

CVD Coated Grade for Steel Turning

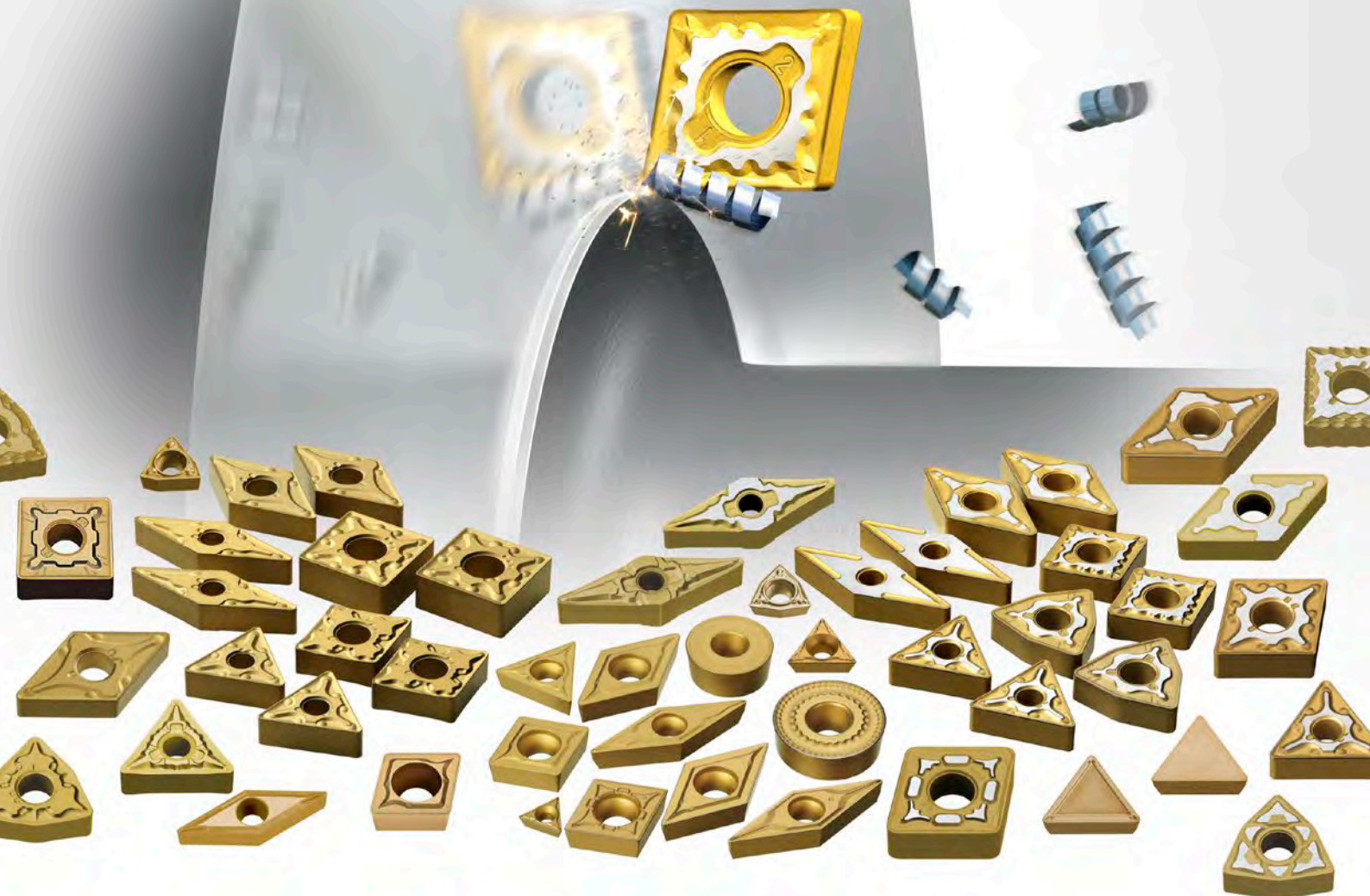
Environmentally Friendly Product

# MC6100 Series

Series  
Addition

## Bringing the Ultimate High Speed Cutting Performance

MC6115 + FP  
MC6125 + MP  
MC6135 + LP



## CVD Coated Grade for Steel Turning

# MC6100 Series

**Dramatic increase in stability and wear resistance, enabled by utilising the improved coating adhesion and crystal orientation technology.**

For High Speed Turning  
MC6115



First Recommendation  
MC6125



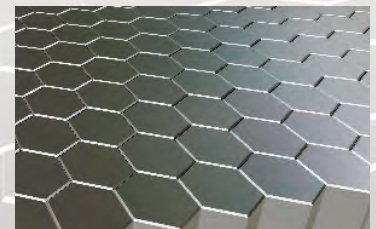
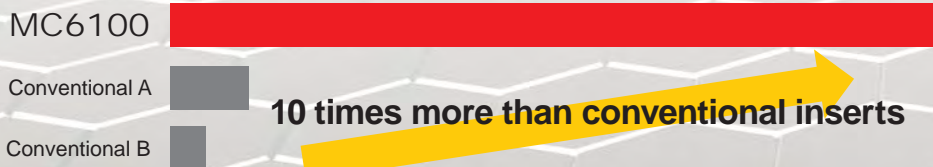
For Fracture Resistance  
MC6135



## Features

### "Super" Nano Texture Technology

The standard Nano Texture Technology has been improved and developed to be an industry leading standard for crystal growth of  $Al_2O_3$  coatings. This Super Nano Texture Technology increases tool life and wear resistance due to the fine, dense crystal growth process.



\*By Image

The ratio of  $Al_2O_3$  crystal grains with the same orientation



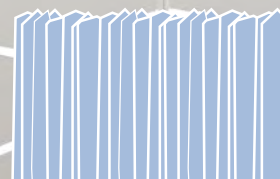
Conventional CVD inserts

Grain size and growth direction are uneven.



Nano Texture

Uniformity of the grain size and growth direction has improved.



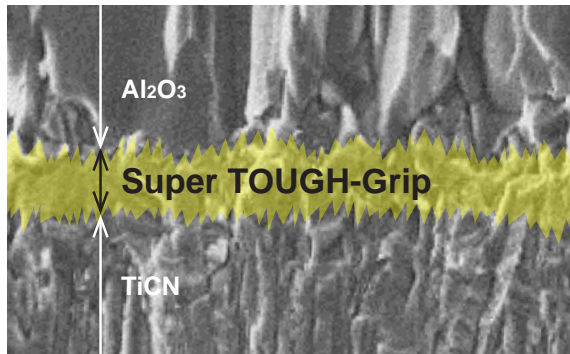
"Super" Nano Texture

Uniformity of the growth direction has drastically improved.

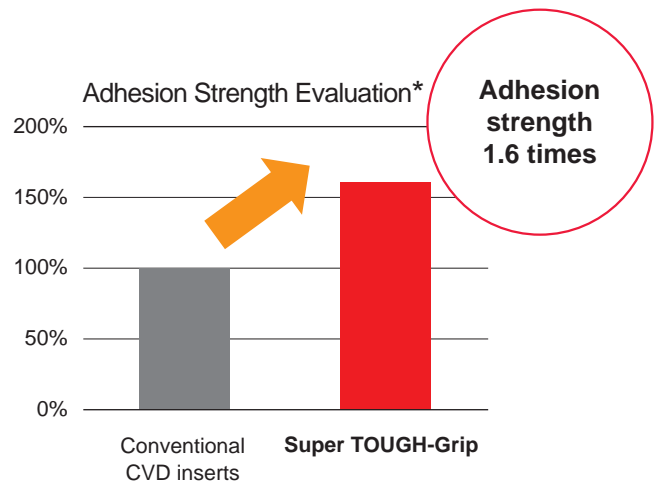
Crystal Orientation

# Super TOUGH-Grip

The Super TOUGH-Grip layer has finer crystal grains that enhance the strength of the adhesion between the coating layers.



\*By Image



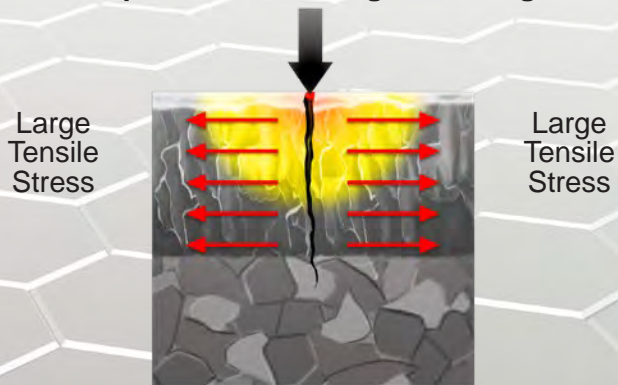
\*Adhesion strength measurement is obtained from a scratch test that records the force needed to peel the coating layers.

# Protection Against Sudden Fracturing

Cracks that occur during unstable machining are prevented due to the relaxing of the tensile stress in the coating. MC6100 series has an 80% reduction in coating tensile stress compared to conventional CVD inserts.

**Relaxing of the Tensile Stress**

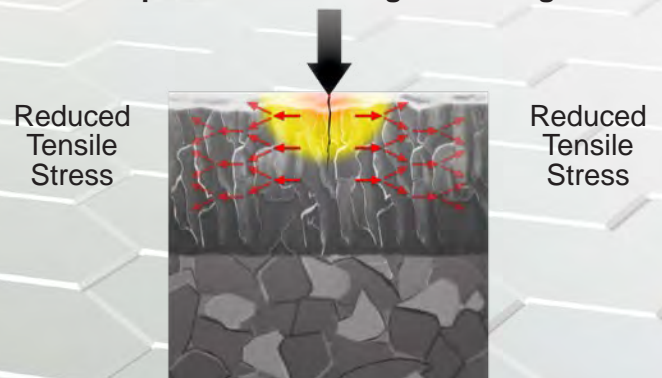
**Impact Stress During Machining**



Conventional CVD inserts

Cracks are generated in the surface of coatings during machining. They propagate through the coating into the substrate due to the large tensile stress in the coating structure. This creates one of the main causes of sudden insert breakage.

**Impact Stress During Machining**



MC6100 Series

MC6100 series has a much lower level of stress than conventional CVD coatings due to the surface treatment. This divides the force of impacts during machining and protects from sudden fracturing.

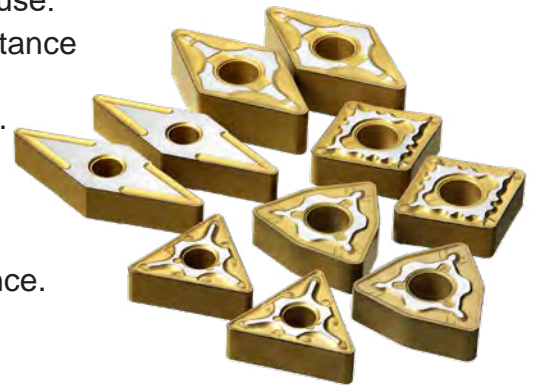
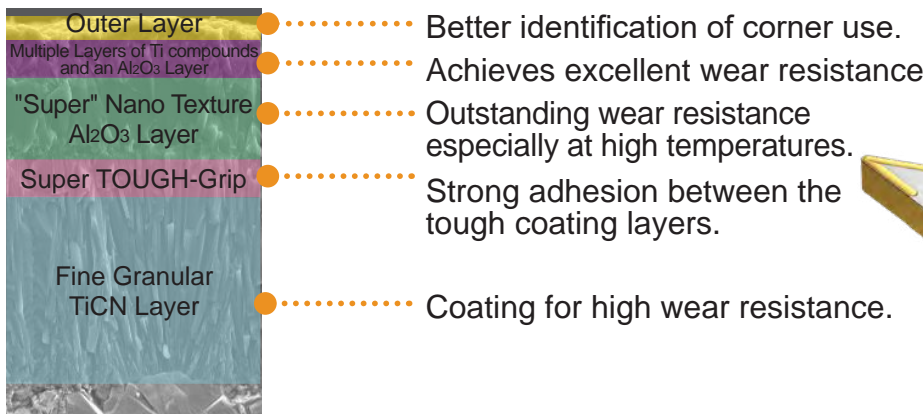


Please refer to the last page for more information on certified environmentally friendly products.

## CVD Coated Grade for Steel Turning

# MC6125

**First recommended grade for steel turning.  
Increasing tool life with stable performance over a wider range of applications.**

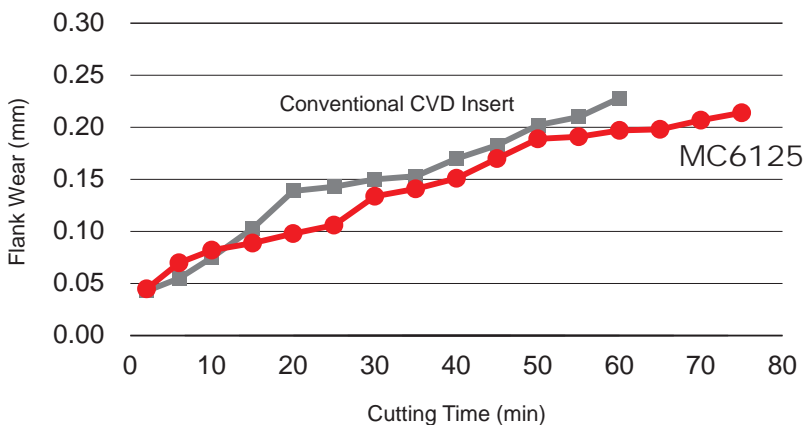


## Special Smooth Surface Treatment

MC6125 uses a new surface treatment for the cutting edge for increased stability. Additionally, the seating faces also have a special smooth surface treatment that provides improved clamping stability to enable a wider range of applications.

## Machining S45C : Comparison of Wear Resistance

The surface treatment has improved stability and provided longer tool life.



<Cutting Conditions>  
 Workpiece Material : JIS S45C  
 Inserts : CNMG120408-MA  
 Cutting Speed : vc = 200 m/min  
 Feed per Rev. : f = 0.3 mm/rev  
 Depth of Cut : ap = 1.5 mm  
 Cutting Mode : Wet Cutting



Please refer to the last page for more information on certified environmentally friendly products.

## CVD Coated Grade for Steel Turning

# MC6115

**MC6115 improves high speed machining and process efficiency with a dramatic increase in resistance to wear and heat.**

|  |   |
|--|---|
| <p>Outer Layer</p> <p>"Super" Nano Texture Al<sub>2</sub>O<sub>3</sub> Layer</p> <p>Super TOUGH-Grip</p> <p>Fine Granular TiCN Layer</p> | <p>..... Better identification of corner use.</p> <p>..... Outstanding wear resistance especially at high temperatures.</p> <p>..... Strong adhesion between the tough coating layers.</p> <p>..... Coating for high wear resistance.</p> |
|--|---|

### Improved Outer Coating (Layer)

The outer layer of MC6115 restricts chip welding thereby improving the dimensional accuracy and surface roughness of components. This also enables easy recognition of whether the corner can continue machining.

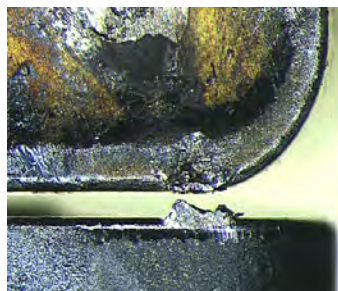
### Example when machining Scr420H

When comparing the high edge strength chipbreaker MH with a conventional low resistance chipbreaker, it shows that MC6115 accomplishes both high welding and wear resistance.

#### After 2 Minutes Machining



MC6115 MH



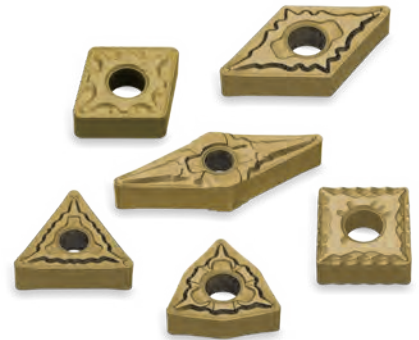
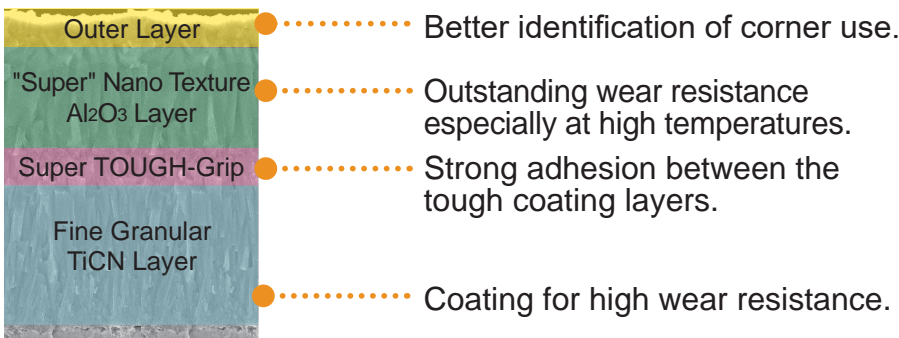
Conventional CVD Insert

<Cutting Conditions>  
 Workpiece Material : JIS SCr420H 170HB  
 Inserts : CNMG120408-MH  
 Cutting Speed : vc = 200 m/min  
 Feed per Rev. : f = 0.3 mm/rev  
 Depth of Cut : ap = 1.5 mm  
 Cutting Mode : Dry Cutting

## CVD Coated Grade for Steel Turning

# MC6135 NEW

**Optimal versatility for machining continuous through to intermittent applications.**

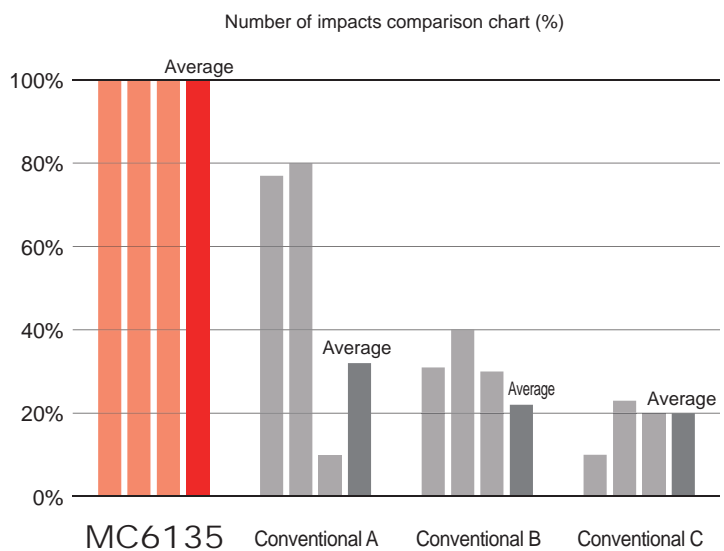


## Thinner Coatings Optimised for General Purpose Machining

Industry-leading crystal orientation control technology enables thinner but still impact-resistant coatings provide improved chipping and wear resistance which is optimal for general-purpose use. (50% thinner compared to our conventional coating).

## Machining SCM440 : Comparison of Toughness During Interrupted Cutting

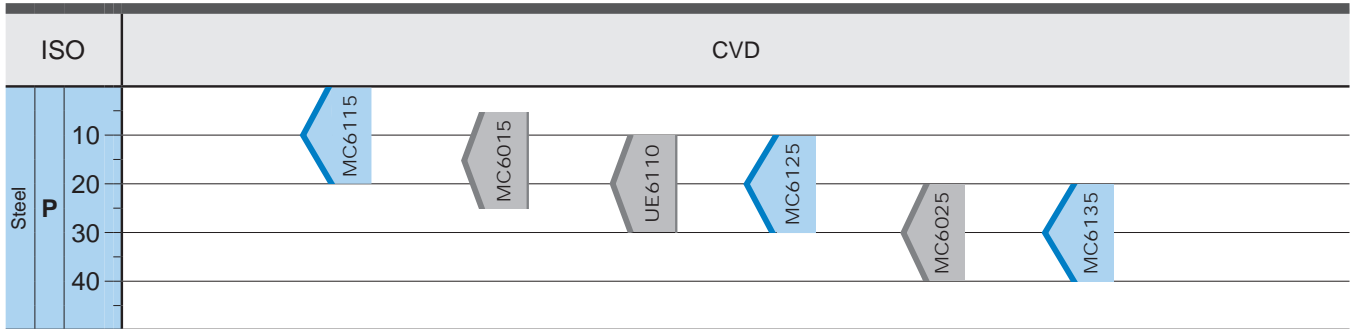
MC6135 shows high stability even during interrupted cutting and can be used over a wide area of applications.



<Cutting Conditions>  
 Workpiece Material : JIS SCM440  
 Inserts : CNMG120408-   
 Cutting Speed : vc=200m/min  
 Feed per Rev. : f=0.35mm/rev  
 Depth of Cut : 2.5mm  
 Cutting Mode : Wet Cutting

Pre-set tool life limit or until damage deteriorates the performance.

## Application Range


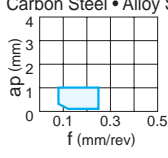
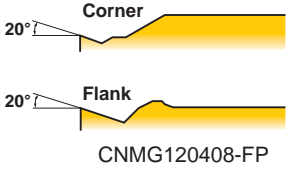

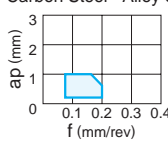
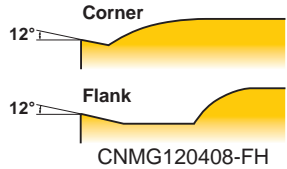

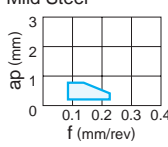
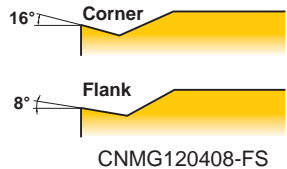

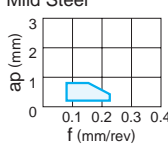
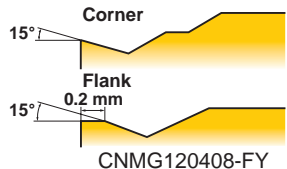


## Selection Criteria

| Work Material | Cutting Mode        | Grade         |
|---------------|---------------------|---------------|
| P<br>Steel    | Continuous Cutting  | <b>MC6115</b> |
|               | Low                 | <b>MC6125</b> |
|               | Medium              | <b>MC6135</b> |
|               | High                |               |
|               | Interrupted Cutting |               |


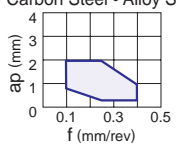
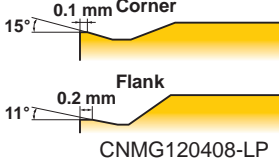

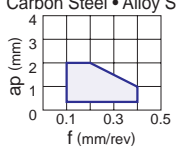
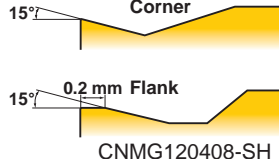

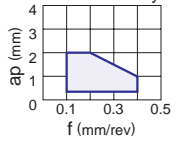
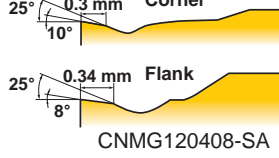

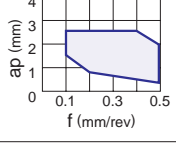
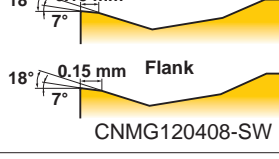

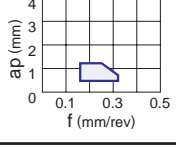
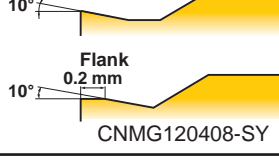

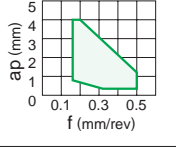
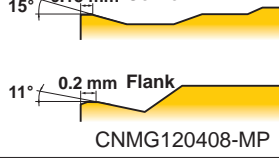

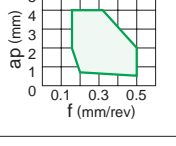
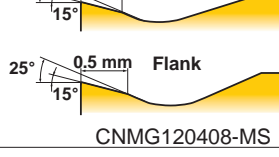

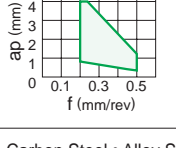
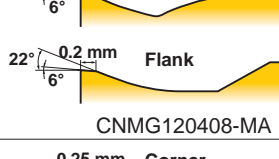

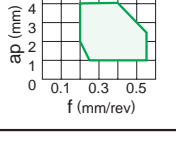
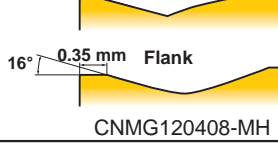
## Chip Breaker System for Steel Turning


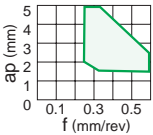

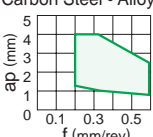

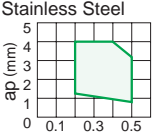

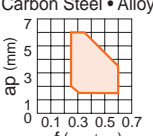

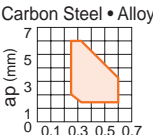

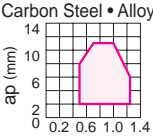

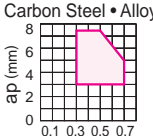

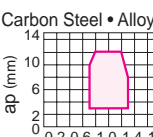

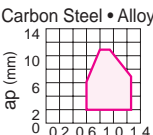
### Negative Inserts

| Application    | Tolerance | Chip Breaker Name and Picture  | Features  | Cross Section Geometry   |  |
|----------------|-----------|--|---|--|--|
| Finish Cutting | M         | <b>FP</b><br> | <b>First recommendation for finishing carbon steel and alloy steel</b><br>Controls chip clogging during high-feed cutting and prevents chips of soft workpiece materials from running onto their surfaces. Large rake angle suppress chatter vibration and deformation in machining of low rigidity workpiece material. | Carbon Steel • Alloy Steel<br> | <br>CNMG120408-FP |
|                |           | <b>FH</b><br> | <b>First recommendation for finishing carbon steel and alloy steel</b><br>Stable chip control even at small depths of cut.  | Carbon Steel • Alloy Steel<br> | <br>CNMG120408-FH |
|                |           | <b>FS</b><br> | <b>Alternative chipbreaker for finishing mild steel</b><br>Stable chip control even at small depths of cut. Sharp edge gives best performance.  | Mild Steel<br>                 | <br>CNMG120408-FS |
|                |           | <b>FY</b><br> | <b>First recommendation for finishing mild steel</b><br>Effectively controls adhesive chips. Suitable for mild steel finishing.   | Mild Steel<br>                 | <br>CNMG120408-FY |

# Chip Breaker System for Steel Turning


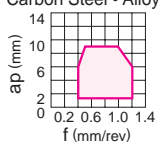

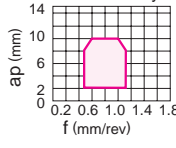
## Negative Inserts

| Application    | Tolerance | Chip Breaker Name and Picture  | Features   | Cross Section Geometry   |
|----------------|-----------|--|--|--|
| Light Cutting  | M         | <b>LP</b><br>   | <b>First recommendation for light cutting of carbon steel and alloy steel</b><br>Stable chip control in the light cutting area.<br>The curved edge allows smooth chip discharge.   | Carbon Steel • Alloy Steel<br><br><br>CNMG120408-LP     |
|                |           | <b>SH</b><br>   | <b>Alternative chipbreaker for light cutting of carbon steel and alloy steel</b><br>Can be used at low depth of cuts and high feed rates.<br>The curved edge allows smooth chip discharge.<br>Recommended for workpieces in the 160—250HB range.   | Carbon Steel • Alloy Steel<br><br><br>CNMG120408-SH     |
|                |           | <b>SA</b><br>   | <b>Alternative chipbreaker for light cutting of carbon steel and alloy steel</b><br>Superior chip control at small depth of cuts.<br>Covers copying and back turning with wavy edge.<br>Recommended for workpieces in the 200—300HB range.   | Carbon Steel • Alloy Steel<br><br><br>CNMG120408-SA     |
|                |           | <b>SW</b><br> | <b>Wiper insert for light cutting of carbon steel, alloy steel, stainless steel and cast iron</b><br>In comparison to conventional chipbreaker, the surface finish is maintained even if the feed per revolution is doubled.<br>Wiper design for increased productivity and improved surface finish. | Carbon Steel • Alloy Steel<br><br><br>CNMG120408-SW   |
|                |           | <b>SY</b><br> | <b>First recommendation for light cutting of mild steel</b><br>Effectively controls adhesive chips.<br>Suitable for mild steel light cutting.  | Mild Steel<br><br><br>CNMG120408-SY                 |
| Medium Cutting | M         | <b>MP</b><br> | <b>First recommendation for medium cutting of carbon steel and alloy steel</b><br>Suitable for medium to light cutting.<br>Chipbreaker geometry appropriate for copying and back turning.<br>Cutting edge geometry for an optimum balance of sharpness and fracture resistance.                      | Carbon Steel • Alloy Steel<br><br><br>CNMG120408-MP |
|                |           | <b>MS</b><br> | <b>Alternative chipbreaker for medium cutting</b><br>The sharp edge gives best performance.<br>Flat top chipbreaker shape offers high edge strength.<br>Applicable to grades other than MP9005, MP9015, MP9025, MT9015   | Carbon Steel • Alloy Steel<br><br><br>CNMG120408-MS |
|                |           | <b>MA</b><br> | <b>First recommendation for medium cutting of carbon steel and alloy steel</b><br>Ideal for general cutting applications.<br>Positive land provides sharp cutting action.  | Carbon Steel • Alloy Steel<br><br><br>CNMG120408-MA |
|                |           | <b>MH</b><br> | <b>Alternative chipbreaker for medium cutting of carbon steel and alloy steel</b><br>Flat land offers high edge strength.<br>Good chip control with suitable chip pocket.  | Carbon Steel • Alloy Steel<br><br><br>CNMG120408-MH |


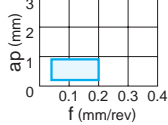
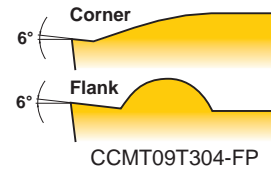

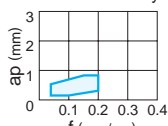
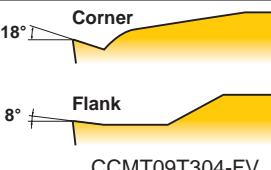

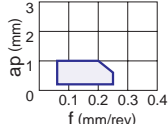
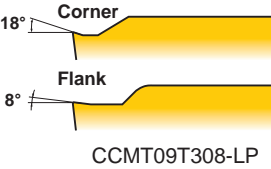

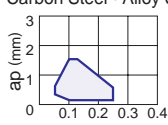
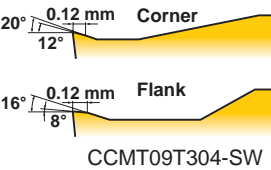

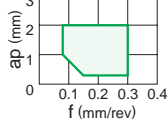
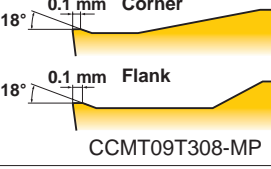

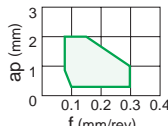
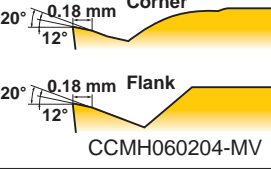

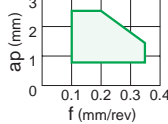
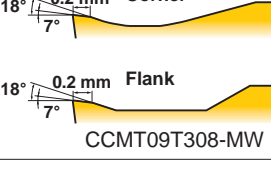

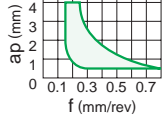
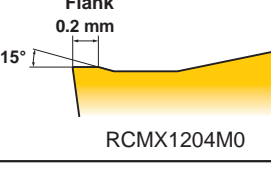

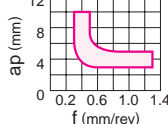
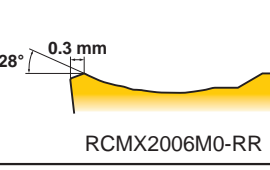
| Application    | Tolerance | Chip Breaker Name and Picture  | Features  | Cross Section Geometry   |
|----------------|-----------|--|---|--|
| Medium Cutting | M         | <b>Standard</b><br> | <b>Alternative chipbreaker for medium cutting of carbon steel and alloy steel</b><br>Flat land offers high edge strength.<br>Flat top chipbreaker shape offers high edge strength.  | Carbon Steel • Alloy Steel<br><br>15° 0.25 mm Corner<br>15° 0.25 mm Flank<br>CNMG120408      |
|                |           | <b>MW</b><br>       | <b>Wiper insert for medium cutting carbon steel, alloy steel, stainless steel and cast iron</b><br>The wiper allows up to two times higher feed.<br>A wide chip pocket prevents chip jamming.   | Carbon Steel • Alloy Steel<br><br>19° 0.25 mm Corner<br>19° 0.3 mm Flank<br>CNMG120408-MW    |
|                |           | <b>R/L-ES</b><br>   | <b>Alternative chipbreaker for medium cutting of stainless steel</b><br>Good balance of edge strength and sharpness.<br>Right- or left-hand chipbreaker for unidirectional chip control.  | Stainless Steel<br><br>15° 0.16 mm Flank<br>TNMG160404R-ES                                   |
| Rough Cutting  | M         | <b>RP</b><br>     | <b>First recommendation for rough cutting of carbon steel and alloy steel</b><br>For interrupted cuts and removing scale.<br>Good balance of cutting edge strength and low cutting resistance because of suitable rake angle.   | Carbon Steel • Alloy Steel<br><br>3° 0.33 mm Corner<br>0.33 mm Flank<br>CNMG120408-RP       |
|                |           | <b>GH</b><br>     | <b>Alternative chipbreaker for rough cutting of carbon steel, alloy steel and cast iron</b><br>For interrupted cuts and removing scale.<br>A combination of wide land and a large chip pocket allows high feed rates.   | Carbon Steel • Alloy Steel<br><br>18° 0.32 mm Corner<br>18° 0.32 mm Flank<br>CNMG120408-GH |
| Heavy Cutting  | M         | <b>HX</b><br>     | <b>First recommendation for heavy cutting of carbon steel and alloy steel</b><br>Covers the medium range of the heavy cutting region.<br>Owing to the straight edge and chamfer, it gives a balance of sharpness and strength.<br>Variable land and a wavy chipbreaker for good chip control. | Carbon Steel • Alloy Steel<br><br>23° 0.43 mm Corner<br>21° 0.52 mm Flank<br>CNMM190616-HX |
|                |           | <b>HL</b><br>     | <b>First recommendation for heavy cutting Alternative chipbreaker for heavy cutting of carbon steel and alloy steel</b><br>Low resistance due to narrow flat land.<br>Achieves high chip breaking ability.  | Carbon Steel • Alloy Steel<br><br>15° 0.34 mm Flank<br>CNMM190616-HL                       |
|                |           | <b>HR</b><br>     | <b>Alternative chipbreaker for heavy cutting of carbon steel and alloy steel</b><br>High cutting edge strength.<br>Excellent chip discharge even with high feed and high depth of cut.  | Carbon Steel • Alloy Steel<br><br>20° 0.58 mm Flank<br>CNMM250924-HR                       |
|                |           | <b>HV</b><br>     | <b>Alternative chipbreaker for heavy cutting of carbon steel and alloy steel</b><br>Covers the upper end of the heavy cutting region.<br>Wide land and large chamfer offer high edge strength.<br>A wide chipbreaker prevents chip jamming.   | Carbon Steel • Alloy Steel<br><br>20° 0.68 mm Corner<br>20° 0.68 mm Flank<br>SNMM190616-HV |

# Chip Breaker System for Steel Turning

## Negative Inserts


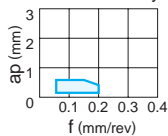
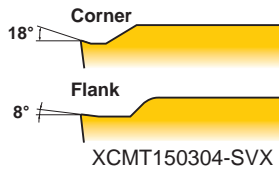
| Application   | Tolerance | Chip Breaker Name and Picture  | Features  | Cross Section Geometry   |
|---------------|-----------|--|---|--|
| Heavy Cutting | M         | <p><b>HZ</b></p>  | <p><b>Alternative chipbreaker for heavy cutting of carbon steel and alloy steel</b></p> <p>Covers the lower end of the heavy cutting region. Low cutting resistance due to positive land and curved edge. Teardrop dots improve chip control without increasing cutting resistance.</p> | <p>Carbon Steel • Alloy Steel</p>  <p>22° <b>0.42 mm Corner</b></p> <p>22° <b>0.42 mm Flank</b></p> <p>CNMM190616-HZ</p> |
|               |           | <p><b>HM</b></p>  | <p><b>Alternative chipbreaker for heavy cutting of carbon steel and alloy steel and stainless steel</b></p> <p>Flat land provides outstanding balance between cutting edge strength and sharpness.</p>  | <p>Carbon Steel • Alloy Steel</p>  <p>16° <b>0.32 mm</b></p> <p>CNMM190616-HM</p>  |

# 5°, 7° Positive Inserts


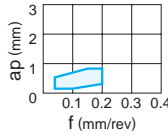
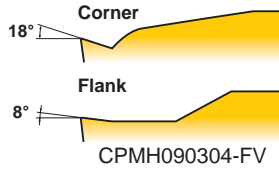
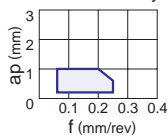
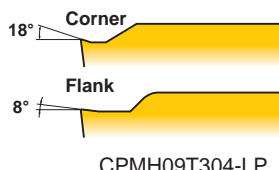

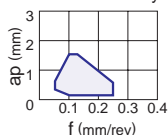
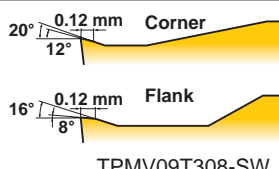
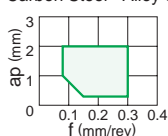
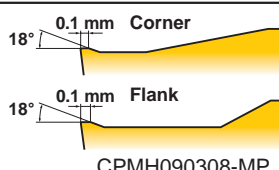

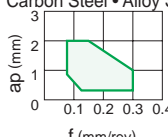
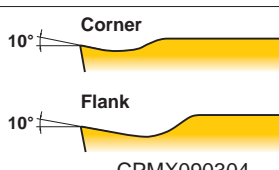
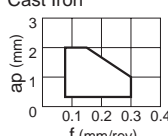
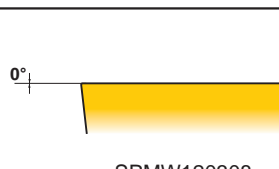
| Application    | Tolerance | Chip Breaker Name and Picture  | Features   |  | Cross Section Geometry  |
|----------------|-----------|--|--|--|---|
| Finish Cutting | M         | <b>FP</b><br>         | <b>First recommendation for finishing carbon steel, alloy steel and mild steel</b><br>Chipbreaker protrusion at the corner tip controls chips even at small depth of cut.<br>Maintains the edge strength at the corner and prevents sudden fractures.  | Carbon Steel • Alloy Steel<br>   |    |
|                |           | <b>FV</b><br>         | <b>Alternative chipbreaker for finishing carbon steel, alloy steel, mild steel and stainless steel</b><br>Suitable for low depths of cut and low feed rates.<br>Sharp cutting edge and low resistance design achieves excellent cutting performance.   | Carbon Steel • Alloy Steel<br>   |    |
| Light Cutting  | M         | <b>LP</b><br>         | <b>First recommendation for light cutting of carbon steel, alloy steel and mild steel</b><br>Sharp cutting edge due to a large rake angle.<br>Prevents welding of the insert and controls white turbidity of the surface finish.<br>Chipbreaker protrusion suitable for depth of cut area achieves a wide range of chip control.     | Carbon Steel • Alloy Steel<br>   |    |
|                |           | <b>SW</b><br>       | <b>Wiper insert for light cutting of carbon steel, alloy steel and stainless steel</b><br>In comparison to conventional chip breakers, the surface finish is maintained even if the feed per revolution is doubled.<br>Positive land improves sharpness.   | Carbon Steel • Alloy Steel<br>  |   |
| Medium Cutting | M         | <b>MP</b><br>       | <b>First recommendation for medium cutting of carbon steel, alloy steel and mild steel</b><br>Good balance of wear resistance and fracture resistance because of the flat land cutting edge.<br>A wide chip pocket controls increasing of the cutting resistance and reduces vibration and chip jamming even at large depths of cut. | Carbon Steel • Alloy Steel<br> |  |
|                |           | <b>MV</b><br>       | <b>Alternative chipbreaker for medium cutting of carbon steel, alloy steel, mild steel and stainless steel</b><br>A positive insert and the large rake angle achieve sharp cutting edge performance.<br>The double chipbreaker and round shape in the rake face achieve a wide range of chip discharge.                              | Carbon Steel • Alloy Steel<br> |  |
|                |           | <b>MW</b><br>       | <b>Wiper insert for medium cutting of carbon steel, alloy steel, mild steel and stainless steel</b><br>The wiper allows up to two times higher feed.<br>A wide chip pocket prevents chip jamming.  | Carbon Steel • Alloy Steel<br> |  |
|                |           | <b>Standard</b><br> | <b>Alternative chipbreaker for medium cutting of carbon steel, alloy steel, mild steel, stainless steel and cast iron</b><br>Balance of edge strength and sharpness due to a combination of a flat land and large rake angle.  | Carbon Steel • Alloy Steel<br> |  |
| Heavy Cutting  | M         | <b>RR</b><br>       | <b>Chipbreaker for heavy cutting of carbon steel and alloy steel</b><br>A wide groove chipbreaker prevents chips from jamming at large depths of cut.<br>Small dimples improve chip control at small depths of cut.  | Carbon Steel • Alloy Steel<br> |  |

## Chip Breaker System for Steel Turning

### 7° Positive Inserts

| Application    | Tolerance | Chip Breaker Name and Picture   | Features  | Cross Section Geometry   |   |
|----------------|-----------|---|---|--|---|
| Finish Cutting | M         | <b>SVX</b><br> | <b>Alternative chipbreaker for light cutting of carbon steel and alloy steel</b><br>Chip control is improved by having a chipbreaker geometry suitable for copying. | Carbon Steel • Alloy Steel<br> | <br>18° Corner<br>8° Flank<br>XCMT150304-SVX |

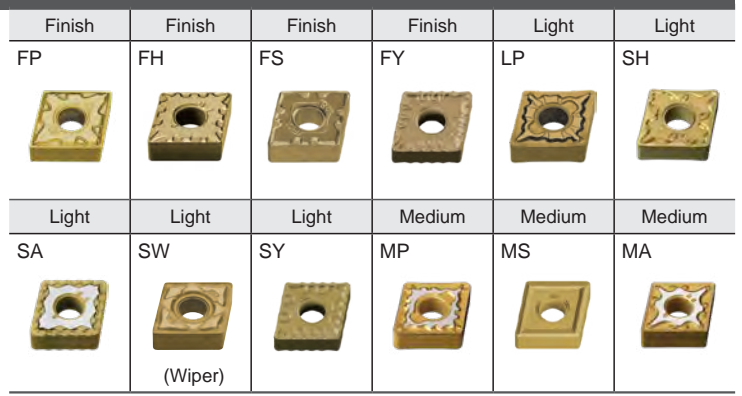
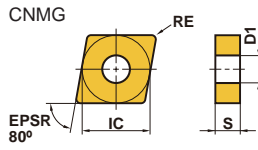
### 11° Positive Inserts

| Application    | Tolerance | Chip Breaker Name and Picture  | Features   | Cross Section Geometry   |  |
|----------------|-----------|--|--|--|--|
| Finish Cutting | M         | <b>FV</b><br>   | <b>First recommendation for finishing carbon steel, alloy steel, mild steel and stainless steel</b><br>Suitable for low depths of cut and low feed rates. Sharp cutting edge and low resistance design achieves excellent cutting performance.   | Carbon Steel • Alloy Steel<br>   | <br>18° Corner<br>8° Flank<br>CPMH090304-FV                                 |
|                |           |  |  | Carbon Steel • Alloy Steel<br>  | <br>18° Corner<br>8° Flank<br>CPMH09T304-LP                                |
| Light Cutting  | M         | <b>LP</b><br> | <b>First recommendation for light cutting of carbon steel, alloy steel and mild steel</b><br>Sharp cutting edge due to a large rake angle. Prevents welding of the insert and controls white turbidity of the surface finish. Chipbreaker protrusion suitable for depth of cut area achieves a wide range of chip control. | Carbon Steel • Alloy Steel<br> | <br>20° 0.12 mm Corner<br>12°<br>16° 0.12 mm Flank<br>8°<br>TPMV09T308-SW |
|                |           |  |  | Carbon Steel • Alloy Steel<br> | <br>18° 0.1 mm Corner<br>18° 0.1 mm Flank<br>CPMH090308-MP                |
| Medium Cutting | M         | <b>MV</b><br> | <b>First recommendation for medium cutting of carbon steel, alloy steel, mild steel, stainless steel and cast iron</b><br>A positive insert and large rake angle achieves sharp cutting edge performance. Double chipbreaker in the rake face achieve a wide range of chip discharge.                                      | Carbon Steel • Alloy Steel<br> | <br>10° Corner<br>10° Flank<br>CPMX090304                                 |
|                |           |  |  | Carbon Steel • Alloy Steel<br> | <br>0°<br>SPMW120308  |

# MC6100 Series

## Negative Inserts (With Hole)

M Class



(mm)

| Order Number  | Cutting Area | NEW    |        |        | IC     | S    | RE  | D1   |
|---------------|--------------|--------|--------|--------|--------|------|-----|------|
|               |              | MC6115 | MC6125 | MC6135 |        |      |     |      |
| CNMG120402-FP | F            | ●      | ●      | ●      | 12.7   | 4.76 | 0.2 | 5.16 |
| CNMG120404-FP | F            | ●      | ●      | ●      | 12.7   | 4.76 | 0.4 | 5.16 |
| CNMG120408-FP | F            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| CNMG120412-FP | F            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| CNMG120402-FH | F            | ●      | ●      | ●      | 12.7   | 4.76 | 0.2 | 5.16 |
| CNMG120404-FH | F            | ●      | ●      | ●      | 12.7   | 4.76 | 0.4 | 5.16 |
| CNMG120408-FH | F            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| CNMG120404-FS | F            | ●      | ●      | ●      | 12.7   | 4.76 | 0.4 | 5.16 |
| CNMG120404-FY | F            | ●      | ●      | ●      | 12.7   | 4.76 | 0.4 | 5.16 |
| CNMG120408-FY | F            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| CNMG120404-LP | L            | ●      | ●      | ●      | 12.7   | 4.76 | 0.4 | 5.16 |
| CNMG120408-LP | L            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| CNMG120412-LP | L            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| CNMG09T304-SH | L            | ●      | ●      | ●      | 9.525  | 3.97 | 0.4 | 3.81 |
| CNMG09T308-SH | L            | ●      | ●      | ●      | 9.525  | 3.97 | 0.8 | 3.81 |
| CNMG120404-SH | L            | ●      | ●      | ●      | 12.7   | 4.76 | 0.4 | 5.16 |
| CNMG120408-SH | L            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| CNMG120412-SH | L            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| CNMG120404-SA | L            | ●      | ●      | ●      | 12.7   | 4.76 | 0.4 | 5.16 |
| CNMG120408-SA | L            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| CNMG120412-SA | L            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| CNMG120404-SW | L            | ●      | ●      | ●      | 12.7   | 4.76 | 0.4 | 5.16 |
| CNMG120408-SW | L            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| CNMG120412-SW | L            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| CNMG120404-SY | L            | ●      | ●      | ●      | 12.7   | 4.76 | 0.4 | 5.16 |
| CNMG120408-SY | L            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| CNMG120404-MP | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.4 | 5.16 |
| CNMG120408-MP | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| CNMG120412-MP | M            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| CNMG120416-MP | M            | ●      | ●      | ●      | 12.7   | 4.76 | 1.6 | 5.16 |
| CNMG160608-MP | M            | ●      | ●      | ●      | 15.875 | 6.35 | 0.8 | 6.35 |
| CNMG160612-MP | M            | ●      | ●      | ●      | 15.875 | 6.35 | 1.2 | 6.35 |
| CNMG160616-MP | M            | ●      | ●      | ●      | 15.875 | 6.35 | 1.6 | 6.35 |
| CNMG090308-MS | M            | ●      | ●      | ●      | 9.525  | 3.18 | 0.8 | 3.81 |
| CNMG09T308-MS | M            | ●      | ●      | ●      | 9.525  | 3.97 | 0.8 | 3.81 |
| CNMG120404-MS | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.4 | 5.16 |
| CNMG120408-MS | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| CNMG120412-MS | M            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |

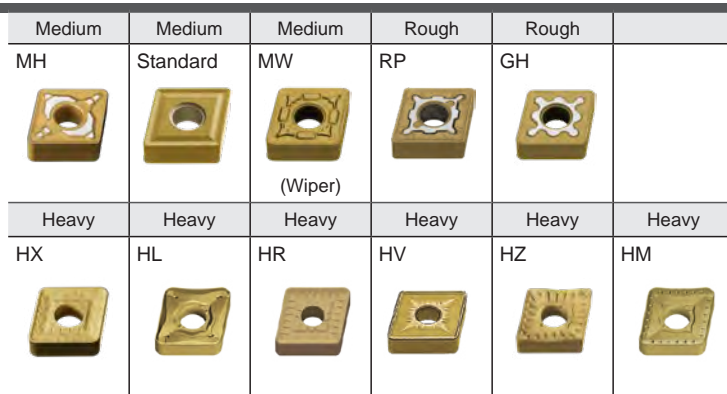
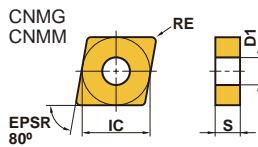
| Order Number  | Cutting Area | NEW    |        |        | IC     | S    | RE  | D1   |
|---------------|--------------|--------|--------|--------|--------|------|-----|------|
|               |              | MC6115 | MC6125 | MC6135 |        |      |     |      |
| CNMG120404-MA | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.4 | 5.16 |
| CNMG120408-MA | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| CNMG120412-MA | M            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| CNMG120416-MA | M            | ●      | ●      | ●      | 12.7   | 4.76 | 1.6 | 5.16 |
| CNMG160608-MA | M            | ●      | ●      | ●      | 15.875 | 6.35 | 0.8 | 6.35 |
| CNMG160612-MA | M            | ●      | ●      | ●      | 15.875 | 6.35 | 1.2 | 6.35 |
| CNMG160616-MA | M            | ●      | ●      | ●      | 15.875 | 6.35 | 1.6 | 6.35 |
| CNMG190612-MA | M            | ●      | ●      | ●      | 19.05  | 6.35 | 1.2 | 7.93 |
| CNMG190616-MA | M            | ●      | ●      | ●      | 19.05  | 6.35 | 1.6 | 7.93 |

● = NEW

# MC6100 Series

## Negative Inserts (With Hole)

M Class

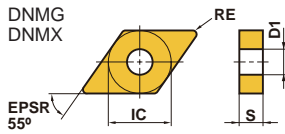


(mm)

| Order Number  | Cutting Area | NEW    |        |        | IC     | S    | RE  | D1   |
|---------------|--------------|--------|--------|--------|--------|------|-----|------|
|               |              | MC6115 | MC6125 | MC6135 |        |      |     |      |
| CNMG120404-MH | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.4 | 5.16 |
| CNMG120408-MH | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| CNMG120412-MH | M            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| CNMG120416-MH | M            | ●      | ●      | ●      | 12.7   | 4.76 | 1.6 | 5.16 |
| CNMG160608-MH | M            | ●      | ●      | ●      | 15.875 | 6.35 | 0.8 | 6.35 |
| CNMG160612-MH | M            | ●      | ●      | ●      | 15.875 | 6.35 | 1.2 | 6.35 |
| CNMG160616-MH | M            | ●      | ●      | ●      | 15.875 | 6.35 | 1.6 | 6.35 |
| CNMG190612-MH | M            | ●      | ●      | ●      | 19.05  | 6.35 | 1.2 | 7.93 |
| CNMG190616-MH | M            | ●      | ●      | ●      | 19.05  | 6.35 | 1.6 | 7.93 |
| CNMG090308    | M            | ●      | ●      | ●      | 9.525  | 3.18 | 0.8 | 3.81 |
| CNMG09T304    | M            | ●      | ●      | ●      | 9.525  | 3.97 | 0.4 | 3.81 |
| CNMG09T308    | M            | ●      | ●      | ●      | 9.525  | 3.97 | 0.8 | 3.81 |
| CNMG120404    | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.4 | 5.16 |
| CNMG120408    | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| CNMG120412    | M            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| CNMG120416    | M            | ●      | ●      | ●      | 12.7   | 4.76 | 1.6 | 5.16 |
| CNMG160608    | M            | ●      | ●      | ●      | 15.875 | 6.35 | 0.8 | 6.35 |
| CNMG160612    | M            | ●      | ●      | ●      | 15.875 | 6.35 | 1.2 | 6.35 |
| CNMG160616    | M            | ●      | ●      | ●      | 15.875 | 6.35 | 1.6 | 6.35 |
| CNMG190608    | M            | ●      | ●      | ●      | 19.05  | 6.35 | 0.8 | 7.93 |
| CNMG190612    | M            | ●      | ●      | ●      | 19.05  | 6.35 | 1.2 | 7.93 |
| CNMG190616    | M            | ●      | ●      | ●      | 19.05  | 6.35 | 1.6 | 7.93 |
| CNMG120408-MW | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| CNMG120412-MW | M            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| CNMG120408-RP | R            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| CNMG120412-RP | R            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| CNMG120416-RP | R            | ●      | ●      | ●      | 12.7   | 4.76 | 1.6 | 5.16 |
| CNMG160612-RP | R            | ●      | ●      | ●      | 15.875 | 6.35 | 1.2 | 6.35 |
| CNMG160616-RP | R            | ●      | ●      | ●      | 15.875 | 6.35 | 1.6 | 6.35 |
| CNMG190612-RP | R            | ●      | ●      | ●      | 19.05  | 6.35 | 1.2 | 7.93 |
| CNMG190616-RP | R            | ●      | ●      | ●      | 19.05  | 6.35 | 1.6 | 7.93 |
| CNMG120408-GH | R            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| CNMG120412-GH | R            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| CNMG120416-GH | R            | ●      | ●      | ●      | 12.7   | 4.76 | 1.6 | 5.16 |
| CNMG160612-GH | R            | ●      | ●      | ●      | 15.875 | 6.35 | 1.2 | 6.35 |
| CNMG160616-GH | R            | ●      | ●      | ●      | 15.875 | 6.35 | 1.6 | 6.35 |
| CNMG190612-GH | R            | ●      | ●      | ●      | 19.05  | 6.35 | 1.2 | 7.93 |
| CNMG190616-GH | R            | ●      | ●      | ●      | 19.05  | 6.35 | 1.6 | 7.93 |

| Order Number  | Cutting Area | NEW    |        |        | IC     | S    | RE  | D1   |
|---------------|--------------|--------|--------|--------|--------|------|-----|------|
|               |              | MC6115 | MC6125 | MC6135 |        |      |     |      |
| CNMM120408-HX | H            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| CNMM120412-HX | H            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| CNMM160612-HX | H            | ●      | ●      | ●      | 15.875 | 6.35 | 1.2 | 6.35 |
| CNMM160616-HX | H            | ●      | ●      | ●      | 15.875 | 6.35 | 1.6 | 6.35 |
| CNMM190612-HX | H            | ●      | ●      | ●      | 19.05  | 6.35 | 1.2 | 7.93 |
| CNMM190616-HX | H            | ●      | ●      | ●      | 19.05  | 6.35 | 1.6 | 7.93 |
| CNMM190624-HX | H            | ●      | ●      | ●      | 19.05  | 6.35 | 2.4 | 7.93 |
| CNMM250924-HX | H            | ●      | ●      | ●      | 25.4   | 9.52 | 2.4 | 9.12 |
| CNMM120408-HL | H            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| CNMM120412-HL | H            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| CNMM120416-HL | H            | ●      | ●      | ●      | 12.7   | 4.76 | 1.6 | 5.16 |
| CNMM160612-HL | H            | ●      | ●      | ●      | 15.875 | 6.35 | 1.2 | 6.35 |
| CNMM160616-HL | H            | ●      | ●      | ●      | 15.875 | 6.35 | 1.6 | 6.35 |
| CNMM190612-HL | H            | ●      | ●      | ●      | 19.05  | 6.35 | 1.2 | 7.93 |
| CNMM190616-HL | H            | ●      | ●      | ●      | 19.05  | 6.35 | 1.6 | 7.93 |
| CNMM190624-HL | H            | ●      | ●      | ●      | 19.05  | 6.35 | 2.4 | 7.93 |
| CNMM250924-HR | H            | ●      | ●      | ●      | 25.4   | 9.52 | 2.4 | 9.12 |
| CNMM190616-HV | H            | ●      | ●      | ●      | 19.05  | 6.35 | 1.6 | 7.93 |
| CNMM190624-HV | H            | ●      | ●      | ●      | 19.05  | 6.35 | 2.4 | 7.93 |
| CNMM250924-HV | H            | ●      | ●      | ●      | 25.4   | 9.52 | 2.4 | 9.12 |
| CNMM120408-HZ | H            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| CNMM120412-HZ | H            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| CNMM120416-HZ | H            | ●      | ●      | ●      | 12.7   | 4.76 | 1.6 | 5.16 |
| CNMM160612-HZ | H            | ●      | ●      | ●      | 15.875 | 6.35 | 1.2 | 6.35 |
| CNMM160616-HZ | H            | ●      | ●      | ●      | 15.875 | 6.35 | 1.6 | 6.35 |
| CNMM190612-HZ | H            | ●      | ●      | ●      | 19.05  | 6.35 | 1.2 | 7.93 |
| CNMM190616-HZ | H            | ●      | ●      | ●      | 19.05  | 6.35 | 1.6 | 7.93 |
| CNMM160612-HM | H            | ●      | ●      | ●      | 15.875 | 6.35 | 1.2 | 6.35 |
| CNMM160616-HM | H            | ●      | ●      | ●      | 15.875 | 6.35 | 1.6 | 6.35 |
| CNMM190612-HM | H            | ●      | ●      | ●      | 19.05  | 6.35 | 1.2 | 7.93 |
| CNMM190616-HM | H            | ●      | ●      | ●      | 19.05  | 6.35 | 1.6 | 7.93 |
| CNMM190624-HM | H            | ●      | ●      | ●      | 19.05  | 6.35 | 2.4 | 7.93 |
| CNMM250924-HM | H            | ●      | ●      | ●      | 25.4   | 9.52 | 2.4 | 9.12 |

● = NEW



|        |             |        |        |        |        |
|--------|-------------|--------|--------|--------|--------|
| Finish | Finish      | Finish | Finish | Light  | Light  |
| FP     | FH          | FS     | FY     | LP     | SH     |
|        |             |        |        |        |        |
| Light  | Light       | Light  | Medium | Medium | Medium |
| SA     | SW          | SY     | MP     | MS     | MA     |
|        | <br>(Wiper) |        |        |        |        |

(mm)

| Order Number  | Cutting Area | NEW    |        |        | IC    | S    | RE  | D1   |
|---------------|--------------|--------|--------|--------|-------|------|-----|------|
|               |              | MC6115 | MC6125 | MC6135 |       |      |     |      |
| DNMG150402-FP | F            | ●      | ●      | ●      | 12.7  | 4.76 | 0.2 | 5.16 |
| DNMG150404-FP | F            | ●      | ●      | ●      | 12.7  | 4.76 | 0.4 | 5.16 |
| DNMG150408-FP | F            | ●      | ●      | ●      | 12.7  | 4.76 | 0.8 | 5.16 |
| DNMG150412-FP | F            | ●      | ●      | ●      | 12.7  | 4.76 | 1.2 | 5.16 |
| DNMG150602-FP | F            | ●      | ●      | ●      | 12.7  | 6.35 | 0.2 | 5.16 |
| DNMG150604-FP | F            | ●      | ●      | ●      | 12.7  | 6.35 | 0.4 | 5.16 |
| DNMG150608-FP | F            | ●      | ●      | ●      | 12.7  | 6.35 | 0.8 | 5.16 |
| DNMG150612-FP | F            | ●      | ●      | ●      | 12.7  | 6.35 | 1.2 | 5.16 |
| DNMG150402-FH | F            | ●      | ●      | ●      | 12.7  | 4.76 | 0.2 | 5.16 |
| DNMG150404-FH | F            | ●      | ●      | ●      | 12.7  | 4.76 | 0.4 | 5.16 |
| DNMG150408-FH | F            | ●      | ●      | ●      | 12.7  | 4.76 | 0.8 | 5.16 |
| DNMG150602-FH | F            | ●      | ●      | ●      | 12.7  | 6.35 | 0.2 | 5.16 |
| DNMG150604-FH | F            | ●      | ●      | ●      | 12.7  | 6.35 | 0.4 | 5.16 |
| DNMG150608-FH | F            | ●      | ●      | ●      | 12.7  | 6.35 | 0.8 | 5.16 |
| DNMG150408-FS | F            | ●      | ●      | ●      | 12.7  | 4.76 | 0.8 | 5.16 |
| DNMG150404-FY | F            | ●      | ●      | ●      | 12.7  | 4.76 | 0.4 | 5.16 |
| DNMG150408-FY | F            | ●      | ●      | ●      | 12.7  | 4.76 | 0.8 | 5.16 |
| DNMG150608-FY | F            | ●      | ●      | ●      | 12.7  | 6.35 | 0.8 | 5.16 |
| DNMG110404-LP | L            | ●      | ●      | ●      | 9.525 | 4.76 | 0.4 | 3.81 |
| DNMG110408-LP | L            | ●      | ●      | ●      | 9.525 | 4.76 | 0.8 | 3.81 |
| DNMG150404-LP | L            | ●      | ●      | ●      | 12.7  | 4.76 | 0.4 | 5.16 |
| DNMG150408-LP | L            | ●      | ●      | ●      | 12.7  | 4.76 | 0.8 | 5.16 |
| DNMG150412-LP | L            | ●      | ●      | ●      | 12.7  | 4.76 | 1.2 | 5.16 |
| DNMG150604-LP | L            | ●      | ●      | ●      | 12.7  | 6.35 | 0.4 | 5.16 |
| DNMG150608-LP | L            | ●      | ●      | ●      | 12.7  | 6.35 | 0.8 | 5.16 |
| DNMG150612-LP | L            | ●      | ●      | ●      | 12.7  | 6.35 | 1.2 | 5.16 |
| DNMG110404-SH | L            | ●      | ●      | ●      | 9.525 | 4.76 | 0.4 | 3.81 |
| DNMG110408-SH | L            | ●      | ●      | ●      | 9.525 | 4.76 | 0.8 | 3.81 |
| DNMG150404-SH | L            | ●      | ●      | ●      | 12.7  | 4.76 | 0.4 | 5.16 |
| DNMG150408-SH | L            | ●      | ●      | ●      | 12.7  | 4.76 | 0.8 | 5.16 |
| DNMG150412-SH | L            | ●      | ●      | ●      | 12.7  | 4.76 | 1.2 | 5.16 |
| DNMG150604-SH | L            | ●      | ●      | ●      | 12.7  | 6.35 | 0.4 | 5.16 |
| DNMG150608-SH | L            | ●      | ●      | ●      | 12.7  | 6.35 | 0.8 | 5.16 |
| DNMG150612-SH | L            | ●      | ●      | ●      | 12.7  | 6.35 | 1.2 | 5.16 |
| DNMG150404-SA | L            | ●      | ●      | ●      | 12.7  | 4.76 | 0.4 | 5.16 |
| DNMG150408-SA | L            | ●      | ●      | ●      | 12.7  | 4.76 | 0.8 | 5.16 |
| DNMG150412-SA | L            | ●      | ●      | ●      | 12.7  | 4.76 | 1.2 | 5.16 |
| DNMG150604-SA | L            | ●      | ●      | ●      | 12.7  | 6.35 | 0.4 | 5.16 |
| DNMG150608-SA | L            | ●      | ●      | ●      | 12.7  | 6.35 | 0.8 | 5.16 |
| DNMG150612-SA | L            | ●      | ●      | ●      | 12.7  | 6.35 | 1.2 | 5.16 |

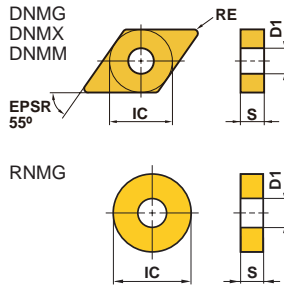
| Order Number  | Cutting Area | NEW    |        |        | IC    | S    | RE  | D1   |
|---------------|--------------|--------|--------|--------|-------|------|-----|------|
|               |              | MC6115 | MC6125 | MC6135 |       |      |     |      |
| DNMX110404-SW | L            | ●      | ●      | ●      | 9.525 | 4.76 | 0.4 | 3.81 |
| DNMX110408-SW | L            | ●      | ●      | ●      | 9.525 | 4.76 | 0.8 | 3.81 |
| DNMX150404-SW | L            | ●      | ●      | ●      | 12.7  | 4.76 | 0.4 | 5.16 |
| DNMX150408-SW | L            | ●      | ●      | ●      | 12.7  | 4.76 | 0.8 | 5.16 |
| DNMX150412-SW | L            | ●      | ●      | ●      | 12.7  | 4.76 | 1.2 | 5.16 |
| DNMX150604-SW | L            | ●      | ●      | ●      | 12.7  | 6.35 | 0.4 | 5.16 |
| DNMX150608-SW | L            | ●      | ●      | ●      | 12.7  | 6.35 | 0.8 | 5.16 |
| DNMX150612-SW | L            | ●      | ●      | ●      | 12.7  | 6.35 | 1.2 | 5.16 |
| DNMG150404-SY | L            | ●      | ●      | ●      | 12.7  | 4.76 | 0.4 | 5.16 |
| DNMG150408-SY | L            | ●      | ●      | ●      | 12.7  | 4.76 | 0.8 | 5.16 |
| DNMG150608-SY | L            | ●      | ●      | ●      | 12.7  | 6.35 | 0.8 | 5.16 |
| DNMG150404-MP | M            | ●      | ●      | ●      | 12.7  | 4.76 | 0.4 | 5.16 |
| DNMG150408-MP | M            | ●      | ●      | ●      | 12.7  | 4.76 | 0.8 | 5.16 |
| DNMG150412-MP | M            | ●      | ●      | ●      | 12.7  | 4.76 | 1.2 | 5.16 |
| DNMG150416-MP | M            | ●      | ●      | ●      | 12.7  | 4.76 | 1.6 | 5.16 |
| DNMG150604-MP | M            | ●      | ●      | ●      | 12.7  | 6.35 | 0.4 | 5.16 |
| DNMG150608-MP | M            | ●      | ●      | ●      | 12.7  | 6.35 | 0.8 | 5.16 |
| DNMG150612-MP | M            | ●      | ●      | ●      | 12.7  | 6.35 | 1.2 | 5.16 |
| DNMG150616-MP | M            | ●      | ●      | ●      | 12.7  | 6.35 | 1.6 | 5.16 |
| DNMG110408-MS | M            | ●      | ●      | ●      | 9.525 | 4.76 | 0.8 | 3.81 |
| DNMG150404-MS | M            | ●      | ●      | ●      | 12.7  | 4.76 | 0.4 | 5.16 |
| DNMG150408-MS | M            | ●      | ●      | ●      | 12.7  | 4.76 | 0.8 | 5.16 |
| DNMG150412-MS | M            | ●      | ●      | ●      | 12.7  | 4.76 | 1.2 | 5.16 |
| DNMG150604-MS | M            | ●      | ●      | ●      | 12.7  | 6.35 | 0.4 | 5.16 |
| DNMG150608-MS | M            | ●      | ●      | ●      | 12.7  | 6.35 | 0.8 | 5.16 |
| DNMG150612-MS | M            | ●      | ●      | ●      | 12.7  | 6.35 | 1.2 | 5.16 |
| DNMG110404-MA | M            | ●      | ●      | ●      | 9.525 | 4.76 | 0.4 | 3.81 |
| DNMG110408-MA | M            | ●      | ●      | ●      | 9.525 | 4.76 | 0.8 | 3.81 |
| DNMG110412-MA | M            | ●      | ●      | ●      | 9.525 | 4.76 | 1.2 | 3.81 |
| DNMG150404-MA | M            | ●      | ●      | ●      | 12.7  | 4.76 | 0.4 | 5.16 |
| DNMG150408-MA | M            | ●      | ●      | ●      | 12.7  | 4.76 | 0.8 | 5.16 |
| DNMG150412-MA | M            | ●      | ●      | ●      | 12.7  | 4.76 | 1.2 | 5.16 |
| DNMG150604-MA | M            | ●      | ●      | ●      | 12.7  | 6.35 | 0.4 | 5.16 |
| DNMG150608-MA | M            | ●      | ●      | ●      | 12.7  | 6.35 | 0.8 | 5.16 |
| DNMG150612-MA | M            | ●      | ●      | ●      | 12.7  | 6.35 | 1.2 | 5.16 |
| DNMG150616-MA | M            | ●      | ●      | ●      | 12.7  | 6.35 | 1.6 | 5.16 |

● = NEW

# MC6100 Series

## Negative Inserts (With Hole)

M Class



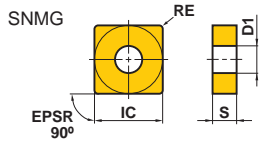
|        |          |               |          |       |
|--------|----------|---------------|----------|-------|
| Medium | Medium   | Medium        | Rough    | Rough |
| MH     | Standard | MW<br>(Wiper) | RP       | GH    |
| Heavy  | Heavy    |               | Medium   |       |
| HL     | HZ       |               | Standard |       |

(mm)

| Order Number  | Cutting Area | NEW    |        |        | IC    | S    | RE  | D1   |
|---------------|--------------|--------|--------|--------|-------|------|-----|------|
|               |              | MC6115 | MC6125 | MC6135 |       |      |     |      |
| DNMG150404-MH | M            | ●      | ●      | ●      | 12.7  | 4.76 | 0.4 | 5.16 |
| DNMG150408-MH | M            | ●      | ●      | ●      | 12.7  | 4.76 | 0.8 | 5.16 |
| DNMG150412-MH | M            | ●      | ●      | ●      | 12.7  | 4.76 | 1.2 | 5.16 |
| DNMG150604-MH | M            | ●      | ●      | ●      | 12.7  | 6.35 | 0.4 | 5.16 |
| DNMG150608-MH | M            | ●      | ●      | ●      | 12.7  | 6.35 | 0.8 | 5.16 |
| DNMG150612-MH | M            | ●      | ●      | ●      | 12.7  | 6.35 | 1.2 | 5.16 |
| DNMG110408    | M            | ●      | ●      | ●      | 9.525 | 4.76 | 0.8 | 3.81 |
| DNMG150404    | M            | ●      | ●      | ●      | 12.7  | 4.76 | 0.4 | 5.16 |
| DNMG150408    | M            | ●      | ●      | ●      | 12.7  | 4.76 | 0.8 | 5.16 |
| DNMG150412    | M            | ●      | ●      | ●      | 12.7  | 4.76 | 1.2 | 5.16 |
| DNMG150416    | M            | ●      | ●      | ●      | 12.7  | 4.76 | 1.6 | 5.16 |
| DNMG150604    | M            | ●      | ●      | ●      | 12.7  | 6.35 | 0.4 | 5.16 |
| DNMG150608    | M            | ●      | ●      | ●      | 12.7  | 6.35 | 0.8 | 5.16 |
| DNMG150612    | M            | ●      | ●      | ●      | 12.7  | 6.35 | 1.2 | 5.16 |
| DNMG150616    | M            | ●      | ●      | ●      | 12.7  | 6.35 | 1.6 | 5.16 |
| DNMX150408-MW | M            | ●      | ●      | ●      | 12.7  | 4.76 | 0.8 | 5.16 |
| DNMX150412-MW | M            | ●      | ●      | ●      | 12.7  | 4.76 | 1.2 | 5.16 |
| DNMX150608-MW | M            | ●      | ●      | ●      | 12.7  | 6.35 | 0.8 | 5.16 |
| DNMX150612-MW | M            | ●      | ●      | ●      | 12.7  | 6.35 | 1.2 | 5.16 |
| DNMG150408-RP | R            | ●      | ●      | ●      | 12.7  | 4.76 | 0.8 | 5.16 |
| DNMG150412-RP | R            | ●      | ●      | ●      | 12.7  | 4.76 | 1.2 | 5.16 |
| DNMG150416-RP | R            | ●      | ●      | ●      | 12.7  | 4.76 | 1.6 | 5.16 |
| DNMG150608-RP | R            | ●      | ●      | ●      | 12.7  | 6.35 | 0.8 | 5.16 |
| DNMG150612-RP | R            | ●      | ●      | ●      | 12.7  | 6.35 | 1.2 | 5.16 |
| DNMG150616-RP | R            | ●      | ●      | ●      | 12.7  | 6.35 | 1.6 | 5.16 |
| DNMG150408-GH | R            | ●      | ●      | ●      | 12.7  | 4.76 | 0.8 | 5.16 |
| DNMG150412-GH | R            | ●      | ●      | ●      | 12.7  | 4.76 | 1.2 | 5.16 |
| DNMG150608-GH | R            | ●      | ●      | ●      | 12.7  | 6.35 | 0.8 | 5.16 |
| DNMG150612-GH | R            | ●      | ●      | ●      | 12.7  | 6.35 | 1.2 | 5.16 |
| DNMM150408-HL | H            | ●      | ●      | ●      | 12.7  | 4.76 | 0.8 | 5.16 |
| DNMM150412-HL | H            | ●      | ●      | ●      | 12.7  | 4.76 | 1.2 | 5.16 |
| DNMM150608-HL | H            | ●      | ●      | ●      | 12.7  | 6.35 | 0.8 | 5.16 |
| DNMM150612-HL | H            | ●      | ●      | ●      | 12.7  | 6.35 | 1.2 | 5.16 |
| DNMM150408-HZ | H            | ●      | ●      | ●      | 12.7  | 4.76 | 0.8 | 5.16 |
| DNMM150412-HZ | H            | ●      | ●      | ●      | 12.7  | 4.76 | 1.2 | 5.16 |
| DNMM150608-HZ | H            | ●      | ●      | ●      | 12.7  | 6.35 | 0.8 | 5.16 |
| DNMM150612-HZ | H            | ●      | ●      | ●      | 12.7  | 6.35 | 1.2 | 5.16 |

| Order Number | Cutting Area | NEW    |        |        | IC   | S    | RE | D1   |
|--------------|--------------|--------|--------|--------|------|------|----|------|
|              |              | MC6115 | MC6125 | MC6135 |      |      |    |      |
| RNMG120400   | M            | ●      | ●      | ●      | 12.0 | 4.76 | -  | 5.16 |

● = NEW



|        |        |        |        |          |       |
|--------|--------|--------|--------|----------|-------|
| Finish | Finish | Light  | Light  | Light    | Light |
| FP     | FH     | LP     | SH     | SA       | SY    |
|        |        |        |        |          |       |
| Medium | Medium | Medium | Medium | Medium   |       |
| MP     | MS     | MA     | MH     | Standard |       |
|        |        |        |        |          |       |

(mm)

| Order Number  | Cutting Area | NEW    |        |        | IC     | S    | RE  | D1   |
|---------------|--------------|--------|--------|--------|--------|------|-----|------|
|               |              | MC6115 | MC6125 | MC6135 |        |      |     |      |
| SNMG120404-FP | F            | ●      | ●      | ●      | 12.7   | 4.76 | 0.4 | 5.16 |
| SNMG120408-FP | F            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| SNMG120412-FP | F            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| SNMG120404-FH | F            | ●      | ●      |        | 12.7   | 4.76 | 0.4 | 5.16 |
| SNMG120408-FH | F            | ●      | ●      |        | 12.7   | 4.76 | 0.8 | 5.16 |
| SNMG120404-LP | L            | ●      | ●      | ●      | 12.7   | 4.76 | 0.4 | 5.16 |
| SNMG120408-LP | L            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| SNMG120412-LP | L            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| SNMG120404-SH | L            | ●      | ●      |        | 12.7   | 4.76 | 0.4 | 5.16 |
| SNMG120408-SH | L            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| SNMG120412-SH | L            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| SNMG120404-SA | L            | ●      | ●      |        | 12.7   | 4.76 | 0.4 | 5.16 |
| SNMG120408-SA | L            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| SNMG120412-SA | L            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| SNMG120408-SY | L            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| SNMG120404-MP | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.4 | 5.16 |
| SNMG120408-MP | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| SNMG120412-MP | M            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| SNMG120404-MS | M            | ●      | ●      |        | 12.7   | 4.76 | 0.4 | 5.16 |
| SNMG120408-MS | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| SNMG120412-MS | M            | ●      | ●      |        | 12.7   | 4.76 | 1.2 | 5.16 |
| SNMG120404-MA | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.4 | 5.16 |
| SNMG120408-MA | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| SNMG120412-MA | M            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| SNMG150608-MA | M            | ●      | ●      | ●      | 15.875 | 6.35 | 0.8 | 6.35 |
| SNMG150612-MA | M            | ●      | ●      | ●      | 15.875 | 6.35 | 1.2 | 6.35 |
| SNMG150616-MA | M            | ●      | ●      | ●      | 15.875 | 6.35 | 1.6 | 6.35 |
| SNMG190612-MA | M            | ●      | ●      | ●      | 19.05  | 6.35 | 1.2 | 7.93 |
| SNMG190616-MA | M            | ●      | ●      | ●      | 19.05  | 6.35 | 1.6 | 7.93 |
| SNMG120408-MH | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| SNMG120412-MH | M            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| SNMG190612-MH | M            | ●      | ●      | ●      | 19.05  | 6.35 | 1.2 | 7.93 |
| SNMG190616-MH | M            | ●      | ●      | ●      | 19.05  | 6.35 | 1.6 | 7.93 |

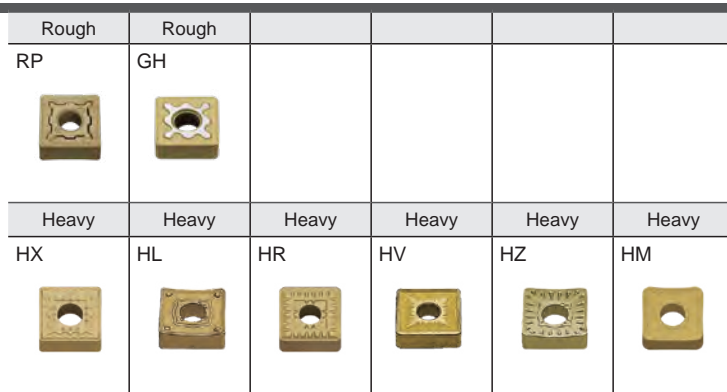
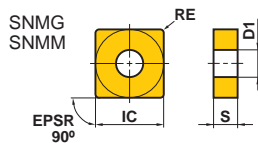
| Order Number | Cutting Area | NEW    |        |        | IC     | S    | RE  | D1   |
|--------------|--------------|--------|--------|--------|--------|------|-----|------|
|              |              | MC6115 | MC6125 | MC6135 |        |      |     |      |
| SNMG090304   | M            | ●      | ●      | ●      | 9.525  | 3.18 | 0.4 | 3.81 |
| SNMG090308   | M            | ●      | ●      | ●      | 9.525  | 3.18 | 0.8 | 3.81 |
| SNMG120404   | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.4 | 5.16 |
| SNMG120408   | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| SNMG120412   | M            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| SNMG120416   | M            | ●      | ●      | ●      | 12.7   | 4.76 | 1.6 | 5.16 |
| SNMG120420   | M            | ●      | ●      | ●      | 12.7   | 4.76 | 2.0 | 5.16 |
| SNMG150612   | M            | ●      | ●      | ●      | 15.875 | 6.35 | 1.2 | 6.35 |
| SNMG150616   | M            | ●      | ●      | ●      | 15.875 | 6.35 | 1.6 | 6.35 |
| SNMG190612   | M            | ●      | ●      | ●      | 19.05  | 6.35 | 1.2 | 7.93 |
| SNMG190616   | M            | ●      | ●      | ●      | 19.05  | 6.35 | 1.6 | 7.93 |

● = NEW

# MC6100 Series

## Negative Inserts (With Hole)

M Class

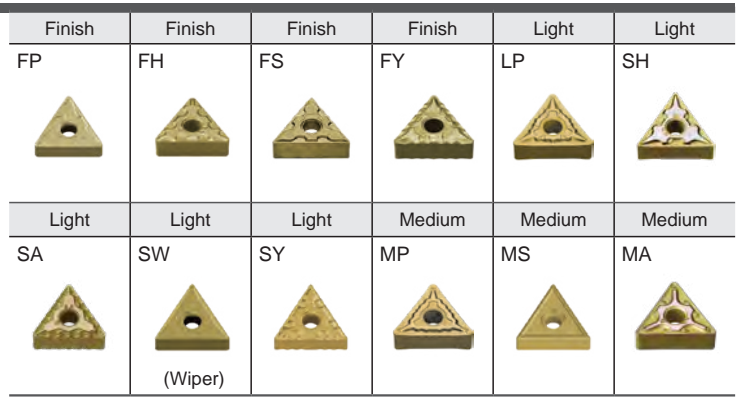
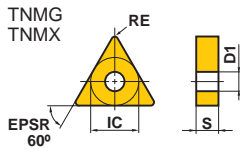


(mm)

| Order Number  | Cutting Area | NEW    |        |        | IC     | S    | RE  | D1   |
|---------------|--------------|--------|--------|--------|--------|------|-----|------|
|               |              | MC6115 | MC6125 | MC6135 |        |      |     |      |
| SNMG120408-RP | R            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| SNMG120412-RP | R            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| SNMG120416-RP | R            | ●      | ●      | ●      | 12.7   | 4.76 | 1.6 | 5.16 |
| SNMG150612-RP | R            | ●      | ●      | ●      | 15.875 | 6.35 | 1.2 | 6.35 |
| SNMG150616-RP | R            | ●      | ●      | ●      | 15.875 | 6.35 | 1.6 | 6.35 |
| SNMG190612-RP | R            | ●      | ●      | ●      | 19.05  | 6.35 | 1.2 | 7.93 |
| SNMG190616-RP | R            | ●      | ●      | ●      | 19.05  | 6.35 | 1.6 | 7.93 |
| SNMG120408-GH | R            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| SNMG120412-GH | R            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| SNMG120416-GH | R            | ●      | ●      | ●      | 12.7   | 4.76 | 1.6 | 5.16 |
| SNMG150612-GH | R            | ●      | ●      | ●      | 15.875 | 6.35 | 1.2 | 6.35 |
| SNMG150616-GH | R            | ●      | ●      | ●      | 15.875 | 6.35 | 1.6 | 6.35 |
| SNMG190612-GH | R            | ●      | ●      | ●      | 19.05  | 6.35 | 1.2 | 7.93 |
| SNMG190616-GH | R            | ●      | ●      | ●      | 19.05  | 6.35 | 1.6 | 7.93 |
| SNMM120408-HX | H            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| SNMM120412-HX | H            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| SNMM150612-HX | H            | ●      | ●      | ●      | 15.875 | 6.35 | 1.2 | 6.35 |
| SNMM190612-HX | H            | ●      | ●      | ●      | 19.05  | 6.35 | 1.2 | 7.93 |
| SNMM190616-HX | H            | ●      | ●      | ●      | 19.05  | 6.35 | 1.6 | 7.93 |
| SNMM190624-HX | H            | ●      | ●      | ●      | 19.05  | 6.35 | 2.4 | 7.93 |
| SNMM250724-HX | H            | ●      | ●      | ●      | 25.4   | 7.94 | 2.4 | 9.12 |
| SNMM250924-HX | H            | ●      | ●      | ●      | 25.4   | 9.52 | 2.4 | 9.12 |
| SNMM120408-HL | H            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| SNMM120412-HL | H            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| SNMM150612-HL | H            | ●      | ●      | ●      | 15.875 | 6.35 | 1.2 | 6.35 |
| SNMM190612-HL | H            | ●      | ●      | ●      | 19.05  | 6.35 | 1.2 | 7.93 |
| SNMM190616-HL | H            | ●      | ●      | ●      | 19.05  | 6.35 | 1.6 | 7.93 |
| SNMM190624-HL | H            | ●      | ●      | ●      | 19.05  | 6.35 | 2.4 | 7.93 |
| SNMM250724-HR | H            | ●      | ●      | ●      | 25.4   | 7.94 | 2.4 | 9.12 |
| SNMM250924-HR | H            | ●      | ●      | ●      | 25.4   | 9.52 | 2.4 | 9.12 |
| SNMM190616-HV | H            | ●      | ●      | ●      | 19.05  | 6.35 | 1.6 | 7.93 |
| SNMM190624-HV | H            | ●      | ●      | ●      | 19.05  | 6.35 | 2.4 | 7.93 |
| SNMM250724-HV | H            | ●      | ●      | ●      | 25.4   | 7.94 | 2.4 | 9.12 |
| SNMM250924-HV | H            | ●      | ●      | ●      | 25.4   | 9.52 | 2.4 | 9.12 |

| Order Number  | Cutting Area | NEW    |        |        | IC     | S    | RE  | D1   |
|---------------|--------------|--------|--------|--------|--------|------|-----|------|
|               |              | MC6115 | MC6125 | MC6135 |        |      |     |      |
| SNMM120408-HZ | H            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| SNMM120412-HZ | H            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| SNMM150612-HZ | H            | ●      | ●      | ●      | 15.875 | 6.35 | 1.2 | 6.35 |
| SNMM190612-HZ | H            | ●      | ●      | ●      | 19.05  | 6.35 | 1.2 | 7.93 |
| SNMM190616-HZ | H            | ●      | ●      | ●      | 19.05  | 6.35 | 1.6 | 7.93 |
| SNMM150612-HM | H            | ●      | ●      | ●      | 15.875 | 6.35 | 1.2 | 6.35 |
| SNMM190612-HM | H            | ●      | ●      | ●      | 19.05  | 6.35 | 1.2 | 7.93 |
| SNMM190616-HM | H            | ●      | ●      | ●      | 19.05  | 6.35 | 1.6 | 7.93 |
| SNMM190624-HM | H            | ●      | ●      | ●      | 19.05  | 6.35 | 2.4 | 7.93 |
| SNMM250724-HM | H            | ●      | ●      | ●      | 25.4   | 7.94 | 2.4 | 9.12 |
| SNMM250924-HM | H            | ●      | ●      | ●      | 25.4   | 9.52 | 2.4 | 9.12 |

● = NEW



(mm)

| Order Number  | Cutting Area | NEW    |        |        | IC    | S    | RE  | D1   |
|---------------|--------------|--------|--------|--------|-------|------|-----|------|
|               |              | MC6115 | MC6125 | MC6135 |       |      |     |      |
| TNMG160402-FP | F            | ●      | ●      | ●      | 9.525 | 4.76 | 0.2 | 3.81 |
| TNMG160404-FP | F            | ●      | ●      | ●      | 9.525 | 4.76 | 0.4 | 3.81 |
| TNMG160408-FP | F            | ●      | ●      | ●      | 9.525 | 4.76 | 0.8 | 3.81 |
| TNMG160412-FP | F            | ●      | ●      | ●      | 9.525 | 4.76 | 1.2 | 3.81 |
| TNMG160402-FH | F            | ●      | ●      | ●      | 9.525 | 4.76 | 0.2 | 3.81 |
| TNMG160404-FH | F            | ●      | ●      | ●      | 9.525 | 4.76 | 0.4 | 3.81 |
| TNMG160408-FH | F            | ●      | ●      | ●      | 9.525 | 4.76 | 0.8 | 3.81 |
| TNMG160404-FS | F            | ●      | ●      | ●      | 9.525 | 4.76 | 0.4 | 3.81 |
| TNMG160408-FS | F            | ●      | ●      | ●      | 9.525 | 4.76 | 0.8 | 3.81 |
| TNMG160404-FY | F            | ●      | ●      | ●      | 9.525 | 4.76 | 0.4 | 3.81 |
| TNMG160408-FY | F            | ●      | ●      | ●      | 9.525 | 4.76 | 0.8 | 3.81 |
| TNMG160404-LP | L            | ●      | ●      | ●      | 9.525 | 4.76 | 0.4 | 3.81 |
| TNMG160408-LP | L            | ●      | ●      | ●      | 9.525 | 4.76 | 0.8 | 3.81 |
| TNMG160412-LP | L            | ●      | ●      | ●      | 9.525 | 4.76 | 1.2 | 3.81 |
| TNMG220408-LP | L            | ●      | ●      | ●      | 12.7  | 4.76 | 0.8 | 5.16 |
| TNMG220412-LP | L            | ●      | ●      | ●      | 12.7  | 4.76 | 1.2 | 5.16 |
| TNMG160404-SH | L            | ●      | ●      | ●      | 9.525 | 4.76 | 0.4 | 3.81 |
| TNMG160408-SH | L            | ●      | ●      | ●      | 9.525 | 4.76 | 0.8 | 3.81 |
| TNMG220408-SH | L            | ●      | ●      | ●      | 12.7  | 4.76 | 0.8 | 5.16 |
| TNMG160404-SA | L            | ●      | ●      | ●      | 9.525 | 4.76 | 0.4 | 3.81 |
| TNMG160408-SA | L            | ●      | ●      | ●      | 9.525 | 4.76 | 0.8 | 3.81 |
| TNMG160412-SA | L            | ●      | ●      | ●      | 9.525 | 4.76 | 1.2 | 3.81 |
| TNMG220408-SA | L            | ●      | ●      | ●      | 12.7  | 4.76 | 0.8 | 5.16 |
| TNMG220412-SA | L            | ●      | ●      | ●      | 12.7  | 4.76 | 1.2 | 5.16 |
| TNMX160404-SW | L            | ●      | ●      | ●      | 9.525 | 4.76 | 0.4 | 3.81 |
| TNMX160408-SW | L            | ●      | ●      | ●      | 9.525 | 4.76 | 0.8 | 3.81 |
| TNMG160404-SY | L            | ●      | ●      | ●      | 9.525 | 4.76 | 0.4 | 3.81 |
| TNMG160408-SY | L            | ●      | ●      | ●      | 9.525 | 4.76 | 0.8 | 3.81 |

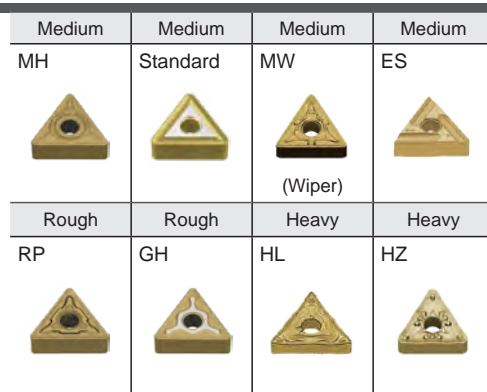
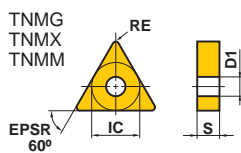
| Order Number  | Cutting Area | NEW    |        |        | IC     | S    | RE  | D1   |
|---------------|--------------|--------|--------|--------|--------|------|-----|------|
|               |              | MC6115 | MC6125 | MC6135 |        |      |     |      |
| TNMG160404-MP | M            | ●      | ●      | ●      | 9.525  | 4.76 | 0.4 | 3.81 |
| TNMG160408-MP | M            | ●      | ●      | ●      | 9.525  | 4.76 | 0.8 | 3.81 |
| TNMG160412-MP | M            | ●      | ●      | ●      | 9.525  | 4.76 | 1.2 | 3.81 |
| TNMG220408-MP | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| TNMG220412-MP | M            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| TNMG160404-MS | M            | ●      | ●      | ●      | 9.525  | 4.76 | 0.4 | 3.81 |
| TNMG160408-MS | M            | ●      | ●      | ●      | 9.525  | 4.76 | 0.8 | 3.81 |
| TNMG160412-MS | M            | ●      | ●      | ●      | 9.525  | 4.76 | 1.2 | 3.81 |
| TNMG220408-MS | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| TNMG160404-MA | M            | ●      | ●      | ●      | 9.525  | 4.76 | 0.4 | 3.81 |
| TNMG160408-MA | M            | ●      | ●      | ●      | 9.525  | 4.76 | 0.8 | 3.81 |
| TNMG160412-MA | M            | ●      | ●      | ●      | 9.525  | 4.76 | 1.2 | 3.81 |
| TNMG220408-MA | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| TNMG220412-MA | M            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| TNMG270608-MA | M            | ●      | ●      | ●      | 15.875 | 6.35 | 0.8 | 6.35 |
| TNMG270612-MA | M            | ●      | ●      | ●      | 15.875 | 6.35 | 1.2 | 6.35 |

● = NEW

# MC6100 Series

## Negative Inserts (With Hole)

M Class

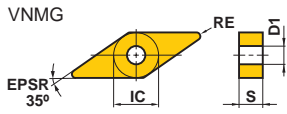


(mm)

| Order Number   | Cutting Area | NEW    |        |        | IC     | S    | RE  | D1   |
|----------------|--------------|--------|--------|--------|--------|------|-----|------|
|                |              | MC6115 | MC6125 | MC6135 |        |      |     |      |
| TNMG160404-MH  | M            | ●      | ●      | ●      | 9.525  | 4.76 | 0.4 | 3.81 |
| TNMG160408-MH  | M            | ●      | ●      | ●      | 9.525  | 4.76 | 0.8 | 3.81 |
| TNMG160412-MH  | M            | ●      | ●      | ●      | 9.525  | 4.76 | 1.2 | 3.81 |
| TNMG220408-MH  | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| TNMG220412-MH  | M            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| TNMG110304     | M            | ●      | ●      | ●      | 6.35   | 3.18 | 0.4 | 2.26 |
| TNMG110308     | M            | ●      | ●      | ●      | 6.35   | 3.18 | 0.8 | 2.26 |
| TNMG160304     | M            | ●      | ●      | ●      | 9.525  | 3.18 | 0.4 | 3.81 |
| TNMG160308     | M            | ●      | ●      | ●      | 9.525  | 3.18 | 0.8 | 3.81 |
| TNMG160404     | M            | ●      | ●      | ●      | 9.525  | 4.76 | 0.4 | 3.81 |
| TNMG160408     | M            | ●      | ●      | ●      | 9.525  | 4.76 | 0.8 | 3.81 |
| TNMG160412     | M            | ●      | ●      | ●      | 9.525  | 4.76 | 1.2 | 3.81 |
| TNMG160416     | M            | ●      | ●      | ●      | 9.525  | 4.76 | 1.6 | 3.81 |
| TNMG220404     | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.4 | 5.16 |
| TNMG220408     | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| TNMG220412     | M            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| TNMG220416     | M            | ●      | ●      | ●      | 12.7   | 4.76 | 1.6 | 5.16 |
| TNMG270608     | M            | ●      | ●      | ●      | 15.875 | 6.35 | 0.8 | 6.35 |
| TNMG270612     | M            | ●      | ●      | ●      | 15.875 | 6.35 | 1.2 | 6.35 |
| TNMG270616     | M            | ●      | ●      | ●      | 15.875 | 6.35 | 1.6 | 6.35 |
| TNMX160408-MW  | M            | ●      | ●      | ●      | 9.525  | 4.76 | 0.8 | 3.81 |
| TNMX160412-MW  | M            | ●      | ●      | ●      | 9.525  | 4.76 | 1.2 | 3.81 |
| TNMG160404R-ES | M            | ●      | ●      | ●      | 9.525  | 4.76 | 0.4 | 3.81 |
| TNMG160404L-ES | M            | ●      | ●      | ●      | 9.525  | 4.76 | 0.4 | 3.81 |
| TNMG160408R-ES | M            | ●      | ●      | ●      | 9.525  | 4.76 | 0.8 | 3.81 |
| TNMG160408L-ES | M            | ●      | ●      | ●      | 9.525  | 4.76 | 0.8 | 3.81 |
| TNMG220408R-ES | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| TNMG220408L-ES | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |

| Order Number  | Cutting Area | NEW    |        |        | IC     | S    | RE  | D1   |
|---------------|--------------|--------|--------|--------|--------|------|-----|------|
|               |              | MC6115 | MC6125 | MC6135 |        |      |     |      |
| TNMG160408-RP | R            | ●      | ●      | ●      | 9.525  | 4.76 | 0.8 | 3.81 |
| TNMG160412-RP | R            | ●      | ●      | ●      | 9.525  | 4.76 | 1.2 | 3.81 |
| TNMG220408-RP | R            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| TNMG220412-RP | R            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| TNMG220416-RP | R            | ●      | ●      | ●      | 12.7   | 4.76 | 1.6 | 5.16 |
| TNMG270612-RP | R            | ●      | ●      | ●      | 15.875 | 6.35 | 1.2 | 6.35 |
| TNMG270616-RP | R            | ●      | ●      | ●      | 15.875 | 6.35 | 1.6 | 6.35 |
| TNMG160408-GH | R            | ●      | ●      | ●      | 9.525  | 4.76 | 0.8 | 3.81 |
| TNMG160412-GH | R            | ●      | ●      | ●      | 9.525  | 4.76 | 1.2 | 3.81 |
| TNMG220408-GH | R            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| TNMG220412-GH | R            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| TNMG220416-GH | R            | ●      | ●      | ●      | 12.7   | 4.76 | 1.6 | 5.16 |
| TNMG270612-GH | R            | ●      | ●      | ●      | 15.875 | 6.35 | 1.2 | 6.35 |
| TNMG270616-GH | R            | ●      | ●      | ●      | 15.875 | 6.35 | 1.6 | 6.35 |
| TNMM160408-HL | H            | ●      | ●      | ●      | 9.525  | 4.76 | 0.8 | 3.81 |
| TNMM160412-HL | H            | ●      | ●      | ●      | 9.525  | 4.76 | 1.2 | 3.81 |
| TNMM220408-HL | H            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| TNMM220412-HL | H            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| TNMM220416-HL | H            | ●      | ●      | ●      | 12.7   | 4.76 | 1.6 | 5.16 |
| TNMM160408-HZ | H            | ●      | ●      | ●      | 9.525  | 4.76 | 0.8 | 3.81 |
| TNMM160412-HZ | H            | ●      | ●      | ●      | 9.525  | 4.76 | 1.2 | 3.81 |
| TNMM220408-HZ | H            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| TNMM220412-HZ | H            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| TNMM220416-HZ | H            | ●      | ●      | ●      | 12.7   | 4.76 | 1.6 | 5.16 |

● = NEW



|        |        |        |        |          |       |
|--------|--------|--------|--------|----------|-------|
| Finish | Finish | Finish | Light  | Light    | Light |
| FP     | FH     | FS     | LP     | SH       | SA    |
|        |        |        |        |          |       |
| Medium | Medium | Medium | Medium | Medium   |       |
| MP     | MS     | MA     | MH     | Standard |       |
|        |        |        |        |          |       |

(mm)

| Order Number  | Cutting Area | NEW    |        |        | IC    | S    | RE  | D1   |
|---------------|--------------|--------|--------|--------|-------|------|-----|------|
|               |              | MC6115 | MC6125 | MC6135 |       |      |     |      |
| VNMG160402-FP | F            | ●      | ●      | ●      | 9.525 | 4.76 | 0.2 | 3.81 |
| VNMG160404-FP | F            | ●      | ●      | ●      | 9.525 | 4.76 | 0.4 | 3.81 |
| VNMG160408-FP | F            | ●      | ●      | ●      | 9.525 | 4.76 | 0.8 | 3.81 |
| VNMG160412-FP | F            | ●      | ●      | ●      | 9.525 | 4.76 | 1.2 | 3.81 |
| VNMG160402-FH | F            | ●      | ●      | ●      | 9.525 | 4.76 | 0.2 | 3.81 |
| VNMG160404-FH | F            | ●      | ●      | ●      | 9.525 | 4.76 | 0.4 | 3.81 |
| VNMG160408-FH | F            | ●      | ●      | ●      | 9.525 | 4.76 | 0.8 | 3.81 |
| VNMG160404-FS | F            |        | ●      | ●      | 9.525 | 4.76 | 0.4 | 3.81 |
| VNMG160408-FS | F            |        | ●      | ●      | 9.525 | 4.76 | 0.8 | 3.81 |
| VNMG160404-LP | L            | ●      | ●      | ●      | 9.525 | 4.76 | 0.4 | 3.81 |
| VNMG160408-LP | L            | ●      | ●      | ●      | 9.525 | 4.76 | 0.8 | 3.81 |
| VNMG160404-SH | L            | ●      | ●      | ●      | 9.525 | 4.76 | 0.4 | 3.81 |
| VNMG160408-SH | L            | ●      | ●      | ●      | 9.525 | 4.76 | 0.8 | 3.81 |
| VNMG160404-SA | L            | ●      | ●      | ●      | 9.525 | 4.76 | 0.4 | 3.81 |
| VNMG160408-SA | L            | ●      | ●      | ●      | 9.525 | 4.76 | 0.8 | 3.81 |

| Order Number  | Cutting Area | NEW    |        |        | IC    | S    | RE  | D1   |
|---------------|--------------|--------|--------|--------|-------|------|-----|------|
|               |              | MC6115 | MC6125 | MC6135 |       |      |     |      |
| VNMG160404-MP | M            | ●      | ●      | ●      | 9.525 | 4.76 | 0.4 | 3.81 |
| VNMG160408-MP | M            | ●      | ●      | ●      | 9.525 | 4.76 | 0.8 | 3.81 |
| VNMG160412-MP | M            | ●      | ●      | ●      | 9.525 | 4.76 | 1.2 | 3.81 |
| VNMG160404-MS | M            | ●      | ●      |        | 9.525 | 4.76 | 0.4 | 3.81 |
| VNMG160408-MS | M            | ●      | ●      |        | 9.525 | 4.76 | 0.8 | 3.81 |
| VNMG160404-MA | M            | ●      | ●      | ●      | 9.525 | 4.76 | 0.4 | 3.81 |
| VNMG160408-MA | M            | ●      | ●      | ●      | 9.525 | 4.76 | 0.8 | 3.81 |
| VNMG160404-MH | M            | ●      | ●      | ●      | 9.525 | 4.76 | 0.4 | 3.81 |
| VNMG160408-MH | M            | ●      | ●      | ●      | 9.525 | 4.76 | 0.8 | 3.81 |
| VNMG160404    | M            | ●      | ●      | ●      | 9.525 | 4.76 | 0.4 | 3.81 |
| VNMG160408    | M            | ●      | ●      | ●      | 9.525 | 4.76 | 0.8 | 3.81 |
| VNMG160412    | M            | ●      | ●      | ●      | 9.525 | 4.76 | 1.2 | 3.81 |

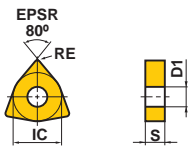
● = NEW

# MC6100 Series

## Negative Inserts (With Hole)

M Class

WNMG



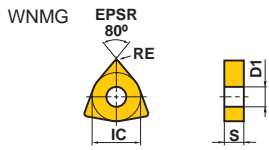
|        |             |        |        |       |       |
|--------|-------------|--------|--------|-------|-------|
| Finish | Finish      | Finish | Finish | Light | Light |
| FP     | FH          | FS     | FY     | LP    | SH    |
|        |             |        |        |       |       |
| Light  | Light       | Light  |        |       |       |
| SA     | SW          | SY     |        |       |       |
|        | <br>(Wiper) |        |        |       |       |

(mm)

| Order Number  | Cutting Area | NEW    |        |        | IC    | S    | RE  | D1   |
|---------------|--------------|--------|--------|--------|-------|------|-----|------|
|               |              | MC6115 | MC6125 | MC6135 |       |      |     |      |
| WNMG080402-FP | F            | ●      | ●      | ●      | 12.7  | 4.76 | 0.2 | 5.16 |
| WNMG080404-FP | F            | ●      | ●      | ●      | 12.7  | 4.76 | 0.4 | 5.16 |
| WNMG080408-FP | F            | ●      | ●      | ●      | 12.7  | 4.76 | 0.8 | 5.16 |
| WNMG080412-FP | F            | ●      | ●      | ●      | 12.7  | 4.76 | 1.2 | 5.16 |
| WNMG080404-FH | F            | ●      | ●      |        | 12.7  | 4.76 | 0.4 | 5.16 |
| WNMG080408-FH | F            | ●      | ●      |        | 12.7  | 4.76 | 0.8 | 5.16 |
| WNMG080404-FS | F            |        | ●      | ●      | 12.7  | 4.76 | 0.4 | 5.16 |
| WNMG080408-FS | F            |        | ●      | ●      | 12.7  | 4.76 | 0.8 | 5.16 |
| WNMG080408-FY | F            | ●      | ●      | ●      | 12.7  | 4.76 | 0.8 | 5.16 |
| WNMG06T304-LP | L            | ●      | ●      | ●      | 9.525 | 3.97 | 0.4 | 3.81 |
| WNMG06T308-LP | L            | ●      | ●      | ●      | 9.525 | 3.97 | 0.8 | 3.81 |
| WNMG060404-LP | L            | ●      | ●      | ●      | 9.525 | 4.76 | 0.4 | 3.81 |
| WNMG060408-LP | L            | ●      | ●      | ●      | 9.525 | 4.76 | 0.8 | 3.81 |
| WNMG080404-LP | L            | ●      | ●      | ●      | 12.7  | 4.76 | 0.4 | 5.16 |
| WNMG080408-LP | L            | ●      | ●      | ●      | 12.7  | 4.76 | 0.8 | 5.16 |
| WNMG080412-LP | L            | ●      | ●      | ●      | 12.7  | 4.76 | 1.2 | 5.16 |
| WNMG06T304-SH | L            | ●      | ●      |        | 9.525 | 3.97 | 0.4 | 3.81 |
| WNMG06T308-SH | L            | ●      | ●      |        | 9.525 | 3.97 | 0.8 | 3.81 |
| WNMG060404-SH | L            | ●      | ●      |        | 9.525 | 4.76 | 0.4 | 3.81 |
| WNMG060408-SH | L            | ●      | ●      |        | 9.525 | 4.76 | 0.8 | 3.81 |
| WNMG080404-SH | L            | ●      | ●      | ●      | 12.7  | 4.76 | 0.4 | 5.16 |
| WNMG080408-SH | L            | ●      | ●      | ●      | 12.7  | 4.76 | 0.8 | 5.16 |
| WNMG080412-SH | L            | ●      | ●      | ●      | 12.7  | 4.76 | 1.2 | 5.16 |

| Order Number  | Cutting Area | NEW    |        |        | IC    | S    | RE  | D1   |
|---------------|--------------|--------|--------|--------|-------|------|-----|------|
|               |              | MC6115 | MC6125 | MC6135 |       |      |     |      |
| WNMG080404-SA | L            | ●      | ●      | ●      | 12.7  | 4.76 | 0.4 | 5.16 |
| WNMG080408-SA | L            | ●      | ●      | ●      | 12.7  | 4.76 | 0.8 | 5.16 |
| WNMG080412-SA | L            | ●      | ●      | ●      | 12.7  | 4.76 | 1.2 | 5.16 |
| WNMG060404-SW | L            | ●      | ●      |        | 9.525 | 4.76 | 0.4 | 3.81 |
| WNMG060408-SW | L            | ●      | ●      |        | 9.525 | 4.76 | 0.8 | 3.81 |
| WNMG080404-SW | L            | ●      | ●      |        | 12.7  | 4.76 | 0.4 | 5.16 |
| WNMG080408-SW | L            | ●      | ●      |        | 12.7  | 4.76 | 0.8 | 5.16 |
| WNMG080412-SW | L            | ●      | ●      |        | 12.7  | 4.76 | 1.2 | 5.16 |
| WNMG080408-SY | L            | ●      | ●      | ●      | 12.7  | 4.76 | 0.8 | 5.16 |

● = NEW



|        |        |        |        |          |               |
|--------|--------|--------|--------|----------|---------------|
| Medium | Medium | Medium | Medium | Medium   | Medium        |
| MP     | MS     | MA     | MH     | Standard | MW<br>(Wiper) |
|        |        |        |        |          |               |
| Rough  | Rough  |        |        |          |               |
| RP     | GH     |        |        |          |               |
|        |        |        |        |          |               |

(mm)

| Order Number  | Cutting Area | NEW    |        |        | IC     | S    | RE  | D1   |
|---------------|--------------|--------|--------|--------|--------|------|-----|------|
|               |              | MC6115 | MC6125 | MC6135 |        |      |     |      |
| WNMG06T304-MP | M            | ●      | ●      | ●      | 9.525  | 3.97 | 0.4 | 3.81 |
| WNMG06T308-MP | M            | ●      | ●      | ●      | 9.525  | 3.97 | 0.8 | 3.81 |
| WNMG06T312-MP | M            | ●      | ●      | ●      | 9.525  | 3.97 | 1.2 | 3.81 |
| WNMG060404-MP | M            | ●      | ●      | ●      | 9.525  | 4.76 | 0.4 | 3.81 |
| WNMG060408-MP | M            | ●      | ●      | ●      | 9.525  | 4.76 | 0.8 | 3.81 |
| WNMG060412-MP | M            | ●      | ●      | ●      | 9.525  | 4.76 | 1.2 | 3.81 |
| WNMG080404-MP | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.4 | 5.16 |
| WNMG080408-MP | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| WNMG080412-MP | M            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| WNMG080416-MP | M            | ●      | ●      | ●      | 12.7   | 4.76 | 1.6 | 5.16 |
| WNMG06T304-MS | M            | ●      | ●      | ●      | 9.525  | 3.97 | 0.4 | 3.81 |
| WNMG06T308-MS | M            | ●      | ●      | ●      | 9.525  | 3.97 | 0.8 | 3.81 |
| WNMG060404-MS | M            | ●      | ●      | ●      | 9.525  | 4.76 | 0.4 | 3.81 |
| WNMG060408-MS | M            | ●      | ●      | ●      | 9.525  | 4.76 | 0.8 | 3.81 |
| WNMG080404-MS | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.4 | 5.16 |
| WNMG080408-MS | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| WNMG080412-MS | M            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| WNMG06T304-MA | M            | ●      | ●      | ●      | 9.525  | 3.97 | 0.4 | 3.81 |
| WNMG06T308-MA | M            | ●      | ●      | ●      | 9.525  | 3.97 | 0.8 | 3.81 |
| WNMG06T312-MA | M            | ●      | ●      | ●      | 9.525  | 3.97 | 1.2 | 3.81 |
| WNMG060404-MA | M            | ●      | ●      | ●      | 9.525  | 4.76 | 0.4 | 3.81 |
| WNMG060408-MA | M            | ●      | ●      | ●      | 9.525  | 4.76 | 0.8 | 3.81 |
| WNMG060412-MA | M            | ●      | ●      | ●      | 9.525  | 4.76 | 1.2 | 3.81 |
| WNMG080404-MA | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.4 | 5.16 |
| WNMG080408-MA | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| WNMG080412-MA | M            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| WNMG080416-MA | M            | ●      | ●      | ●      | 12.7   | 4.76 | 1.6 | 5.16 |
| WNMG100612-MA | M            | ●      | ●      | ●      | 15.875 | 6.35 | 1.2 | 6.35 |
| WNMG080404-MH | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.4 | 5.16 |
| WNMG080408-MH | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| WNMG080412-MH | M            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| WNMG080404    | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.4 | 5.16 |
| WNMG080408    | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| WNMG080412    | M            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |
| WNMG060408-MW | M            | ●      | ●      | ●      | 9.525  | 4.76 | 0.8 | 3.81 |
| WNMG060412-MW | M            | ●      | ●      | ●      | 9.525  | 4.76 | 1.2 | 3.81 |
| WNMG080408-MW | M            | ●      | ●      | ●      | 12.7   | 4.76 | 0.8 | 5.16 |
| WNMG080412-MW | M            | ●      | ●      | ●      | 12.7   | 4.76 | 1.2 | 5.16 |

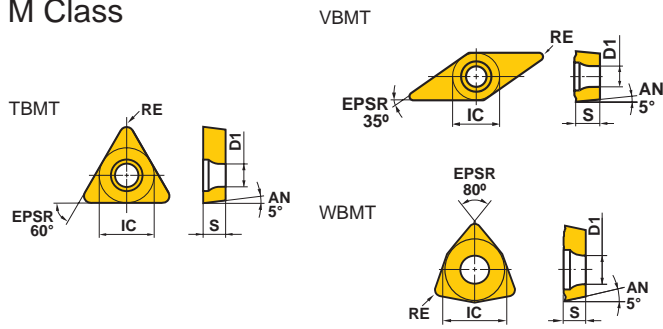
| Order Number  | Cutting Area | NEW    |        |        | IC   | S    | RE  | D1   |
|---------------|--------------|--------|--------|--------|------|------|-----|------|
|               |              | MC6115 | MC6125 | MC6135 |      |      |     |      |
| WNMG080408-RP | R            | ●      | ●      | ●      | 12.7 | 4.76 | 0.8 | 5.16 |
| WNMG080412-RP | R            | ●      | ●      | ●      | 12.7 | 4.76 | 1.2 | 5.16 |
| WNMG080416-RP | R            | ●      | ●      | ●      | 12.7 | 4.76 | 1.6 | 5.16 |
| WNMG080408-GH | R            | ●      | ●      | ●      | 12.7 | 4.76 | 0.8 | 5.16 |
| WNMG080412-GH | R            | ●      | ●      | ●      | 12.7 | 4.76 | 1.2 | 5.16 |

● = NEW

# MC6100 Series

## 5° Positive Inserts (With Hole)

M Class



| Finish | Light  | Light | Medium | Medium |
|--------|--------|-------|--------|--------|
| FP     | FV     | LP    | MP     | MV     |
|        |        |       |        |        |
| Finish | Medium |       |        |        |
| FV     |        | MV    |        |        |
|        |        |       |        |        |

(mm)

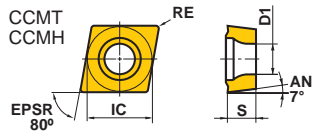
| Order Number  | Cutting Area | NEW    |        |        | IC    | S    | RE  | D1  |
|---------------|--------------|--------|--------|--------|-------|------|-----|-----|
|               |              | MC6115 | MC6125 | MC6135 |       |      |     |     |
| TBMT060102-FV | F            | ●      |        | ●      | 3.97  | 1.59 | 0.2 | 2.3 |
| TBMT060104-FV | F            | ●      |        | ●      | 3.97  | 1.59 | 0.4 | 2.3 |
| VBMT110302-FP | F            | ●      | ●      | ●      | 6.35  | 3.18 | 0.2 | 2.9 |
| VBMT110304-FP | F            | ●      | ●      | ●      | 6.35  | 3.18 | 0.4 | 2.9 |
| VBMT110308-FP | F            | ●      | ●      | ●      | 6.35  | 3.18 | 0.8 | 2.9 |
| VBMT160404-FP | F            | ●      | ●      | ●      | 9.525 | 4.76 | 0.4 | 4.4 |
| VBMT160408-FP | F            | ●      | ●      | ●      | 9.525 | 4.76 | 0.8 | 4.4 |
| VBMT160412-FP | F            | ●      | ●      | ●      | 9.525 | 4.76 | 1.2 | 4.4 |
| VBMT110304-FV | F            | ●      | ●      | ●      | 6.35  | 3.18 | 0.4 | 2.9 |
| VBMT110308-FV | F            |        | ●      | ●      | 6.35  | 3.18 | 0.8 | 2.9 |
| VBMT160404-FV | F            | ●      | ●      | ●      | 9.525 | 4.76 | 0.4 | 4.4 |
| VBMT160408-FV | F            | ●      | ●      | ●      | 9.525 | 4.76 | 0.8 | 4.4 |
| VBMT110304-LP | L            | ●      | ●      | ●      | 6.35  | 3.18 | 0.4 | 2.9 |
| VBMT110308-LP | L            | ●      | ●      | ●      | 6.35  | 3.18 | 0.8 | 2.9 |
| VBMT160404-LP | L            | ●      | ●      | ●      | 9.525 | 4.76 | 0.4 | 4.4 |
| VBMT160408-LP | L            | ●      | ●      | ●      | 9.525 | 4.76 | 0.8 | 4.4 |
| VBMT160412-LP | L            | ●      | ●      | ●      | 9.525 | 4.76 | 1.2 | 4.4 |
| VBMT160404-MP | M            | ●      | ●      | ●      | 9.525 | 4.76 | 0.4 | 4.4 |
| VBMT160408-MP | M            | ●      | ●      | ●      | 9.525 | 4.76 | 0.8 | 4.4 |
| VBMT110304-MV | M            |        | ●      | ●      | 6.35  | 3.18 | 0.4 | 2.9 |
| VBMT110308-MV | M            |        | ●      | ●      | 6.35  | 3.18 | 0.8 | 2.9 |
| VBMT160404-MV | M            |        | ●      | ●      | 9.525 | 4.76 | 0.4 | 4.4 |
| VBMT160408-MV | M            |        | ●      | ●      | 9.525 | 4.76 | 0.8 | 4.4 |

| Order Number   | Cutting Area | NEW    |        |        | IC   | S    | RE  | D1  |
|----------------|--------------|--------|--------|--------|------|------|-----|-----|
|                |              | MC6115 | MC6125 | MC6135 |      |      |     |     |
| WBMTL30202R-MV | M            |        | ●      | ●      | 4.76 | 2.38 | 0.2 | 2.3 |
| WBMTL30202L-MV | M            |        | ●      | ●      | 4.76 | 2.38 | 0.2 | 2.3 |
| WBMTL30204R-MV | M            |        | ●      | ●      | 4.76 | 2.38 | 0.4 | 2.3 |
| WBMTL30204L-MV | M            |        | ●      | ●      | 4.76 | 2.38 | 0.4 | 2.3 |

● = NEW

# 7° Positive Inserts (With Hole)

M Class



| Finish | Finish | Light         | Light         |
|--------|--------|---------------|---------------|
| FP     | FV     | LP            | SW<br>(Wiper) |
|        |        |               |               |
| Medium | Medium | Medium        |               |
| MP     | MV     | MW<br>(Wiper) |               |
|        |        |               |               |

(mm)

| Order Number  | Cutting Area | NEW    |        |        | IC    | S    | RE  | D1  |
|---------------|--------------|--------|--------|--------|-------|------|-----|-----|
|               |              | MC6115 | MC6125 | MC6135 |       |      |     |     |
| CCMT060202-FP | F            | ●      | ●      | ●      | 6.35  | 2.38 | 0.2 | 2.8 |
| CCMT060204-FP | F            | ●      | ●      | ●      | 6.35  | 2.38 | 0.4 | 2.8 |
| CCMT09T302-FP | F            | ●      | ●      | ●      | 9.525 | 3.97 | 0.2 | 4.4 |
| CCMT09T304-FP | F            | ●      | ●      | ●      | 9.525 | 3.97 | 0.4 | 4.4 |
| CCMT09T308-FP | F            | ●      | ●      | ●      | 9.525 | 3.97 | 0.8 | 4.4 |
| CCMT060202-FV | F            |        | ●      | ●      | 6.35  | 2.38 | 0.2 | 2.8 |
| CCMT060204-FV | F            |        | ●      | ●      | 6.35  | 2.38 | 0.4 | 2.8 |
| CCMT09T302-FV | F            |        | ●      | ●      | 9.525 | 3.97 | 0.2 | 4.4 |
| CCMT09T304-FV | F            |        | ●      | ●      | 9.525 | 3.97 | 0.4 | 4.4 |
| CCMT09T308-FV | F            |        | ●      | ●      | 9.525 | 3.97 | 0.8 | 4.4 |
| CCMT060202-LP | L            | ●      | ●      | ●      | 6.35  | 2.38 | 0.2 | 2.8 |
| CCMT060204-LP | L            | ●      | ●      | ●      | 6.35  | 2.38 | 0.4 | 2.8 |
| CCMT060208-LP | L            | ●      | ●      | ●      | 6.35  | 2.38 | 0.8 | 2.8 |
| CCMT09T302-LP | L            | ●      | ●      | ●      | 9.525 | 3.97 | 0.2 | 4.4 |
| CCMT09T304-LP | L            | ●      | ●      | ●      | 9.525 | 3.97 | 0.4 | 4.4 |
| CCMT09T308-LP | L            | ●      | ●      | ●      | 9.525 | 3.97 | 0.8 | 4.4 |
| CCMT060202-SW | L            | ●      | ●      | ●      | 6.35  | 2.38 | 0.2 | 2.8 |
| CCMT060204-SW | L            | ●      | ●      | ●      | 6.35  | 2.38 | 0.4 | 2.8 |
| CCMT060208-SW | L            | ●      | ●      | ●      | 6.35  | 2.38 | 0.8 | 2.8 |
| CCMT09T302-SW | L            | ●      | ●      | ●      | 9.525 | 3.97 | 0.2 | 4.4 |
| CCMT09T304-SW | L            | ●      | ●      | ●      | 9.525 | 3.97 | 0.4 | 4.4 |
| CCMT09T308-SW | L            | ●      | ●      | ●      | 9.525 | 3.97 | 0.8 | 4.4 |

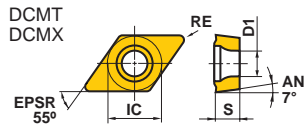
| Order Number  | Cutting Area | NEW    |        |        | IC    | S    | RE  | D1  |
|---------------|--------------|--------|--------|--------|-------|------|-----|-----|
|               |              | MC6115 | MC6125 | MC6135 |       |      |     |     |
| CCMT060202-MP | M            | ●      | ●      | ●      | 6.35  | 2.38 | 0.2 | 2.8 |
| CCMT060204-MP | M            | ●      | ●      | ●      | 6.35  | 2.38 | 0.4 | 2.8 |
| CCMT060208-MP | M            | ●      | ●      | ●      | 6.35  | 2.38 | 0.8 | 2.8 |
| CCMT080302-MP | M            | ●      | ●      |        | 7.94  | 3.18 | 0.2 | 3.4 |
| CCMT080304-MP | M            | ●      | ●      |        | 7.94  | 3.18 | 0.4 | 3.4 |
| CCMT080308-MP | M            | ●      | ●      |        | 7.94  | 3.18 | 0.8 | 3.4 |
| CCMT09T302-MP | M            | ●      | ●      | ●      | 9.525 | 3.97 | 0.2 | 4.4 |
| CCMT09T304-MP | M            | ●      | ●      | ●      | 9.525 | 3.97 | 0.4 | 4.4 |
| CCMT09T308-MP | M            | ●      | ●      | ●      | 9.525 | 3.97 | 0.8 | 4.4 |
| CCMT120404-MP | M            | ●      | ●      | ●      | 12.7  | 4.76 | 0.4 | 5.5 |
| CCMT120408-MP | M            | ●      | ●      | ●      | 12.7  | 4.76 | 0.8 | 5.5 |
| CCMT120412-MP | M            | ●      | ●      | ●      | 12.7  | 4.76 | 1.2 | 5.5 |
| CCMH060202-MV | M            |        | ●      | ●      | 6.35  | 2.38 | 0.2 | 2.8 |
| CCMH060204-MV | M            |        | ●      | ●      | 6.35  | 2.38 | 0.4 | 2.8 |
| CCMT060204-MW | M            | ●      | ●      | ●      | 6.35  | 2.38 | 0.4 | 2.8 |
| CCMT060208-MW | M            | ●      | ●      | ●      | 6.35  | 2.38 | 0.8 | 2.8 |
| CCMT09T304-MW | M            | ●      | ●      | ●      | 9.525 | 3.97 | 0.4 | 4.4 |
| CCMT09T308-MW | M            | ●      | ●      | ●      | 9.525 | 3.97 | 0.8 | 4.4 |
| CCMT120404-MW | M            | ●      | ●      | ●      | 12.7  | 4.76 | 0.4 | 5.5 |
| CCMT120408-MW | M            | ●      | ●      | ●      | 12.7  | 4.76 | 0.8 | 5.5 |

● = NEW

# MC6100 Series

## 7° Positive Inserts (With Hole)

M Class



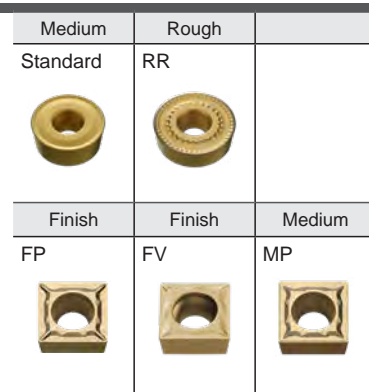
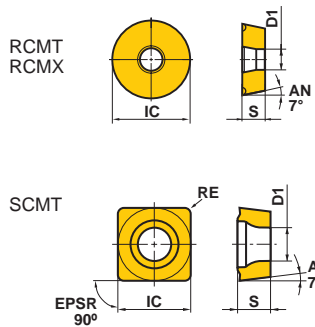
| Finish   | Finish  | Light   | Light   |
|--|---|---|---|
| FP   | FV  | LP  | SW<br>(Wiper)   |
|  |  |  |  |
| Medium   | Medium  |   |   |
| MP   | MV  |   |   |
|  |  |   |   |

(mm)

| Order Number  | Cutting Area | NEW    |        |        | IC    | S    | RE  | D1  |
|---------------|--------------|--------|--------|--------|-------|------|-----|-----|
|               |              | MC6115 | MC6125 | MC6135 |       |      |     |     |
| DCMT070202-FP | F            | ●      | ●      | ●      | 6.35  | 2.38 | 0.2 | 2.8 |
| DCMT070204-FP | F            | ●      | ●      | ●      | 6.35  | 2.38 | 0.4 | 2.8 |
| DCMT11T302-FP | F            | ●      | ●      | ●      | 9.525 | 3.97 | 0.2 | 4.4 |
| DCMT11T304-FP | F            | ●      | ●      | ●      | 9.525 | 3.97 | 0.4 | 4.4 |
| DCMT11T308-FP | F            | ●      | ●      | ●      | 9.525 | 3.97 | 0.8 | 4.4 |
| DCMT070202-FV | F            | ●      | ●      | ●      | 6.35  | 2.38 | 0.2 | 2.8 |
| DCMT070204-FV | F            | ●      | ●      | ●      | 6.35  | 2.38 | 0.4 | 2.8 |
| DCMT070208-FV | F            | ●      | ●      | ●      | 6.35  | 2.38 | 0.8 | 2.8 |
| DCMT11T302-FV | F            | ●      | ●      | ●      | 9.525 | 3.97 | 0.2 | 4.4 |
| DCMT11T304-FV | F            | ●      | ●      | ●      | 9.525 | 3.97 | 0.4 | 4.4 |
| DCMT11T308-FV | F            | ●      | ●      | ●      | 9.525 | 3.97 | 0.8 | 4.4 |
| DCMT070202-LP | L            | ●      | ●      | ●      | 6.35  | 2.38 | 0.2 | 2.8 |
| DCMT070204-LP | L            | ●      | ●      | ●      | 6.35  | 2.38 | 0.4 | 2.8 |
| DCMT070208-LP | L            | ●      | ●      | ●      | 6.35  | 2.38 | 0.8 | 2.8 |
| DCMT11T302-LP | L            | ●      | ●      | ●      | 9.525 | 3.97 | 0.2 | 4.4 |
| DCMT11T304-LP | L            | ●      | ●      | ●      | 9.525 | 3.97 | 0.4 | 4.4 |
| DCMT11T308-LP | L            | ●      | ●      | ●      | 9.525 | 3.97 | 0.8 | 4.4 |
| DCMX070202-SW | L            | ●      | ●      | ●      | 6.35  | 2.38 | 0.2 | 2.8 |
| DCMX070204-SW | L            | ●      | ●      | ●      | 6.35  | 2.38 | 0.4 | 2.8 |
| DCMX070208-SW | L            | ●      | ●      | ●      | 6.35  | 2.38 | 0.8 | 2.8 |
| DCMX11T302-SW | L            | ●      | ●      | ●      | 9.525 | 3.97 | 0.2 | 4.4 |
| DCMX11T304-SW | L            | ●      | ●      | ●      | 9.525 | 3.97 | 0.4 | 4.4 |
| DCMX11T308-SW | L            | ●      | ●      | ●      | 9.525 | 3.97 | 0.8 | 4.4 |

| Order Number  | Cutting Area | NEW    |        |        | IC    | S    | RE  | D1  |
|---------------|--------------|--------|--------|--------|-------|------|-----|-----|
|               |              | MC6115 | MC6125 | MC6135 |       |      |     |     |
| DCMT070202-MP | M            | ●      | ●      | ●      | 6.35  | 2.38 | 0.2 | 2.8 |
| DCMT070204-MP | M            | ●      | ●      | ●      | 6.35  | 2.38 | 0.4 | 2.8 |
| DCMT070208-MP | M            | ●      | ●      | ●      | 6.35  | 2.38 | 0.8 | 2.8 |
| DCMT11T302-MP | M            | ●      | ●      | ●      | 9.525 | 3.97 | 0.2 | 4.4 |
| DCMT11T304-MP | M            | ●      | ●      | ●      | 9.525 | 3.97 | 0.4 | 4.4 |
| DCMT11T308-MP | M            | ●      | ●      | ●      | 9.525 | 3.97 | 0.8 | 4.4 |
| DCMT11T312-MP | M            | ●      | ●      | ●      | 9.525 | 3.97 | 1.2 | 4.4 |
| DCMT150404-MP | M            | ●      | ●      | ●      | 12.7  | 4.76 | 0.4 | 5.5 |
| DCMT150408-MP | M            | ●      | ●      | ●      | 12.7  | 4.76 | 0.8 | 5.5 |
| DCMT150412-MP | M            | ●      | ●      | ●      | 12.7  | 4.76 | 1.2 | 5.5 |
| DCMT070202-MV | M            | ●      | ●      | ●      | 6.35  | 2.38 | 0.2 | 2.8 |
| DCMT070204-MV | M            | ●      | ●      | ●      | 6.35  | 2.38 | 0.4 | 2.8 |
| DCMT070208-MV | M            | ●      | ●      | ●      | 6.35  | 2.38 | 0.8 | 2.8 |
| DCMT11T302-MV | M            | ●      | ●      | ●      | 9.525 | 3.97 | 0.2 | 4.4 |
| DCMT11T304-MV | M            | ●      | ●      | ●      | 9.525 | 3.97 | 0.4 | 4.4 |
| DCMT11T308-MV | M            | ●      | ●      | ●      | 9.525 | 3.97 | 0.8 | 4.4 |

● = NEW



(mm)

| Order Number  | Cutting Area | NEW    |        |        | IC | S    | RE | D1  |
|---------------|--------------|--------|--------|--------|----|------|----|-----|
|               |              | MC6115 | MC6125 | MC6135 |    |      |    |     |
| RCMT0602M0    | M            | ●      | ●      |        | 6  | 2.38 | -  | 2.8 |
| RCMT0803M0    | M            | ●      | ●      |        | 8  | 3.18 | -  | 3.4 |
| RCMX1003M0    | M            | ●      | ●      | ●      | 10 | 3.18 | -  | 3.6 |
| RCMX1204M0    | M            | ●      | ●      | ●      | 12 | 4.76 | -  | 4.2 |
| RCMX1606M0    | M            | ●      | ●      | ●      | 16 | 6.35 | -  | 5.2 |
| RCMX2006M0    | M            | ●      | ●      | ●      | 20 | 6.35 | -  | 6.5 |
| RCMX2507M0    | M            | ●      | ●      | ●      | 25 | 7.94 | -  | 7.2 |
| RCMX3209M0    | M            | ●      | ●      | ●      | 32 | 9.52 | -  | 9.5 |
| RCMX1606M0-RR | R            | ●      | ●      | ●      | 16 | 6.35 | -  | 5.2 |
| RCMX2006M0-RR | R            | ●      | ●      | ●      | 20 | 6.35 | -  | 6.5 |
| RCMX2507M0-RR | R            | ●      | ●      | ●      | 25 | 7.94 | -  | 7.2 |
| RCMX3209M0-RR | R            | ●      | ●      | ●      | 32 | 9.52 | -  | 9.5 |

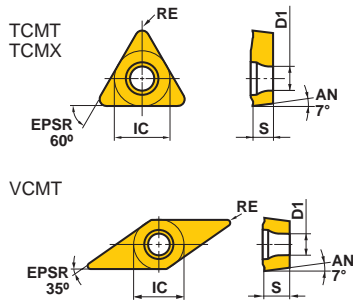
| Order Number  | Cutting Area | NEW    |        |        | IC    | S    | RE  | D1  |
|---------------|--------------|--------|--------|--------|-------|------|-----|-----|
|               |              | MC6115 | MC6125 | MC6135 |       |      |     |     |
| SCMT09T304-FP | F            | ●      | ●      | ●      | 9.525 | 3.97 | 0.4 | 4.4 |
| SCMT09T308-FP | F            | ●      | ●      | ●      | 9.525 | 3.97 | 0.8 | 4.4 |
| SCMT09T304-FV | F            |        | ●      | ●      | 9.525 | 3.97 | 0.4 | 4.4 |
| SCMT09T304-LP | L            | ●      | ●      | ●      | 9.525 | 3.97 | 0.4 | 4.4 |
| SCMT09T308-LP | L            | ●      | ●      | ●      | 9.525 | 3.97 | 0.8 | 4.4 |
| SCMT09T304-MP | M            | ●      | ●      | ●      | 9.525 | 3.97 | 0.4 | 4.4 |
| SCMT09T308-MP | M            | ●      | ●      | ●      | 9.525 | 3.97 | 0.8 | 4.4 |
| SCMT120404-MP | M            | ●      | ●      | ●      | 12.7  | 4.76 | 0.4 | 5.5 |
| SCMT120408-MP | M            | ●      | ●      | ●      | 12.7  | 4.76 | 0.8 | 5.5 |
| SCMT120412-MP | M            | ●      | ●      |        | 12.7  | 4.76 | 1.2 | 5.5 |

● = NEW

# MC6100 Series

## 7° Positive Inserts (With Hole)

M Class

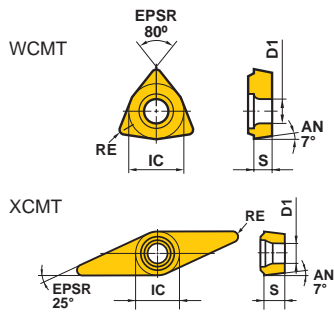


(mm)

| Order Number  | Cutting Area | NEW    |        |        | IC    | S    | RE  | D1  |
|---------------|--------------|--------|--------|--------|-------|------|-----|-----|
|               |              | MC6115 | MC6125 | MC6135 |       |      |     |     |
| TCMT090202-FP | F            | ●      | ●      | ●      | 5.56  | 2.38 | 0.2 | 2.5 |
| TCMT090204-FP | F            | ●      | ●      | ●      | 5.56  | 2.38 | 0.4 | 2.5 |
| TCMT110202-FP | F            | ●      | ●      | ●      | 6.35  | 2.38 | 0.2 | 2.8 |
| TCMT110204-FP | F            | ●      | ●      | ●      | 6.35  | 2.38 | 0.4 | 2.8 |
| TCMT16T304-FP | F            | ●      | ●      | ●      | 9.525 | 3.97 | 0.4 | 4.4 |
| TCMT110204-FV | F            |        | ●      | ●      | 6.35  | 2.38 | 0.4 | 2.8 |
| TCMT16T304-FV | F            |        | ●      | ●      | 9.525 | 3.97 | 0.4 | 4.4 |
| TCMT090204-LP | L            | ●      | ●      | ●      | 5.56  | 2.38 | 0.4 | 2.5 |
| TCMT090208-LP | L            | ●      | ●      | ●      | 5.56  | 2.38 | 0.8 | 2.5 |
| TCMT110202-LP | L            | ●      | ●      | ●      | 6.35  | 2.38 | 0.2 | 2.8 |
| TCMT110204-LP | L            | ●      | ●      | ●      | 6.35  | 2.38 | 0.4 | 2.8 |
| TCMT110208-LP | L            | ●      | ●      | ●      | 6.35  | 2.38 | 0.8 | 2.8 |
| TCMT16T304-LP | L            | ●      | ●      | ●      | 9.525 | 3.97 | 0.4 | 4.4 |
| TCMT16T308-LP | L            | ●      | ●      | ●      | 9.525 | 3.97 | 0.8 | 4.4 |
| TCMX090204-SW | L            | ●      | ●      | ●      | 5.56  | 2.38 | 0.4 | 2.5 |
| TCMX110204-SW | L            | ●      | ●      | ●      | 6.35  | 2.38 | 0.4 | 2.8 |
| TCMT090204-MP | M            | ●      | ●      | ●      | 5.56  | 2.38 | 0.4 | 2.5 |
| TCMT090208-MP | M            | ●      | ●      | ●      | 5.56  | 2.38 | 0.8 | 2.5 |
| TCMT110202-MP | M            | ●      | ●      | ●      | 6.35  | 2.38 | 0.2 | 2.8 |
| TCMT110204-MP | M            | ●      | ●      | ●      | 6.35  | 2.38 | 0.4 | 2.8 |
| TCMT110208-MP | M            | ●      | ●      | ●      | 6.35  | 2.38 | 0.8 | 2.8 |
| TCMT130304-MP | M            | ●      | ●      | ●      | 7.94  | 3.18 | 0.4 | 3.4 |
| TCMT16T304-MP | M            | ●      | ●      | ●      | 9.525 | 3.97 | 0.4 | 4.4 |
| TCMT16T308-MP | M            | ●      | ●      | ●      | 9.525 | 3.97 | 0.8 | 4.4 |
| TCMT16T312-MP | M            | ●      | ●      | ●      | 9.525 | 3.97 | 1.2 | 4.4 |

| Order Number  | Cutting Area | NEW    |        |        | IC    | S    | RE  | D1  |
|---------------|--------------|--------|--------|--------|-------|------|-----|-----|
|               |              | MC6115 | MC6125 | MC6135 |       |      |     |     |
| VCMT080202-FP | F            | ●      | ●      | ●      | 4.76  | 2.38 | 0.2 | 2.4 |
| VCMT080204-FP | F            | ●      | ●      | ●      | 4.76  | 2.38 | 0.4 | 2.4 |
| VCMT110302-FP | F            | ●      | ●      | ●      | 6.35  | 3.18 | 0.2 | 2.8 |
| VCMT110304-FP | F            | ●      | ●      | ●      | 6.35  | 3.18 | 0.4 | 2.8 |
| VCMT160404-FP | F            | ●      | ●      | ●      | 9.525 | 4.76 | 0.4 | 4.4 |
| VCMT160408-FP | F            | ●      | ●      | ●      | 9.525 | 4.76 | 0.8 | 4.4 |
| VCMT080202-FV | F            |        | ●      | ●      | 4.76  | 2.38 | 0.2 | 2.4 |
| VCMT080204-FV | F            |        | ●      | ●      | 4.76  | 2.38 | 0.4 | 2.4 |
| VCMT160404-FV | F            | ●      | ●      | ●      | 9.525 | 4.76 | 0.4 | 4.4 |
| VCMT160408-FV | F            | ●      | ●      | ●      | 9.525 | 4.76 | 0.8 | 4.4 |
| VCMT080202-LP | L            | ●      | ●      | ●      | 4.76  | 2.38 | 0.2 | 2.4 |
| VCMT080204-LP | L            | ●      | ●      | ●      | 4.76  | 2.38 | 0.4 | 2.4 |
| VCMT110304-LP | L            | ●      | ●      | ●      | 6.35  | 3.18 | 0.4 | 2.8 |
| VCMT110308-LP | L            | ●      | ●      | ●      | 6.35  | 3.18 | 0.8 | 2.8 |
| VCMT160404-LP | L            | ●      | ●      | ●      | 9.525 | 4.76 | 0.4 | 4.4 |
| VCMT160408-LP | L            | ●      | ●      | ●      | 9.525 | 4.76 | 0.8 | 4.4 |
| VCMT110304-MP | M            | ●      | ●      | ●      | 6.35  | 3.18 | 0.4 | 2.8 |
| VCMT160404-MP | M            | ●      | ●      | ●      | 9.525 | 4.76 | 0.4 | 4.4 |
| VCMT160408-MP | M            | ●      | ●      | ●      | 9.525 | 4.76 | 0.8 | 4.4 |
| VCMT160412-MP | M            | ●      | ●      | ●      | 9.525 | 4.76 | 1.2 | 4.4 |
| VCMT080202-MV | M            |        | ●      | ●      | 4.76  | 2.38 | 0.2 | 2.4 |
| VCMT080204-MV | M            |        | ●      | ●      | 4.76  | 2.38 | 0.4 | 2.4 |

● = NEW



(mm)

| Order Number  | Cutting Area | NEW    |        |        | IC    | S    | RE  | D1  |
|---------------|--------------|--------|--------|--------|-------|------|-----|-----|
|               |              | MC6115 | MC6125 | MC6135 |       |      |     |     |
| WCMT020102-FV | F            |        | ●      |        | 3.97  | 1.59 | 0.2 | 2.3 |
| WCMT020104-FV | F            |        | ●      |        | 3.97  | 1.59 | 0.4 | 2.3 |
| WCMTL30202-FV | F            |        | ●      |        | 4.76  | 2.38 | 0.2 | 2.3 |
| WCMTL30204-FV | F            |        | ●      |        | 4.76  | 2.38 | 0.4 | 2.3 |
| WCMT040202-FV | F            |        | ●      |        | 6.35  | 2.38 | 0.2 | 2.8 |
| WCMT040204-FV | F            |        | ●      |        | 6.35  | 2.38 | 0.4 | 2.8 |
| WCMT06T302-FV | F            |        | ●      |        | 9.525 | 3.97 | 0.2 | 4.4 |
| WCMT06T304-FV | F            |        | ●      |        | 9.525 | 3.97 | 0.4 | 4.4 |
| WCMT020102-MP | M            | ●      | ●      | ●      | 3.97  | 1.59 | 0.2 | 2.3 |
| WCMT020104-MP | M            | ●      | ●      | ●      | 3.97  | 1.59 | 0.4 | 2.3 |
| WCMTL30202-MP | M            | ●      | ●      |        | 4.76  | 2.38 | 0.2 | 2.3 |
| WCMTL30204-MP | M            | ●      | ●      |        | 4.76  | 2.38 | 0.4 | 2.3 |
| WCMT040202-MP | M            | ●      | ●      | ●      | 6.35  | 2.38 | 0.2 | 2.8 |
| WCMT040204-MP | M            | ●      | ●      | ●      | 6.35  | 2.38 | 0.4 | 2.8 |
| WCMT040208-MP | M            |        | ●      | ●      | 6.35  | 2.38 | 0.8 | 2.8 |
| WCMT06T304-MP | M            | ●      | ●      | ●      | 9.525 | 3.97 | 0.4 | 4.4 |
| WCMT06T308-MP | M            | ●      | ●      | ●      | 9.525 | 3.97 | 0.8 | 4.4 |

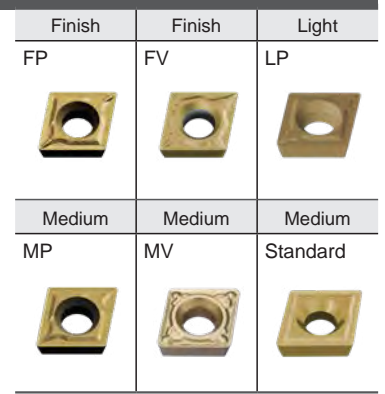
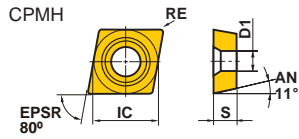
| Order Number   | Cutting Area | NEW    |        |        | IC   | S    | RE  | D1   |
|----------------|--------------|--------|--------|--------|------|------|-----|------|
|                |              | MC6115 | MC6125 | MC6135 |      |      |     |      |
| XCMT150304-SVX | F            |        | ●      | ●      | 6.35 | 3.18 | 0.4 | 2.85 |
| XCMT150308-SVX | F            |        | ●      | ●      | 6.35 | 3.18 | 0.8 | 2.85 |

● = NEW

# MC6100 Series

## 11° Positive Inserts (With Hole)

M Class

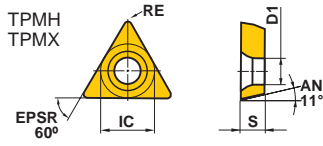


(mm)

| Order Number  | Cutting Area | NEW    |        |        | IC   | S   | RE  | D1 |
|---------------|--------------|--------|--------|--------|------|-----|-----|----|
|               |              | MC6115 | MC6125 | MC6135 |      |     |     |    |
| CPMH080202-FP | F            | ●      | ●      | 7.94   | 2.38 | 0.2 | 3.5 |    |
| CPMH080204-FP | F            | ●      | ●      | 7.94   | 2.38 | 0.4 | 3.5 |    |
| CPMH090302-FP | F            | ●      | ●      | 9.525  | 3.18 | 0.2 | 4.5 |    |
| CPMH090304-FP | F            | ●      | ●      | 9.525  | 3.18 | 0.4 | 4.5 |    |
| CPMH090308-FP | F            | ●      | ●      | 9.525  | 3.18 | 0.8 | 4.5 |    |
| CPMH080202-FV | F            | ●      | ●      | 7.94   | 2.38 | 0.2 | 3.5 |    |
| CPMH080204-FV | F            | ●      | ●      | 7.94   | 2.38 | 0.4 | 3.5 |    |
| CPMH090302-FV | F            | ●      | ●      | 9.525  | 3.18 | 0.2 | 4.5 |    |
| CPMH090304-FV | F            | ●      | ●      | 9.525  | 3.18 | 0.4 | 4.5 |    |
| CPMH090308-FV | F            | ●      | ●      | 9.525  | 3.18 | 0.8 | 4.5 |    |
| CPMH080202-LP | L            | ●      | ●      | 7.94   | 2.38 | 0.2 | 3.5 |    |
| CPMH080204-LP | L            | ●      | ●      | 7.94   | 2.38 | 0.4 | 3.5 |    |
| CPMH080208-LP | L            | ●      | ●      | 7.94   | 2.38 | 0.8 | 3.5 |    |
| CPMH090302-LP | L            | ●      | ●      | 9.525  | 3.18 | 0.2 | 4.5 |    |
| CPMH090304-LP | L            | ●      | ●      | 9.525  | 3.18 | 0.4 | 4.5 |    |
| CPMH090308-LP | L            | ●      | ●      | 9.525  | 3.18 | 0.8 | 4.5 |    |

| Order Number  | Cutting Area | NEW    |        |        | IC   | S   | RE  | D1 |
|---------------|--------------|--------|--------|--------|------|-----|-----|----|
|               |              | MC6115 | MC6125 | MC6135 |      |     |     |    |
| CPMH080204-MP | M            | ●      | ●      | 7.94   | 2.38 | 0.4 | 3.5 |    |
| CPMH080208-MP | M            | ●      | ●      | 7.94   | 2.38 | 0.8 | 3.5 |    |
| CPMH090304-MP | M            | ●      | ●      | 9.525  | 3.18 | 0.4 | 4.5 |    |
| CPMH090308-MP | M            | ●      | ●      | 9.525  | 3.18 | 0.8 | 4.5 |    |
| CPMH080204-MV | M            | ●      | ●      | 7.94   | 2.38 | 0.4 | 3.5 |    |
| CPMH080208-MV | M            | ●      | ●      | 7.94   | 2.38 | 0.8 | 3.5 |    |
| CPMH090304-MV | M            | ●      | ●      | 9.525  | 3.18 | 0.4 | 4.5 |    |
| CPMH090308-MV | M            | ●      | ●      | 9.525  | 3.18 | 0.8 | 4.5 |    |
| CPMH080204    | M            | ●      | ●      | 7.94   | 2.38 | 0.4 | 3.5 |    |
| CPMH080208    | M            | ●      | ●      | 7.94   | 2.38 | 0.8 | 3.5 |    |
| CPMH090304    | M            | ●      | ●      | 9.525  | 3.18 | 0.4 | 4.5 |    |
| CPMH090308    | M            | ●      | ●      | 9.525  | 3.18 | 0.8 | 4.5 |    |

● = NEW



| Finish | Finish | Light | Light         |
|--------|--------|-------|---------------|
| FP     | FV     | LP    | SW<br>(Wiper) |
| Medium |        |       |               |
| MV     |        |       |               |

(mm)

| Order Number  | Cutting Area | NEW    |        |        | IC    | S    | RE  | D1  |
|---------------|--------------|--------|--------|--------|-------|------|-----|-----|
|               |              | MC6115 | MC6125 | MC6135 |       |      |     |     |
| TPMH090202-FP | F            | ●      | ●      | ●      | 5.56  | 2.38 | 0.2 | 2.9 |
| TPMH090204-FP | F            | ●      | ●      | ●      | 5.56  | 2.38 | 0.4 | 2.9 |
| TPMH110302-FP | F            | ●      | ●      | ●      | 6.35  | 3.18 | 0.2 | 3.4 |
| TPMH110304-FP | F            | ●      | ●      | ●      | 6.35  | 3.18 | 0.4 | 3.4 |
| TPMH110308-FP | F            | ●      | ●      | ●      | 6.35  | 3.18 | 0.8 | 3.4 |
| TPMH080202-FV | F            |        | ●      | ●      | 4.76  | 2.38 | 0.2 | 2.4 |
| TPMH080204-FV | F            |        | ●      | ●      | 4.76  | 2.38 | 0.4 | 2.4 |
| TPMH090202-FV | F            |        | ●      | ●      | 5.56  | 2.38 | 0.2 | 2.9 |
| TPMH090204-FV | F            |        | ●      | ●      | 5.56  | 2.38 | 0.4 | 2.9 |
| TPMH110302-FV | F            |        | ●      | ●      | 6.35  | 3.18 | 0.2 | 3.4 |
| TPMH110304-FV | F            | ●      | ●      | ●      | 6.35  | 3.18 | 0.4 | 3.4 |
| TPMH110308-FV | F            | ●      | ●      | ●      | 6.35  | 3.18 | 0.8 | 3.4 |
| TPMH160302-FV | F            |        | ●      | ●      | 9.525 | 3.18 | 0.2 | 4.4 |
| TPMH160304-FV | F            | ●      | ●      | ●      | 9.525 | 3.18 | 0.4 | 4.4 |
| TPMH160308-FV | F            |        | ●      | ●      | 9.525 | 3.18 | 0.8 | 4.4 |
| TPMH080202-LP | L            |        | ●      | ●      | 4.76  | 2.38 | 0.2 | 2.4 |
| TPMH080204-LP | L            |        | ●      | ●      | 4.76  | 2.38 | 0.4 | 2.4 |
| TPMH090202-LP | L            | ●      | ●      | ●      | 5.56  | 2.38 | 0.2 | 2.9 |
| TPMH090204-LP | L            | ●      | ●      | ●      | 5.56  | 2.38 | 0.4 | 2.9 |
| TPMH110302-LP | L            | ●      | ●      | ●      | 6.35  | 3.18 | 0.2 | 3.4 |
| TPMH110304-LP | L            | ●      | ●      | ●      | 6.35  | 3.18 | 0.4 | 3.4 |
| TPMH110308-LP | L            | ●      | ●      | ●      | 6.35  | 3.18 | 0.8 | 3.4 |
| TPMH160302-LP | L            | ●      | ●      | ●      | 9.525 | 3.18 | 0.2 | 4.4 |
| TPMH160304-LP | L            | ●      | ●      | ●      | 9.525 | 3.18 | 0.4 | 4.4 |
| TPMH160308-LP | L            | ●      | ●      | ●      | 9.525 | 3.18 | 0.8 | 4.4 |
| TPMX090202-SW | L            | ●      | ●      | ●      | 5.56  | 2.38 | 0.2 | 2.9 |
| TPMX090204-SW | L            | ●      | ●      | ●      | 5.56  | 2.38 | 0.4 | 2.9 |
| TPMX090208-SW | L            | ●      | ●      | ●      | 5.56  | 2.38 | 0.8 | 2.9 |
| TPMX110302-SW | L            | ●      | ●      | ●      | 6.35  | 3.18 | 0.2 | 3.4 |
| TPMX110304-SW | L            | ●      | ●      | ●      | 6.35  | 3.18 | 0.4 | 3.4 |
| TPMX110308-SW | L            | ●      | ●      | ●      | 6.35  | 3.18 | 0.8 | 3.4 |

| Order Number  | Cutting Area | NEW    |        |        | IC    | S    | RE  | D1  |
|---------------|--------------|--------|--------|--------|-------|------|-----|-----|
|               |              | MC6115 | MC6125 | MC6135 |       |      |     |     |
| TPMH080202-MV | M            |        | ●      | ●      | 4.76  | 2.38 | 0.2 | 2.4 |
| TPMH080204-MV | M            |        | ●      | ●      | 4.76  | 2.38 | 0.4 | 2.4 |
| TPMH090202-MV | M            |        | ●      | ●      | 5.56  | 2.38 | 0.2 | 2.9 |
| TPMH090204-MV | M            |        | ●      | ●      | 5.56  | 2.38 | 0.4 | 2.9 |
| TPMH090208-MV | M            |        | ●      | ●      | 5.56  | 2.38 | 0.8 | 2.9 |
| TPMH110302-MV | M            |        | ●      | ●      | 6.35  | 3.18 | 0.2 | 3.4 |
| TPMH110304-MV | M            |        | ●      | ●      | 6.35  | 3.18 | 0.4 | 3.4 |
| TPMH110308-MV | M            |        | ●      | ●      | 6.35  | 3.18 | 0.8 | 3.4 |
| TPMH160304-MV | M            |        | ●      | ●      | 9.525 | 3.18 | 0.4 | 4.4 |
| TPMH160308-MV | M            |        | ●      | ●      | 9.525 | 3.18 | 0.8 | 4.4 |

● = NEW

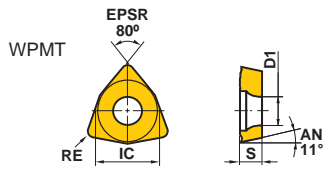
# MC6100 Series

## 11° Positive Inserts (With Hole)

M Class

Medium

MV



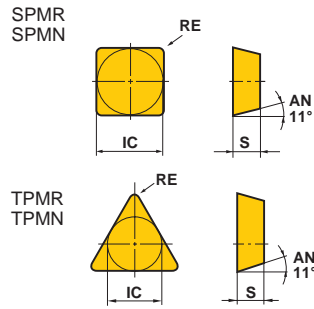
(mm)

| Order Number  | Cutting Area | NEW    |        |        | IC    | S    | RE  | D1  |
|---------------|--------------|--------|--------|--------|-------|------|-----|-----|
|               |              | MC6115 | MC6125 | MC6135 |       |      |     |     |
| WPMT040202-MV | M            | ●      | ●      | ●      | 6.35  | 2.38 | 0.2 | 2.8 |
| WPMT040204-MV | M            | ●      | ●      | ●      | 6.35  | 2.38 | 0.4 | 2.8 |
| WPMT060304-MV | M            | ●      | ●      | ●      | 9.525 | 3.18 | 0.4 | 4.4 |
| WPMT060308-MV | M            | ●      | ●      | ●      | 9.525 | 3.18 | 0.8 | 4.4 |

● = NEW

# 11° Positive Inserts (Without Hole)

M Class



|                 |             |                 |                 |             |
|-----------------|-------------|-----------------|-----------------|-------------|
| Light to Medium | Strong Edge |                 |                 |             |
| Standard        | Flat Top    |                 |                 |             |
|                 |             |                 |                 |             |
| Finish          | Light       | Light to Medium | Light to Medium | Strong Edge |
| FV              | LP          | MP              | Standard        | Flat Top    |
|                 |             |                 |                 |             |

(mm)

| Order Number | Cutting Area | NEW    |        |        | IC    | S    | RE  | D1 |
|--------------|--------------|--------|--------|--------|-------|------|-----|----|
|              |              | MC6115 | MC6125 | MC6135 |       |      |     |    |
| SPMR090304   | M            | ●      | ●      | ●      | 9.525 | 3.18 | 0.4 | -  |
| SPMR090308   | M            | ●      | ●      | ●      | 9.525 | 3.18 | 0.8 | -  |
| SPMR120304   | M            | ●      | ●      | ●      | 12.7  | 3.18 | 0.4 | -  |
| SPMR120308   | M            | ●      | ●      | ●      | 12.7  | 3.18 | 0.8 | -  |
| SPMN090308   | -            | ●      |        |        | 9.525 | 3.18 | 0.8 | -  |
| SPMN120304   | -            | ●      |        |        | 12.7  | 3.18 | 0.4 | -  |
| SPMN120308   | -            | ●      |        |        | 12.7  | 3.18 | 0.8 | -  |
| SPMN120312   | -            | ●      |        | ●      | 12.7  | 3.18 | 1.2 | -  |

| Order Number  | Cutting Area | NEW    |        |        | IC    | S    | RE  | D1 |
|---------------|--------------|--------|--------|--------|-------|------|-----|----|
|               |              | MC6115 | MC6125 | MC6135 |       |      |     |    |
| TPMR160304-FV | F            |        | ●      | ●      | 9.525 | 3.18 | 0.4 | -  |
| TPMR110304-LP | L            |        | ●      | ●      | 6.35  | 3.18 | 0.4 | -  |
| TPMR110308-LP | L            |        | ●      | ●      | 6.35  | 3.18 | 0.8 | -  |
| TPMR160304-LP | L            | ●      | ●      | ●      | 9.525 | 3.18 | 0.4 | -  |
| TPMR160308-LP | L            | ●      | ●      | ●      | 9.525 | 3.18 | 0.8 | -  |
| TPMR110304-MP | M            | ●      | ●      | ●      | 6.35  | 3.18 | 0.4 | -  |
| TPMR110308-MP | M            | ●      | ●      | ●      | 6.35  | 3.18 | 0.8 | -  |
| TPMR160304-MP | M            | ●      | ●      | ●      | 9.525 | 3.18 | 0.4 | -  |
| TPMR160308-MP | M            | ●      | ●      | ●      | 9.525 | 3.18 | 0.8 | -  |
| TPMR110304    | M            | ●      | ●      | ●      | 6.35  | 3.18 | 0.4 | -  |
| TPMR110308    | M            | ●      | ●      | ●      | 6.35  | 3.18 | 0.8 | -  |
| TPMR160304    | M            | ●      | ●      | ●      | 9.525 | 3.18 | 0.4 | -  |
| TPMR160308    | M            | ●      | ●      | ●      | 9.525 | 3.18 | 0.8 | -  |
| TPMR160312    | M            | ●      | ●      |        | 9.525 | 3.18 | 1.2 | -  |
| TPMN110304    | -            | ●      |        |        | 6.35  | 3.18 | 0.4 | -  |
| TPMN110308    | -            | ●      |        |        | 6.35  | 3.18 | 0.8 | -  |
| TPMN160304    | -            | ●      |        |        | 9.525 | 3.18 | 0.4 | -  |
| TPMN160308    | -            | ●      |        |        | 9.525 | 3.18 | 0.8 | -  |
| TPMN160312    | -            | ●      |        |        | 9.525 | 3.18 | 1.2 | -  |
| TPMN220404    | -            | ●      |        |        | 12.7  | 4.76 | 0.4 | -  |
| TPMN220408    | -            | ●      |        | ●      | 12.7  | 4.76 | 0.8 | -  |
| TPMN220412    | -            | ●      |        |        | 12.7  | 4.76 | 1.2 | -  |

● = NEW

# CVD Coated Grade for Steel Turning

## Recommended Cutting Conditions

### Negative Inserts (For External Turning)

(mm)

| Workpiece Material          | Properties            | Cutting Range | Priority | Grade | Chip Breaker | Cutting Speed<br>vc (m/min) | Feed<br>f (mm/rev) | Depth of Cut<br>ap |            |
|-----------------------------|-----------------------|---------------|----------|-------|--------------|-----------------------------|--------------------|--------------------|------------|
| <b>P</b>                    |                       |               |          |       |              |                             |                    |                    |            |
| Mild Steel                  | Hardness<br>≤180HB    | ✚             | F        | 1     | MC6125       | FY                          | 385–605            | 0.09–0.23          | 0.20–0.80  |
|                             |                       | ✚             | F        | 2     | MC6135       | FY                          | 315–480            | 0.09–0.23          | 0.20–0.80  |
|                             |                       | ✚             | L        | 1     | MC6125       | SY                          | 350–550            | 0.16–0.33          | 0.50–1.20  |
|                             |                       | ✚             | L        | 2     | MC6135       | SY                          | 290–435            | 0.16–0.33          | 0.50–1.20  |
| Carbon Steel<br>Alloy Steel | Hardness<br>180–280HB | ●             | F        | 1     | MC6115       | FP                          | 250–480            | 0.08–0.25          | 0.10–1.00  |
|                             |                       | ●             | F        | 2     | MC6125       | FP                          | 275–425            | 0.08–0.25          | 0.10–1.00  |
|                             |                       | ●             | L        | 1     | MC6115       | LP                          | 250–480            | 0.10–0.40          | 0.30–2.00  |
|                             |                       | ●             | L        | 2     | MC6125       | LP                          | 275–425            | 0.10–0.40          | 0.30–2.00  |
|                             |                       | ●             | L        | 3     | MC6115       | SH                          | 250–480            | 0.10–0.40          | 0.30–2.00  |
|                             |                       | ●             | L        | 4     | MC6125       | SH                          | 275–425            | 0.10–0.40          | 0.30–2.00  |
|                             |                       | ●             | L        | 5     | MC6115       | SA                          | 250–480            | 0.10–0.40          | 0.30–2.00  |
|                             |                       | ●             | L        | 6     | MC6125       | SA                          | 275–425            | 0.10–0.40          | 0.30–2.00  |
|                             |                       | ●             | L        | 7     | MC6115       | SW                          | 250–480            | 0.10–0.50          | 0.30–2.50  |
|                             |                       | ●             | L        | 8     | MC6125       | SW                          | 275–425            | 0.10–0.50          | 0.30–2.50  |
|                             |                       | ●             | M        | 1     | MC6115       | MP                          | 230–440            | 0.16–0.50          | 0.30–4.00  |
|                             |                       | ●             | M        | 2     | MC6125       | MP                          | 250–390            | 0.16–0.50          | 0.30–4.00  |
|                             |                       | ●             | M        | 3     | MC6115       | MA                          | 230–440            | 0.20–0.50          | 0.30–4.00  |
|                             |                       | ●             | M        | 4     | MC6125       | MA                          | 250–390            | 0.20–0.50          | 0.30–4.00  |
|                             |                       | ●             | M        | 5     | MC6115       | Std                         | 230–440            | 0.25–0.60          | 1.50–5.00  |
|                             |                       | ●             | M        | 6     | MC6125       | Std                         | 250–390            | 0.25–0.60          | 1.50–5.00  |
|                             |                       | ●             | M        | 7     | MC6115       | MW                          | 230–440            | 0.20–0.60          | 0.90–4.00  |
|                             |                       | ●             | M        | 8     | MC6125       | MW                          | 250–390            | 0.20–0.60          | 0.90–4.00  |
|                             |                       | ●             | R        | 1     | MC6115       | RP                          | 215–415            | 0.25–0.60          | 1.50–6.00  |
|                             |                       | ●             | R        | 2     | MC6125       | RP                          | 235–370            | 0.25–0.60          | 1.50–6.00  |
|                             |                       | ●             | R        | 3     | MC6115       | GH                          | 215–415            | 0.25–0.60          | 1.50–6.00  |
|                             |                       | ●             | R        | 4     | MC6125       | GH                          | 235–370            | 0.25–0.60          | 1.50–6.00  |
|                             |                       | ●             | H        | 1     | MC6125       | HX                          | 210–330            | 0.50–1.26          | 3.00–11.00 |
|                             |                       | ●             | H        | 2     | MC6135       | HX                          | 170–260            | 0.50–1.26          | 3.00–11.00 |
|                             |                       | ●             | H        | 3     | MC6125       | HV                          | 175–270            | 0.58–1.26          | 4.00–12.00 |
|                             |                       | ●             | H        | 4     | MC6135       | HV                          | 140–215            | 0.58–1.26          | 4.00–12.00 |
|                             |                       | ●             | F        | 1     | MC6115       | FP                          | 250–480            | 0.08–0.25          | 0.10–1.00  |
|                             |                       | ●             | F        | 2     | MC6125       | FP                          | 275–425            | 0.08–0.25          | 0.10–1.00  |
|                             |                       | ●             | L        | 1     | MC6115       | LP                          | 250–480            | 0.10–0.40          | 0.30–2.00  |
|                             |                       | ●             | L        | 2     | MC6125       | LP                          | 275–425            | 0.10–0.40          | 0.30–2.00  |
|                             |                       | ●             | L        | 3     | MC6115       | SH                          | 250–480            | 0.10–0.40          | 0.30–2.00  |
|                             |                       | ●             | L        | 4     | MC6125       | SH                          | 275–425            | 0.10–0.40          | 0.30–2.00  |
|                             |                       | ●             | L        | 5     | MC6115       | SA                          | 250–480            | 0.10–0.40          | 0.30–2.00  |
|                             |                       | ●             | L        | 6     | MC6125       | SA                          | 275–425            | 0.10–0.40          | 0.30–2.00  |
|                             |                       | ●             | L        | 7     | MC6115       | SW                          | 250–480            | 0.10–0.50          | 0.30–2.50  |
|                             |                       | ●             | L        | 8     | MC6125       | SW                          | 275–425            | 0.10–0.50          | 0.30–2.50  |
|                             |                       | ●             | M        | 1     | MC6125       | MP                          | 250–390            | 0.16–0.50          | 0.30–4.00  |
|                             |                       | ●             | M        | 2     | MC6135       | MP                          | 205–310            | 0.16–0.50          | 0.30–4.00  |
|                             |                       | ●             | M        | 3     | MC6125       | MA                          | 250–390            | 0.20–0.50          | 0.30–4.00  |
|                             |                       | ●             | M        | 4     | MC6135       | MA                          | 205–310            | 0.20–0.50          | 0.30–4.00  |
| ●                           | M                     | 5             | MC6125   | MH    | 250–390      | 0.20–0.55                   | 1.00–4.00          |                    |            |
| ●                           | M                     | 6             | MC6135   | MH    | 205–310      | 0.20–0.55                   | 1.00–4.00          |                    |            |
| ●                           | M                     | 7             | MC6125   | Std   | 250–390      | 0.25–0.60                   | 1.50–5.00          |                    |            |
| ●                           | M                     | 8             | MC6135   | Std   | 205–310      | 0.25–0.60                   | 1.50–5.00          |                    |            |
| ●                           | M                     | 9             | MC6125   | MW    | 250–390      | 0.20–0.60                   | 0.90–4.00          |                    |            |
| ●                           | M                     | 10            | MC6135   | MW    | 205–310      | 0.20–0.60                   | 0.90–4.00          |                    |            |

Note 1) Recommended cutting conditions for 5°/7°/11° positive inserts are provided as a guideline only.  
Verify the recommended conditions for each boring bar as cutting conditions for internal machining will vary depending on the length of overhang.

Cutting Conditions : ● : Stable Cutting ● : General Cutting ✚ : Unstable Cutting  
Cutting Area : L : Light Cutting M : Medium Cutting R : Rough Cutting

|                             |                       |               |   |          |        |              |                             | (mm)              |                    |
|-----------------------------|-----------------------|---------------|---|----------|--------|--------------|-----------------------------|-------------------|--------------------|
| Workpiece Material          | Properties            | Cutting Range |   | Priority | Grade  | Chip Breaker | Cutting Speed $v_c$ (m/min) | Feed $f$ (mm/rev) | Depth of Cut $a_p$ |
| Carbon Steel<br>Alloy Steel | Hardness<br>180–280HB | ●             | R | 1        | MC6135 | RP           | 190–290                     | 0.25–0.60         | 1.50–6.00          |
|                             |                       | ●             | R | 2        | MC6125 | RP           | 235–370                     | 0.25–0.60         | 1.50–6.00          |
|                             |                       | ●             | R | 3        | MC6135 | GH           | 190–290                     | 0.25–0.60         | 1.50–6.00          |
|                             |                       | ●             | R | 4        | MC6125 | GH           | 235–370                     | 0.25–0.60         | 1.50–6.00          |
|                             |                       | ●             | H | 1        | MC6135 | HX           | 170–260                     | 0.50–1.26         | 3.00–11.00         |
|                             |                       | ●             | H | 2        | MC6125 | HX           | 210–330                     | 0.50–1.26         | 3.00–11.00         |
|                             |                       | ●             | H | 3        | MC6135 | HV           | 140–215                     | 0.58–1.26         | 4.00–12.00         |
|                             |                       | ●             | H | 4        | MC6125 | HV           | 175–270                     | 0.58–1.26         | 4.00–12.00         |
|                             |                       | ✚             | F | 1        | MC6135 | FP           | 245–370                     | 0.08–0.25         | 0.10–1.00          |
|                             |                       | ✚             | F | 2        | MC6125 | FP           | 300–465                     | 0.08–0.25         | 0.10–1.00          |
|                             |                       | ✚             | L | 1        | MC6135 | LP           | 225–340                     | 0.10–0.40         | 0.30–2.00          |
|                             |                       | ✚             | L | 2        | MC6125 | LP           | 275–425                     | 0.10–0.40         | 0.30–2.00          |
|                             |                       | ✚             | L | 3        | MC6135 | SH           | 225–340                     | 0.10–0.40         | 0.30–2.00          |
|                             |                       | ✚             | L | 4        | MC6125 | SH           | 275–425                     | 0.10–0.40         | 0.30–2.00          |
|                             |                       | ✚             | L | 5        | MC6135 | SA           | 225–340                     | 0.10–0.40         | 0.30–2.00          |
|                             |                       | ✚             | L | 6        | MC6125 | SA           | 275–425                     | 0.10–0.40         | 0.30–2.00          |
|                             |                       | ✚             | M | 1        | MC6135 | MP           | 205–310                     | 0.16–0.50         | 0.30–4.00          |
|                             |                       | ✚             | M | 2        | MC6125 | MP           | 250–390                     | 0.16–0.50         | 0.30–4.00          |
|                             |                       | ✚             | M | 3        | MC6135 | MA           | 205–310                     | 0.20–0.50         | 0.30–4.00          |
|                             |                       | ✚             | M | 4        | MC6125 | MA           | 250–390                     | 0.20–0.50         | 0.30–4.00          |
|                             |                       | ✚             | M | 5        | MC6135 | MH           | 205–310                     | 0.20–0.55         | 1.00–4.00          |
|                             |                       | ✚             | M | 6        | MC6125 | MH           | 250–390                     | 0.20–0.55         | 1.00–4.00          |
|                             |                       | ✚             | M | 7        | MC6135 | Std          | 205–310                     | 0.25–0.60         | 1.50–5.00          |
|                             |                       | ✚             | M | 8        | MC6125 | Std          | 250–390                     | 0.25–0.60         | 1.50–5.00          |
|                             |                       | ✚             | M | 9        | MC6135 | MW           | 205–310                     | 0.20–0.60         | 0.90–4.00          |
|                             |                       | ✚             | M | 10       | MC6125 | MW           | 250–390                     | 0.20–0.60         | 0.90–4.00          |
|                             |                       | ✚             | R | 1        | MC6135 | RP           | 190–290                     | 0.25–0.60         | 1.50–6.00          |
|                             |                       | ✚             | R | 2        | MC6125 | RP           | 235–370                     | 0.25–0.60         | 1.50–6.00          |
|                             |                       | ✚             | R | 3        | MC6135 | GH           | 190–290                     | 0.25–0.60         | 1.50–6.00          |
|                             |                       | ✚             | R | 4        | MC6125 | GH           | 235–370                     | 0.25–0.60         | 1.50–6.00          |
|                             |                       | ✚             | H | 1        | MC6135 | HX           | 170–260                     | 0.50–1.26         | 3.00–11.00         |
|                             |                       | ✚             | H | 2        | MC6125 | HX           | 210–330                     | 0.50–1.26         | 3.00–11.00         |

Note 1) Recommended cutting conditions for 5°/7°/11° positive inserts are provided as a guideline only.  
Verify the recommended conditions for each boring bar as cutting conditions for internal machining will vary depending on the length of overhang.

# CVD Coated Grade for Steel Turning

## Recommended Cutting Conditions

### 5° 7° Positive Inserts (For External Turning)

(mm)

| Workpiece Material          | Properties            | Cutting Range               | Priority              | Grade | Chip Breaker | Cutting Speed<br>vc (m/min) | Feed<br>f (mm/rev) | Depth of Cut<br>ap |           |
|-----------------------------|-----------------------|-----------------------------|-----------------------|-------|--------------|-----------------------------|--------------------|--------------------|-----------|
| <b>P</b>                    |                       |                             |                       |       |              |                             |                    |                    |           |
| Mild Steel                  | Hardness<br>≤180HB    | ●                           | F                     | 1     | MC6115       | FP                          | 295–570            | 0.04–0.20          | 0.20–0.90 |
|                             |                       | ●                           | F                     | 2     | MC6115       | FV                          | 295–570            | 0.04–0.20          | 0.20–0.90 |
|                             |                       | ●                           | L                     | 1     | MC6115       | LP                          | 295–570            | 0.06–0.25          | 0.20–1.00 |
|                             |                       | ●                           | L                     | 2     | MC6115       | SW                          | 295–570            | 0.06–0.24          | 0.20–1.50 |
|                             |                       | ●                           | M                     | 1     | MC6115       | MP                          | 245–475            | 0.08–0.30          | 0.30–2.00 |
|                             |                       | ●                           | M                     | 2     | MC6115       | MV                          | 245–475            | 0.08–0.30          | 0.30–2.00 |
|                             |                       | ●                           | M                     | 3     | MC6115       | MW                          | 245–475            | 0.10–0.35          | 0.80–2.50 |
|                             |                       | ✚                           | F                     | 1     | MC6125       | FP                          | 320–505            | 0.04–0.20          | 0.20–0.90 |
|                             |                       | ✚                           | F                     | 2     | MC6135       | FP                          | 265–400            | 0.04–0.20          | 0.20–0.90 |
|                             |                       | ✚                           | L                     | 1     | MC6125       | LP                          | 320–505            | 0.06–0.25          | 0.20–1.00 |
|                             |                       | ✚                           | L                     | 2     | MC6135       | LP                          | 265–400            | 0.06–0.25          | 0.20–1.00 |
|                             |                       | ✚                           | L                     | 3     | MC6125       | SW                          | 320–505            | 0.06–0.24          | 0.20–1.50 |
|                             |                       | ✚                           | M                     | 1     | MC6125       | MP                          | 270–420            | 0.08–0.30          | 0.30–2.00 |
|                             |                       | ✚                           | M                     | 2     | MC6135       | MP                          | 220–330            | 0.08–0.30          | 0.30–2.00 |
|                             |                       | Carbon Steel<br>Alloy Steel | Hardness<br>180–280HB | ●     | F            | 1                           | MC6115             | FP                 | 220–420   |
| ●                           | F                     |                             |                       | 2     | MC6125       | FP                          | 240–370            | 0.04–0.20          | 0.20–0.90 |
| ●                           | F                     |                             |                       | 3     | MC6115       | FV                          | 220–420            | 0.04–0.20          | 0.20–0.90 |
| ●                           | L                     |                             |                       | 1     | MC6115       | LP                          | 220–420            | 0.06–0.25          | 0.20–1.00 |
| ●                           | L                     |                             |                       | 2     | MC6125       | LP                          | 240–370            | 0.06–0.25          | 0.20–1.00 |
| ●                           | M                     |                             |                       | 1     | MC6125       | MP                          | 200–310            | 0.08–0.30          | 0.30–2.00 |
| ●                           | M                     |                             |                       | 2     | MC6115       | MP                          | 180–350            | 0.08–0.30          | 0.30–2.00 |
| ●                           | M                     |                             |                       | 3     | MC6125       | MV                          | 200–310            | 0.08–0.30          | 0.30–2.00 |
| ●                           | M                     |                             |                       | 4     | MC6115       | MV                          | 180–350            | 0.08–0.30          | 0.30–2.00 |
| ●                           | M                     |                             |                       | 5     | MC6115       | MW                          | 180–350            | 0.10–0.35          | 0.80–2.50 |
| ✚                           | F                     |                             |                       | 1     | MC6125       | FP                          | 240–370            | 0.04–0.20          | 0.20–0.90 |
| ✚                           | F                     |                             |                       | 2     | MC6135       | FP                          | 195–295            | 0.04–0.20          | 0.20–0.90 |
| ✚                           | F                     |                             |                       | 3     | MC6125       | FV                          | 240–370            | 0.04–0.20          | 0.20–0.90 |
| ✚                           | L                     |                             |                       | 1     | MC6125       | LP                          | 240–370            | 0.06–0.25          | 0.20–1.00 |
| ✚                           | L                     |                             |                       | 2     | MC6135       | LP                          | 195–295            | 0.06–0.25          | 0.20–1.00 |
| ✚                           | L                     | 3                           | MC6125                | SW    | 240–370      | 0.06–0.24                   | 0.20–1.50          |                    |           |
| ✚                           | M                     | 1                           | MC6125                | MP    | 200–310      | 0.08–0.30                   | 0.30–2.00          |                    |           |
| ✚                           | M                     | 2                           | MC6135                | MP    | 160–245      | 0.08–0.30                   | 0.30–2.00          |                    |           |
| ✚                           | M                     | 3                           | MC6125                | MV    | 200–310      | 0.08–0.30                   | 0.30–2.00          |                    |           |
| Carbon Steel<br>Alloy Steel | Hardness<br>280–350HB | ●                           | F                     | 1     | MC6115       | FP                          | 155–295            | 0.04–0.20          | 0.20–0.90 |
|                             |                       | ●                           | F                     | 2     | MC6115       | FV                          | 155–295            | 0.04–0.20          | 0.20–0.90 |
|                             |                       | ●                           | L                     | 1     | MC6115       | LP                          | 155–295            | 0.06–0.25          | 0.20–1.00 |
|                             |                       | ●                           | M                     | 1     | MC6115       | MP                          | 130–245            | 0.08–0.30          | 0.30–2.00 |
|                             |                       | ●                           | M                     | 2     | MC6115       | MV                          | 130–245            | 0.08–0.30          | 0.30–2.00 |
|                             |                       | ✚                           | F                     | 1     | MC6125       | FP                          | 170–265            | 0.04–0.20          | 0.20–0.90 |
|                             |                       | ✚                           | F                     | 2     | MC6135       | FP                          | 135–210            | 0.04–0.20          | 0.20–0.90 |
|                             |                       | ✚                           | L                     | 1     | MC6125       | LP                          | 170–265            | 0.06–0.25          | 0.20–1.00 |
|                             |                       | ✚                           | L                     | 2     | MC6135       | LP                          | 135–210            | 0.06–0.25          | 0.20–1.00 |
|                             |                       | ✚                           | M                     | 1     | MC6125       | MP                          | 140–220            | 0.08–0.30          | 0.30–2.00 |
|                             |                       | ✚                           | M                     | 2     | MC6135       | MP                          | 115–175            | 0.08–0.30          | 0.30–2.00 |
| ✚                           | M                     | 3                           | MC6125                | MV    | 140–220      | 0.08–0.30                   | 0.30–2.00          |                    |           |

Note 1) Recommended cutting conditions for 5°/7°/11° positive inserts are provided as a guideline only.

Verify the recommended conditions for each boring bar as cutting conditions for internal machining will vary depending on the length of overhang.

Note 2) Please scan the QR code for a pamphlet of the recommended conditions for the XCMT profile holder insert.



Cutting Conditions : ● : Stable Cutting ● : General Cutting ✚ : Unstable Cutting  
Cutting Area : L : Light Cutting M : Medium Cutting R : Rough Cutting

### 11° Positive Inserts (For External Turning)

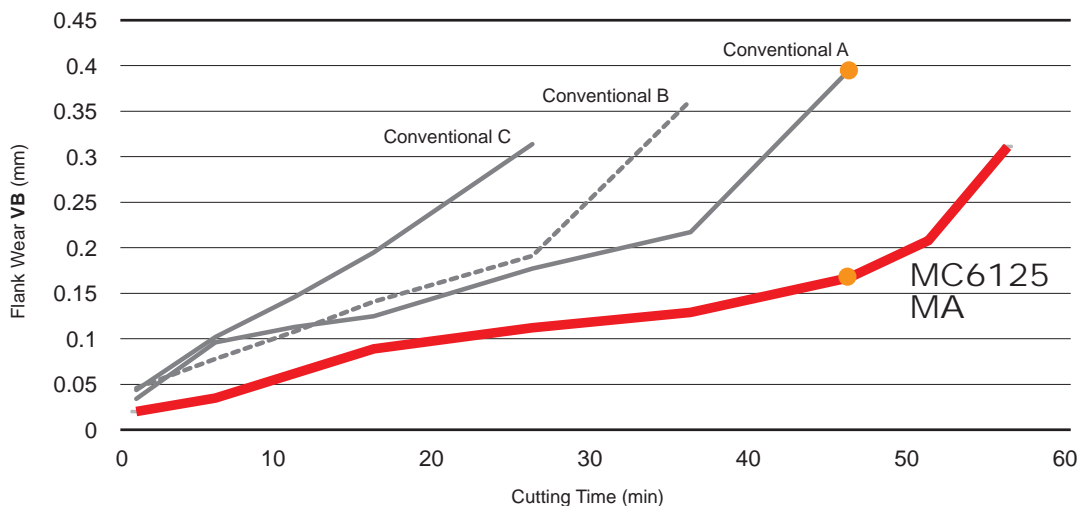
(mm)

| Workpiece Material          | Properties            | Cutting Range | Priority | Grade | Chip Breaker | Cutting Speed<br>vc (m/min) | Feed<br>f (mm/rev) | Depth of Cut<br>ap |           |
|-----------------------------|-----------------------|---------------|----------|-------|--------------|-----------------------------|--------------------|--------------------|-----------|
| <b>P</b>                    |                       |               |          |       |              |                             |                    |                    |           |
| Mild Steel                  | Hardness<br>≤180HB    | ●             | F        | 1     | MC6125       | FP                          | 320–505            | 0.04–0.20          | 0.20–0.90 |
|                             |                       | ●             | F        | 2     | MC6125       | FV                          | 320–505            | 0.04–0.20          | 0.20–0.90 |
|                             |                       | ●             | L        | 1     | MC6125       | LP                          | 320–505            | 0.06–0.25          | 0.20–1.00 |
|                             |                       | ●             | L        | 2     | MC6115       | R-Std                       | 245–475            | 0.08–0.30          | 0.30–2.00 |
|                             |                       | ●             | M        | 1     | MC6125       | MP                          | 270–420            | 0.08–0.30          | 0.30–2.00 |
|                             |                       | ●             | M        | 2     | MC6115       | MP                          | 245–475            | 0.08–0.30          | 0.30–2.00 |
|                             |                       | ●             | M        | 3     | MC6125       | MV                          | 270–420            | 0.08–0.30          | 0.30–2.00 |
|                             |                       | ●             | M        | 4     | MC6115       | MV                          | 245–475            | 0.08–0.30          | 0.30–2.00 |
|                             |                       | ⊕             | L        | 1     | MC6125       | LP                          | 320–505            | 0.06–0.25          | 0.20–1.00 |
|                             |                       | ⊕             | L        | 2     | MC6135       | LP                          | 265–400            | 0.06–0.25          | 0.20–1.00 |
|                             |                       | ⊕             | M        | 1     | MC6125       | MP                          | 270–420            | 0.08–0.30          | 0.30–2.00 |
|                             |                       | ⊕             | M        | 2     | MC6135       | MP                          | 220–330            | 0.08–0.30          | 0.30–2.00 |
|                             |                       | ⊕             | M        | 3     | MC6125       | MV                          | 270–420            | 0.08–0.30          | 0.30–2.00 |
|                             |                       | ⊕             | M        | 4     | MC6135       | MV                          | 220–330            | 0.08–0.30          | 0.30–2.00 |
| Carbon Steel<br>Alloy Steel | Hardness<br>180–280HB | ●             | F        | 1     | MC6125       | FP                          | 240–370            | 0.04–0.20          | 0.20–0.90 |
|                             |                       | ●             | F        | 2     | MC6125       | FV                          | 240–370            | 0.04–0.20          | 0.20–0.90 |
|                             |                       | ●             | L        | 1     | MC6125       | LP                          | 240–370            | 0.06–0.25          | 0.20–1.00 |
|                             |                       | ●             | L        | 2     | MC6115       | LP                          | 220–420            | 0.06–0.25          | 0.20–1.00 |
|                             |                       | ●             | M        | 1     | MC6125       | MP                          | 200–310            | 0.08–0.30          | 0.30–2.00 |
|                             |                       | ●             | M        | 2     | MC6125       | MV                          | 200–310            | 0.08–0.30          | 0.30–2.00 |
|                             |                       | ●             | M        | 3     | MC6115       | R-Std                       | 180–350            | 0.08–0.30          | 0.30–2.00 |
|                             |                       | ●             | M        | 4     | MC6125       | R-Std                       | 200–310            | 0.08–0.30          | 0.30–2.00 |
|                             |                       | ⊕             | L        | 1     | MC6125       | LP                          | 240–370            | 0.06–0.25          | 0.20–1.00 |
|                             |                       | ⊕             | L        | 2     | MC6135       | LP                          | 195–295            | 0.06–0.25          | 0.20–1.00 |
|                             |                       | ⊕             | M        | 1     | MC6125       | MP                          | 200–310            | 0.08–0.30          | 0.30–2.00 |
|                             |                       | ⊕             | M        | 2     | MC6135       | MP                          | 160–245            | 0.08–0.30          | 0.30–2.00 |
|                             |                       | ⊕             | M        | 3     | MC6125       | MV                          | 200–310            | 0.08–0.30          | 0.30–2.00 |
|                             |                       | ⊕             | M        | 4     | MC6135       | MV                          | 160–245            | 0.08–0.30          | 0.30–2.00 |

## Cutting Performance

### Machining SCr420H : Comparison of Wear Resistance During Continuous Wet Cutting

The thick coating exclusively for MC6125 effectively suppresses early wear.



MC6125 MA 46 min.

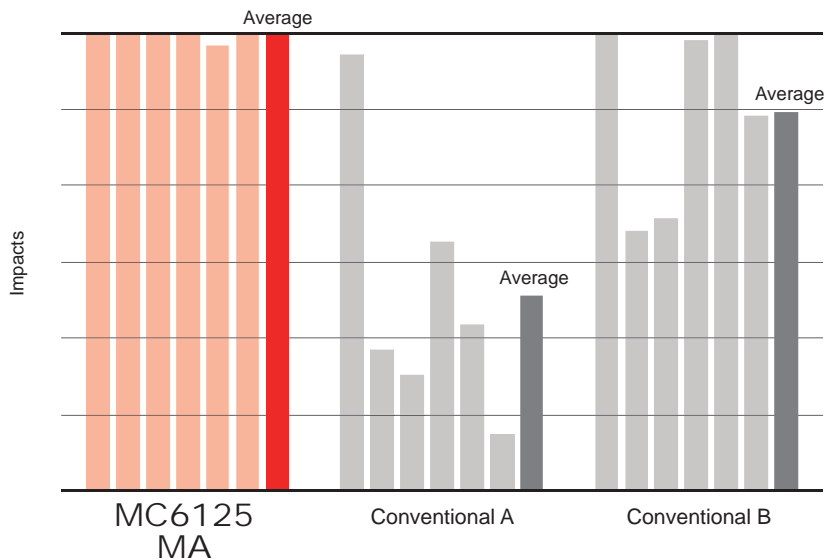


Conventional A 46 min.

<Cutting Conditions>  
 Work Material : JIS SCr420H  
 Inserts : CNMG120408-00  
 Cutting Speed :  $v_c=300$  m/min  
 Feed per Rev. :  $f=0.3$  mm/rev  
 Depth of Cut :  $a_p=1.5$  mm  
 Cutting Mode : Wet Cutting

### Comparison of Toughness During Interrupted Cutting

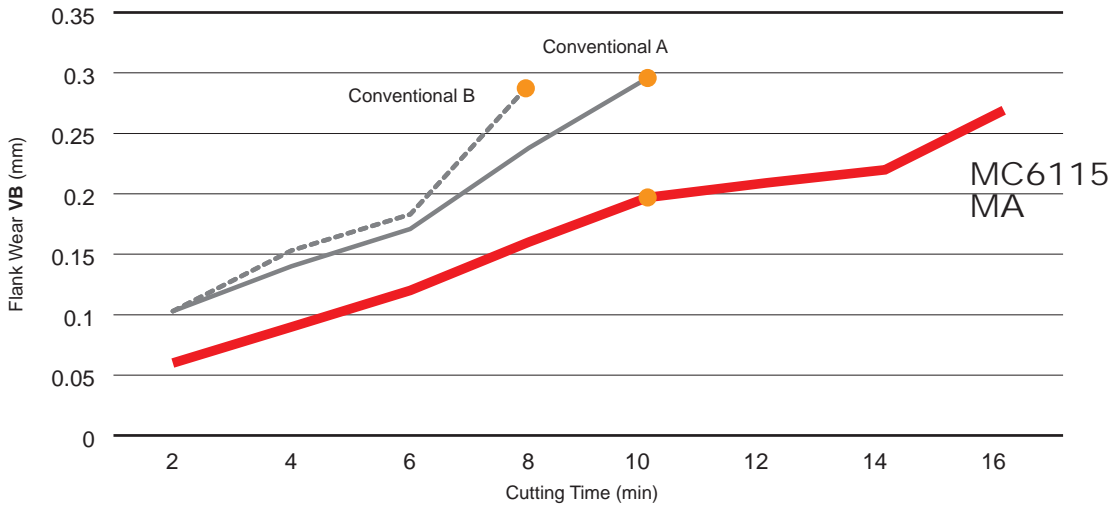
Provides stable cutting under severe cutting conditions that are likely to cause sudden fracturing.



<Cutting Conditions>  
 Work Material : JIS SCM440  
 Inserts : CNMG120408-00  
 Cutting Speed :  $v_c=200$  m/min  
 Feed per Rev. :  $f=0.25$  mm/rev  
 Depth of Cut :  $a_p=1.5$  mm  
 Cutting Mode : Wet Cutting

## Machining S45C : Comparison of Wear Resistance During Continuous Dry Cutting

The "Super" Nano Texture Technology increases tool life even when dry cutting by suppressing crater wear.

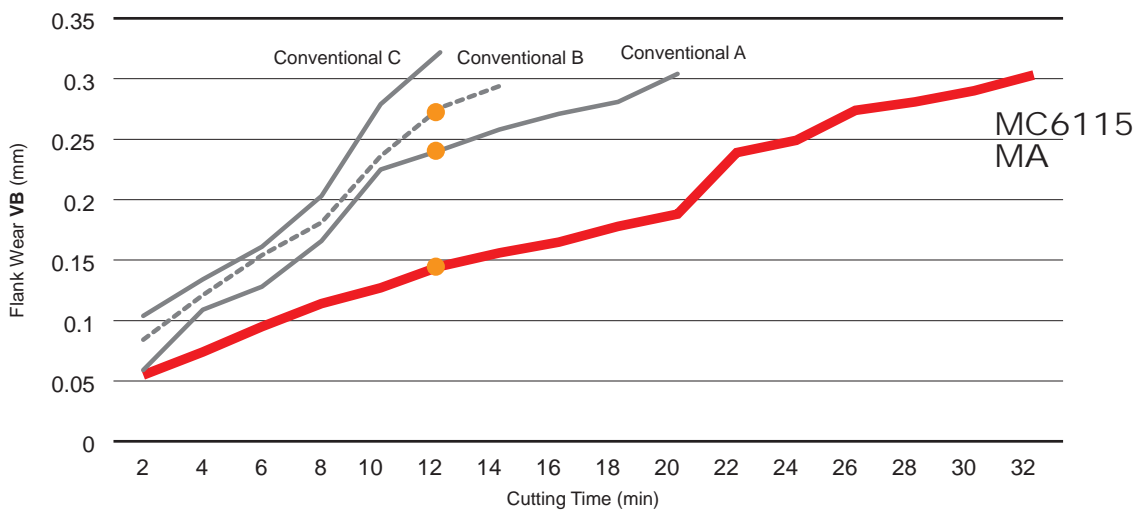


MC6115 10 min. Conventional A 10 min. Conventional B 8 min.

<Cutting Conditions>  
 Work Material : JIS S45C  
 Inserts : CNMG120408-   
 Cutting Speed :  $v_c=300$  m/min  
 Feed per Rev. :  $f=0.3$  mm/rev  
 Depth of Cut :  $a_p=1.5$  mm  
 Cutting Mode : Dry Cutting

## Machining SUJ2 : Comparison of Wear Resistance During Continuous Wet Cutting

The thick coating provides high flank wear resistance.



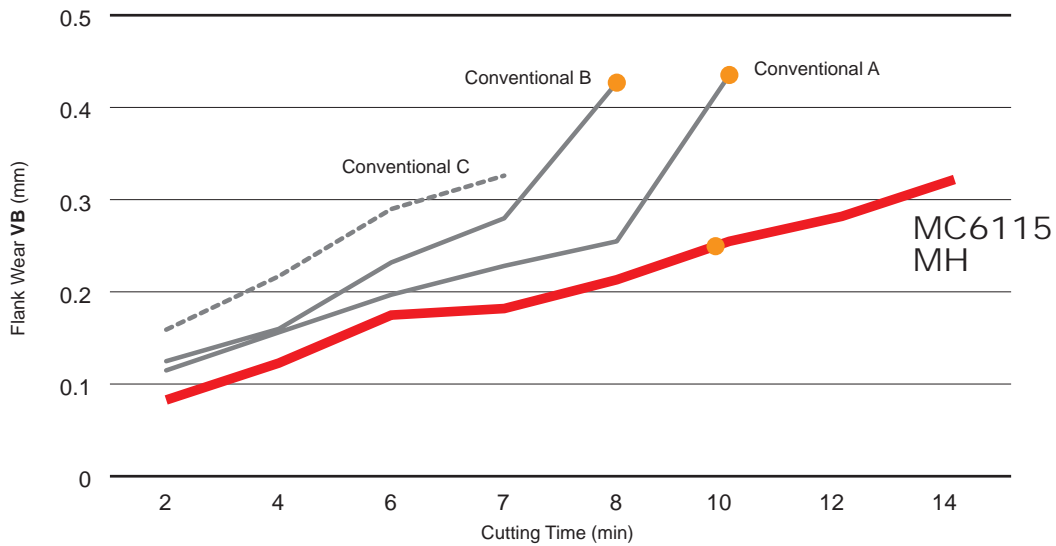
MC6115 12 min. Conventional A 12 min. Conventional B 12 min.

<Cutting Conditions>  
 Work Material : JIS SUJ2  
 Inserts : CNMG120408-   
 Cutting Speed :  $v_c=300$  m/min  
 Feed per Rev. :  $f=0.3$  mm/rev  
 Depth of Cut :  $a_p=1.5$  mm  
 Cutting Mode : Wet Cutting

## Cutting Performance

### Machining SCM440 : Comparison of Wear Resistance During Continuous Wet Cutting


MC6115 with high edge strength chipbreaker can also enable excellent wear resistance during high speed turning.





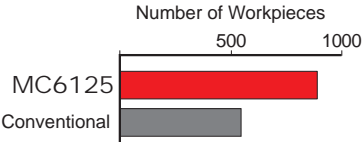
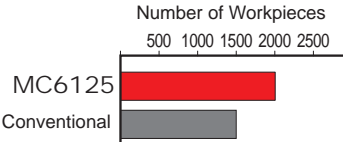
MC6115 10 min.


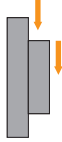
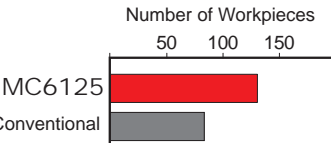
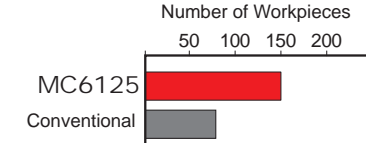
Conventional A 10 min.

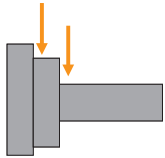
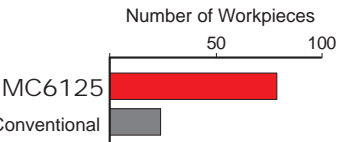
Conventional B 8 min.

<Cutting Conditions>  
 Work Material : JIS SCM440  
 Inserts : CNMG120408-  
 Cutting Speed:  $v_c=350\text{m/min}$   
 Feed per Rev. :  $f=0.3\text{mm/rev}$   
 Depth of Cut :  $a_p=1.5\text{mm}$   
 Cutting Mode : Wet Cutting

## Examples of Usage

| Insert             |  | CNMG120408-MA   | WNMG080408-MP  |  |
|--------------------|--|---|--|--|
| Workpiece Material | JIS S45C   |  |   |  |
|                    | Component  | Hex Bar Parts   | Automotive Parts   |  |
| Application        |  | Interrupted Finish Turning  | External Turning and Facing  |  |
| Cutting Conditions | Cutting Speed $v_c$ (m/min)  | 150   | 80   |  |
|                    | Feed per Rev. $f$ (mm/rev)   | 0.2   | 0.1-0.5  |  |
|                    | Depth of Cut $a_p$ (mm)  | 2.0, 1.6  | 0.5  |  |
| Cutting Mode       |  | Wet Cutting   | Wet Cutting  |  |
| Results            |  <p>Number of Workpieces: 500, 1000</p> <p>MC6125</p> <p>Conventional</p> |   |  <p>Number of Workpieces: 500, 1000, 1500, 2000, 2500</p> <p>MC6125</p> <p>Conventional</p> |  |
|                    | <p>Conventional products fractured after chipping but MC6125 formed good chip shapes and achieved a longer tool life.</p>                                  |   | <p>MC6125 achieved more than 1.3 times longer tool life due to its high wear resistance.</p>   |  |

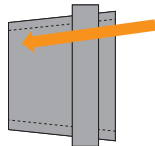
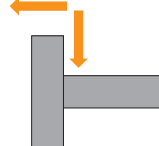
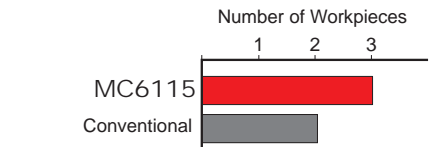
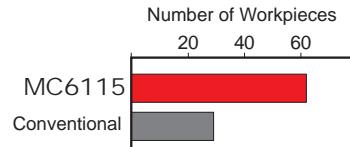
| Insert             |   | DNMG150412-SH   | CNMG120408-MH  |  |
|--------------------|---|---|--|--|
| Workpiece Material | JIS S53C  |  |    |  |
|                    | Component   | –   | Hun Parts  |  |
| Application        |   | Interrupted Finish Turning  | Face Turning   |  |
| Cutting Conditions | Cutting Speed $v_c$ (m/min)   | 200   | 200→240  |  |
|                    | Feed per Rev. $f$ (mm/rev)  | 0.3   | 0.25   |  |
|                    | Depth of Cut $a_p$ (mm)   | 1.2   | 2.0  |  |
| Cutting Mode       |   | Wet Cutting   | Wet Cutting  |  |
| Results            |  <p>Number of Workpieces: 50, 100, 150</p> <p>MC6125</p> <p>Conventional</p> |   |  <p>Number of Workpieces: 50, 100, 150, 200</p> <p>MC6125</p> <p>Conventional</p> |  |
|                    | <p>MC6125 provided a stable cutting action and achieved 1.5 times more tool life than conventional products.</p>  |   | <p>MC6125 improved efficiency and tool life by increasing the cutting speed.</p>   |  |

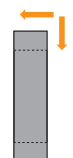

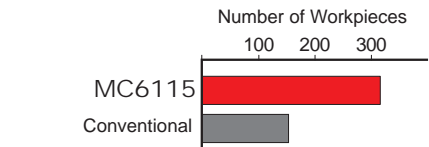
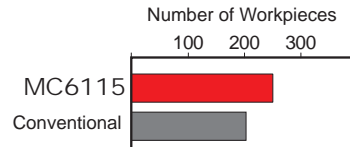
| Insert             |  | CNMG120412-RP   |
|--------------------|--|---|
| Workpiece Material | JIS SCM435   |  |
|                    | Component  | Flange Parts  |
| Application        |  | External Turning and Facing   |
| Cutting Conditions | Cutting Speed $v_c$ (m/min)  | 200   |
|                    | Feed per Rev. $f$ (mm/rev)   | 0.25  |
|                    | Depth of Cut $a_p$ (mm)  | 1.5   |
| Cutting Mode       |  | Wet Cutting   |
| Results            |  <p>Number of Workpieces: 50, 100</p> <p>MC6125</p> <p>Conventional</p> |   |
|                    | <p>Conventional products machined an inconsistent number of components. MC6125 was more consistent and improved tool life.</p>                             |   |

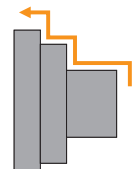
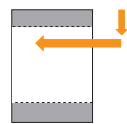
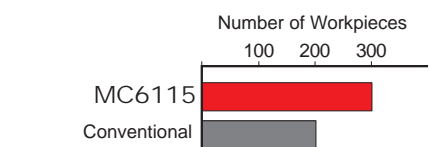
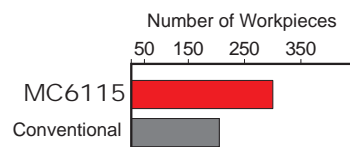
The application examples are from customers workpieces and can therefore differ from the recommended cutting conditions.

# CVD Coated Grade for Steel Turning

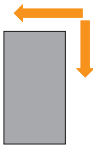
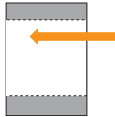




## Examples of Usage

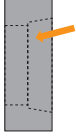


| Insert             |  | CNMG120408-MA   | WNMG080408-MA   |  |
|--------------------|--|---|---|--|
| Workpiece Material | JIS SCM440   |  | JIS SCr440   |  |
|                    | Component  | Heavy Machinery Parts   | Automotive Parts  |  |
| Application        |  | Internal Turning  | External Face Turning   |  |
| Cutting Conditions | Cutting Speed $v_c$ (m/min)  | 150   | 290   |  |
|                    | Feed per Rev. $f$ (mm/rev)   | 0.3   | 0.25  |  |
|                    | Depth of Cut $a_p$ (mm)  | 1.5   | 1.0   |  |
| Cutting Mode       |  | Wet Cutting   | Wet Cutting   |  |
| Results            |  <p>MC6115</p> <p>Conventional</p> <p>Number of Workpieces: 1, 2, 3</p> <p>Tool life increased x 1.5 on a large workpiece (inner diameter 430 mm)</p> |   |  <p>MC6115</p> <p>Conventional</p> <p>Number of Workpieces: 20, 40, 60</p> <p>The excellent wear resistance of MC6115 helped achieve double tool life.</p> |  |

| Insert             |  | WNMG080408-MA  | WNMG080412-MP  |  |
|--------------------|--|--|--|--|
| Workpiece Material | JIS SUJ2   |  | JIS SCr420H    |  |
|                    | Component  | Bearing Parts  | Machine Parts  |  |
| Application        |  | External Face Turning  | Face Turning   |  |
| Cutting Conditions | Cutting Speed $v_c$ (m/min)  | 198-278  | 235  |  |
|                    | Feed per Rev. $f$ (mm/rev)   | 0.21-0.3   | 0.35   |  |
|                    | Depth of Cut $a_p$ (mm)  | 1.0  | 1.0  |  |
| Cutting Mode       |  | Wet Cutting  | Wet Cutting  |  |
| Results            |  <p>MC6115</p> <p>Conventional</p> <p>Number of Workpieces: 100, 200, 300</p> <p>The excellent wear resistance of MC6115 helped achieve double tool life.</p> |  |  <p>MC6115</p> <p>Conventional</p> <p>Number of Workpieces: 100, 200, 300</p> <p>MC6115 achieved longer tool life compared to a conventional product.</p> |  |

| Insert             |  | WNMG080408-MP   | WNMG080416-MA  |  |
|--------------------|--|---|--|--|
| Workpiece Material | JIS SCr440   |  | JIS S50C    |  |
|                    | Component  | Hub   | Joint Parts  |  |
| Application        |  | External Turning and Facing   | Internal Turning and Facing  |  |
| Cutting Conditions | Cutting Speed $v_c$ (m/min)  | 300   | 215  |  |
|                    | Feed per Rev. $f$ (mm/rev)   | 0.25-0.35   | 0.25-0.27  |  |
|                    | Depth of Cut $a_p$ (mm)  | 1-2.5   | 3.15   |  |
| Cutting Mode       |  | Wet Cutting   | Wet Cutting  |  |
| Results            |  <p>MC6115</p> <p>Conventional</p> <p>Number of Workpieces: 100, 200, 300</p> <p>Superior wear resistance compared to conventional products meant tool life was extended.</p> |   |  <p>MC6115</p> <p>Conventional</p> <p>Number of Workpieces: 50, 150, 250, 350</p> <p>Excellent wear resistance during rough machining of forged product applications helped achieve 150% tool life.</p> |  |

The application examples are from customers workpieces and can therefore differ from the recommended cutting conditions.

| Insert             | <b>DNMG150612-SA</b>  | <b>CNMG120408-MP</b>  |
|--------------------|---|---|
| Workpiece Material | Bearing Steel<br>  | JIS SCr440<br>   |
| Component          | Bearing Parts   | Shaft Parts   |
| Application        | External Turning and Facing   | Internal Turning  |
| Cutting Conditions | Cutting Speed $v_c$ (m/min)   | 260   |
|                    | Feed per Rev. $f$ (mm/rev)  | 0.3-0.35  |
|                    | Depth of Cut $a_p$ (mm)   | 0.5   |
| Cutting Mode       | Wet Cutting   | Wet Cutting   |
| Results            | <p>Number of Workpieces<br/>50 100 150 200 250</p> <p>MC6115 </p> <p>Conventional </p> <p>Extreme resistance to chipping achieved 150% tool life and enabled easy identification of wear.</p> | <p>Number of Workpieces<br/>50 150 250 350</p> <p>MC6115 </p> <p>Conventional </p> <p>Number of components machined increased by 50% due to improved wear resistance.</p> |

| Insert             | <b>WNMG080408-MP</b>  |      |
|--------------------|---|------|
| Workpiece Material | Heated Tool Steel<br>   |      |
| Component          | Die Casting Parts   |      |
| Application        | Internal Turning  |      |
| Cutting Conditions | Cutting Speed $v_c$ (m/min)   | 160  |
|                    | Feed per Rev. $f$ (mm/rev)  | 0.25 |
|                    | Depth of Cut $a_p$ (mm)   | 2.0  |
| Cutting Mode       | Wet Cutting   |      |
| Results            | <p>Number of Workpieces<br/>1 2 3 4</p> <p>MC6115 </p> <p>Conventional </p> <p>MC6115 gave 1.5 x longer tool life even when machining heat treated materials.</p> |      |

The application examples are from customers workpieces and can therefore differ from the recommended cutting conditions.



## CVD Coated Grade for Steel Turning

# MC6100 Series

### Environmentally Friendly Product

This product has been certified as an environmentally friendly product in the machine tool industry by the Japan Cutting & Wear-resistant Tool Association. This is a product unique to the industry, in harmony with the environment, and with the aim of fulfilling the social responsibilities of the machine tool industry.

The Japan Cutting & Wear-resistant Tool Association evaluates the product's environmental impact during the manufacturing and usage stages and issues a certification according to the evaluation score.



### For People, Society and the Earth

More information about MITSUBISHI MATERIALS' efforts to address social and environmental issues can be found in the website below or by scanning the QR code.

<https://mmc.disclosure.site/en/>



#### For Your Safety

●Don't handle inserts and chips without gloves. ●Please machine within the recommended application range and exchange expired tools with new ones in advance of breakage. ●Please use safety covers and wear safety glasses. ●When using compounded cutting oils, please take fire precautions. ●When attaching inserts or spare parts, please use only the correct wrench or driver. ●When using rotating tools, please make a trial run to check run-out, vibration and abnormal sounds etc.

This brochure is published by

 **MITSUBISHI MATERIALS CORPORATION**

#### MITSUBISHI MATERIALS CORPORATION

##### Overseas Sales Dept, Asian Region

Marunouchi Nijubashi Building 22F, 3-2-3, Marunouchi, Chiyoda-ku, Tokyo 100-8117, Japan

##### Overseas Sales Dept, European & American Region

Marunouchi Nijubashi Building 22F, 3-2-3, Marunouchi, Chiyoda-ku, Tokyo 100-8117, Japan

<http://www.mmc-carbide.com/>

(Tools specifications subject to change without notice.)