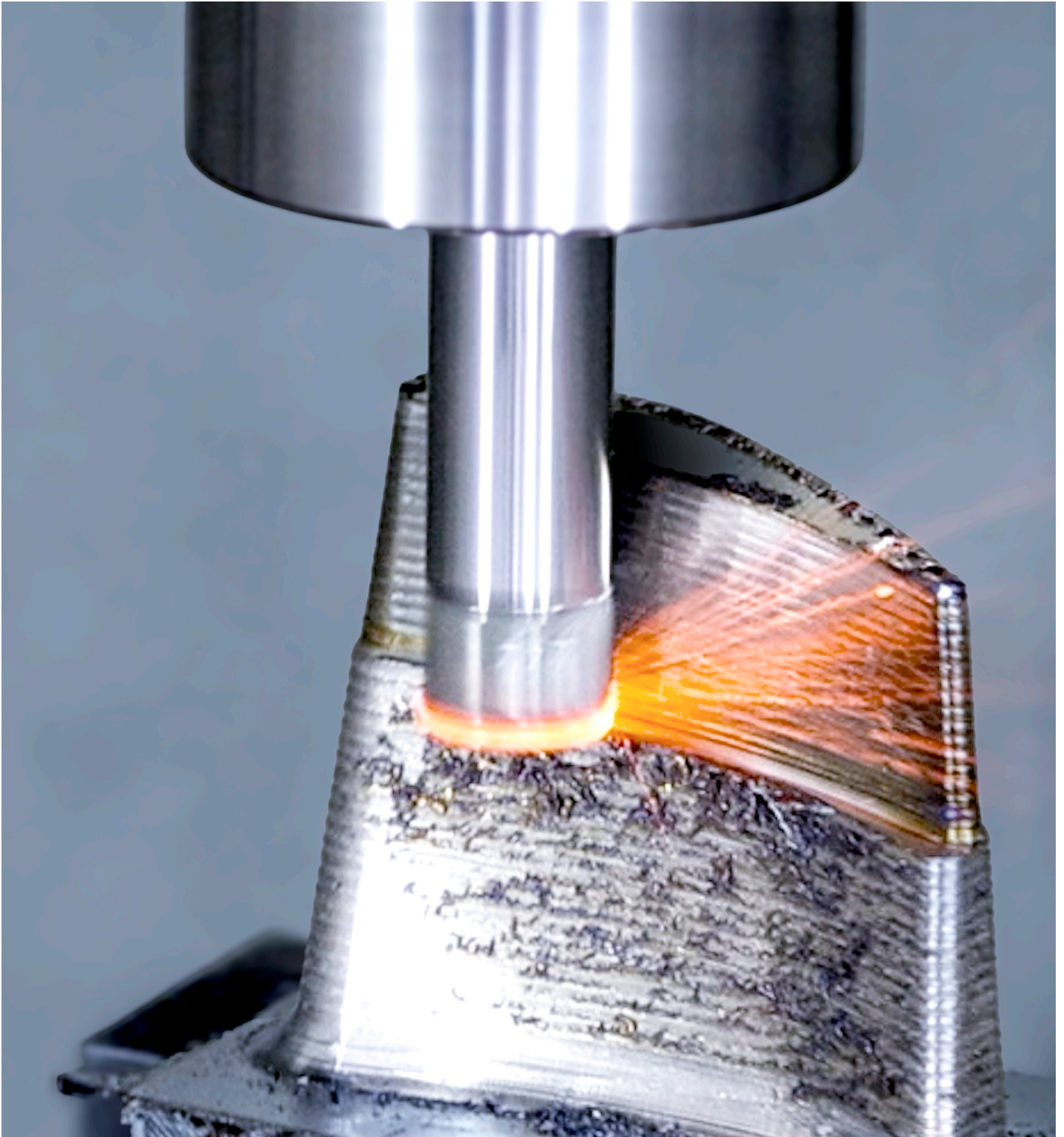


# CERAMATIC Brazed

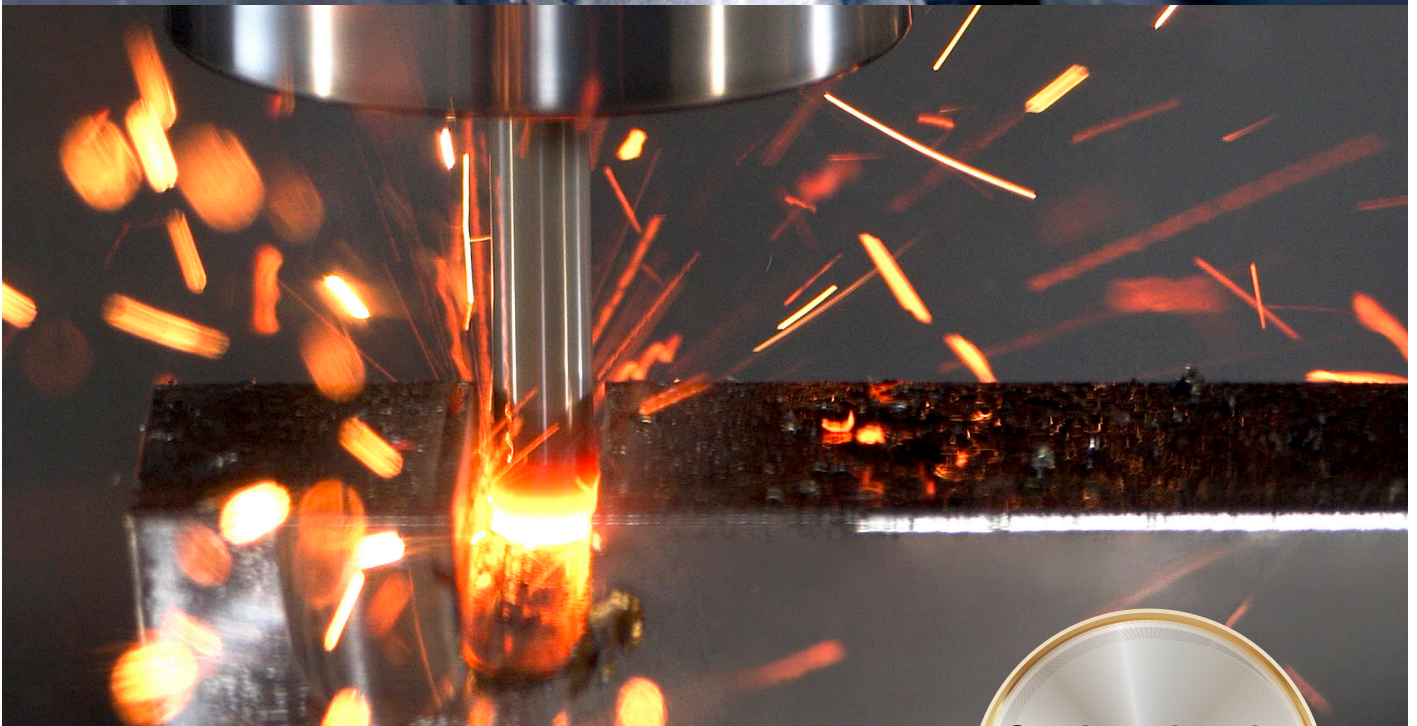
For Heat-Resistant Alloys | Ceramics



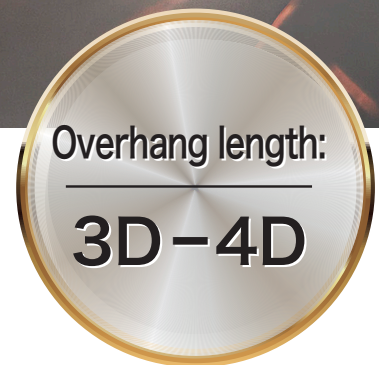
Brazed End Mills: Carbide Strength + Ceramic Speed

*CERtainly* | but not only | *CERamics*  
Outstanding solutions for demanding applications

Advanced Ceramic End Mills for Heat-Resistant Alloy Machining.



A ceramic end mill with a carbide shank for superior breakage strength, ensuring stable machining and increased productivity in heat-resistant alloy applications.

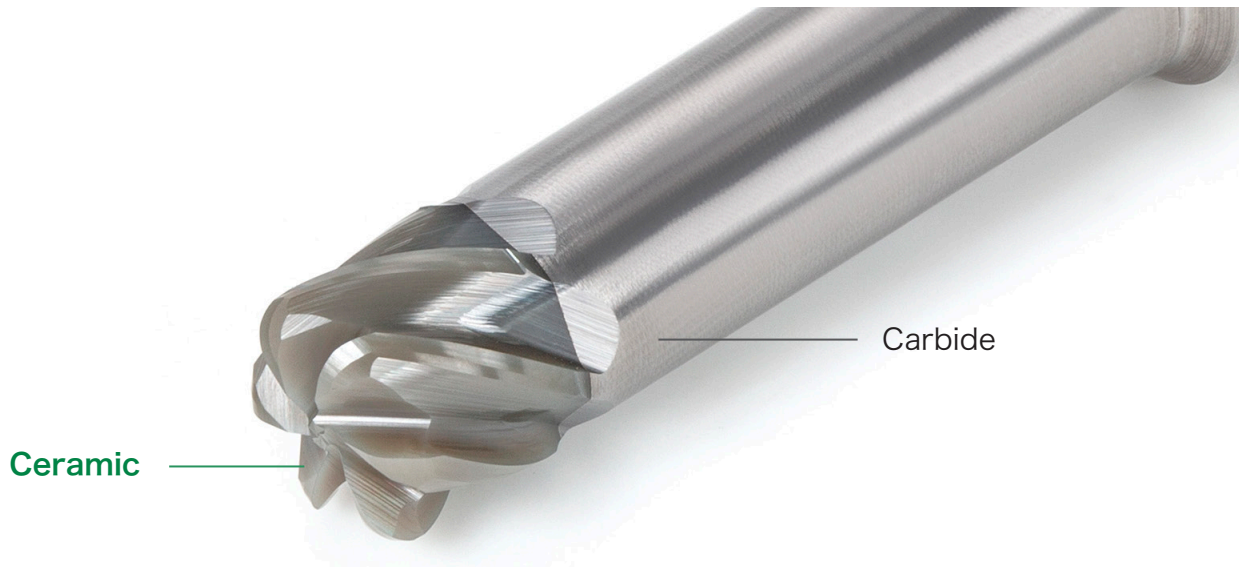


# CERAMATIC Brazed

For Heat-Resistant Alloys | Ceramics

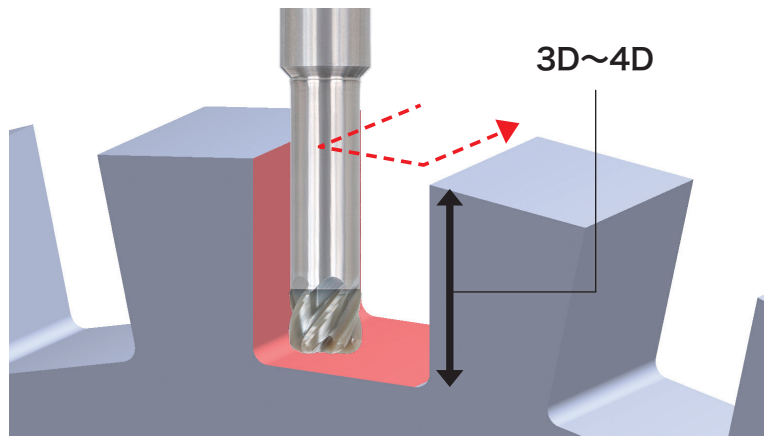
**New**

**CERAMATIC Brazed**

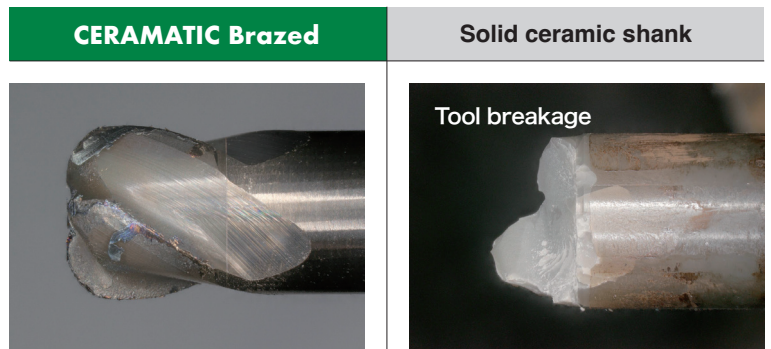
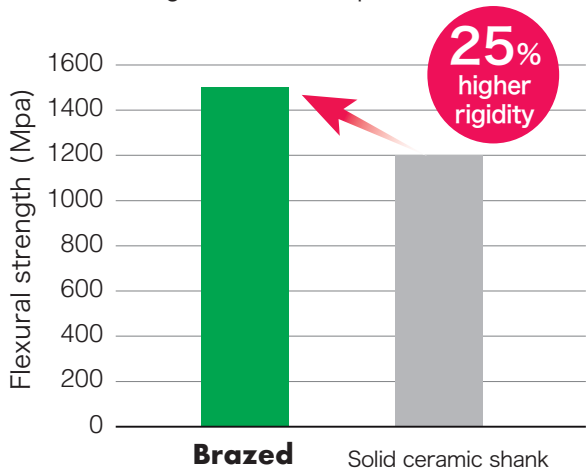


- Starting from  $\phi 6$  mm, the lineup covers a wide variety of applications.
- **SiAlON ceramic SX9** delivers an outstanding balance of toughness and wear resistance, enabling machining efficiency up to 15× compared with carbide end mills.

High rigidity from the carbide shank ensures stable cutting performance and minimizes breakage risk, even in deep machining with 3–4D overhangs.

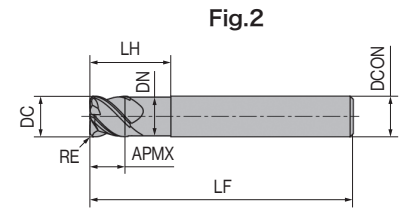
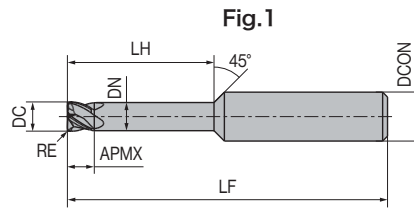
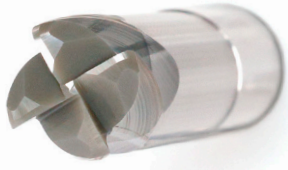
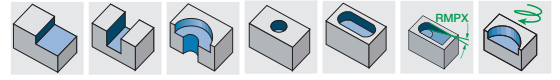


Flexural strength at room temperature



Vc=370m/min f= 0.03mm/t ap=0.7mm DRY Inconel 718  
L/D 4  $\phi 6$

## RCE-H4 / 4 Flute



### Tolerances

unit (mm)

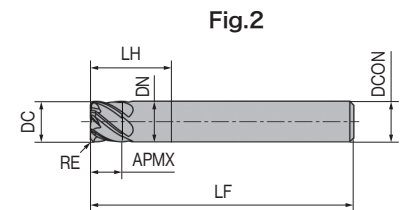
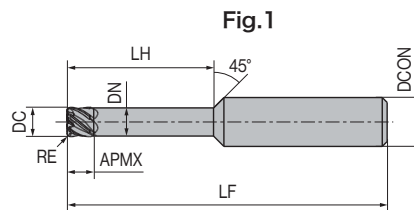
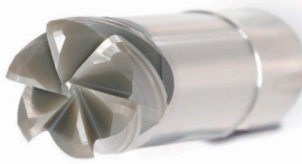
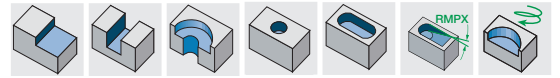
DC	DC (e8)	DCON (h6)
6	-0.02/-0.038	+0/-0.009
8/10/6.35/9.525	-0.025/-0.047	+0/-0.009

### Lineup

\* Flute helix angle

Designation	Figure	Flute	Center cutting edge	APMX mm	DC mm	DCON mm	DN mm	FHA °*	LH mm	LF mm	RE mm
RCEM060H4R150B	Fig.1	4	None	4.5	6	10	5.6	35	30	65.5	1.5
RCEM080H4R150B	Fig.1	4	None	6	8	10	7.6	35	30	67.5	1.5
RCEM100H4R150B	Fig.2	4	None	6.3	10	10	9.6	35	30	67.8	1.5
RCEI250H4R059B	Fig.1	4	None	4.76	6.35	10	5.95	35	30	66	1.5
RCEI375H4R059B	Fig.2	4	None	6.3	9.525	10	9.12	35	30	67.8	1.5

## RCE-J6 / 6 Flute



### Tolerances

unit (mm)

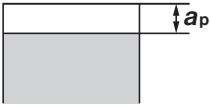

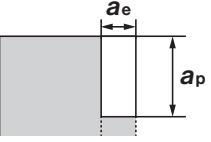

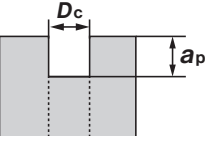


DC	DC (e8)	DCON (h6)
6	-0.02/-0.038	+0/-0.009
8/10/6.35/9.525	-0.025/-0.047	+0/-0.009

### Lineup

\* Flute helix angle

Designation	Figure	Flute	Center cutting edge	APMX mm	DC mm	DCON mm	DN mm	FHA °*	LH mm	LF mm	RE mm
RCEM080J6R150B	Fig.1	6	None	6	8	10	7.6	40	30	67.5	1.5
RCEM100J6R150B	Fig.2	6	None	6.3	10	10	9.6	40	30	67.8	1.5
RCEI375J6R059B	Fig.2	6	None	6.3	9.525	10	9.12	40	30	67.8	1.5

## Recommended cutting conditions for heat-resistant alloy machining

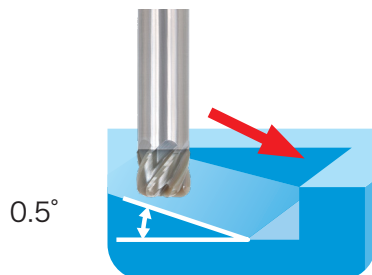
Application	Grade	Dia (D <sub>c</sub> -mm)	DOC (a <sub>p</sub> -mm)	Width (a <sub>e</sub> -mm)	Feed (mm/t)	Flute	Cutting speed (m/min)				Coolant								
							150	300	600	1000									
 Face Milling	SX9	6	≤0.9	—	0.03	4/6					DRY 								
		8	≤1.2																
		10	≤1.5																
		1/4"	≤0.9																
		3/8"	≤1.4																
 Side Milling	SX9	6	≤2.0	≤0.6	0.03	4/6					DRY 								
		8	≤3.8	≤0.8															
		10	≤5.0	≤1.0															
		1/4"	≤2.4	≤0.6															
		3/8"	≤4.8	≤0.9															
 Slot milling	SX9	6	≤0.7	—	0.03	4					DRY 								
		8	≤1.2																
		10	≤2.0																
		1/4"	≤0.75																
		3/8"	≤1.8																
		8	≤0.8									—	0.03	6					DRY 
		10	≤1.25																
3/8"	≤1.2																		

Note: Exceeding the recommended cutting conditions may result in brazed joint separation or tool failure. Please machine within the recommended cutting condition range.

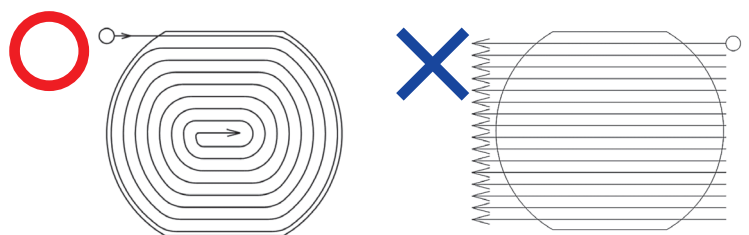
## To maximize machining productivity

- Please machine at a cutting speed of 300 m/min or higher.
- A ramping angle of 0.5° is recommended.\*
- Tool paths in which the cutting edge leaves the workpiece during machining may cause rapid cooling of the cutting edge, increasing the risk of chipping or damage. Continuous machining is therefore recommended.\*\* (See below)
- A high-speed rotation-capable collet chuck is recommended.  
When using a hydraulic chuck or shrink-fit chuck, apply air blow to the arbor body.  
Do not blow air directly onto the end mill body.





\*Recommended ramping angle

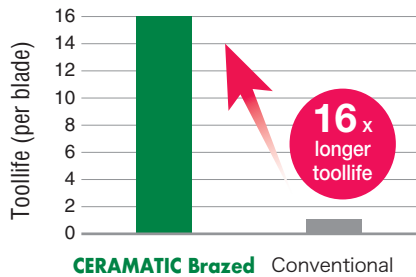


\*\*Recommended tool path



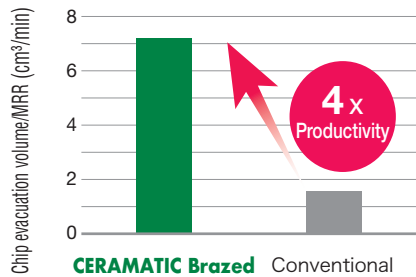
## Practical examples

		NTK	Conventional
Component	Aircraft part		
Insert	RCEM060H4R150B	Endmill	
Grade	<b>SX9</b>	Carbide	
Inconel718			
Workpiece			
			
Cutting conditions	Cutting speed (m/min)	370	21
	Feed per tooth (mm/t)	0.03	0.06
	DOC (mm)	0.5	1.0
	Coolant	DRY	WET


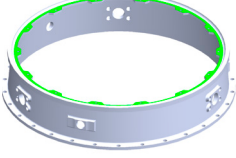



With outstanding wear resistance, **CERAMATIC Brazed SX9** delivers **16 times longer** tool life than conventional tool.

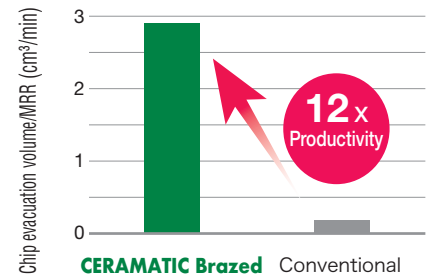
Results



**CERAMATIC Brazed SX9** enables high-speed machining, providing up to **4 times higher** productivity than conventional tool.

		NTK	Conventional
Component	Aircraft part		
Insert	RCEM100H4R150B	Endmill	
Grade	<b>SX9</b>	Carbide	
Inconel718			
Workpiece			
Cutting conditions	Cutting speed (m/min)	314	46
	Feed per tooth (mm/t)	0.03	0.02
	Feed speed (mm/min)	1,217	152
	DOC (mm)	3.0	1.0
	Groove width (mm)	0.8	2.0
	Coolant	DRY	WET

Results



**CERAMATIC Brazed SX9** allows higher cutting speed and larger depths of cut, providing up to **12 times higher** productivity compared with conventional tool.

# Worldwide Network

## Tungaloy-NTK America, Inc.

3726 N. Ventura Drive  
Arlington Heights  
IL 60004, U.S.A.  
Phone: +1-888-554-8394  
Fax: +1-888-554-8392  
www.tungaloy.com/us  
<https://www.ntkcuttingtools.com/us/>

## Tungaloy Canada

432 Elgin St. Unit 3, Brantford  
Ontario N3S 7P7, Canada  
Phone: +1-519-758-5779  
Fax: +1-519-758-5791  
www.tungaloy.com/ca

## Tungaloy-NTK de Mexico S.A.

C/ Los Arellano 113  
Parque Industrial Siglo XXI  
Aguascalientes, AGS  
Mexico 20290  
Phone: +52-449-929-5410  
Fax: +52-449-929-5411  
www.tungaloy.com/mx  
<https://www.ntkcuttingtools.com/mx/>

## Tungaloy-NTK do Brasil Ltda.

Avd. Independencia N4158  
Residencial Flora  
13280-000 Vinhedo  
São Paulo, Brazil  
Phone: +55-19-38262757  
Fax: +55-19-38262757  
www.tungaloy.com/br  
<https://www.ntkcuttingtools.com/br/>

## Tungaloy Hungary Kft

Erzsébet királyné útja 125  
H-1142 Budapest, Hungary  
Phone: +36 1 781-6846  
Fax: +36 1 781-6866  
www.tungaloy.com/hu

## Tungaloy Turkey

Serifali Mah. bayraktar  
Bulvari Kule Sk. No:26  
34775 Umraniye / Istanbul / Turkey  
Phone: +90 216 540 04 67  
Fax: +90 216 540 04 87  
www.tungaloy.com/tr

## Tungaloy Benelux b.v.

Tjalk 70  
NL-2411 NZ Bodegraven Netherlands  
Phone: +31 172 630 420  
Fax: +31 172 630 429  
www.tungaloy.com/nl

## Tungaloy Croatia

Ulica bana Josipa Jelačića 87,  
10430 Samobor, Croatia  
Phone: +385 1 3326 604  
Fax: +385 1 3327 683  
www.tungaloy.com/hr

## NTK Cutting Tools (Shanghai) Co., Ltd

Room 103, Building C, No. 7666 Zhong-  
chun Road, Minhang District, Shanghai,  
200131, China  
Phone: +86-21-64788878  
Fax: +86-21-64788879  
www.ntkcuttingtools.com/zh-hans/

## Tungaloy-NTK Germany GmbH

Katzbergstr. 3a  
D-40764 Langenfeld, Germany  
Phone: +49-2173-90420-0  
Fax: +49-2173-90420-19  
www.tungaloy.com/de  
<https://www.ntkcuttingtools.com/de/>

## Tungaloy France S.A.S.

Les Fjords  
19 avenue de Norvège  
91140 Villebon Sur Yvette, France  
Phone: +33-1-6486-4300  
Fax: +33-1-6907-7817  
www.tungaloy.com/fr

## Tungaloy Italia S.r.l.

Viale Sarca 336/Edificio 13  
20126 Milano, Italy  
Phone: +39-02-252012-1  
Fax: +39-02-252012-65  
www.tungaloy.com/it

## Tungaloy Czech s.r.o

Turanka 1583/115g,  
627 00 Brno, Czech Republic  
Phone: +420-532 123 391  
www.tungaloy.com/cz

## Tungaloy Ibérica S.L.

C/Miquel Servet, 43B, Nau 7  
Pol. Ind. Bufalvent  
ES-08243 Manresa (BCN), Spain  
Phone: +34 93 113 1360  
Fax: +34 93 876 2798  
www.tungaloy.com/es

## Tungaloy-NTK Cutting Tools (Thailand) Co.,Ltd.

Interlink tower 4th Fl.  
1858/5-7 Bangna-Trad Road  
km.5 Bangna, Bangna, Bangkok 10260  
Thailand  
Phone: +66-2-751-5711  
Fax: +66-2-751-5715  
www.tungaloy.com/th  
<https://www.ntkcuttingtools.com/th/>

## Tungaloy Cutting Tools (Taiwan) Co.,Ltd.

9F. No.293, Zhongyang Rd,  
Xinzhuang Dist, New Taipei City,  
24251 Taiwan  
Phone: +886-2-8521-9986  
Fax: +886-2-8521-8935  
www.tungaloy.com/tw

## Tungaloy Singapore (Pte.), Ltd.

62 Ubi Road 1,  
#08-09 Oxley BizHub 2  
Singapore 408734  
Phone: +65-6391-1833  
Fax: +65-6299-4557  
www.tungaloy.com/sg

## Tungaloy-NTK Vietnam LLC

3rd Floor, Licogi 13 Tower,  
164 Khuat Duy Tien, Nhan Chinh, Thanh  
Xuan District,  
Hanoi, Vietnam  
Phone: +84 24 63282086  
www.tungaloy.com/vn

## Tungaloy Scandinavia AB

Bultgatan 38, 442 40  
Kungälv, Sweden  
Phone: +46-462119200  
Fax: +46-462119207  
www.tungaloy.com/se

## Tungaloy Rus, LLC

Andropova avenue, h.18/7,  
11 floor, office 3, 115432,  
Moscow, Russia  
Phone: +7-499-683-01-80  
Fax: +7-499-683-01-81  
www.tungaloy.com/ru

## Tungaloy Polska Sp. z o.o.

Ul. Irysowa 1, 55-040 Bielany  
Wrocławskie, Poland  
Phone: +48 607 907 237  
www.tungaloy.com/pl

## Tungaloy-NTK U.K. Ltd

Suite 3, Pioneer House, Mill Street,  
Cannock, WS11 0EF, UK  
Phone: +44 121 4000 231  
Fax: +44 121 270 9694  
www.tungaloy.com/uk  
<https://www.ntkcuttingtools.com/uk/>

## Tungaloy India Pvt. Ltd.

One International Center,  
Unit # 902-A, 9th Floor,  
Tower 1, Senapati Bapat Marg,  
Elphinstone Road (West),  
Mumbai -400013, India  
Phone: +91-22-6124-8804  
Fax: +91-22-6124-8899  
www.tungaloy.com/in

## Tungaloy-NTK Korea Ltd

1040 Gachang-ro, Gachang-myeon,  
Dalseong-gun, Daegu, 42936, Korea  
Phone: +82-53-760-7698  
Fax: +82-53-768-9912  
www.tungaloy.com/kr

## Tungaloy Malaysia Sdn Bhd

50 K-2, Kelana Mall, Jalan  
SS6/14, Kelana Jaya, 47301  
Petaling Jaya, Selangor Darul Ehsan  
Malaysia  
Phone: +603-7805-3222  
Fax: +603-7804-8563  
www.tungaloy.com/my

## Tungaloy Australia Pty Ltd

Unit 68 1470 Ferntree Gully Road  
Knoxfield 3180 Victoria, Australia  
Phone: +61-3-9755-8147  
Fax: +61-3-9755-6070  
www.tungaloy.com/au

## PT. Tungaloy Indonesia

Kompleks Grand Wisata Block AA-10  
No.3-5 Cibitung  
Bekasi 17510, Indonesia  
Phone: +62-21-8261-5808  
Fax: +62-21-8261-5809  
www.tungaloy.com/id



**NTK CUTTING TOOLS JAPAN**

2808 Iwazaki, Komaki, Aichi 485-8510, Japan



[www.ntkcuttingtools.com/global/contact/](http://www.ntkcuttingtools.com/global/contact/)

