

Technical Guide for Future Mill (FMA) 45°

Comprehensive Milling Cutter with High Productivity

1. A wide range of chipbreakers are available.
2. Light cutter body allows high speed machining without chattering, making it possible to use on machines with low horse power.
3. Smooth cutting with low cutting force is accomplished with a high rake angle.



Machining Example



Chipbreakers

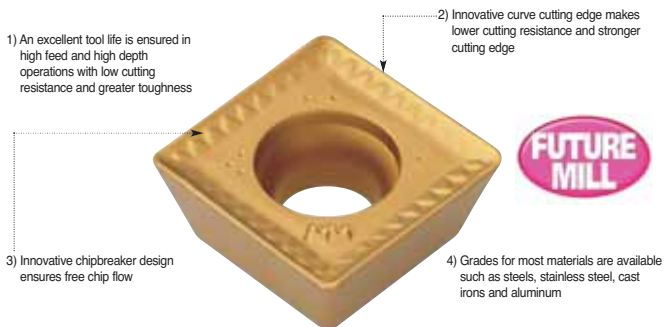
	Chip-Breakers	Cutting edge shape	Use and Features of Chip Breakers
Light cutting	Non C/B		Superior surface roughness finishing due to ground-type cement insert.
	MF		Superior cutting quality for light and difficult to cut material cutting through the low cutting resistance type of chipbreaker
General cutting	MM		Suitable for a wide range of cutting, due to special shape design for general cutting.
Roughing	MR		Tough cutting edge provides stable and consistent cutting performance, even at severe intermittent cutting.
For Aluminum	MA		Superior cutting quality for aluminum cutting resulting from application of proper cutting edge treatment and buffing of surface.

Recommended Cutting Conditions

ISO	C/B	MF		MM		MR		MA	
	Grade	V(m/min)	fz(mm/tooth)	V(m/min)	fz(mm/tooth)	V(m/min)	fz(mm/tooth)	V(m/min)	fz(mm/tooth)
P	NCM325	200 ~ 300	0.05 ~ 0.2	150 ~ 300	0.1 ~ 0.3	150 ~ 250	0.1 ~ 0.3	-	-
	PC3535	200 ~ 300	0.05 ~ 0.2	150 ~ 300	0.1 ~ 0.3	100 ~ 250	0.1 ~ 0.3	-	-
M	PC9530	100 ~ 180	0.05 ~ 0.15	120 ~ 180	0.1 ~ 0.3	-	-	-	-
	NCM335	120 ~ 200	0.05 ~ 0.15	120 ~ 200	0.1 ~ 0.3	-	-	-	-
K	NCM310K	180 ~ 300	0.05 ~ 0.2	180 ~ 300	0.1 ~ 0.3	-	-	-	-
	PC215K	150 ~ 250	0.05 ~ 0.2	150 ~ 250	0.1 ~ 0.3	-	-	-	-
	NCM320K	150 ~ 250	0.05 ~ 0.2	150 ~ 250	0.1 ~ 0.3	-	-	-	-
Aluminum	H01	-	-	-	-	-	-	350 ~ 1,000	0.1 ~ 0.35

Technical Guide for Future Mill (FMP) 90°

Features of FMP Insert



Inserts Feature & Application

- Korloy's innovative curve cutting edge and chipbreaker design ensures ideal 90 degree cutting and lower cutting resistance
- Various applications are available with multifunctional cutters (facing, slotting, square shoulder milling etc.)
- Improved inserts life time
- Excellent performance ensured at large depth of cutting operations due to strong cutting edge and low cutting resistance

Chip -breaker	Cutting Edge Shape		Recommendation C/B and Grades (●:1 st Choice, ○:2 nd Choice)									
			Low carbon steels Soft Steels		High carbon steels Alloy Steels		Stainless steels		Cast Irons		Aluminum alloys	
			C/B	Grade	C/B	Grade	C/B	Grade	C/B	Grade	C/B	Grade
MF		Low cutting Resistance Type	● NCM325 ○ PC230 ● NCM335	○ NCM325 ○ PC230 ○ NCM335	● NCM325 ○ PC230 ○ NCM335	● NCM325 ○ PC230 ● NCM335	● NCM310K ● NCM320K ○ PC215K	-	-	-	-	
MM		Reinforced Cutting Edge Type	○ NCM325 ○ PC230 ● NCM335	● NCM325 ○ PC230 ○ NCM335	● NCM325 ○ PC230 ● NCM335	○ NCM310K ● NCM320K ○ PC215K	-	-	-	-	-	
MA		Sharp Cutting Edge Type	-	-	-	-	-	-	-	-	● H01 ○ G10	

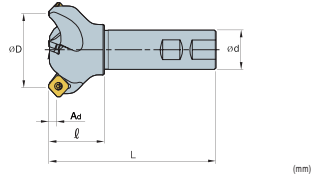
Recommended Cutting Conditions

ISO	Cutter diameter (Ø)		Ø32 ~ 63		Ø80 ~ 125	
	Grade	V(m/min)	fz(mm/tooth)	V(m/min)	fz(mm/tooth)	
						Grade
P	NCM325	100 ~ 250	0.05 ~ 0.3	120 ~ 250	0.08 ~ 0.3	
	NCM335	100 ~ 220	0.05 ~ 0.25	120 ~ 220	0.08 ~ 0.25	
	PC3535	100 ~ 220	0.05 ~ 0.25	100 ~ 220	0.1 ~ 0.25	
M	NCM335	80 ~ 180	0.05 ~ 0.2	80 ~ 180	0.1 ~ 0.25	
K	NCM310K	200 ~ 300	0.08 ~ 0.25	200 ~ 280	0.1 ~ 0.25	
	NCM320K	180 ~ 250	0.08 ~ 0.25	180 ~ 250	0.1 ~ 0.25	
	PC215K	150 ~ 250	0.08 ~ 0.25	150 ~ 230	0.1 ~ 0.25	
Aluminum	H01	400 ~ 1,000	0.05 ~ 0.4	400 ~ 1,000	0.1 ~ 0.4	

MILLING TOOLS

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FMAS3000/4000R (45°)

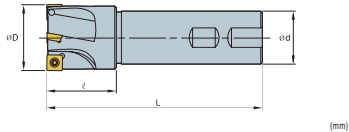


Designation	2007 £	ØD	Ød	L	l		As
FMAS 3025R	43.28	25	25	115	35	2	4
3032R	50.76	32	25	125	40	3	4
3040R	54.74	40	32	130	40	3	4
3050R	67.26	50	32	135	40	4	4
3063R	77.37	63	32	135	45	5	4
4050R	67.93	50	32	135	45	3	6.5
4063R	79.00	63	32	135	45	4	6.5

For inserts see page 91

Holder	Insert	Screw	Wrench for insert	Wrench for shim	Screw for shim	Shim
FMAS3000 FMAS4000	SE□□ 0903 SE□□ 14M4	FTKA0307 FTGA03512	TW09S TW15S	- HW35L	- SHXN0509F	SS42SAF

FMPS3000/4000S (90°)

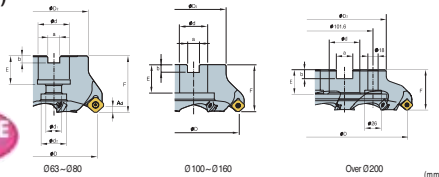


Designation	2007 £	ØD	L	Ød	l	
FMPS 3025S	44.08	25	115	25	35	2
3032S	57.42	32	125	25	40	3
3040S	72.94	40	130	32	40	4
3050S	87.25	50	135	32	40	5
3063S	99.00	63	135	32	45	6
4040S	69.00	40	130	32	40	3
4050S	74.36	50	135	32	45	4
4063S	89.00	63	135	32	45	5

For inserts see page 89

Holder	Insert	Screw	Wrench	Assembling
FMPS 3000 FMPS 4000	SDXT09M4 SDXT1305	FTGA 03508 FTNC 04511	TW15S TW20S	

FMACM3000/4000 (45°)

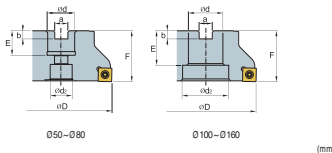


Designation	2007 £	ØD	ØDz	Ød	F	a	b	Ødt	Ødz	E		As	
FMACM	3050R	65.00	50	42	22	40	10.4	6.3	11	18	20	4	4
	3063R	75.00	63	49	22	40	10.4	6.3	11	18	20	5	4
	3080R	119.00	80	57	27	50	12.4	7.0	-	-	22	6	4
	3100R	139.00	100	67	32	50	14.4	8.0	-	-	32	7	4
	3125R	165.00	125	87	40	63	16.4	9.0	-	-	35	8	4
	3050R-H	79.00	50	42	22	40	10.4	6.3	11	18	20	6	4
3063R-H	90.00	63	49	22	40	10.4	6.3	11	18	20	8	4	
3080R-H	129.00	80	57	27	50	12.4	7.0	-	-	22	10	4	
3100R-H	169.00	100	67	32	50	14.4	8.0	-	-	32	12	4	
3125R-H	199.00	125	87	40	63	16.4	9.0	-	-	35	14	4	
FMACM	4050R	60.00	50	49	22	40	10.4	6.3	11	18	20	3	6.5
	4063R	70.00	63	49	22	40	10.4	6.3	11	18	20	4	6.5
	4080R	115.00	80	57	27	50	12.4	7.0	-	-	20	5	6.5
	4100R	129.00	100	67	32	50	14.4	8.0	-	-	20	5	6.5
	4125R	159.00	125	87	40	63	16.4	9.0	-	-	35	6	6.5
	4160R	199.00	160	107	40	63	16.4	9.0	-	-	35	7	6.5
	4200R	249.00	200	130	60	63	25.7	14.0	-	-	32	8	6.5

Spares are same as FMAS

For inserts see page 91

FMPCM3000/4000 (90°)



Designation	2007 £	ØD	Ød	Ødz	a	b	E	F		
FMPCM	3050S	89.00	50	22	18	10.4	6.3	20	40	5
	3063S	99.00	63	22	18	10.4	6.3	20	40	6
	3080S	119.00	80	27	20	12.4	7.0	22	50	7
	3100S	139.00	100	32	45	14.4	8.0	32	50	8
	4063S	95.00	63	22	18	10.4	6.3	20	40	5
	4080S	115.00	80	27	20	12.4	7.0	22.0	50	6
4100S	135.00	100	32	45	14.4	8.0	32.0	50	7	
4125S	150.00	125	40	56	16.4	9.0	35.0	63	8	

Spares are same as FMPS

For inserts see page 89

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