Tooling News No.554

SUMITOMO

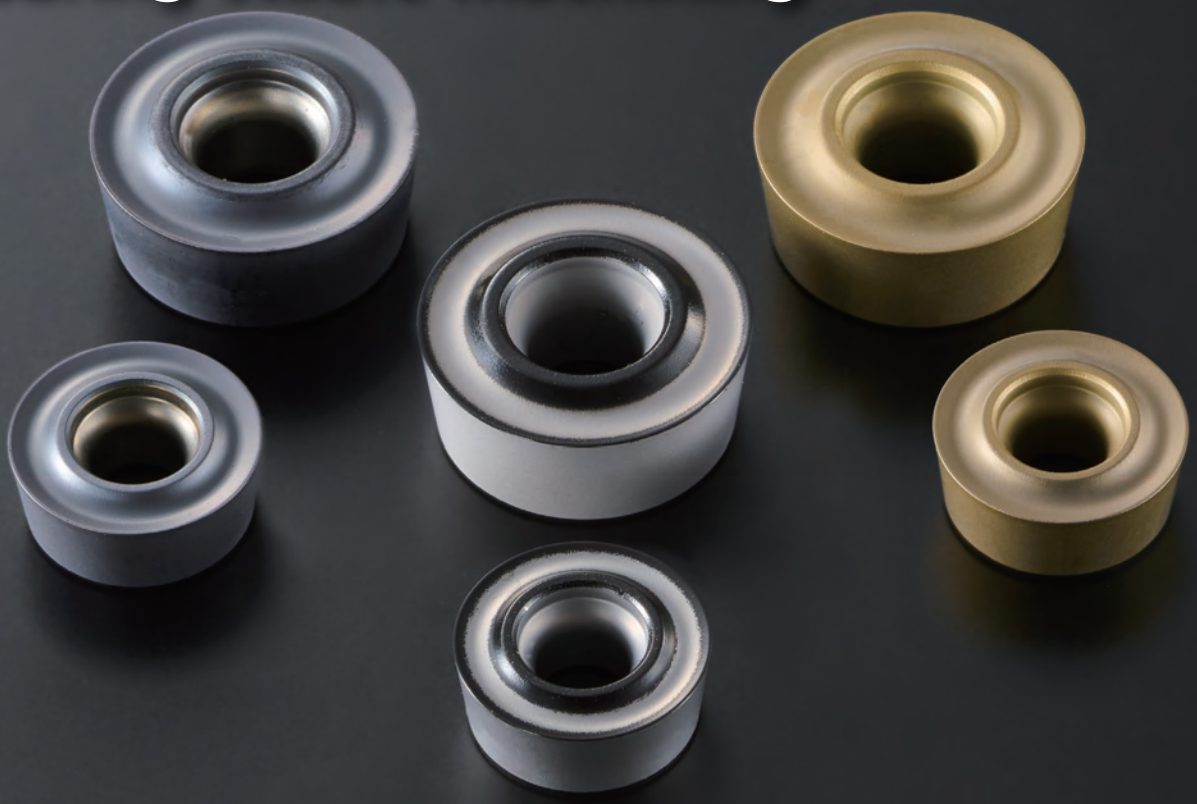
CARBIDE - CBN - DIAMOND

Global Support, Global Solutions.

Round Type Chipbreaker for Exotic Alloy & Steel Turning

New RE type Chipbreaker

Eliminates chip problems when turning exotic alloys and steel, preventing constant stoppages and ensuring stable machining



P M K N S H

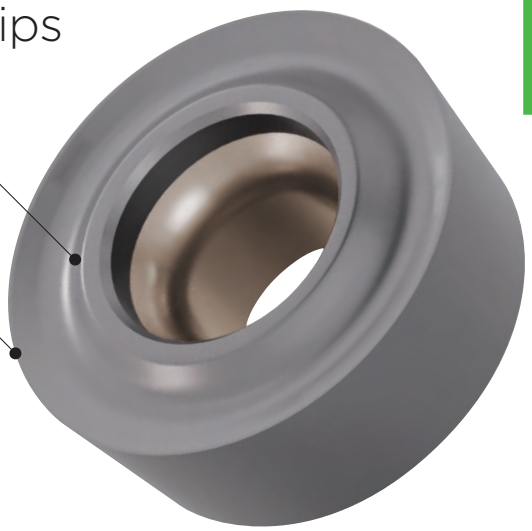
SUMITOMO ELECTRIC GROUP

High-raked wide chipbreaker controls and breaks chips

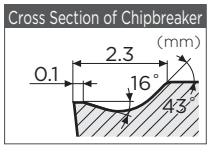
Reduces chip problems and realises stable machining

Low cutting force provides excellent cutting edge wear resistance

Improved cutting edge sharpness reduces machining noise



RE Type

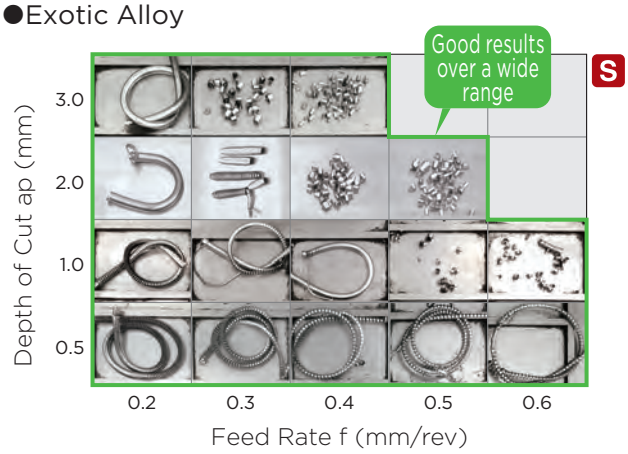


RCMT1204M0N type

Thorough chip control prevents constant stoppages and realises stable machining

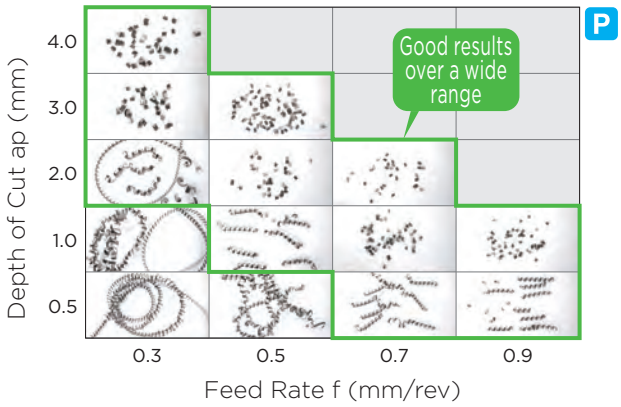
■ Chip Control

●Exotic Alloy



Work Material: Inconel 718 Insert: RCMT1204M0N-RE
Cutting Conditions: vc = 40m/min f = 0.2 to 0.6mm/rev ap = 0.5 to 3.0mm
Wet (Internal Coolant Supply 1MPa)

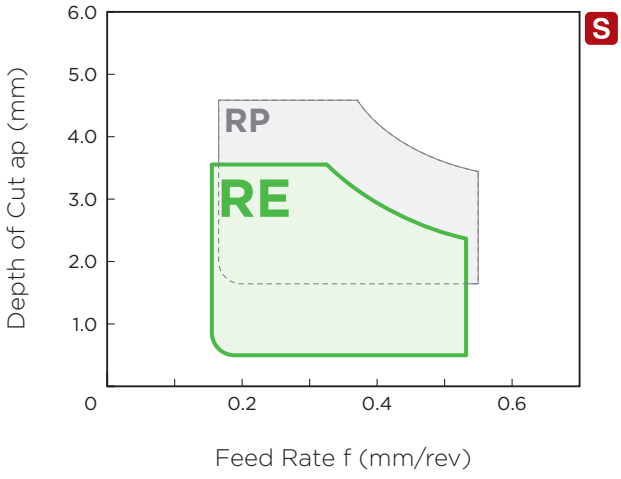
●Steel



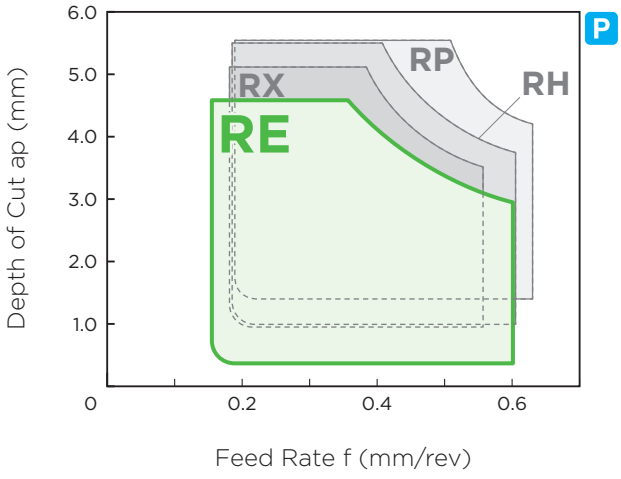
Work Material: SUJ2 Insert: RCMT1204M0N-RE
Cutting Conditions: vc = 180m/min f = 0.3 to 0.9mm/rev ap = 0.5 to 4.0mm
Wet (External Coolant Supply)

■ Application Range

●Exotic Alloy



●Steel

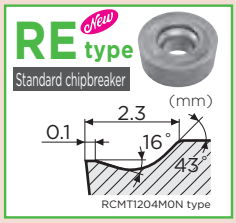


RE type Chipbreaker

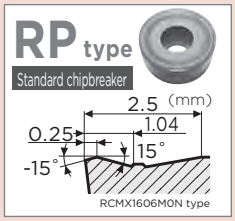
■ Round Chipbreaker Selection Guide (Positive Inserts)

S Exotic Alloy Turning

Improved Chip Control and Surface Roughness

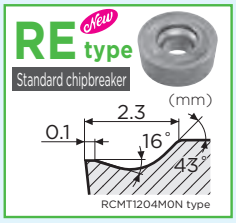


Strong Edged Type for Large Depths-of-Cut Profiling or Interrupted Turning

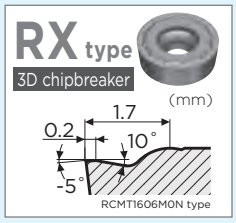


P Steel Turning

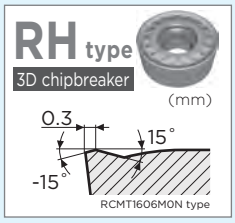
Improved Chip Control and Surface Roughness



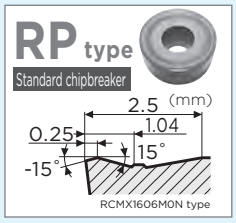
Emphasising Balance of Chip Control and Strength



General-purpose Steel Turning



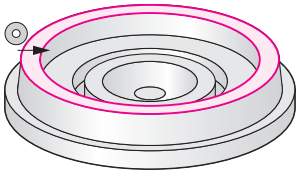
Strong Edged Type for Roughing to Heavy Cutting



■ RE Chipbreaker Application Examples

Inconel 718 Aerospace Component S

Tool life equivalent to competitor's product but with drastically improved chip control



RE type

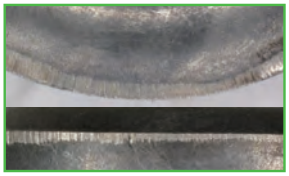
Competitor's Product A

Insert: RCMT1606M0N-RE (AC5015S) Mill-scale Work Interrupted Machining
Cutting Conditions: vc = 40m/min f = 0.6mm/rev ap = 2.0 to 3.0mm
Wet (vertical lathe)

Inconel 718 Aircraft Engine Component S

Low-resistance cutting edge design suppresses wear, extends tool life by 1.5x, and reduces machining noise

Minimal adhesion



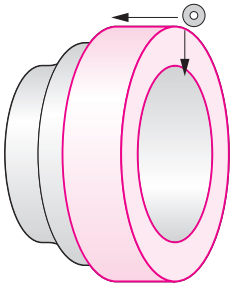
RE type

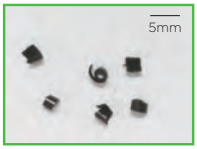
Competitor's Product B

Insert: RCMT1606M0N-RE (AC5015S) Mill-scale Work
Cutting Conditions: vc = 50m/min f = 0.4mm/rev ap = 1.5 to 2.0mm
Wet

SUJ2 Bearing Component P

Equivalent tool life with drastically improved chip evacuation





RE type

Competitor's Product C

Insert: RCMT1003M0N-RE (AC8025P)
Cutting Conditions: vc = 250m/min ap = 0.25mm
Dry (single-purpose machine)

RE type Chipbreaker

RE type Chipbreaker Stock Table

(Coated Carbide)

Shape	Relief Angle	Cat. No.	Stock						Dimensions (mm)			
			AC8115P	AC8020P	AC8025P	AC5005S	AC5015S	AC5025S	Inscribed Circle	Thickness	Bore Dia.	Corner Radius
 RE	7°	RCMT 0803M0N-RE				●	●	●	8	3.18	3.4	-
		RCMT 1003M0N-RE	●	●	●	●	●	●	10	3.18	4.4	-
		RCMT 1204M0N-RE	●	●	●	●	●	●	12	4.76	4.4	-
		RCMT 1606M0N-RE	●	●	●	●	●	●	16	6.35	5.5	-

● mark: Standard stocked item Blank: Made-to-order item

■ Recommended Cutting Conditions

Work Material		Application	Chipbreaker	Grade	Cutting Conditions Min. - **Optimum** - Max.		
					Depth of Cut ap (mm)	Feed Rate f (mm/rev)	Cutting Speed vc (m/min)
S	Heat-resistant Titanium Alloy	Medium to Roughing	RE	AC5005S	0.5 - **2.0** - 3.3	0.18 - **0.35** - 0.55	30 - **80** - 120
				AC5015S	0.5 - **2.0** - 3.3	0.18 - **0.35** - 0.55	30 - **60** - 110
				AC5025S	0.5 - **2.0** - 3.3	0.18 - **0.35** - 0.55	30 - **50** - 80
P	Mild Steel STKM13A SS400, etc.	Medium to Roughing	RE	AC8115P	0.5 - **2.5** - 4.5	0.15 - **0.40** - 0.60	160 - **230** - 310
				AC8020P	0.5 - **2.5** - 4.5	0.15 - **0.40** - 0.60	140 - **190** - 230
				AC8025P	0.5 - **2.5** - 4.5	0.15 - **0.40** - 0.60	140 - **180** - 230
P	Carbon Steel Alloy Steel S45C SCM435, etc.	Medium to Roughing	RE	AC8115P	0.5 - **2.5** - 4.5	0.15 - **0.40** - 0.60	160 - **230** - 310
				AC8020P	0.5 - **2.5** - 4.5	0.15 - **0.40** - 0.60	140 - **190** - 230
				AC8025P	0.5 - **2.5** - 4.5	0.15 - **0.40** - 0.60	140 - **180** - 230

< SAFETY NOTES >

- Very hot or lengthy chips may be discharged while the machine is in operation. Therefore, machine guards, safety goggles or other protective covers must be used. Fire safety precautions must also be considered.
- Please handle with care as this product has sharp edges.
- Improper cutting conditions or mis-handling of the tool may result in breakages or projectiles. Therefore, please use the tool within its recommended conditions.
- When using non-water soluble cutting oil, precautions against fire must be taken and please ensure that a fire extinguisher is placed near the machine.

Sumitomo Electric Industries, Ltd.

Hardmetal Division

Global Marketing Department : 1-1-1, Koyakita, Itami, Hyogo 664-0016, Japan

https://www.sumitool.com/global

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