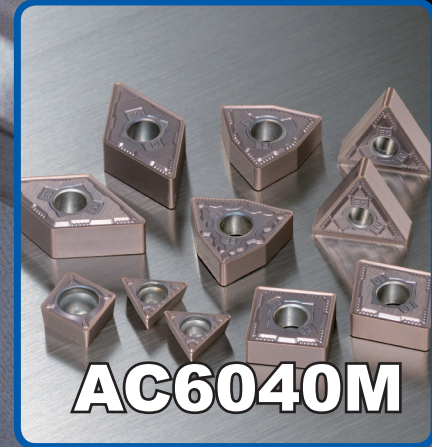
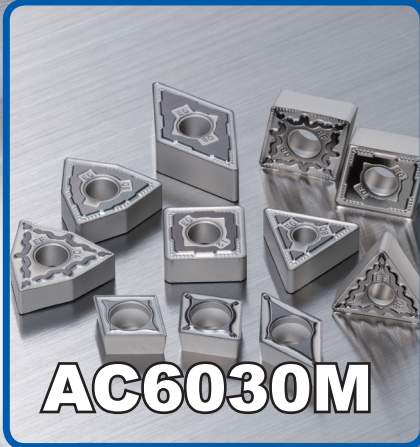


Carbide Grades for Turning

# AC6030M / AC6040M



AC6030M & AC6040M Grades for machining  
stainless steels

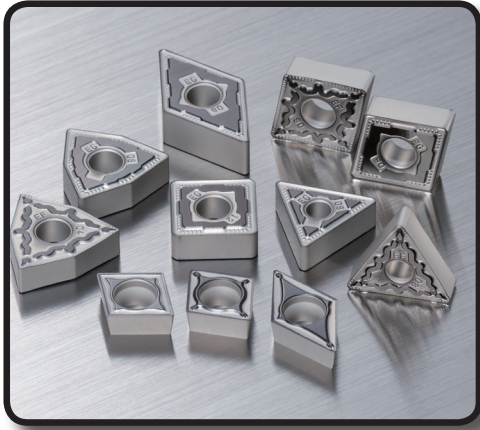
**M**



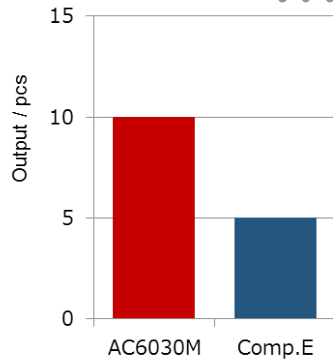
# AC6030M Features & Benefits

- Sumitomo's new "Absotech platinum" PVD grade coating, with fine grains and high hardness, achieved 1.5 times higher wear resistance and twice the tool life than conventional grade
- New  $TiB_2$  surface layer creates excellent adhesion and chipping resistance
- Expanded chipbreaker lineup with newly developed "EEM" type gives excellent chip control when roughing

## Application Examples



Twice longer tool life with improved fracture resistance!



AC6030M

Competitor E

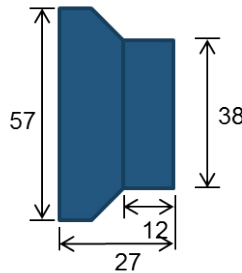


### Application Example Cutting Conditions (Impeller):

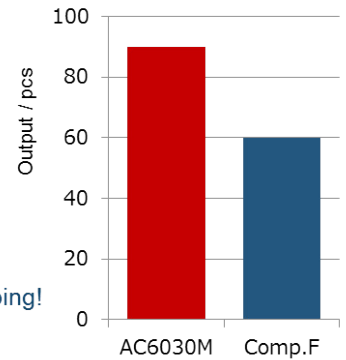
**Work Material:** G-X6CrNi189 / Cast Stainless

**Insert:** CNMG432EEG

**Cutting Condition:**  $V_c$ : 530 sfm  $f$ : 0.008 ipr  
 $a_p$ : 0.078", Wet



1.5times longer tool life without chipping!



AC6030M

Competitor F



### Application Example Cutting Conditions (probe):

**Work Material:** X5CrNiMo1810 / 316 Stainless

**Insert:** WNMG432EMU

**Cutting Condition:**  $V_c$ : 600 sfm  $f$ : 0.011 ipr  
 $a_p$ : 0.118", Wet

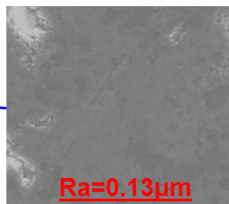
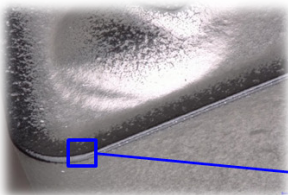
## AC6030M Surface Layer

### ■ New surface layer

" $TiB_2$ " surface layer has an extremely smooth surface.

- Excellent adhesion and chipping resistance
- Easily distinguishable used cutting edge

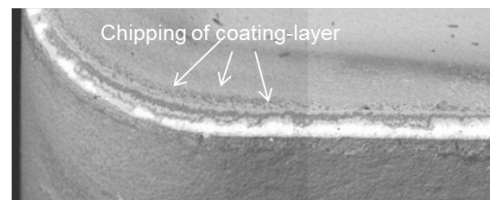
Patent Pending



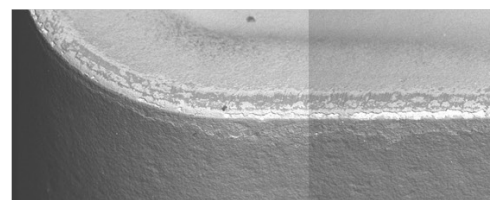
$Ra=0.13\mu m$

Patented Process

### Competitor

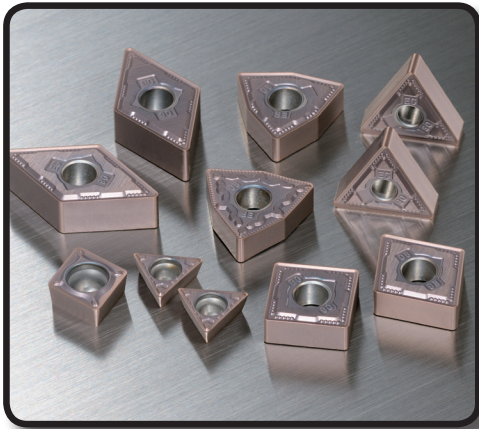


### AC6030M

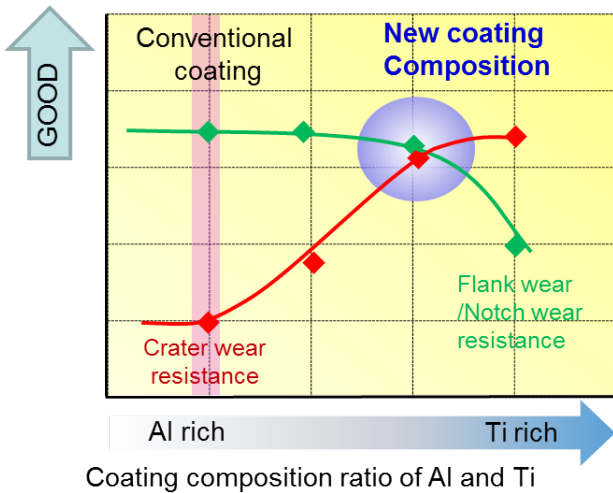


# AC6040M Features & Benefits

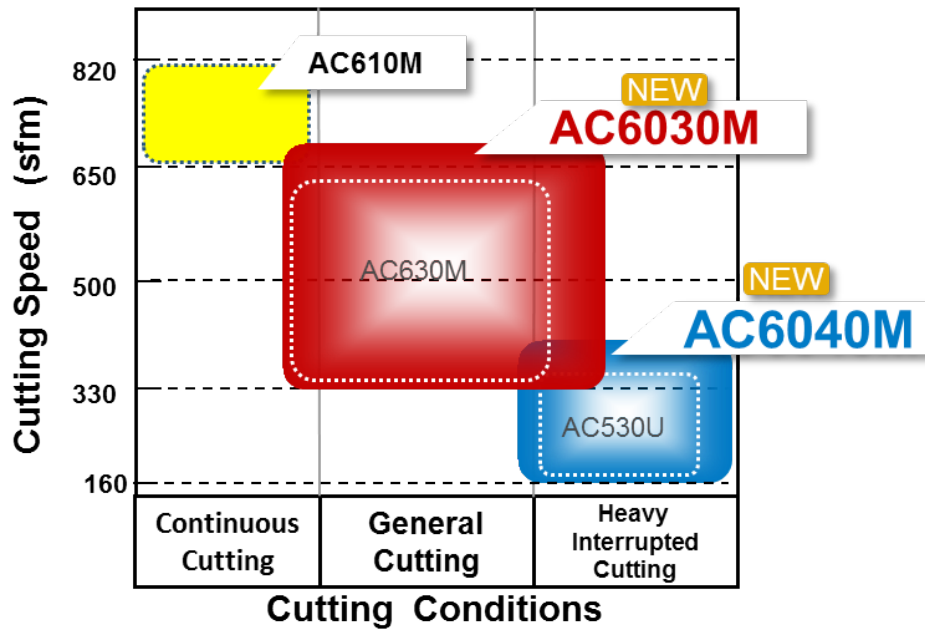
- Sumitomo's new "Absotech Bronze" PVD grade coating improves wear resistance, adhesion resistance, and fracture resistance which extends tool life - reducing your cost per part
- Expanded chipbreaker lineup with newly developed "EEM" type gives excellent chip control when roughing



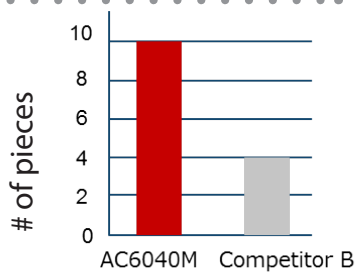
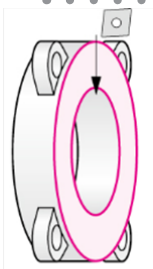
## Wear Resistance Chart



## Cutting Conditions



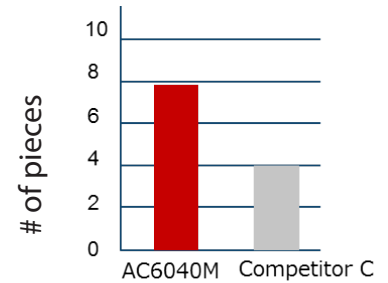
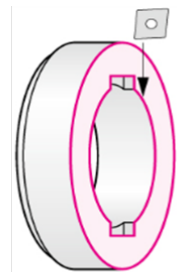
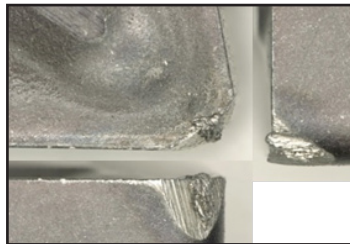
## Application Examples



2.6 times longer tool life without breakage!

AC6040M

Competitor B



2.0 times longer tool life!

AC6040M

Competitor C



### Application Example Cutting Conditions (flange):

Work Material: X5CrNiMo1810 / 316 Stainless

Insert: CNMG432EGU

Cutting Condition:  $V_c$ : 650 - 1,175 sfm  $f$ : 0.005 ipr  
 $a_p$ : 0.016", Wet

### Application Example Cutting Conditions (coupling):

Work Material: G-X6CrNi189 / Cast Stainless

Insert: WNMG432EEG

Cutting Condition:  $V_c$ : 230 - 600 sfm  $f$ : 0.006 ipr  
 $a_p$ : 0.098", Wet



### CNMG 80° Diamond/Negative

Sumitomo Catalog Number	AC6030M	AC6040M	Inscribed Circle	Thickness	Nose Radius	Insert Hole Diameter
CNMG431EEF	●	●	.500	.1875	.0156	.2031
CNMG432EEF	●	●	.500	.1875	.0313	.2031
CNMG433EEF	○		.500	.1875	.0469	.2031
CNMG432EEG	●	●	.500	.1875	.0313	.2031
CNMG433EEG	●	●	.500	.1875	.0469	.2031
CNMG543EEG	●		.625	.250	.0469	.250
CNMG544EEG	●		.625	.250	.0625	.250
CNMG643EEG	●	●	.750	.250	.0469	.3126
CNMG644EEG	●		.750	.250	.0625	.3126
CNMG432EEM	●	●	.500	.1875	.0313	.2031
CNMG433EEM	●	●	.500	.1875	.0469	.2031
CNMG434EEM	●		.500	.1875	.0625	.2031
CNMG543EEM	●	●	.625	.250	.0469	.250
CNMG544EEM	●	●	.625	.250	.0625	.250
CNMG643EEM	●	●	.750	.250	.0469	.3126
CNMG644EEM	●	●	.750	.250	.0625	.3126
CNMG866EEM	○		1.00	.3750	.0938	.3622
CNMG431EEX	●	●	.500	.1875	.0156	.2031
CNMG432EEX	●	●	.500	.1875	.0313	.2031
CNMG433EEX	●	●	.500	.1875	.0469	.2031
CNMG543EEX	●	●	.625	.250	.0469	.250
CNMG431EGU	●	●	.500	.1875	.0156	.2031
CNMG432EGU	●	●	.500	.1875	.0313	.2031
CNMG433EGU	●	●	.500	.1875	.0469	.2031
CNMG432EMU	●	●	.500	.1875	.0313	.2031
CNMG433EMU	●	●	.500	.1875	.0469	.2031
CNMG434EMU	●	●	.500	.1875	.0625	.2031
CNMG543EMU	●	●	.625	.250	.0469	.250
CNMG544EMU	●	●	.625	.250	.0625	.250
CNMG643EMU	●	●	.750	.250	.0469	.3126
CNMG644EMU	●	●	.750	.250	.0625	.3126
CNMG431ESU	●	●	.500	.1875	.0156	.2031
CNMG432ESU	●	●	.500	.1875	.0313	.2031
CNMG433ESU	●	●	.500	.1875	.0469	.2031
CNMG431EUP	●	●	.500	.1875	.0156	.2031
CNMG432EUP	●	●	.500	.1875	.0313	.2031
CNMG433EUP	●	●	.500	.1875	.0469	.2031
CNMG432EGUW	●	●	.500	.1875	.0313	.2031
CNMG433EGUW	●	●	.500	.1875	.0469	.2031

### DNMG 55° Diamond/Negative

Sumitomo Catalog Number	AC6030M	AC6040M	Inscribed Circle	Thickness	Nose Radius	Insert Hole Diameter
DNMG431EEF	●	●	.500	.1875	.0156	.2031
DNMG432EEF	●	●	.500	.1875	.0313	.2031
DNMG433EEF	●		.500	.1875	.0469	.2031
DNMG431EEG	●	●	.500	.1875	.0156	.2031
DNMG432EEG	●	●	.500	.1875	.0313	.2031
DNMG433EEG	●	●	.500	.1875	.0469	.2031
DNMG432EEM	●	●	.500	.1875	.0313	.2031
DNMG433EEM	●	●	.500	.1875	.0469	.2031
DNMG431EEX	●	●	.500	.1875	.0156	.2031
DNMG432EEX	●	●	.500	.1875	.0313	.2031
DNMG433EEX	●	●	.500	.1875	.0469	.2031
DNMG431EGU	●	●	.500	.1875	.0156	.2031
DNMG432EGU	●	●	.500	.1875	.0313	.2031
DNMG433EGU	●	●	.500	.1875	.0469	.2031
DNMG432EMU	●	●	.500	.1875	.0313	.2031
DNMG433EMU	●	●	.500	.1875	.0469	.2031
DNMG431ESU	●	●	.500	.1875	.0156	.2031
DNMG432ESU	●	●	.500	.1875	.0313	.2031
DNMG431EUP	●	●	.500	.1875	.0156	.2031
DNMG432EUP	●	●	.500	.1875	.0313	.2031

## AC6030M & AC6040M Inventory - Negative Inserts

### SNMG 90° Square/Negative

Sumitomo Catalog Number	AC6030M	AC6040M	Inscribed Circle	Thickness	Nose Radius	Insert Hole Diameter
SNMG432EEG	●	●	.500	.1875	.0313	.2031
SNMG433EEG	●	●	.500	.1875	.0469	.2031
SNMG543EEG	●	●	.625	.250	.0469	.250
SNMG643EEG	●	●	.750	.250	.0469	.3126
SNMG644EEG	●	●	.750	.250	.0625	.3126
SNMG432EEM	●	●	.500	.1875	.0313	.2031
SNMG433EEM	●	●	.500	.1875	.0469	.2031
SNMG543EEM	●	●	.625	.250	.0469	.250
SNMG544EEM	●	●	.625	.250	.0625	.250
SNMG643EEM	●	●	.750	.250	.0469	.3126
SNMG644EEM	●	●	.750	.250	.0625	.3126
SNMG322EEX	●		.375	.125	.0313	.150
SNMG432EEX	●	●	.500	.1875	.0313	.2031
SNMG433EEX	●	●	.500	.1875	.0469	.2031
SNMG432EGU	●	●	.500	.1875	.0313	.2031
SNMG433EGU	●	●	.500	.1875	.0469	.2031
SNMG434EGU	●	●	.500	.1875	.0625	.2031
SNMG432EMU	●	●	.500	.1875	.0313	.2031
SNMG433EMU	●	●	.500	.1875	.0469	.2031
SNMG543EMU	●	●	.625	.250	.0469	.250
SNMG544EMU	●	●	.625	.250	.0625	.250
SNMG643EMU	●	●	.750	.250	.0469	.3126
SNMG644EMU	●	●	.750	.250	.0625	.3126
SNMG432ESU	●	●	.500	.1875	.0313	.2031
SNMG432EUP	●	●	.500	.1875	.0313	.2031

### TNMG Triangle/Negative

Sumitomo Catalog Number	AC6030M	AC6040M	Inscribed Circle	Thickness	Nose Radius	Insert Hole Diameter
TNMG331EEF	●	●	.375	.1875	.0156	.150
TNMG332EEF	●	●	.375	.1875	.0313	.150
TNMG332EEG	●	●	.375	.1875	.0313	.150
TNMG333EEG	●	●	.375	.1875	.0469	.150
TNMG332EEM	●	●	.375	.1875	.0313	.150
TNMG333EEM	●	●	.375	.1875	.0469	.150
TNMG331EEX	●	●	.375	.1875	.0156	.150
TNMG332EEX	●	●	.375	.1875	.0313	.150
TNMG333EEX	●	●	.375	.1875	.0469	.150
TNMG331EGU	●	●	.375	.1875	.0156	.150
TNMG332EGU	●	●	.375	.1875	.0313	.150
TNMG333EGU	●	●	.375	.1875	.0469	.150
TNMG432EGU	●	●	.500	.1875	.0313	.2031
TNMG433EGU	●	●	.500	.1875	.0469	.2031
TNMG332EMU	●	●	.375	.1875	.0313	.150
TNMG333EMU	●	●	.375	.1875	.0469	.2031
TNMG432EMU	●	●	.500	.1875	.0313	.2031
TNMG433EMU	●	●	.500	.1875	.0469	.2031
TNMG331ESU	●	●	.375	.1875	.0156	.150
TNMG332ESU	●	●	.375	.1875	.0313	.150
TNMG333ESU	●	●	.375	.1875	.0469	.150
TNMG331EUP	●	●	.375	.1875	.0156	.150
TNMG332EUP	●	●	.375	.1875	.0313	.150
TNMG333EUP	●	●	.375	.1875	.0469	.150

### TRM 55° Triangle/Negative

Sumitomo Catalog Number	AC6030M	AC6040M	Inscribed Circle	Thickness	Nose Radius	Insert Hole Diameter
TRM551704GU	●		.394	.197	.0156	.084
TRM551708GU	●		.394	.197	.0313	.084
TRM551712GU	●		.394	.197	.0469	.084
TRM551704SU	●		.394	.197	.0156	.084
TRM551708SU	●		.394	.197	.0313	.084
TRM551712SU	●		.394	.197	.0469	.084

### VNMG 35° Diamond/Negative

Sumitomo Catalog Number	AC6030M	AC6040M	Inscribed Circle	Thickness	Nose Radius	Insert Hole Diameter
VNMG331EEF	●	●	.375	.1875	.0156	.150
VNMG332EEF	●	●	.375	.1875	.0313	.150
VNMG332EEG	●	●	.375	.1875	.0313	.150
VNMG333EEG	●	●	.375	.1875	.0469	.150
VNMG331EEX	●	●	.375	.1875	.0156	.150
VNMG332EEX	●	●	.375	.1875	.0313	.150
VNMG331EGU	●	●	.375	.1875	.0156	.150
VNMG332EGU	●	●	.375	.1875	.0313	.150
VNMG331ESU	●	●	.375	.1875	.0156	.150
VNMG332ESU	●	●	.375	.1875	.0313	.150

### WNMG Trigon/Negative

Sumitomo Catalog Number	AC6030M	AC6040M	Inscribed Circle	Thickness	Nose Radius	Insert Hole Diameter
WNMG431EEF	●		.500	.1875	.0156	.2031
WNMG432EEF	●		.500	.1875	.0313	.2031
WNMG432EEG	●	●	.500	.1875	.0313	.2031
WNMG433EEG	●	●	.500	.1875	.0469	.2031
WNMG432EEM	●	●	.500	.1875	.0313	.2031
WNMG433EEM	●	●	.500	.1875	.0469	.2031
WNMG431EEX	●	●	.500	.1875	.0156	.2031
WNMG432EEX	●	●	.500	.1875	.0313	.2031
WNMG433EEX	●	●	.500	.1875	.0469	.2031
WNMG431EGU	●	●	.500	.1875	.0156	.2031
WNMG432EGU	●	●	.500	.1875	.0313	.2031
WNMG433EGU	●	●	.500	.1875	.0469	.2031
WNMG332EMU	●		.375	.1875	.0313	.150
WNMG333EMU	●		.375	.1875	.0469	.150
WNMG432EMU	●	●	.500	.1875	.0313	.2031
WNMG433EMU	●	●	.500	.1875	.0469	.2031
WNMG331ESU	●		.375	.1875	.0156	.150
WNMG332ESU	●		.375	.1875	.0313	.150
WNMG431ESU	●	●	.500	.1875	.0156	.2031
WNMG432ESU	●	●	.500	.1875	.0313	.2031
WNMG433ESU	●	●	.500	.1875	.0469	.2031
WNMG432EUP	●	●	.500	.1875	.0313	.2031
WNMG433EUP	●	●	.500	.1875	.0469	.2031
WNMG432EGUW	●	●	.500	.1875	.0313	.2031
WNMG433EGUW	●	●	.500	.1875	.0469	.2031
WNMG331ELUW	●		.375	.1875	.0156	.150
WNMG332ELUW	●		.375	.1875	.0313	.150

● = USA Stocked item

○ = Available 3rd Quarter 2015

# AC6030M & AC6040M Inventory - Positive Inserts

CCGT 80° Diamond/ 7° Relief Angle						
Sumitomo Catalog Number	AC6030M	AC6040M	Inscribed Circle	Thickness	Nose Radius	Insert Hole Diameter
CCGT32.50MESI	●		.375	.156	.0039	.1732
CCGT32.50.5MESI	●		.375	.156	.0078	.1732
CCGT32.51MESI	●		.375	.156	.0156	.1732

CCMT 80° Diamond/ 7° Relief Angle						
Sumitomo Catalog Number	AC6030M	AC6040M	Inscribed Circle	Thickness	Nose Radius	Insert Hole Diameter
CCMT21.50.5ELU	●		.250	.094	.0078	.110
CCMT21.51ELU	●		.250	.094	.0156	.110
CCMT32.51ELU	●		.375	.156	.0156	.1732
CCMT32.52ELU	●		.375	.156	.0313	.1732
CCMT21.50.5ESU	●		.250	.094	.0078	.110
CCMT21.51ESU	●	●	.250	.094	.0156	.110
CCMT21.52ESU	●	●	.250	.094	.0313	.110
CCMT32.50.5ESU	●		.375	.156	.0078	.1732
CCMT32.51ESU	●	●	.375	.156	.0156	.1732
CCMT32.52ESU	●	●	.375	.156	.0313	.1732

CPMT 80° Diamond/11° Relief Angle						
Sumitomo Catalog Number	AC6030M	AC6040M	Inscribed Circle	Thickness	Nose Radius	Insert Hole Diameter
CPMT321ELU	●		.375	.125	.0156	.1732
CPMT21.51ENS	●		.250	.094	.0156	.110
CPMT2.51.52ENS	●		.3125	.094	.0313	.134
CPMT322ENS	●		.375	.125	.0313	.1732
CPMT432ENS	●		.500	.1875	.0313	.2165
CPMT32.52ENX	●		.375	.156	.0313	.1732
CPMT2.51.51ESU	●	●	.3125	.094	.0156	.134
CPMT2.51.52ESU	●		.3125	.094	.0313	.134
CPMT321ESU	●		.375	.125	.0156	.1732
CPMT322ESU	●		.375	.125	.0313	.1732

DCGT 55° Diamond/ 7° Relief Angle						
Sumitomo Catalog Number	AC6030M	AC6040M	Inscribed Circle	Thickness	Nose Radius	Insert Hole Diameter
DCGT21.50MESI	●		.250	.094	.0039	.110
DCGT21.50.5MESI	●		.250	.094	.0078	.110
DCGT21.51MESI	●		.250	.094	.0156	.110
DCGT32.50MESI	●		.375	.156	.0039	.1732
DCGT32.50.5MESI	●		.375	.156	.0078	.1732
DCGT32.51MESI	●		.375	.156	.0156	.1732
DCGT32.52MESI	●		.375	.156	.0313	.1732

DCMT 55° Diamond/ 7° Relief Angle						
Sumitomo Catalog Number	AC6030M	AC6040M	Inscribed Circle	Thickness	Nose Radius	Insert Hole Diameter
DCMT21.51ELU	●	●	.250	.094	.0156	.110
DCMT32.51ELU	●		.375	.156	.0156	.1732
DCMT32.52ELU	●		.375	.156	.0313	.1732
DCMT21.50.5ESU	●		.250	.094	.0078	.110
DCMT21.51ESU	●	●	.250	.094	.0156	.110
DCMT21.52ESU	●		.250	.094	.0313	.110
DCMT32.50.5ESU	●		.375	.156	.0078	.1732
DCMT32.51ESU	●	●	.375	.156	.0156	.1732
DCMT32.52ESU	●	●	.375	.156	.0313	.1732

SCMT 90° Square/ 7° Relief Angle						
Sumitomo Catalog Number	AC6030M	AC6040M	Inscribed Circle	Thickness	Nose Radius	Insert Hole Diameter
SCMT32.51ESU	●	●	.375	.156	.0156	.1732
SCMT32.52ESU	●	●	.375	.156	.0313	.1732

SPMT 90° Square/ 11° Relief Angle						
Sumitomo Catalog Number	AC6030M	AC6040M	Inscribed Circle	Thickness	Nose Radius	Insert Hole Diameter
SPMT321ELU	●	●	.375	.156	.0156	.1732
SPMT322ELU	●	●	.375	.156	.0313	.1732
SPMT21.51ENS	●	●	.250	.094	.0156	.110
SPMT2.522ENS	●	●	.3125	.125	.0313	.134
SPMT322ENS	●	●	.375	.125	.0313	.130
SPMT432ENS	●	●	.500	.1875	.0313	.2165
SPMT32.52ENX	●	●	.375	.156	.0313	.1732

TCMT Triangle/ 7° Relief Angle						
Sumitomo Catalog Number	AC6030M	AC6040M	Inscribed Circle	Thickness	Nose Radius	Insert Hole Diameter
TCMT21.51ELU	●		.250	.094	.0156	.110
TCMT21.52ELU	●		.250	.094	.0313	.110
TCMT21.51ESU	●	●	.250	.094	.0156	.110
TCMT21.52ESU	●	●	.250	.094	.0313	.110
TCMT32.51ESU	●	●	.375	.156	.0156	.1693
TCMT32.52ESU	●	●	.375	.156	.0313	.1693

TPMT Triangle/ 11° Relief Angle						
Sumitomo Catalog Number	AC6030M	AC6040M	Inscribed Circle	Thickness	Nose Radius	Insert Hole Diameter
TPMT221ELU	●	●	.250	.125	.0156	.110
TPMT222ELU	●	●	.250	.125	.0313	.110
TPMT220.5ESU	●	●	.250	.125	.0078	.130
TPMT221ESU	●	●	.250	.125	.0156	.130
TPMT222ESU	●		.250	.125	.0313	.130
TPMT331ESU	●	●	.375	.1875	.0156	.1693
TPMT332ESU	●	●	.375	.1875	.0313	.1693

VBGT 35° Diamond/ 5° Relief Angle						
Sumitomo Catalog Number	AC6030M	AC6040M	Inscribed Circle	Thickness	Nose Radius	Insert Hole Diameter
VBGT220MESI	○		.250	.125	.0039	.134
VBGT220.5MESI	○		.250	.125	.0078	.134
VBGT221MESI	○		.250	.125	.0156	.134
VBGT222MESI	○		.250	.125	.0313	.134
VBGT330MESI	○		.375	.1875	.0039	.1732
VBGT330.5MESI	○		.375	.1875	.0078	.1732
VBGT331MESI	○		.375	.1875	.0156	.1732
VBGT332MESI	○		.375	.1875	.0313	.1732

VBMT 35° Diamond/ 5° Relief Angle						
Sumitomo Catalog Number	AC6030M	AC6040M	Inscribed Circle	Thickness	Nose Radius	Insert Hole Diameter
VBMT221ELU	●	●	.250	.125	.0156	.134
VBMT331ELU	●		.375	.1875	.0156	.1732
VBMT332ELU	●		.375	.1875	.0313	.1732
VBMT221ESU	●		.250	.125	.0156	.134
VBMT222ESU	●		.250	.125	.0313	.134
VBMT331ESU	●		.375	.1875	.0156	.1732
VBMT332ESU	●		.375	.1875	.0313	.1732

VCGT 35° Diamond/ 7° Relief Angle						
Sumitomo Catalog Number	AC6030M	AC6040M	Inscribed Circle	Thickness	Nose Radius	Insert Hole Diameter
VCGT220MESI	●		.250	.125	.0039	.134
VCGT220.5MESI	●		.250	.125	.0078	.134
VCGT221MESI	●		.250	.125	.0156	.134
VCGT222MESI	●		.250	.125	.0313	.134
VCGT330MESI	●		.375	.1875	.0039	.1732
VCGT330.5MESI	●		.375	.1875	.0078	.1732
VCGT331MESI	●		.375	.1875	.0156	.1732
VCGT332MESI	○		.375	.1875	.0313	.1732

VCMT 35° Diamond/ 7° Relief Angle						
Sumitomo Catalog Number	AC6030M	AC6040M	Inscribed Circle	Thickness	Nose Radius	Insert Hole Diameter
VCMT331ELU	●		.375	.1875	.0156	.1732
VCMT332ELU	●		.375	.1875	.0313	.1732
VCMT331ESU	●		.375	.1875	.0156	.1732
VCMT332ESU	●		.375	.1875	.0313	.1732

● = USA Stocked item

○ = Available 3rd Quarter 2015

M before the chipbreaker indicates a negative nose tolerance (-0.0001" to -0.0005")



# SUMITOMO

**CARBIDE - CBN - DIAMOND**

## Sumitomo Electric Carbide, Inc.

### Headquarters

1001 Business Center Drive  
Mount Prospect, IL 60056-2181  
P.O. Box 545, Mt. Prospect, IL 60056-0545  
Phone: (800) 950-5202  
Phone: (847) 635-0044  
Fax: (847) 635-7866  
<http://www.sumicarbide.com>

### Detroit Branch

14496 Sheldon Road #230  
Plymouth, MI 48170  
Phone: (800) 239-5177  
Phone: (734) 451-0200  
Fax: (734) 451-5338

### Sumitomo Electric Tool Engineering Center

5637 S. Westridge Drive  
New Berlin, WI 53151  
Phone: (800) 950-5202

### Huntsville Branch

6700 Odyssey Drive  
Suite 211  
Huntsville, AL 35806  
Phone: (256) 971-1203  
Fax: (256) 971-1205

### Cincinnati Branch

4450 Carver Woods Drive  
Cincinnati, OH 45242-5545  
Phone: (800) 879-1887  
Phone: (513) 891-4000  
Fax: (513) 794-2911

### Torrance Branch

21241 South Western Avenue  
Suite 120  
Torrance, CA 90501  
Phone: (800) 950-5202  
Fax: (310) 782-0211

### Sumicarbide Canada, Inc.

2600 Skymark Avenue  
Building 6, Suite 103  
Mississauga, ON L4W 5B2  
Canada  
Phone: (905) 282-9986  
Fax: (905) 282-9984

