

TAC Mill Series : Radial Milling Cutters

New

ROUNDSPLIT

TRC / ERC type

metric

Overlapping Serrated Cutting Edge!



TRC / ERC type Radial milling cutters

Features

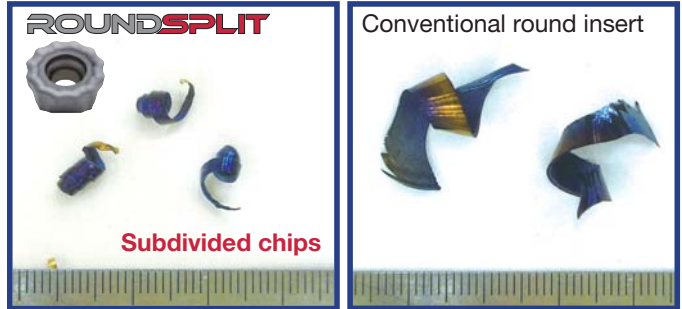
1 Anti-chatter cutter

Serrated cutting edge further breaks chips. This provides a very low cutting force and reduces chattering for long overhang applications.



Work material : S55C (200HB)
 Cutting speed : $V_c = 150$ m/min
 Feed per tooth : $f_z = 0.5$ mm/t
 Depth of cut : $a_p = 2$ mm
 Width of cut : $a_e = 50$ mm

Comparison of chip shape

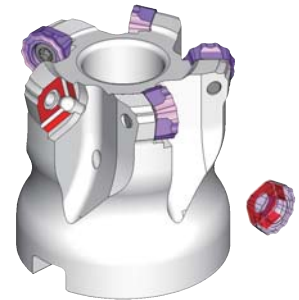
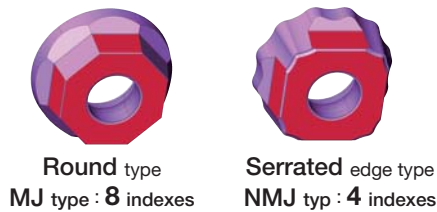


2 Serrated and round inserts are available

Unique insert boss provides a tight fit and rigid clamping.

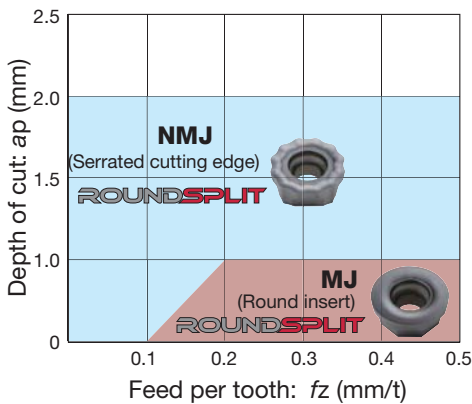
4 indexes per insert (Serration type)
 8 indexes per insert (Regular round type)

These serrations are overlapped individually. When changing corners, please use the same insert slot. If you change slots, you cannot use all 4 or 8 cutting edges correctly.

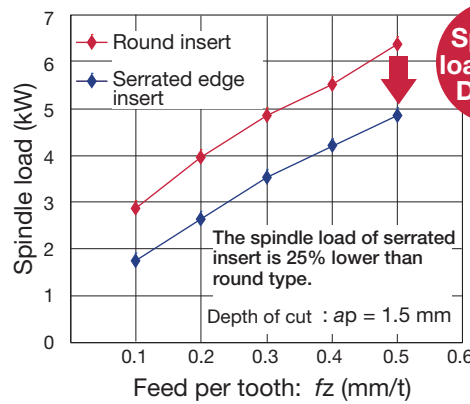


Cutting performance

Comparison of application areas



Comparison of spindle load



Work material : S55C (200HB)
 Tool \varnothing : $\varnothing 50$ mm (5 tooth)
 Cutting speed : $V_c = 150$ m/min
 Width of cut : $a_e = 50$ mm (Grooving)
 Overhang : 238 mm ($L/D = 4.76$) length

Insert Specification

For general machining with serrated cutting edge

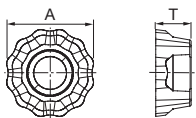


Fig. 1 NMJ

For general machining Round insert

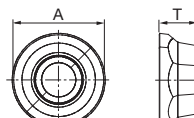


Fig. 2 MJ

For aluminium machining with serrated cutting edge

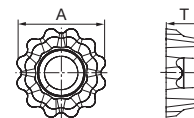
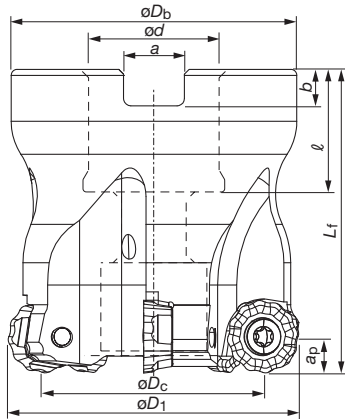


Fig. 3 NAJ

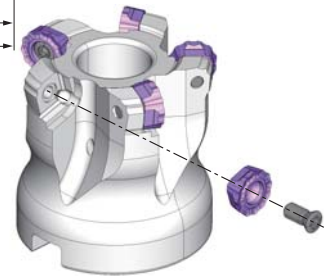
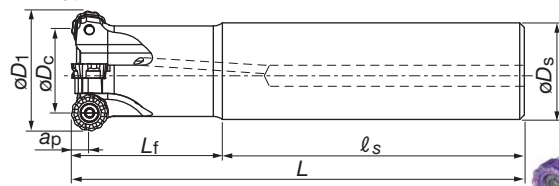
Cat. No.	Accuracy	Honing	Stock				Dimensions (mm)		Shape	Cutter
			Coated grades			Carbide	A	T		
			AH725	AH120	AH140					
RCMT1204EN-NMJ	M	with	●	●	●		12	4.8	Fig. 1	E/TRC12
RCMT1204EN-MJ	M	with	●	●	●		12	4.8	Fig. 2	
RCMT1204FN-NAJ	M	without				●	12	4.8	Fig. 3	
RCMT1606EN-NMJ	M	with	●	●	●		16	6.5	Fig. 1	E/TRC16
RCMT1606EN-MJ	M	with	●	●	●		16	6.5	Fig. 2	
RCMT1606FN-NAJ	M	without				●	16	6.5	Fig. 3	

Cutter Body Specification

Bore type



Shank type



Max. depth of cut
 RCMT12 type : Max. a_p = 6.0 mm
 RCMT16 type : Max. a_p = 8.0 mm

Descriptions		Replacement parts Cat. No.		
Applicable cutter		TRC12R...	TRC16R050~100...	TRC16R125...
Clamping screw		CSTB-4L090	CSTB-5L120	CSTB-5L120
Wrench	Torx Bit	BT15S	BT20S	BT20M
	Grip	H-TBS	H-TB	H-TB
Mono block type substitution wrench		T-15D	T-20D	T-20D

■ Bore type

Cat. No.	Stock	No. of Inserts	Dimensions (mm)								Weight (kg)	Air hole	Cutter mounting screw	Inserts
			ϕD_1	ϕD_c	ϕD_b	ϕd	r	L_f	b	a				
TRC12R040M16.0E04	●	4	40	28	35	16	19	40	5.6	8.4	0.2	with	FSHM8-30H	RCMT1204*N-***
TRC12R050M22.0E05	●	5	50	38	47	22	20	50	6.3	10.4	0.4	with	CM10X30H	
TRC12R052M22.0E05	●	5	52	40	49	22	20	50	6.3	10.4	0.4	with	CM10X30H	
TRC12R063M22.0E06	●	6	63	51	59	22	20	50	6.3	10.4	0.7	with	CM10X30H	
TRC12R066M22.0E06	●	6	66	54	62	22	20	50	6.3	10.4	0.7	with	CM10X30H	
TRC12R080M27.0E07	●	7	80	68	76	27	22	50	7	12.4	1.1	with	CM12X30H	
TRC16R050M22.0E04	●	4	50	34	47	22	20	50	6.3	10.4	0.3	with	FSHM10-40H	
TRC16R052M22.0E04	●	4	52	36	49	22	20	50	6.3	10.4	0.4	with	FSHM10-40H	
TRC16R063M22.0E05	●	5	63	47	59	22	20	50	6.3	10.4	0.6	with	CM10X30H	
TRC16R066M22.0E05	●	5	66	50	62	22	20	50	6.3	10.4	0.7	with	CM10X30H	
TRC16R080M27.0E06	●	6	80	64	76	27	22	50	7	12.4	1.0	with	CM12X30H	
TRC16R100M32.0E07	●	7	100	84	96	32	25	63	8	14.4	2.4	with	CM16X40H	
TRC16R125M40.0E08	●	8	125	109	98	40	32	63	9	16.4	3.0	with	-	

Descriptions		Replacement parts Cat. No.		
Applicable cutter		ERC12R...	ERC16R...	ERC16R040M32.0-02
Clamping screw		CSTB-4L090	CSTB-5L120	CSTB-5L105
Wrench (substitution)		T-15DB (T-15D)	T-20DB (T-20D)	T-20DB (T-20D)

■ Shank type

type	Cat. No.	Stock	No. of Inserts	Dimensions (mm)						Weight (kg)	Air hole	Inserts
				ϕD_1	ϕD_c	ϕD_s	r_s	L_f	L			
Standard	ERC12R032M32.0-03	●	3	32	20	32	80	70	150	0.8	with	RCMT1204*N-***
	ERC12R033M32.0-03	●	3	33	21	32	80	70	150	0.8	with	
	ERC12R040M32.0-04	●	4	40	28	32	100	50	150	0.8	with	
	ERC12R050M42.0-05	●	5	50	38	42	100	50	150	1.5	with	
	ERC16R040M32.0-02	●	2	40	24	32	100	50	150	0.8	with	RCMT1606*N-***
	ERC16R050M42.0-03	●	3	50	34	42	100	50	150	1.4	with	
Long	ERC12R032M32.0-03L	●	3	32	20	32	100	150	250	1.3	with	RCMT1204*N-***
	ERC12R033M32.0-03L	●	3	33	21	32	100	150	250	1.4	with	
	ERC12R040M32.0-04L	●	4	40	28	32	200	50	250	1.5	with	
	ERC12R050M42.0-05L	●	5	50	38	42	200	50	250	2.6	with	
	ERC16R040M32.0-02L	●	2	40	24	32	200	50	250	1.4	with	RCMT1606*N-***
	ERC16R050M42.0-03L	●	3	50	34	42	200	50	250	2.4	with	
Extra long	ERC12R032M32.0-03LL	●	3	32	20	32	120	180	300	1.6	with	RCMT1204*N-***
	ERC12R033M32.0-03LL	●	3	33	21	32	230	70	300	1.7	with	
	ERC12R040M32.0-04LL	●	4	40	28	32	250	50	300	1.8	with	
	ERC12R050M42.0-05LL	●	5	50	38	42	250	50	300	3.0	with	
	ERC16R040M32.0-02LL	●	2	40	24	32	250	50	300	1.7	with	RCMT1606*N-***
	ERC16R050M42.0-03LL	●	3	50	34	42	250	50	300	3.0	with	



Standard cutting conditions

Work material	Brinell hardness HB	Grades	Cutting Speed Vc (m/min)	Feed per tooth fz (mm/t) each chipbreaker		
				NMJ	MJ	NAJ
Low carbon steels (C15E etc.)	~ 200	AH725	100 - 160 - 220	0.17 - 0.25 - 0.3	0.2 - 0.5 - 0.7	-
High carbon steels (C45, C55 etc.)	200 ~ 300		100 - 150 - 200	0.17 - 0.2 - 0.25		
Alloyed steels (42CrMo4, 17Cr3 etc.)	150 ~ 300		100 - 140 - 180			
Tool steels (X 155 CrVMo 12 1 etc.)	~ 300					
Stainless steels (X 5 CrNi 18 9 etc.)	-	AH140	90 - 150 - 180	0.15 - 0.2 - 0.25	0.2 - 0.4 - 0.6	-
Grey cast irons	150 ~ 250	AH120	140 - 180 - 250	0.17 - 0.25 - 0.3	0.2 - 0.5 - 0.7	-
Ductile cast irons						
Aluminium alloys (Si < 13%)	-	KS15F	500 - 800 - 1200	-	-	0.1 - 0.25 - 0.3
Aluminium alloys (Si ≥ 13%)	-		100 - 200 - 300			
Heat-resisting alloy (Inconel 718, Ti-6Al-4V etc.)	-	AH725	20 - 35 - 50	0.15 - 0.2 - 0.25	0.2 - 0.4 - 0.6	-

- To remove excessive chip accumulation use an air blast.
- When chips stick to the cutting edges (aluminium machining), use a water soluble cutting fluid.

- Cutting conditions are limited by machine power and material rigidity. When the cutting width or depth is large, set Vc and fz below the recommended values and check the machine vibration and spindle load.



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