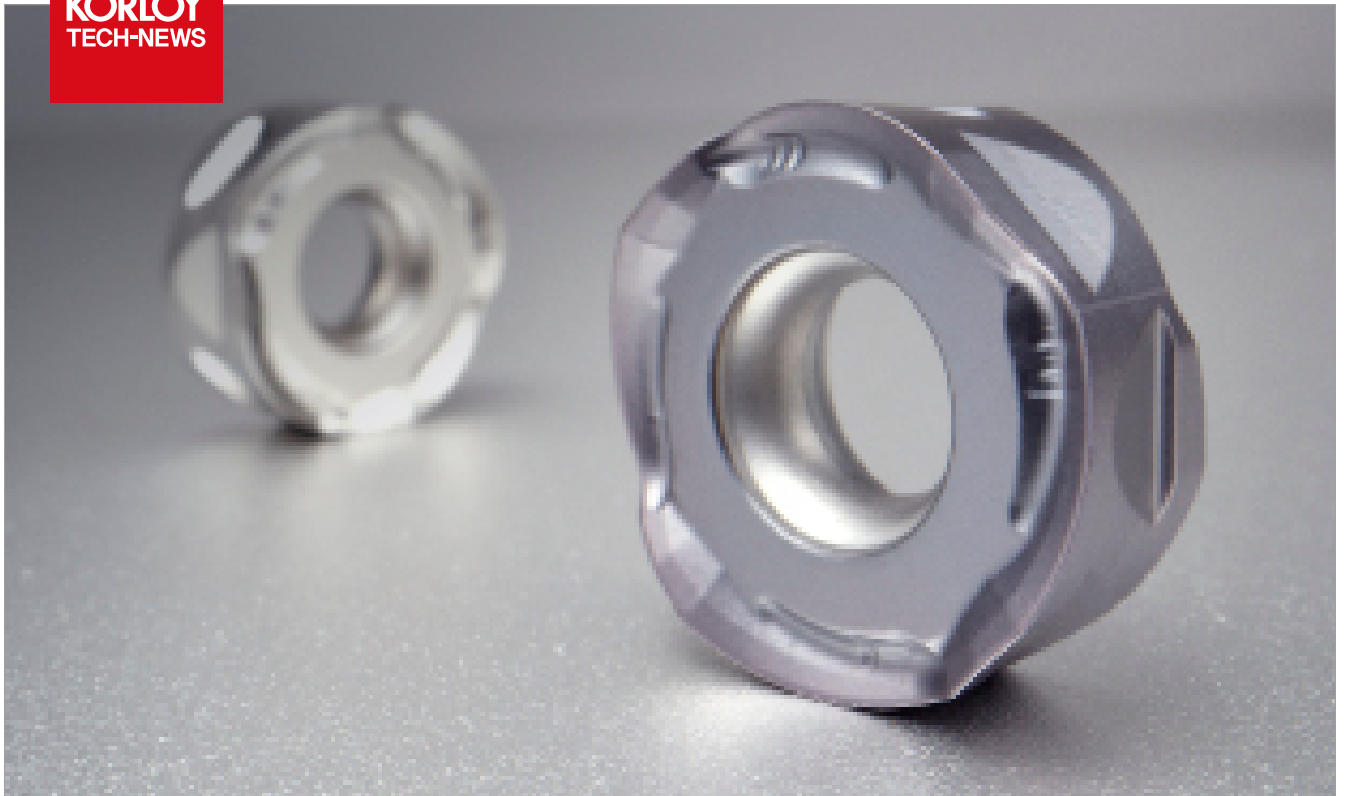


Double-sided round milling tool with 8 corners

RMR

KORLOY
TECH-NEWS



- The exclusive structure preventing rotation ensures stable machining.
- Double-sided round tool with 8 corners realizes cost efficiency.

Double-sided round milling tool with 8 corners

RMR

KORLOY launched double-sided round indexable milling tool, RMR which is the most effective in HRSA machining.

The **RMR**'s exclusive reverse positive structure prevents rotation of tool that has been a big trouble in HRSA cutting occurred by existing tool's round shape and enhances long tool life. In addition, its sharp chip breaker and helix cutting edge help HRSA

cutting smoothly without cutting load.

The wide minor cutting edge with the optimal angle between workpiece and tool enhances machinability and the double-sided shape with 8 corners ensures cost efficiency.

The optimal cutting edge for HRSA cutting and ultra-coating technology with excellent lubrication reduce fracture and enhance wear resistance and tool life.



High cost efficiency

- Maximum 8 corners are usable due to applying double-sided structure.

Good surface finish

- The optimal minor cutting edge ensures good surface finish.

Stable tool life

- The exclusive structure preventing rotation ensures stable machining.

Excellent performance

- Chip breaker for good surface finish and helix cutting edge realizes excellent cutting performance.

Code system


【Cutter type】

RMR	C	M	050	R	-	22	-	5	-	RN12
Rich Mill Round	Type C: Cutter	Arbor M: Metric A: Inch None: Asia	Machining dia. 050: Ø50 mm	Oil hole & Hand R: With oil hole, Right-handed NR: Without oil hole, Right-handed		Internal dia. 22: Ø22 mm	No. of tooth 5: 5 Teeth	Available insert RN12: RNMX12		

【Shank type】

RMR	S	040	R	-	3	W	32	-	110	-	RN12
Rich Mill Round	Type S: Shank	Machining dia. 040: Ø40 mm	Oil hole & Hand R: With oil hole, Right-handed NR: Without oil hole, Right-handed		No. of tooth 3: 3 Teeth	Shank type W: Weldon C: Cylinder	Shank dia. 032: Ø32 mm	Overall length 110: 110 mm	Available insert RN12: RNMX12		

Recommended grade and cutting edge

Chip breaker	Cutting edge	Recommended insert and grade for different workpieces (●: 1st recommendation)	
		S	M
		Grade	Grade
ML		● UNC840 ○ UPC845	● PC9540 ○ UPC845

Recommended cutting conditions

Workpiece	ISO	AISI	Specific cutting force (N/mm ²)	Hardness (HB)	<<< Wear resistance >>>		<<< Toughness >>>		ML	
					Grade	C/B	Grade	C/B		
					UNC840	ML	UPC845	ML		
					vc (m/min)	fz (mm/t)	vc (m/min)	fz (mm/t)	ap (mm)	
S	Nickel base	15156-3	Inconel625	2650	250	30	0.40	25	0.40	1~3
						45	0.20	40	0.20	
						60	0.05	55	0.10	
		9723	Inconel718	3000	320	25	0.40	20	0.40	
						40	0.20	35	0.20	
						55	0.05	50	0.10	
	Cobalt alloys	Stellite	Stellite	3000~3100	300~320	30	0.40	20	0.40	
						45	0.20	35	0.20	
						60	0.05	50	0.10	
	Titanium alloys	5832-11	Ti-6Al-4V	1400	320	30	0.40	20	0.40	
						50	0.20	40	0.20	
						70	0.05	60	0.10	

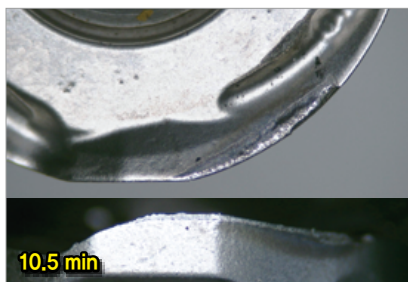
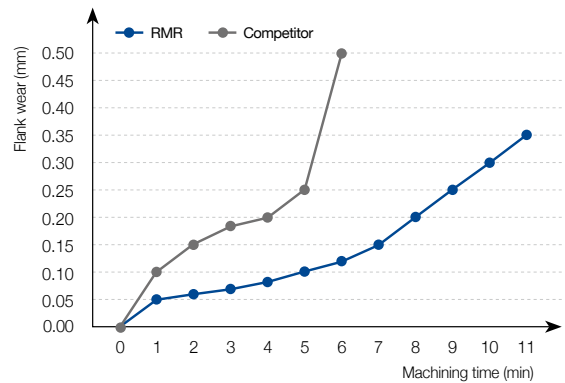
Recommended cutting conditions

Workpiece	ISO	AISI	Specific cutting force (N/mm ²)	Hardness (HB)	Grade	C/B	ML	
					PC9540	ML		
					vc (m/min)	fz (mm/t)		ap (mm)
M	Ferritic/ martensitic	X6CrAl13 X6Cr17	405 430	1800	200	120	0.30	1~3
						160	0.15	
						200	0.05	
		X12CrS13 X6CrMo17-1	416 434	2850	330	100	0.30	
						140	0.15	
						180	0.05	
	X12Cr13	403 410	2350	330	100	0.30		
					140	0.15		
					180	0.05		
	Austenitic	X5CrNi18-9 X2CrNi18-9 X5CrNiMo17-12-2 XCrNiMo17-12-3	304 316	2000	180	90	0.30	
						120	0.15	
						150	0.05	
Austenitic/ ferritic (Duplex)	-	S31803 S32750	2450	260	60	0.30		
					90	0.15		
					120	0.10		

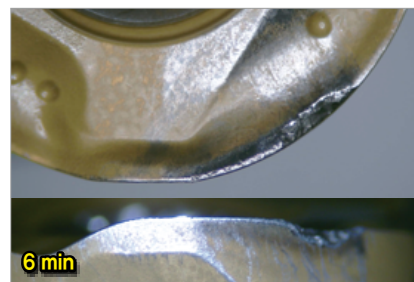
Performance evaluation

Wear resistance

- **Workpiece** 15156-3
100(L)x100(W)x100(H)
Steel rectangular tube
- **Cutting conditions** vc (m/min) = 30
fz (mm/t) = 0.4
ap (mm) = 1.8
ae (mm) = 35, wet
- **Tools** Insert RNMX1204M0E-ML (UNC840)
Holder RMRCM050R-22-5-RN12

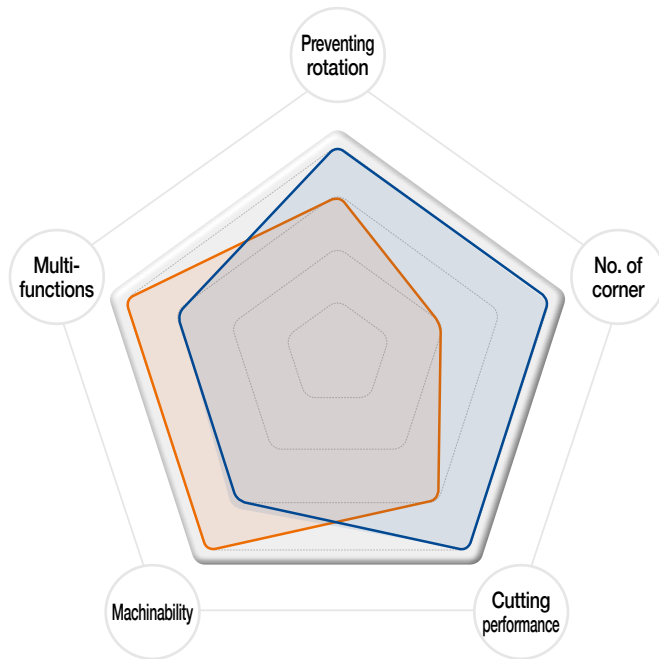


[RMR]



[Competitor]

Tool selection guide



— RMR

— FMR P-positive

RMR

- Excellent clamping force due to preventing rotation with reverse positive angle
- High cost efficiency from double-sided corners (max. 8 corners)
- High cutting performance with an optimal minor edge structure



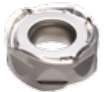
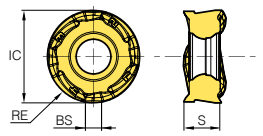
FMR P-positive

- Multi-functions by applying one sided shape
- Low cutting resistance due to positive setting



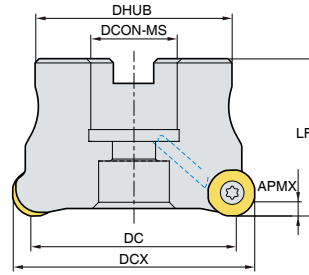
Tools	Preventing rotation	No. of corners	Cutting performance	Machinability	Multi-functions
RMR	★★★★★	★★★★★	★★★★★	★★★	★★★
FMR P-positive	★★★	★★	★★★	★★★★★	★★★★★

Insert

Inserts	Designation	Coated			Dimensions (mm)				Geometries
		PC9540	UNC840	UPC845	IC	BS	RE	S	
	RNMX 1204M0E-ML		●	●	12.0	2.0	6.0	4.75	

● : Stock item

RMRC(M)-RN12



- AR: -7°
- RR: -13°

(mm)

Designation	Stock		DCX	DC	DHUB	DCON-MS	LF	APMX		MIID
RMRCM	050R-22-5-RN12	●	5	50	40.4	42	22	40	3.5	0.28
	050R-22-6-RN12	●	6	50	40.4	42	22	40	3.5	0.29
	063R-22-6-RN12	●	6	63	53.4	42	22	40	3.5	0.45
	063R-22-7-RN12	●	7	63	53.4	42	22	40	3.5	0.46
	080R-27-6-RN12		6	80	70.4	60	27	50	3.5	0.83
	080R-27-8-RN12		8	80	70.4	60	27	50	3.5	0.82
	100R-32-7-RN12		7	100	90.4	70	32	63	3.5	1.67
	100R-32-9-RN12		9	100	90.4	70	32	63	3.5	1.67
	125R-40-10-RN12		10	125	115.4	90	40	63	3.5	2.82
	125R-40-12-RN12		12	125	115.4	90	40	63	3.5	2.83
RMRC	080R-25.4-6-RN12		6	80	70.4	60	25.4	50	3.5	0.85
	080R-25.4-8-RN12		8	80	70.4	60	25.4	50	3.5	0.85
	100R-31.75-7-RN12		7	100	90.4	70	31.75	63	3.5	1.71
	100R-31.75-9-RN12		9	100	90.4	70	31.75	63	3.5	1.71
	125R-38.1-10-RN12		10	125	115.4	90	38.1	63	3.5	2.88
	125R-38.1-12-RN12		12	125	115.4	90	38.1	63	3.5	2.88

● : Stock item

Available inserts



RNMX-ML

Designation	Coated		
	PC9540	UNC840	UPC845
RNMX 1204M0E-ML		●	●

● : Stock item

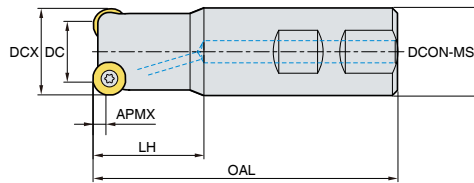
Available arbors

Designation	DCON	Available arbors	Designation	DCON	Available arbors	
RMRCM	22	BT□□-FMC22-□□	RMRCM	080R-25.4-□-RN12	BT□□-FMC25.4-□□	
		063R-22-□-RN12		100R-31.75-□-RN12	BT□□-FMC31.75-□□	
	080R-27-□-RN12	27		BT□□-FMC27-□□	125R-38.1-□-RN12	38.1
	100R-32-□-RN12	32	BT□□-FMC32-□□			
	125R-40-□-RN12	40	BT□□-FMC40-□□			

Parts

Specification	Screw	Wrench
Ø50~Ø125	FTNA0411-A	TW15S

RMRS-RN12



- AR: -7°
- RR: -15° ~ -13°

(mm)

Designation	Stock		DCX	DC	DCON-MS	LH	OAL	Shank	APMX		MIID
RMRS 032R-2W32-110-RN12	●	2	32	22.4	32	40	110	W	3.5	0.56	RNMX12
032R-3W32-110-RN12	●	3	32	22.4	32	40	110	W	3.5	0.55	
032R-2C32-200-RN12	●	2	32	22.4	32	40	200	C	3.5	1.09	
032R-3C32-200-RN12	●	3	32	22.4	32	40	200	C	3.5	1.09	
040R-3W32-110-RN12	●	3	40	30.4	32	40	110	W	3.5	0.62	
040R-4W32-110-RN12	●	4	40	30.4	32	40	110	W	3.5	0.62	
040R-3C32-200-RN12	●	3	40	30.4	32	40	200	C	3.5	1.15	
040R-4C32-200-RN12	●	4	40	30.4	32	40	200	C	3.5	1.15	
050R-5W40-120-RN12		5	50	40.4	40	40	120	W	3.5	1.08	
050R-6W40-120-RN12		6	50	40.4	40	40	120	W	3.5	1.08	
050R-5C42-300-RN12		5	50	40.4	42	40	300	C	3.5	3.05	
050R-6C42-300-RN12		6	50	40.4	42	40	300	C	3.5	3.05	
063R-6W40-130-RN12		6	63	53.4	40	50	130	W	3.5	1.43	
063R-7W40-130-RN12		7	63	53.4	40	50	130	W	3.5	1.43	
063R-6C42-300-RN12		6	63	53.4	42	50	300	C	3.5	3.30	
063R-7C42-300-RN12		7	63	53.4	42	50	300	C	3.5	3.26	

● : Stock item

Available inserts



RNMX-ML

Designation	Coated		
	PC9540	UNC840	UPC845
RNMX 1204M0E-ML		●	●

● : Stock item

Parts

Specification	Screw	Wrench
Ø32~Ø63	 FTNA0411-A	 TW15S

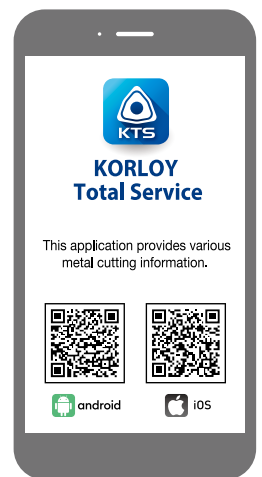
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