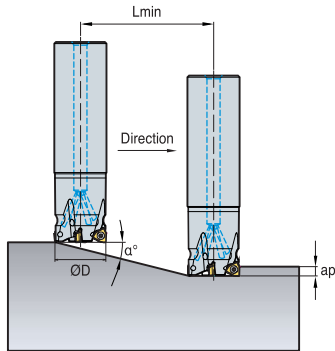


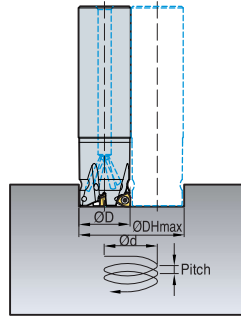
Rich Mill RM3

Ramping and helical cutting

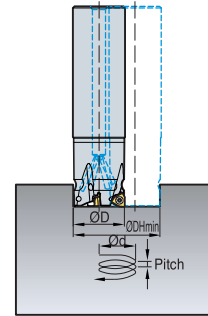
1. Ramping



2. Helical cutting for blind hole



3. Helical cutting for through hole



(mm)

Type	Tool Dia. ØD	ap	1. Ramping		2. Helical cutting for blind hole				3. Helical cutting for through hole	
			Max. rake angle α°	Lmin	Min. machining Dia. ØDHmin	Max. pitch	Max. machining Dia. ØDHmax	Max. pitch	Min. machining Dia. ØDHmin	Max. pitch
3000 type	20	5.5	15.5	19.8	36.5	5.5	38.5	5.5	33.0	5.5
	21	5.5	14.0	22.1	38.5	5.5	40.5	5.5	35.0	5.5
	25	5.5	10.0	31.2	46.5	5.5	48.5	5.5	43.0	5.5
	26	5.5	9.5	32.9	48.34	5.5	51.0	5.5	45.0	5.5
	32	5.5	6.5	48.3	60.5	5.5	62.5	5.5	59.0	5.5
	33	5.5	6.0	52.3	62.5	5.5	64.5	5.5	59.0	5.5
	40	5.5	4.5	69.9	46.5	5.5	78.5	5.5	73.0	5.5
	50	5.5	3.5	89.9	96.5	5.5	98.5	5.5	93.0	5.5
	63	5.5	2.5	126.0	122.5	5.5	124.5	5.5	119.0	5.5
	80	8	2.0	157.5	156.5	5.5	158.5	5.5	153.0	5.5
	100	8	1.5	210.0	194.5	5.5	198.5	5.5	193.0	5.5
	125	8	1.0	315.1	246.5	5.5	248.5	5.5	243.0	5.5
4000 type	25	8	24.0	18.0	44.5	8.0	48.0	8.0	38.5	8.0
	32	8	13.0	34.7	58.5	8.0	62.0	8.0	52.5	8.0
	33	8	12.0	37.6	60.02	8.0	64.4	8.0	54.5	8.0
	40	8	8.5	53.5	74.5	8.0	78.0	8.0	68.5	8.0
	50	8	6.0	76.1	94.5	8.0	98.0	8.0	88.5	8.0
	63	8	4.0	114.4	120.5	8.0	124.0	8.0	114.5	8.0
	80	8	3.0	152.6	154.5	8.0	158.0	8.0	148.5	8.0
	100	8	2.0	229.1	194.5	8.0	198.0	8.0	188.5	8.0
5000 type	80	12	5.5	124.6	153.5	12.0	158.0	12.0	146.5	12.0
	100	12	4.5	152.5	193.5	12.0	198.0	12.0	159.5	12.0
	125	12	3.5	196.2	242.5	12.0	248.0	12.0	236.5	12.0

* Please be sure to use cutting oil or air for ramping and helical machining
 $Lmin = ap / \tan(\alpha^\circ)$

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Application guideline for grade

Workpiece		P		M	K	N
		Carbon steel	Alloy steel	Stainless steel	Cast iron	Aluminum
Chip breaker	First choice	MM	MM	ML	ML	MA
	Second choice	ML	ML	-	MM	-
Grades	High speed machining	PC3700	PC3700	PC5300	PC6510	H01
	General machining	PC5400	PC5300	PC5400	PC5300	
	Interrupted machining	PC5400	PC5400	PC5400	PC5400	

Recommended cutting condition

• RM3 3000 type

Workpiece	Grades	Cutting conditions				Cutting conditions			
		vc (m/min)	fz (mm/t)	max ap (mm)	Available inserts	vc (m/min)	fz (mm/t)	max ap (mm)	Available inserts
P steel	PC3700	160~270	0.25~0.05	5.5	XNKT0604□□ PNSR-MM	160~270	0.2~0.05	5.5	XNKT0604□□ PNER-ML
	PC5300	150~240	0.25~0.05			150~240	0.25~0.05		
	PC5400	130~210	0.25~0.05			130~210	0.25~0.05		
M Stainless steel	PC5300	90~150	0.2~0.05			90~150	0.1~0.05		
	PC5400	70~120	0.2~0.05			70~120	0.1~0.05		
K Cast iron	PC6510	140~230	0.3~0.08			140~230	0.25~0.08		
	PC5300	120~200	0.3~0.08			120~200	0.25~0.08		

※ Maximum cutting condition: vc = 350 m/min, fz = 0.5 mm/t according to cutting environment

• RM3 4000 type

Workpiece	Grades	Cutting conditions				Cutting conditions			
		vc (m/min)	fz (mm/t)	max ap (mm)	Available inserts	vc (m/min)	fz (mm/t)	max ap (mm)	Available inserts
P steel	PC3700	160~270	0.3~0.05	8.0	XNKT0805□□ PNSR-MM	160~270	0.25~0.05	8.0	XNKT0805□□ PNER-ML
	PC5300	150~240	0.3~0.05			150~240	0.25~0.05		
	PC5400	130~210	0.3~0.05			130~210	0.25~0.05		
M Stainless steel	PC5300	90~150	0.25~0.05			90~150	0.2~0.05		
	PC5400	70~120	0.25~0.05			70~120	0.2~0.05		
K Cast iron	PC6510	140~230	0.35~0.08			140~230	0.3~0.08		
	PC5300	120~200	0.35~0.08			120~200	0.3~0.08		
N Aluminum	H01	400~1200	0.4~0.1		XNCT0805□□PNFR-MA	-	-	-	-

※ Maximum cutting condition: vc = 350 m/min, fz = 0.5 mm/t according to cutting environment

• RM3 5000 type

Workpiece	Grades	Cutting conditions				Cutting conditions			
		vc (m/min)	fz (mm/t)	max ap (mm)	Available inserts	vc (m/min)	fz (mm/t)	max ap (mm)	Available inserts
P steel	PC3700	160~270	0.3~0.05	12.0	XNKT1206□□ PNSR-MM	160~270	0.25~0.05	12.0	XNKT1206□□ PNER-ML
	PC5300	150~240	0.3~0.05			150~240	0.25~0.05		
	PC5400	130~210	0.3~0.05			130~210	0.25~0.05		
M Stainless steel	PC5300	90~150	0.25~0.05			90~150	0.2~0.05		
	PC5400	70~120	0.25~0.05			70~120	0.2~0.05		
K Cast iron	PC6510	140~230	0.35~0.08			140~230	0.3~0.08		
	PC5300	120~200	0.35~0.08			120~200	0.3~0.08		
N Aluminum	H01	400~1200	0.4~0.1		XNCT1206□□PNFR-MA	-	-	-	-

※ Maximum cutting condition: vc = 350 m/min, fz = 0.5 mm/t according to cutting environment

