

A

Grades

Steel

Stainless Steel

Cast Iron

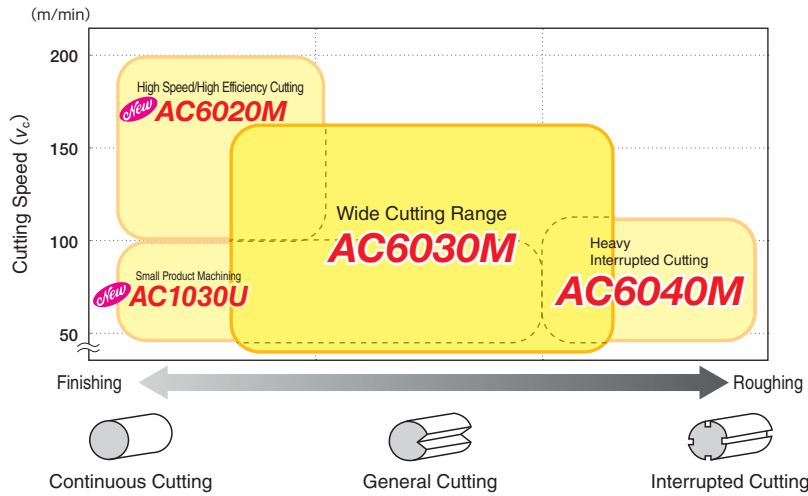
Exotic Alloy

Hardened Steel

Non-Ferrous Metal

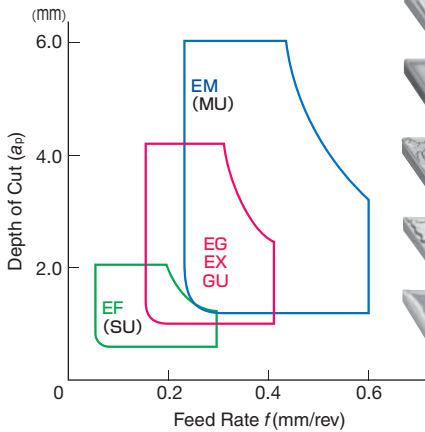
Small Product Machining

### Grades

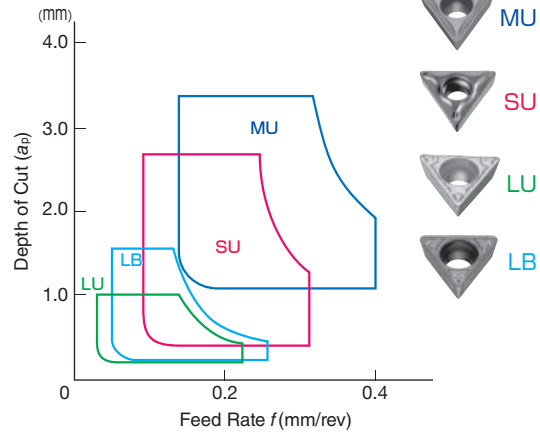


### Chipbreakers

#### Negative Type



#### Positive Type



Refer to the chapter on Small Product Machining (page D7) for the Chipbreaker Selection Guide for ground (G Class) inserts.

**M**  
Stainless Steel

### Recommended Cutting Conditions

(Red text indicates 1st recommendation.)

Work Materials			Cutting Process	Chipbreakers	Grades	Cutting Conditions		
						Depth of Cut $a_p$ (mm)	Feed Rate $f$ (mm/rev)	Cutting Speed $V_c$ (m/min)
Cr-based	Ferritic	SUS405, SUS410L, SUS430, SUS430F, SUS434, SUS447FJ1	Finishing	EF (SU)	<b>AC6020M</b>	0.5-1.5-2.0	0.05-0.15-0.25	170-230-300
			Medium	<b>EG · GU · EX</b>	<b>AC6030M</b>	1.0-2.5-4.0	0.10-0.25-0.40	140-170-250
			Rough	EM	<b>AC6040M</b>	1.5-3.5-6.0	0.20-0.35-0.60	140-170-200
	Martensitic	SUS403, SUS410, SUS420J2, SUS420F, SUS440F	Finishing	EF (SU)	<b>AC6020M</b>	0.5-1.5-2.0	0.05-0.15-0.25	120-180-240
			Medium	<b>EG · GU · EX</b>	<b>AC6030M</b>	1.0-2.5-4.0	0.10-0.25-0.40	100-150-200
			Rough	EM	<b>AC6040M</b>	1.5-3.5-6.0	0.20-0.35-0.60	80-130-180
Cr/Ni-based	Austenitic	SSU304, SUS304L, SUS316, SUS316L, SUS303, SUS321	Finishing	EF (SU)	<b>AC6020M</b>	0.5-1.5-2.0	0.05-0.15-0.25	120-180-240
			Medium	<b>EG · GU · EX</b>	<b>AC6030M</b>	1.0-2.5-4.0	0.10-0.25-0.40	100-150-200
			Rough	EM	<b>AC6040M</b>	1.5-3.5-6.0	0.20-0.35-0.60	80-130-180
	Two-Phase Austenitic/Ferritic	SUS329J1, SUS329J3L, SSU329J4L	Finishing	EF (SU)	<b>AC6020M</b>	0.5-1.5-2.0	0.05-0.15-0.25	100-145-180
			Medium	<b>EG · GU · EX</b>	<b>AC6030M</b>	1.0-2.5-4.0	0.10-0.25-0.40	80-120-160
			Rough	EM	<b>AC6040M</b>	1.5-3.5-6.0	0.20-0.35-0.60	70-100-140
	Deposition Hardened Structures	SUS630, SUS631, SUS632J1	Finishing	EF (SU)	<b>AC6020M</b>	0.5-1.5-2.0	0.05-0.15-0.25	90-115-140
			Medium	<b>EG · GU · EX</b>	<b>AC6030M</b>	1.0-2.5-4.0	0.10-0.25-0.40	70- 90-130
			Rough	EM	<b>AC6040M</b>	1.5-3.5-6.0	0.20-0.35-0.60	50- 80-120

## Grades

**New** AC6020M / AC6030M / AC6040M / **New** AC1030U

**AC6020M**: Employs Absotech Platinum, a new CVD coating, coupled with a wear resistant hard substrate to achieve both excellent wear fracture resistance.

**AC6030M**: Employs Absotech Platinum, a new CVD coating. The first recommended grade stainless steel machining that drastically reduces typical abnormal damage in stainless steel machining, and achieves long and stable machining thanks to the improved coating strength and excellent adhesion.

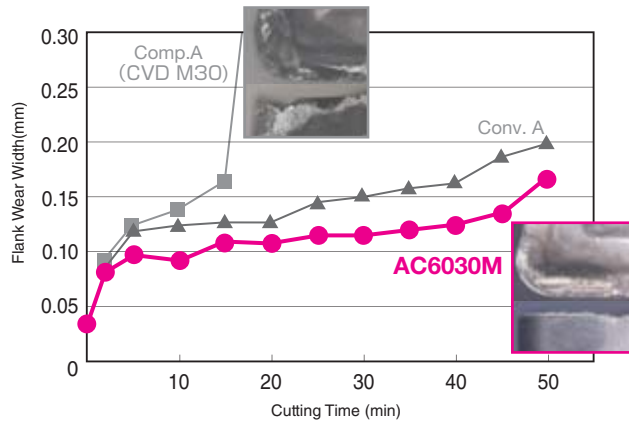
**AC6040M**: Employs Absotech Bronze, a new PVD coating, and exclusive tough carbide substrate. The excellent adhesion and peel-off resistance of the new PVD coating as well as the improved fracture resistance of the exclusive carbide substrate drastically improves the reliability in unstable machining.

**AC1030U**: Employs Absotech Bronze, a new PVD coating, with a special tough carbide substrate. Achieving excellent machined surface quality with a high-quality cutting edge that reduces adhesion and micro-chipping.

## Performance

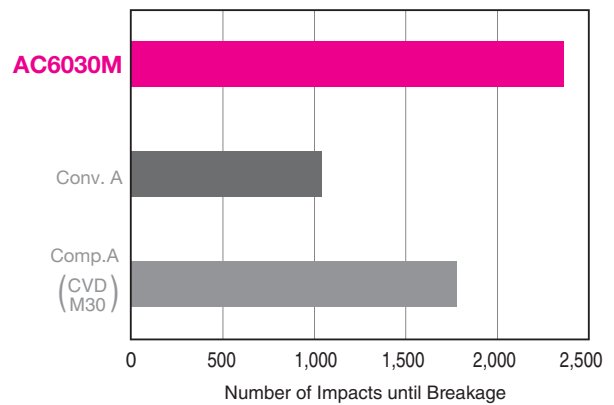
### AC6030M Cutting Performance

#### Continuous Cutting



Work Material : SUS316 Insert : CNMG120408N-EX  
Cutting Conditions :  $v_c=200\text{m/min}$   $f=0.2\text{mm/rev}$   $a_p=2.0\text{mm}$  Wet

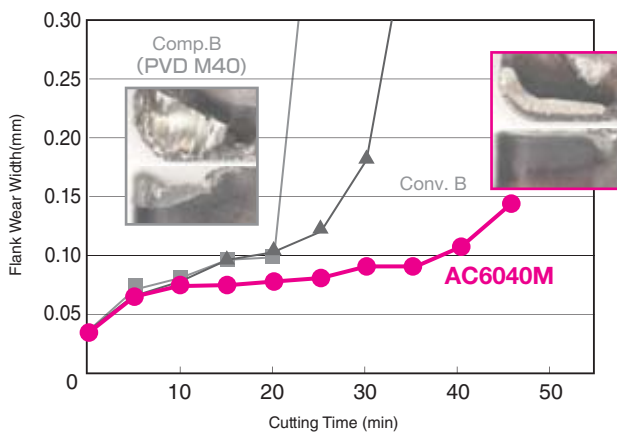
#### Interrupted Cutting



Work Material : SUS316 Insert : CNMG120408N-GU  
Cutting Conditions :  $v_c=100\text{m/min}$   $f=0.1\text{mm/rev}$   $a_p=1.0\text{mm}$  Wet

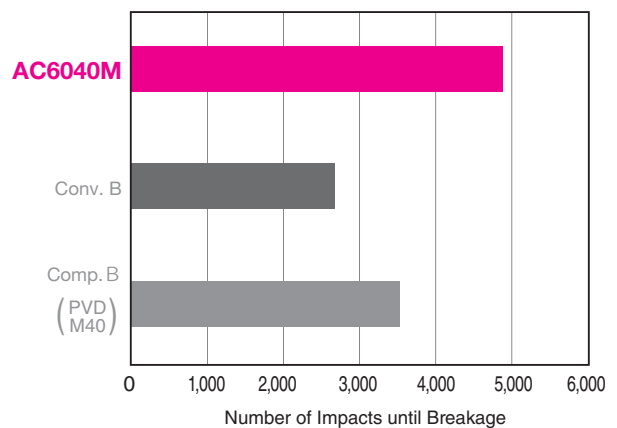
### AC6040M Cutting Performance

#### Continuous Cutting



Work Material : SUS316 Insert : CNMG120408N-GU  
Cutting Conditions :  $v_c=150\text{m/min}$   $f=0.2\text{mm/rev}$   $a_p=2.0\text{mm}$  Wet

#### Interrupted Cutting



Work Material : SUS316 Insert : CNMG120408N-GU  
Cutting Conditions :  $v_c=230\text{m/min}$   $f=0.23\text{mm/rev}$   $a_p=0.80\text{mm}$  Dry