

Future-Mill Series

Multi purpose  
milling tool

# FMR Tools

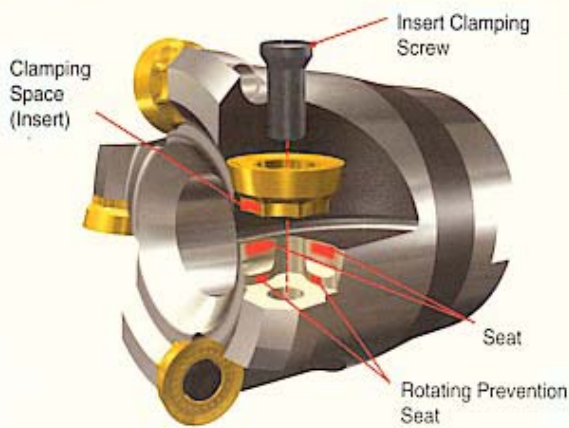


## Features

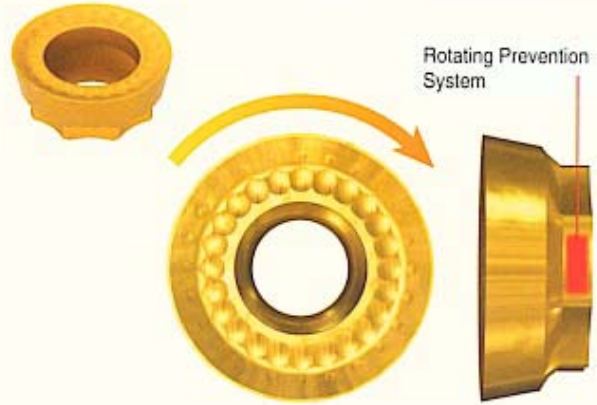
- Wide application from roughing to finishing, from general steel to mold steel.
- Strong clamping force : 2-tiered insert.
- 4-8 edges available round type insert.
- Chattering free thanks to the unequal flute spacing.
- High precision designing of the insert seat
- Unique rotating prevention system.
- Easy insert change.

# Future-Mill Series FMR Tools

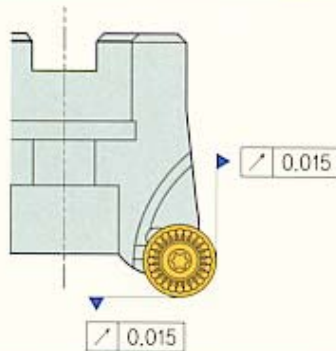
## Clamping System



FMR□ 3000 Type  
FMR□ 4000 Type



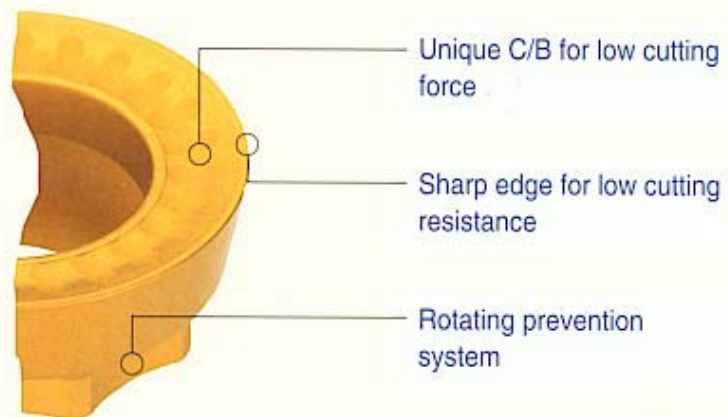
RDKT10T3M0-□□  
RDKT1204M0-□□



■ Seat : Precision designing of the insert seat



■ Un-even flute spacing prevent vibration at high speed application and provide stable machining





# Future-Mill Series FMR Tools

## FMR- INSERT

Designation	Use	Applicable Cutter	Dimension(mm)			Shape	
			I.C	T	$\alpha^\circ$		
RDKT10T3M0-MM	Medium	FMRC3000RD	10	3.97	15°		
RDKT10T3M0-MF	Finish	FMRC(M)3000RD-□					
RDKT10T3M0-MA	Aluminum	FMRS3000RD-□					
RDKT1204M0-MM	Medium	FMRC4000RD	12	4.76	15°		
RDKT1204M0-MF	Finish	FMRCM4000RD-□					
RDKT1204M0-MA	Aluminum	FMRS4000RD-□					

## FMR- Chip Breaker

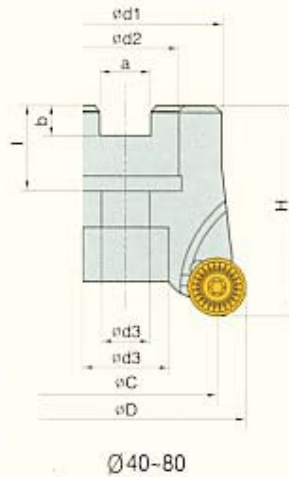
Shape		Edge	Features
Finish	MF		Low cutting resistance Light and Hard-to-cut material cutting C/B
Aluminum	MA		ALUMINUM Cutting C/B Buffing surface treatment : Good Chip flow & Adhesion resistance.
Medium	MM		General milling application

## Application

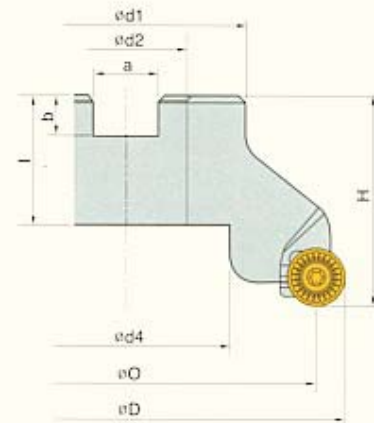
GRADE	I.C	(Metric)				(Inch)			
		I.C = 08, 10		I.C = 12, 16		I.C = 08, 10		I.C = 12, 16	
		V(m/min)	Fz(mm/tooth)	V(m/min)	Fz(mm/tooth)	Sfm	ipt	Sfm	ipt
P (steel)	NCM325	100-300	0.10-0.40	120-250	0.15-0.60	330-990	0.004-0.016	400-825	0.006-0.024
	NCM335	100-250	0.10-0.40	120-220	0.15-0.60	330-825	0.004-0.016	400-725	0.006-0.024
	PC3535	100-250	0.10-0.50	100-220	0.10-0.60	330-825	0.004-0.020	330-725	0.004-0.024
M stainless	PC9530	80-180	0.05-0.50	80-180	0.10-0.60	260-600	0.002-0.020	260-600	0.004-0.024
K cast iron	NCM310K	200-300	0.08-0.35	200-280	0.1-0.55	660-990	0.003-0.0015	660-925	0.004-0.022
	NCM320K	180-250	0.08-0.35	180-250	0.1-0.55	600-825	0.003-0.0015	600-825	0.004-0.022
	PC6510	150-250	0.08-0.35	150-230	0.1-0.55	500-825	0.003-0.0015	500-760	0.004-0.022
ALUMINUM	H01	400-1,200	0.05-0.65	400-1,000	0.1-0.7	1320-3960	0.002-0.026	1320-3300	0.004-0.022

# Future-Mill Series FMR Tools

## FMRC(M)3000/4000



Ø40-80



Ø100

pitch	designation	Dimension(mm)											Stock	I.C
		D	C	d1	d2	H	a	b	d3	d4	l	No. of tooth		
Close Pitch	3040RD	40	30	36	15.875(16)	40	8.4	5.6	9	14	18(20)	3	●	10
	3050RD	50	40	42	22.225(22)	50	8.4(10.4)	5(6.3)	11	16.5	20(20)	4	●	
	3063RD	63	53	49	22.225(22)	50	8.4(10.4)	5(6.3)	11	16.5	20(20)	5	●	
	3080RD	80	70	57	25.4(27)	50	9.75(12.4)	6(7.0)	14	20	25(22)	6	●	
	3100RD	100	90	67	31.75(32)	50	12.95(14.4)	8(8)	-	45	32(32)	7	●	
Extra close Pitch	3040RD-H	40	30	36	15.875(16)	40	8.4	5.6	9	14	18(20)	4	●	
	3050RD-H	50	40	42	22.225(22)	50	8.4(10.4)	5(6.3)	11	16.5	20(20)	5	●	
	3063RD-H	63	53	49	22.225(22)	50	8.4(10.4)	5(6.3)	11	16.5	20(20)	6	●	
	3080RD-H	80	70	57	25.4(27)	50	9.75(12.4)	6(7.0)	14	20	25(22)	7	●	
	3100RD-H	100	90	67	31.75(32)	50	12.95(14.4)	8(8)	-	45	32(32)	8	●	
Coarse Pitch	4050RD	50	38	42	22.225(22)	50	8.4(10.4)	5(6.3)	11	16.5	20(20)	4	●	12
	4063RD	63	51	49	22.225(22)	50	8.4(10.4)	6(7.0)	11	16.5	25(22)	4	●	
	4080RD	80	68	57	25.4(27)	50	9.75(12.4)	8(8)	14	20	32(32)	5	●	
	4100RD	100	88	67	31.75(32)	50	12.95(14.4)	10(9)	-	45	38(35)	6	●	
	4125RD	125	113	87	38.10(40)	63	16.15(16.4)	10(9)	-	56	38(35)	7	●	
Close Pitch	4063RD-M	63	51	49	22.225(22)	50	8.4(10.4)	5(6.3)	11	16.5	20(20)	5	●	
	4080RD-M	80	68	57	25.4(27)	50	9.75(12.4)	6(7.0)	14	20	25(22)	6	●	
	4100RD-M	100	88	67	31.75(32)	50	12.95(14.4)	8(8)	-	45	32(32)	7	●	
	4125RD-M	125	113	87	38.10(40)	63	16.15(16.4)	10(9)	-	56	38(35)	8	●	

● Stock, ○ Non stock





# Future-Mill Series FMR Tools

## Feed as per D.O.C

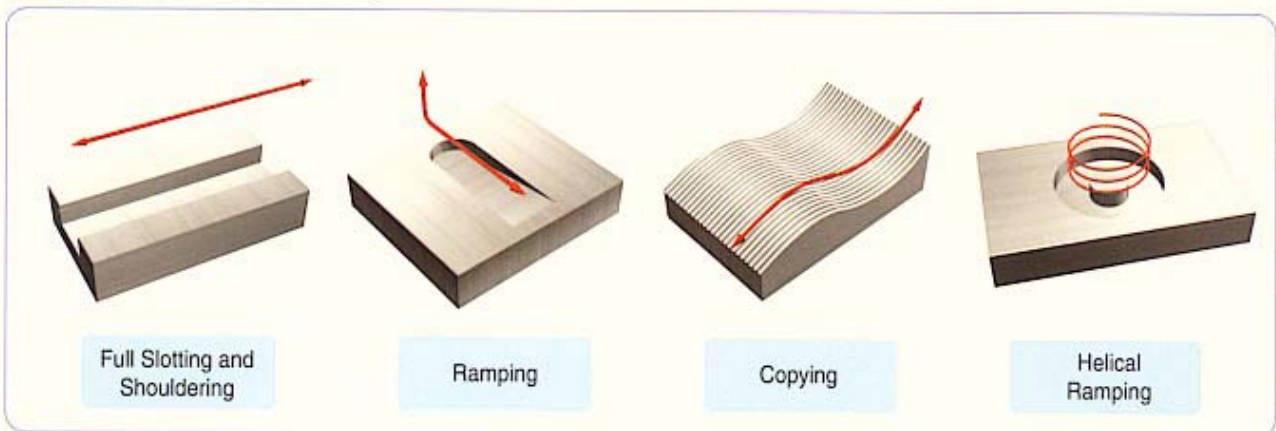
Designation	C/B	D.O.C mm (inch)							
		1	2	3	4	5	6	7	8
RDKT10T3M0-□□	MF/MM	0.40	0.35	0.30	0.20	0.10	-	-	-
RDKT1204M0-□□		0.50	0.45	0.30	0.25	0.22	0.20	-	-

Feed rate

## Part

Cutter	Screw	Wrench
FMR3000	FTGA03508 (Ø21 : FTGA03507)	TW15S
FMR4000	FTKA0410	

## Applications

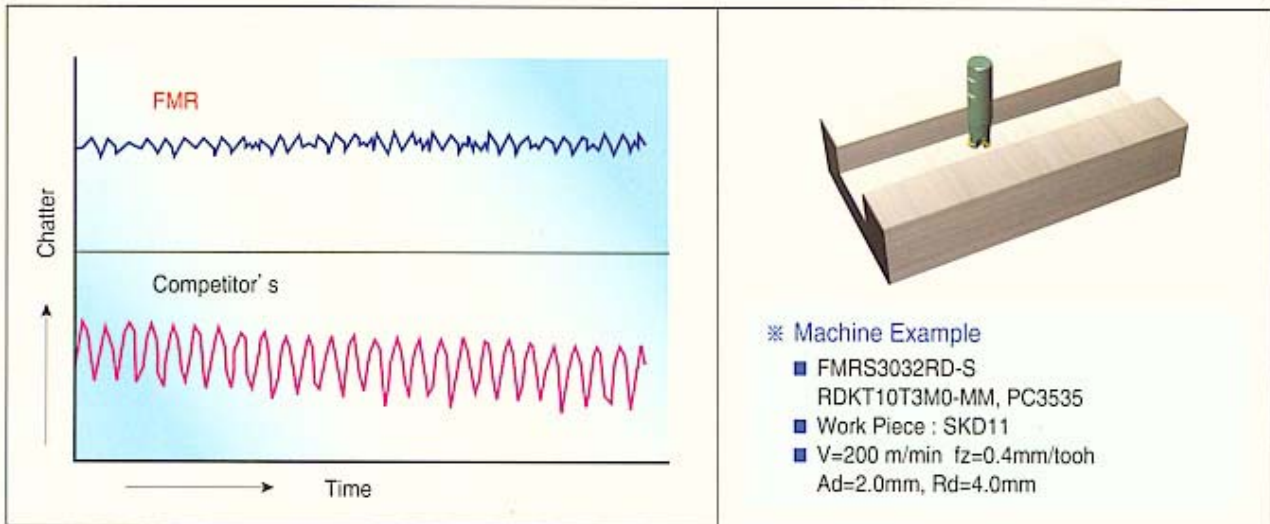


## Safety instruction

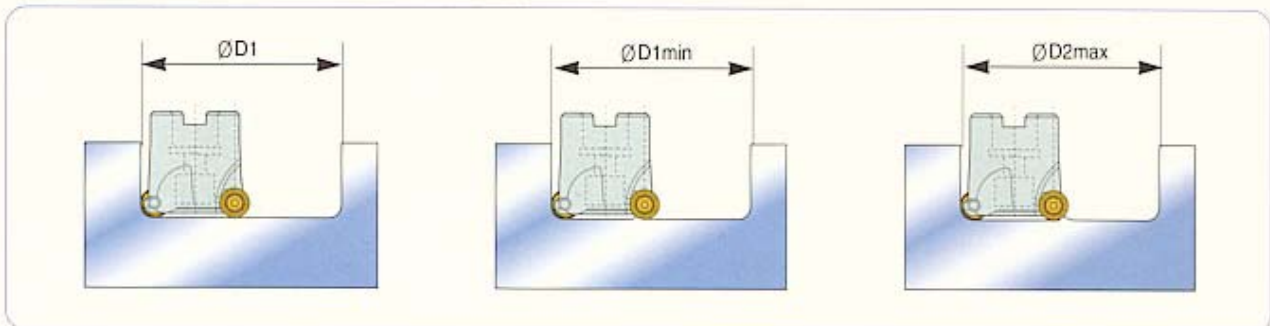
- Do not touch the tools with bare hand.
- Wear safety glasses or face cover.
- Make appropriate tool substitution if possible.
- Be careful when you handle hot and acute chips. Use special tools for chip removal.
- Be Equipped with fire extinguisher in case of fire.
- Clamp workpiece tightly.
- Apply recommended cutting condition for your safe and efficient operation.

# Future-Mill Series FMR Tools

## FMR Chattering TEST



## Helical / Plunging Application

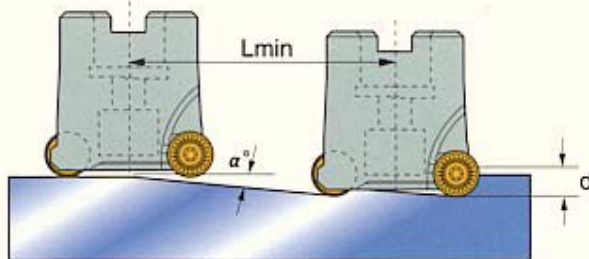


	$\varnothing D$	$\varnothing D1$	$\varnothing D1min$	$\varnothing D2max$	INSERT	Dmax
FMR3000	25	40	32	48	RDKT10T3M0	5
	32	54	46	62		
	40	70	62	78		
	50	90	82	98		
	63	116	108	124		
	100	190	182	198		
FMR4000	32	52	41	63	RDKT1204M0	6
	40	68	57	79		
	50	88	77	98		
	63	114	103	125		
	80	148	137	159		
	100	188	177	199		
	125	238	227	249		



# Future-Mill Series FMR Tools

## Ramping Application



$$L_{min} = \frac{d}{\tan \alpha^{\circ}} \text{ (mm)}$$

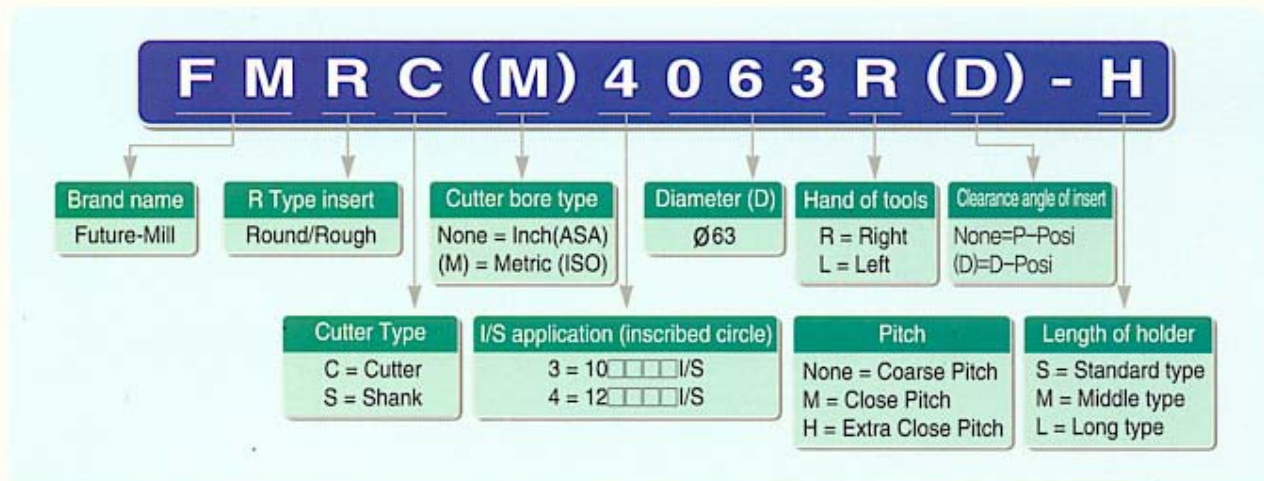
※ Lmin : minimum cutting (ramping) length  
 $\alpha^{\circ}$  : Ramping angle  
 d : depth

Diameter	$\alpha^{\circ}$ (max)	Lmin	INSERT
Ø25	21.8 °	5	RDKT10
Ø32	13.24 °	8.5	
Ø40	9.09 °	12.5	
Ø50	6.52 °	17.5	
Ø63	4.76 °	24	
Ø80	3.52 °	32.5	
Ø100	2.69 °	42.5	

Diameter	$\alpha^{\circ}$ (max)	Lmin	INSERT
Ø32	15.95 °	7	RDKT12
Ø40	10.30 °	11	
Ø50	7.13 °	16	
Ø63	5.08 °	22.5	
Ø80	3.69 °	31	
Ø100	2.79 °	41	
Ø125	2.14 °	53.5	

\* Note : Under the condition of d=2.0mm

## Designation of FMR



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