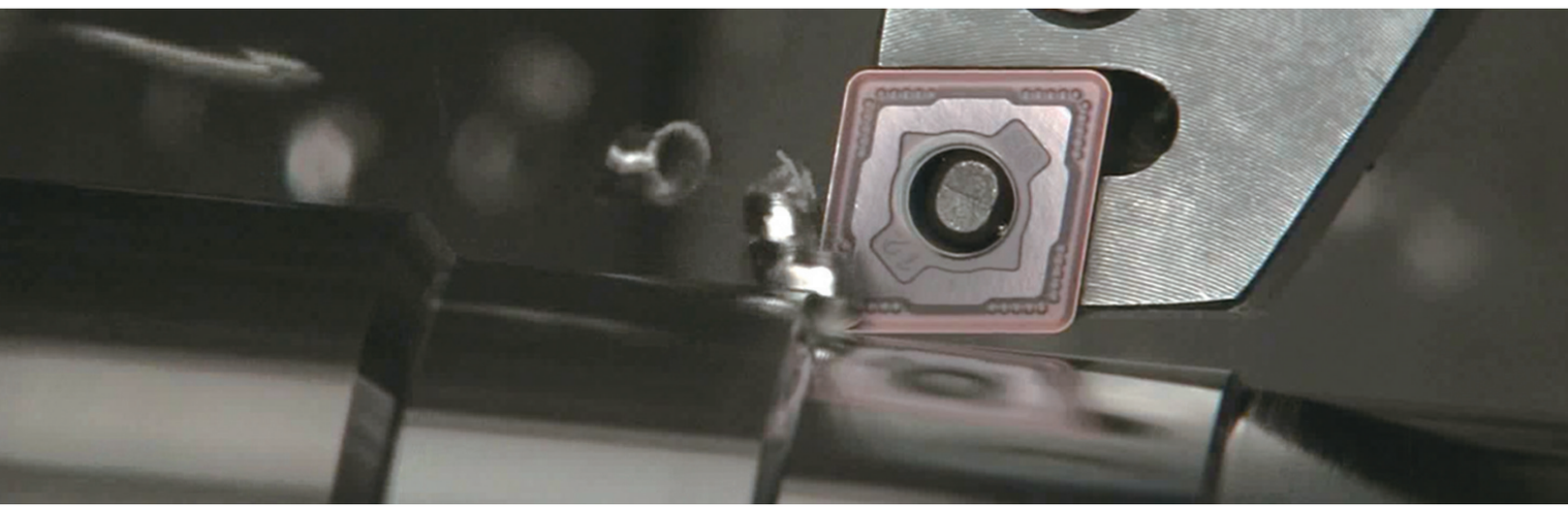
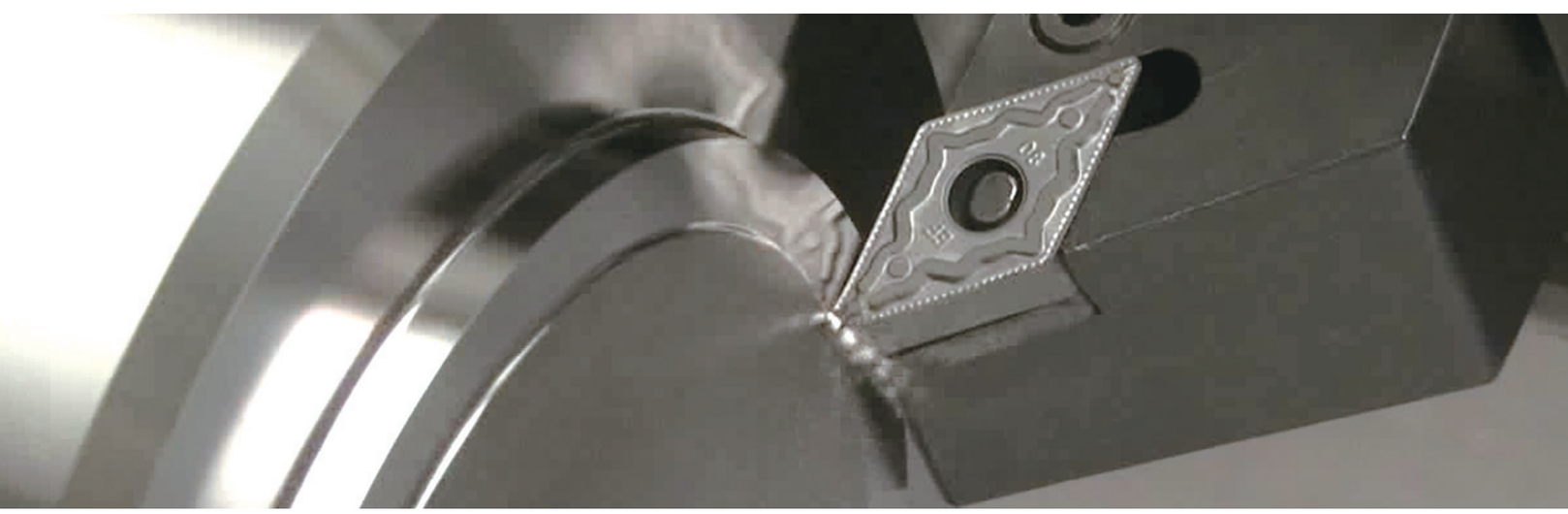
P M K N S H

New Chipbreaker Series for Exotic Alloys

NEG / NEF





– Suitable for exotic alloys, Titanium alloys and stainless steel
– New chip breaker design
– Longer tool life by preventing heat generation
– Superior chip control

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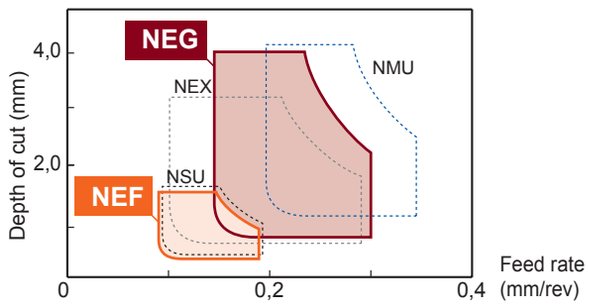
Chipbreaker for Exotic Alloys
NEG Type / NEF Type

General Features

NEG/NEF type chipbreaker for exotic alloy machining can be used for Titanium alloys, heat-resistant alloys and a variety of other exotic alloys.
They deliver excellent wear resistance and superior chip management. These chipbreakers can solve quality problems caused by the unstable tool life and poor chip control provided by conventional chipbreakers for exotic alloys.

Application Range



NEG Chipbreaker for Roughing

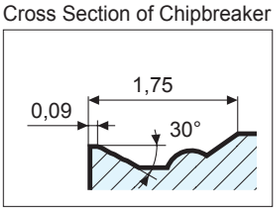
Provides excellent wear resistance and chip control from general-purpose machining to roughing applications. Reduces damage to insert and eliminates trouble from chips specific to exotic alloys. Also demonstrates very high versatility.

Crater wear advancement is prevented by the round bumps, whilst maintaining excellent control.

The cutting edge maintains the strength slowing the progress of crater wear.

Excellent chip management and wear prevention is delivered by the special rake face design.

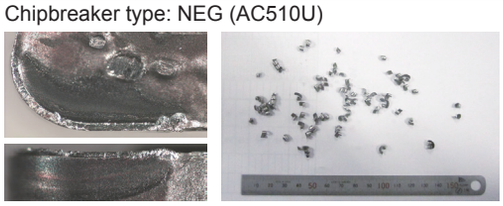
Cross Section of Chipbreaker



Cutting Performance – NEG Type

Heat Resistant Alloy

Chipbreaker type: NEG (AC510U)



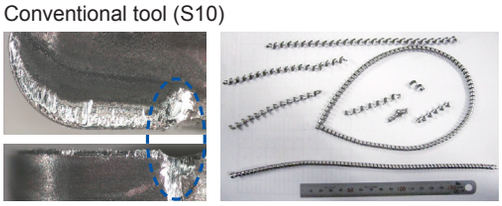
Suppresses the chipping of peripheral cutting edge and notch wear. Excellent chip management.

Work Material: Inconel 718

Insert: CNMG120412

Cutting Data:
v_c = 40m/min
a_p = 2,5mm
f = 0,2mm/rev
wet
T = 7min

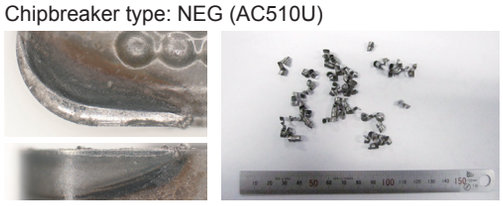
Conventional tool (S10)



Notch wear / poor chip control

Titanium Alloy

Chipbreaker type: NEG (AC510U)



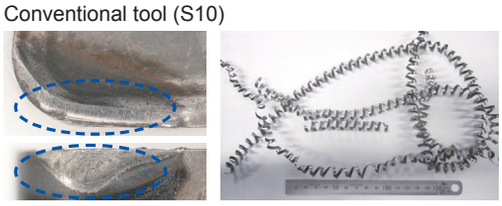
Suppresses crater wear and flank wear. Excellent chip management.

Work Material: Ti-6Al-4V

Insert: CNMG120412

Cutting Data:
v_c = 65m/min
a_p = 2,5mm
f = 0,2mm/rev
wet
T = 8min

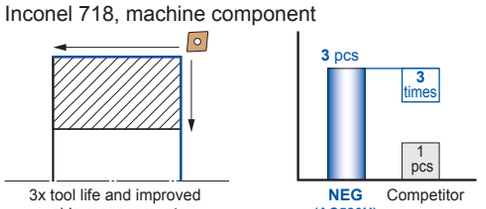
Conventional tool (S10)



Crater wear / flank wear / poor chip control

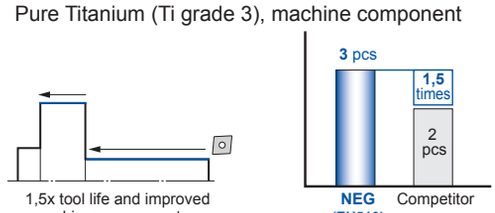
Application Example – NEG Type

Inconel 718, machine component



Insert: CNMG120408 NEG (AC520U)
Cutting Data: v_c=50m/min, a_p=1,5mm, f=0,3mm/rev, wet

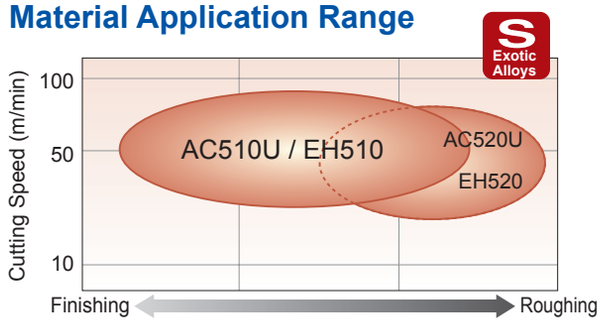
Pure Titanium (Ti grade 3), machine component

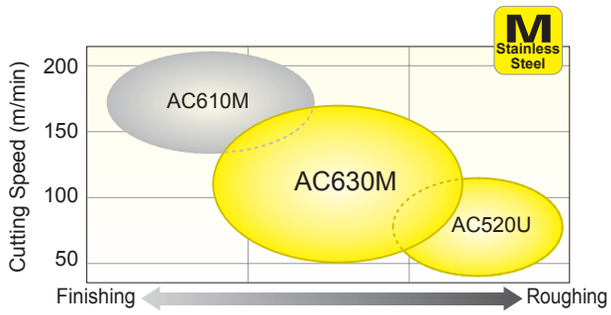


Insert: CNMG120408 NEG (EH510)
Cutting Data: v_c=80~100m/min, a_p=1,0mm, f=0,25mm/rev, wet

Chipbreaker for Exotic Alloys
NEG Type / NEF Type

Material Application Range



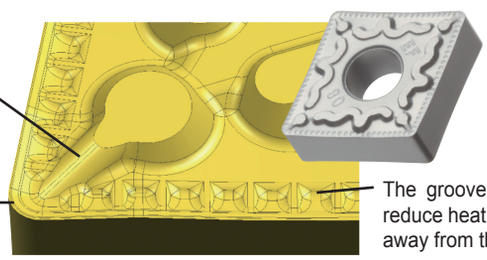


NEF Chipbreaker for Finishing

The NEF chipbreaker reduces chip curl diameter in finishing applications.
Provides extremely good chip management not fluctuated by the material in use.

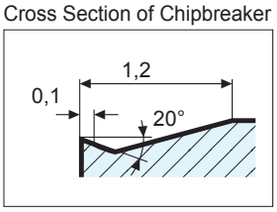
Main chipbreaker that enables good chip control even at low depths of cut.

Sharp edge with 20° rake angle reduces wear.



The grooves on the rake face reduce heat and assist chip flow away from the workpiece.

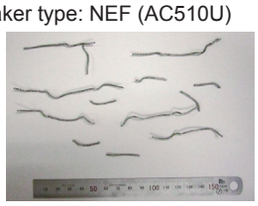
Cross Section of Chipbreaker



Cutting Performance – NEF Type

Heat Resistant Alloy

Chipbreaker type: NEF (AC510U)



Improvements in chip control and chip removal management based on small curled chips.

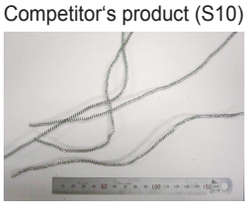
Work Material:
Inconel 718

Insert:
CNMG120408

Cutting Data:
v_c = 55m/min
a_p = 0,3mm
f = 0,15mm/rev
wet
T = 8min

Conventional tool (S10)

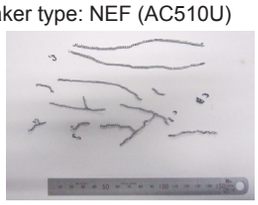
Competitor's product (S10)



There is a problem in the length and the diameter of chips.

Titanium Alloy

Chipbreaker type: NEF (AC510U)



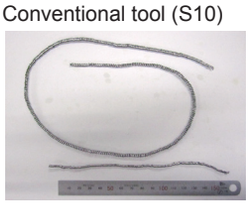
Improvements in chip control and chip removal management based on small curled chips.

Work Material:
Ti-6Al-4V

Insert:
CNMG120408

Cutting Data:
v_c = 80m/min
a_p = 0,5mm
f = 0,2mm/rev
wet
T = 25min

Conventional tool (S10)

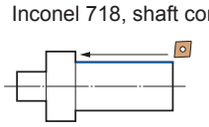


Competitor's product (S10)

There is a problem in the length and the diameter of chips.

Application Example – NEF Type

Inconel 718, shaft component



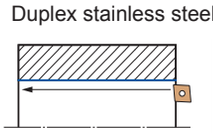
NEF (AC510U)

Conventional tool

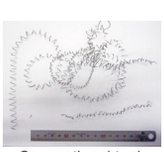
Great improvement in chip management. Keeps workpieces free of damage. It is possible to omit final polishing process.

Insert:	CNMG120408 NEF (AC510U)
Cutting Data:	v_c=45m/min, a_p=0,25mm, f=0,1mm/rev, wet

Duplex stainless steel cover



NEF (AC510U)



Conventional tool

Improvements in chip management. Suppress damage to finished surface with no entanglement of chips.

Insert:	CNMG120408 NEF (AC510U)
Cutting Data:	v_c=55m/min, a_p=0,3mm, f=0,125mm/rev, wet

Chipbreaker for Exotic Alloys
NEG Type / NEF Type

Inserts

NEG Type

Shape	Cat. No.		Grade					Dimensions (mm)			
			Coating			Uncoat. Carbide		Inscr. Circle	Thick-ness	Hole Ø	Nose Radius
			AC630M	AC510U	AC520U	EH510	EH520				
	CNMG	120408 NEG	●	●	●	●	●	12,7	4,76	5,16	0,8
		120412 NEG	●	●	●	●	●				1,2
		160612 NEG	●	●	●	●	●	15,875	6,35	6,35	1,2
	DNMG	150408 NEG	●	●	●	●	●	12,7	4,76	5,16	0,8
		150412 NEG	●	●	●	●	●				1,2
		150608 NEG	●	●	●	●	●	12,7	6,35	5,16	0,8
		150612 NEG	●	●	●	●	●				1,2
	SNMG	120408 NEG	●	●	●	●	●	12,7	4,76	5,16	0,8
		120412 NEG	●	●	●	●	●				1,2
	TNMG	160408 NEG	●	●	●	●	●	9,525	4,76	3,81	0,8
		160412 NEG	●	●	●	●	●				1,2
	WNMG	080408 NEG	●	●	●	●	●	12,7	4,76	5,16	0,8
		080412 NEG	●	●	●	●	●				1,2

NEF Type

Shape	Cat. No.		Grade					Dimensions (mm)			
			Coating			Uncoat. Carbide		Inscr. Circle	Thick-ness	Hole Ø	Nose Radius
			AC630M	AC510U	AC520U	EH510	EH520				
	CNMG	120404 NEF	●	●	●	●	●	12,7	4,76	5,16	0,4
		120408 NEF	●	●	●	●	●				0,8
	DNMG	150404 NEF	●	●	●	●	●	12,7	4,76	5,16	0,4
		150408 NEF	●	●	●	●	●				0,8
		150604 NEF	●	●	●	●	●	12,7	6,35	5,16	0,4
		150608 NEF	●	●	●	●	●				0,8
	TNMG	160404 NEF	●	●	●	●	●	9,525	4,76	3,81	0,4
		160408 NEF	●	●	●	●	●				0,8
	VNMG	160404 NEF	●	●	●	●	●	9,525	4,76	3,81	0,4
		160408 NEF	●	●	●	●	●				0,8
	WNMG	080404 NEF	●	●	●	●	●	12,7	4,76	5,16	0,4
		080408 NEF	●	●	●	●	●				0,8

● Euro stock

SUMITOMO
CARBIDE - CBN - DIAMOND

(Germany)
SUMITOMO ELECTRIC Hartmetall GmbH
Siemensring 84, D - 47877 Willich

Tel. +49(0)2154 4992-0, Fax +49(0)2154 41072
e-Mail: Info@SumitomoTool.com
Internet: www.sumitomoTool.com

(UK and Ireland)
SUMITOMO ELECTRIC Hardmetal Ltd.
Summerleys Road, Princes Risborough
Buckinghamshire HP27 9PW, UK

Tel. +44(0)1844 342081, Fax: +44(0)1844 342415
e-Mail: enquiries@sumitomo-hardmetal.co.uk
Internet: www.sumitomo-hardmetal.co.uk

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