Tungaloy
Member IMC Group

Keeping the Customer First

Tungaloy Report No. 373-EE

TAC Mill Series : Radial Milling Cutters New

ROUNDSPLIT

TRC / ERC type

metric

Overlapping Serrated Cutting Edge!

TRC / ERC type Radial milling cutters

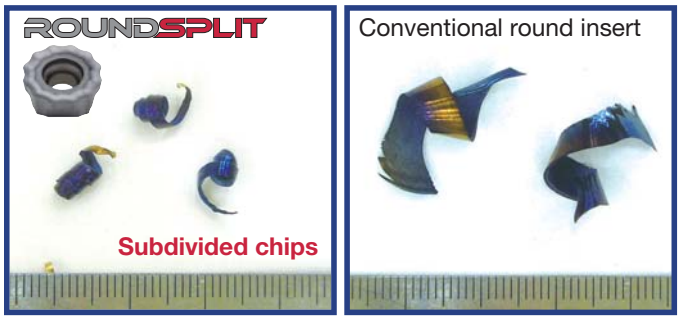
Features

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	: *Vc* = 150 m/min
Feed per tooth	: *fz* = 0.5 mm/t
Depth of cut	: *ap* = 2 mm
Width of cut	: *ae* = 50 mm

Comparison of chip shape

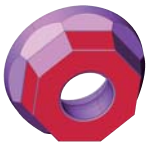


2 Serrated and round inserts are available

Unique insert boss provides a tight fit and rigid clamping.

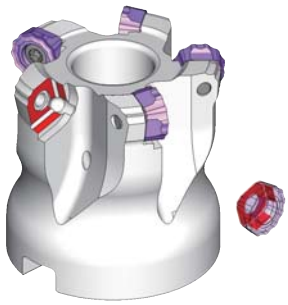
4 indexes per insert (Serration type)
8 indexes per insert (Regular round type)

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.



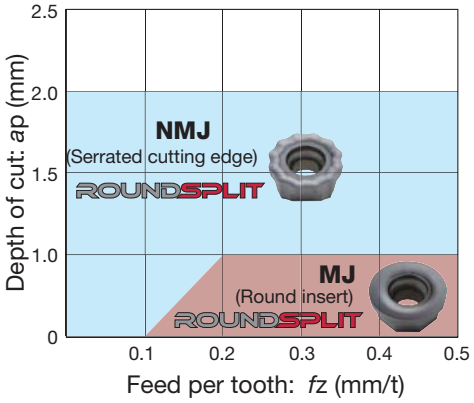
Round type
MJ type : **8** indexes

Serrated edge type
NMJ typ : **4** indexes

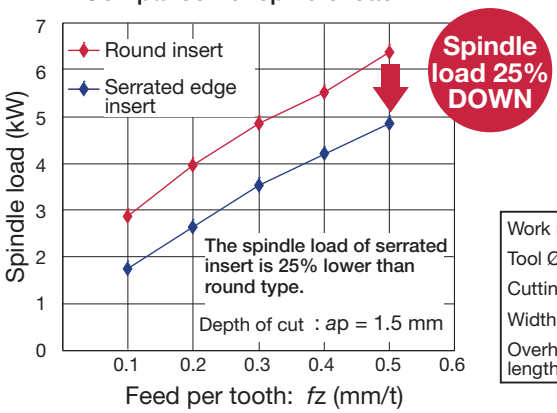


Cutting performance

Comparison of application areas



Comparison of spindle load



Work material	: S55C (200HB)
Tool Ø	: ø50 mm (5 tooth)
Cutting speed	: *Vc* = 150 m/min
Width of cut	: *ae* = 50 mm (Grooving)
Overhang length	: 238 mm (L/D = 4.76)

Insert Specification

For general machining
with serrated cutting edge

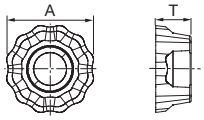


Fig. 1 **NMJ**

For general machining
Round insert

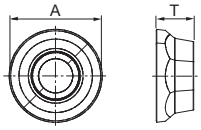


Fig. 2 **MJ**

For aluminium machining
with serrated cutting edge

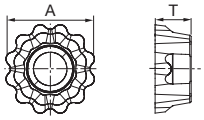
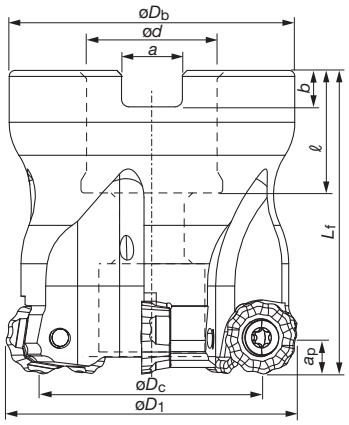


Fig. 3 **NAJ**

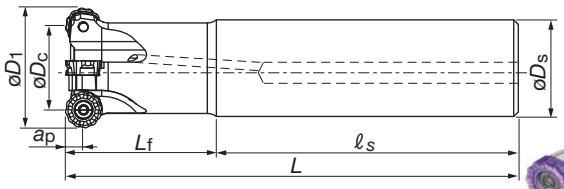
Cat. No.	Accuracy	Honing	Stock				Dimensions (mm)		Shape	Cutter
			Coated grades			Carbide				
			AH725	AH120	AH140	KS15F	A	T		
RCMT1204EN-NMJ	M	with	●	●	●		12	4.8	Fig. 1	
RCMT1204EN-MJ	M	with	●	●	●		12	4.8	Fig. 2	**E/TRC12**
RCMT1204FN-NAJ	M	without				●	12	4.8	Fig. 3	
RCMT1606EN-NMJ	M	with	●	●	●		16	6.5	Fig. 1	
RCMT1606EN-MJ	M	with	●	●	●		16	6.5	Fig. 2	**E/TRC16**
RCMT1606FN-NAJ	M	without				●	16	6.5	Fig. 3	

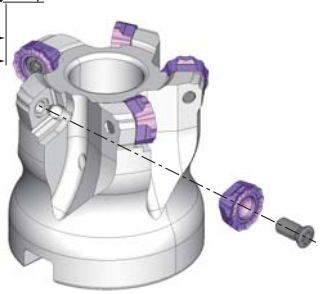
Cutter Body Specification

Bore type



Shank type





Max. depth of cut
RCMT12 type : Max. ap = 6.0 mm
RCMT16 type : Max. ap = 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
			øD1	øDc	øDb	ød	r	Lf	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	**RCMT1606*N-***
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
				øD1	øDc	øDs	rs	Lf	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					
Tool steels (X 155 CrVMo 12 1 etc.)	~ 300		100 - **140** - 180			
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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