32. • 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  B164 B165	cutting depth: see the detailed information about tool specifications	XSEQ12□□	Slot milling of steel, stainless steel and cast iron
SMP03  B167 B168		MPHT□□		Slot milling of steel, stainless steel and cast iron	<ul style="list-style-type: none"> • Diameter range Ø80-Ø200. • Two mounting styles: mounting by keyway and arbor mounting. • Groove width range : 8, 10, 12, 16, 18, 20mm.
SMP05  B171		QC16L□□ QC22L□□		Slot milling of steel, stainless steel and cast iron	<ul style="list-style-type: none"> • Diameter range Ø25-Ø44
SMP09 <i>New</i>  B173-174 B175-176		LNGX1005□□-GM LNGX1407□□-GM		Slot milling of steel, stainless steel and cast iron	<ul style="list-style-type: none"> • Diameter range Ø80-Ø250. • Optimized positioning structure of the cutter for reliable positioning. • Tangential milling cutter for excellent impact resistance. • Large rank angle makes cutting easier and faster. Tailor-made cutters and inserts are available for grooving of different width and nose radius. • Diameter range Ø80-Ø315. • Optimized positioning structure of the cutter for reliable positioning. • Tangential milling cutter for excellent impact resistance. • Large rank angle makes cutting easier and faster. Tailor-made cutters and inserts are available for grooving of different width and nose radius.




Indexable milling tools

Indexable milling tools overview

Indexable milling tools overview

Operating pattern	Series/Shape	Approach angle / Max. cutting depth.	Applicable insert	Application overview	Features
Special milling (high feed)	XMR01  B178  B179	cutting depth: see the detailed information about tool specifications	SDMT□□-DM/PM/NM	Slot milling of steel, stainless steel and cast iron	<ul style="list-style-type: none"> • Diameter range Ø20-Ø160. • 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.
	 B181  B182		WPGT□□ZSR WPGT□□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 Ø20-Ø160. • Two mounting types: straight shank and arbor mounting. • Cutting forces are resolved effectively, achieving cutting with high feed rate. • Double clamping, firm and reliable.
	XMR03 <i>New</i>  B189		SNGU□□-GM	cavity milling, face milling of steel, alloy steel, stainless steel, and cast iron	<ul style="list-style-type: none"> • Diameter range Ø50-Ø125 • double-sided inserts with 8 cutting edges and great economical effect. • Large rake angle design leads to low cutting resistance with high generality. • The overall impact resistance of the tool is outstanding. • Great anti-vibration ability and stable machining.
T-slot milling	TMP01  B191	$Kr=90^\circ$ $a_{pmax}=9\sim 28$	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	 B193	$Kr=90^\circ$ $a_{pmax}=55$	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.
	 B194	$Kr=90^\circ$ $a_{pmax}=74\sim 144$			
	HMP01 EC  B195	$Kr=90^\circ$ $a_{pmax}=74\sim 144$			

Indexable milling tools overview

Operating pattern	Series/Shape	Approach angle / Max. cutting depth.	Applicable insert	Application overview	Features
Chamfering	CMZ01  B198	Kr=30°	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.
	CMA01  B199	Kr=45°		Chamfer machining of steel, alloy steel, stainless steel and cast iron	
	CMD01  B200	Kr=60°			

Indexable milling tools

Indexable milling tools overview



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		YBG202 YBG205 YB9320 YBG252	YNG151 YNG151C		
	P20	YBC301 YBC302 YBM251				
	P30	YBM351	YBG202 YBG205 YB9320		YC30S	
	P40		YBG302			
M Stainless steel	M01					
	M10	YBM251 YBC302 YBM351 YBM253	YBG202 YBG205 YB9320 YBG252	YNG151 YNG151C		
	M20					
	M30		YBG302		YC30S	
	M40					
K Cast iron	K01					BK1021 BK1041
	K10	YBD152	YBG102	YNG151 YNG151C	YD051	
	K20					
	K30	YBD252	YBG152		YD201	BK2531
	K40					
N Non ferrous metal	N01					
	N10				YD101	DN1021
	N20					
	N30				YD201	
S Heat resistant alloy & Ti alloy	S01					
	S10		YBG202 YBS203			
	S20					
	S30		YBS303			
H Super hard material	H01					
	H10					
	H20					
	H30					

Indexable milling tools

Indexable milling tools overview

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 M10~30	Suitable for rough and semi-finish milling of P-type, M-type, whose hardness is below HRC45 and under
YBM251	Combination of high-toughness, high-strength substrate and coating composed of TiCN, thin Al ₂ O ₃ and TiN		P15~40 M10~30	Suitable for semi-finish and rough milling of P- and M-type material
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 M20~35	Suitable for rough milling of P- and M-type material
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

Vertical machining center, dry machining

Horizontal machining center, dry machining

Workpiece material and hardness

45# Forged steel HB240-270

HT250 HB220

Type of machining

Milling surface

Milling surface

Applicable tool

FMA01-125-B40-SE12-08

FMP02-100-B32-SE12-07

Applicable insert

YBM351/SEET12T3-DR

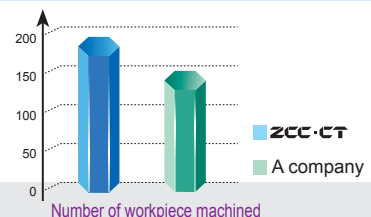
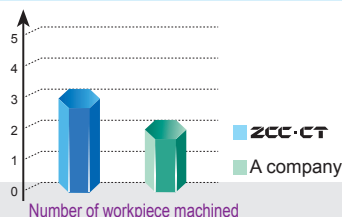
YBD252/SEET120308PER-APM

Cutting parameters

V_c=212m/min, f_z=0.2mm/z, a_p=3mm

V_c=160m/min, f_z=0.2mm/z, a_p=1.5mm

Application results



Grade classification for milling inserts

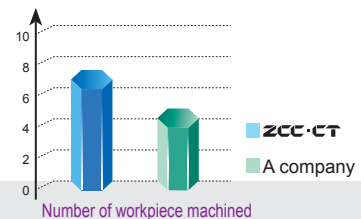
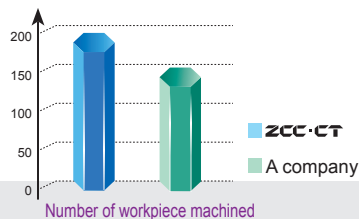
Coated Cemented Carbide PVD

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	
YBS203	The excellent resistance to deformation substrate+ Nano coating	S10~20	The general grade for S type machining, suitable for the milling of S type hard-to-cut materials.
YBS303	The great rigidity and strength substrate + Nano coating	S20~30	Suitable for milling of titanium alloy materials

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	YB9320/APKT11T308-APM	YBG302/XPHT50R2507- GM
Cutting parameters	$V_c=235\text{m/min}$, $f_z=0.15\text{mm/z}$, $a_p=1\sim3\text{mm}$	$V_c=120\text{m/min}$, $f_z=0.25\text{mm/z}$, $a_p=8\text{mm}$

Application results

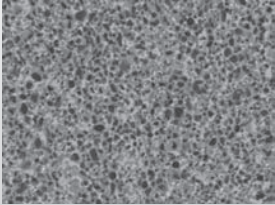
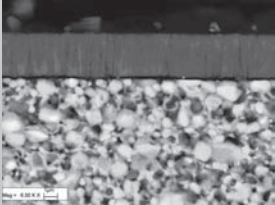


Indexable milling tools

Grade classification for milling inserts

Grade classification for milling inserts

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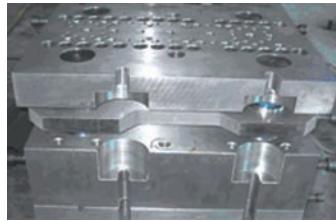
Grade	Coating structure	ISO applied range	Application field
YNG151		P05~20	Wide application in finish milling of P-, M-, and K-type material
		M05~20	
		K05~20	
YNG151C		P01~20	Wide application in finish milling of P-, M-, and K-type material
		M01~20	
		K01~20	

Indexable milling tools

Grade classification for milling inserts

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

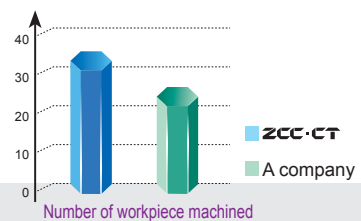
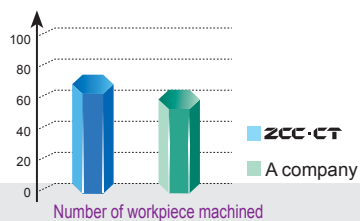
YNG151C/SPEN1203EDER

Cutting parameters

$V_c=400\text{m/min}$, $f_z=0.1\text{mm/z}$, $a_p=0.3\text{mm}$


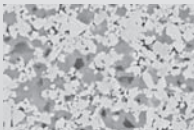
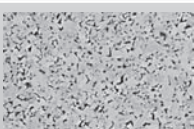

$V_c=420\text{m/min}$, $f_z=0.12\text{mm/z}$, $a_p=0.35\text{mm}$

Application results



Grade classification for milling inserts

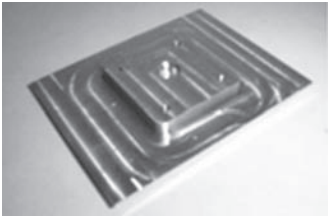


Cemented Carbide

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
YD201		K15~35	Suitable for rough and semi-finish milling of K-type material, and for rough milling of N-type material
		N15~30	

Indexable milling tools

Grade classification for milling inserts

Application case

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