DIA EDGE
TOOL NEWS
2021.4 Update
B266A

CVD Coated Grade for Steel Turning

# MC6100 Series

Series Addition

## Next Generation Steel Turning Performance

Introducing **MC6125**, the first recommendation for steel turning.

For High Speed Turning
**MC6115**

NEW

First Recommendation
**MC6125**

MITSUBISHI MATERIALS CORPORATION

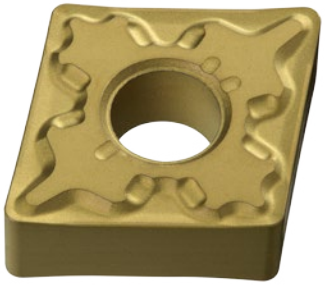
CVD Coated Grade for Steel Turning

# MC6100 Series

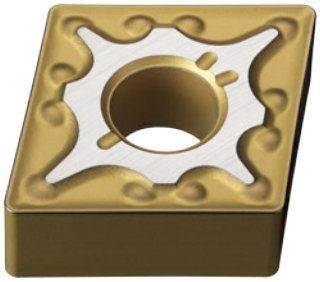
## Dramatic increase in stability and wear resistance resulting from improved coating adhesion and crystal orientation technology.

NEW

For High Speed Turning
**MC6115**



First Recommendation
**MC6125**

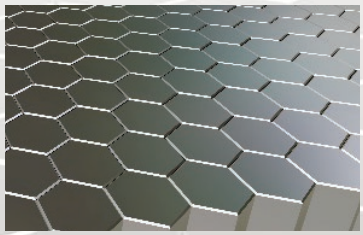


## Features

### "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.


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



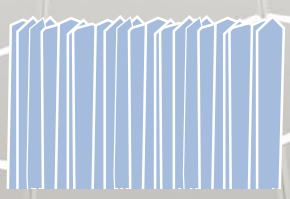
*By Image

Conventional CVD inserts

Grain size and growth direction are uneven.

**Nano Texture**

Uniformity of the grain size and growth direction has improved.



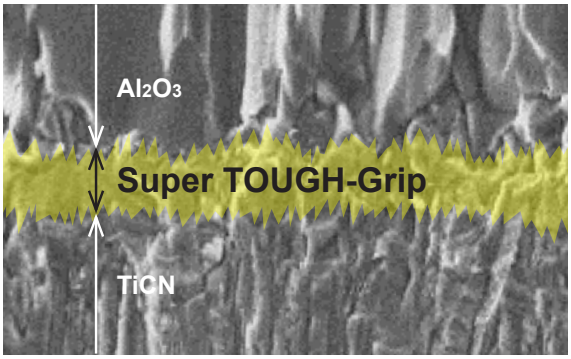
**"Super" Nano Texture**

Uniformity of the growth direction has drastically improved.

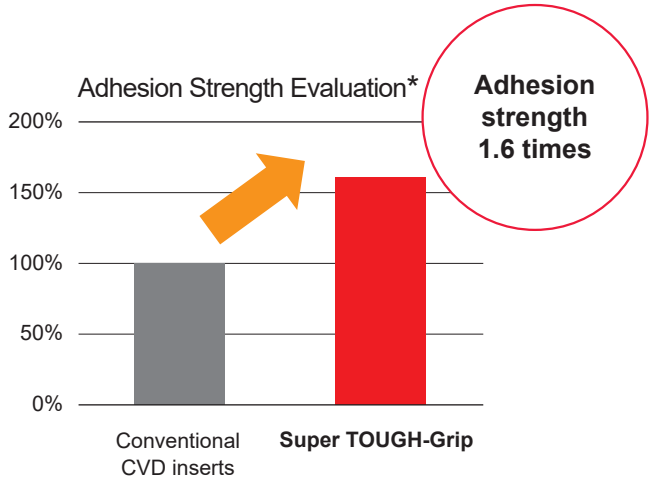
**Crystal Orientation**

## Super TOUGH-Grip

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



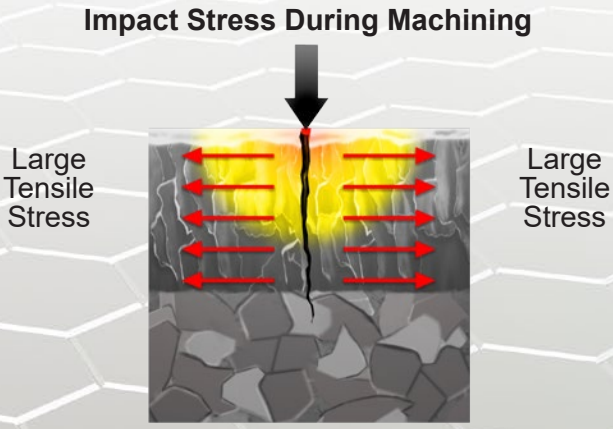

*By Image




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

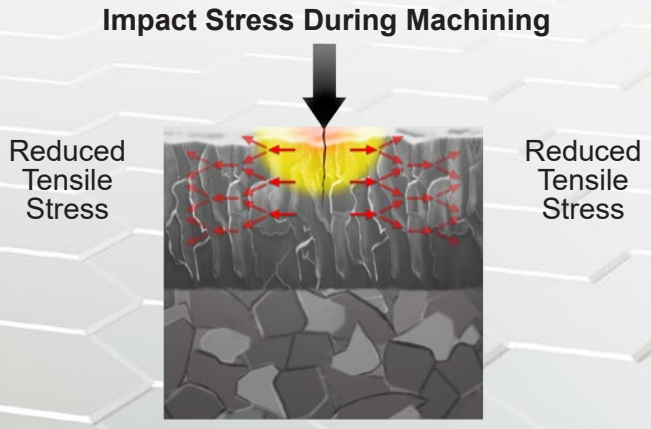
## Protection Against Sudden Fracturing

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.


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.

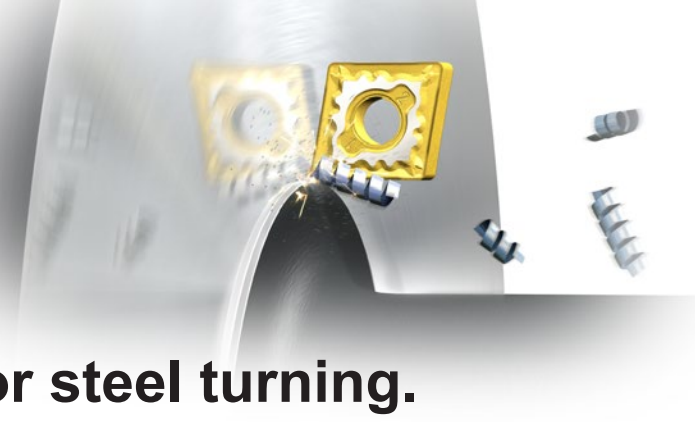



**MC6100 Series**

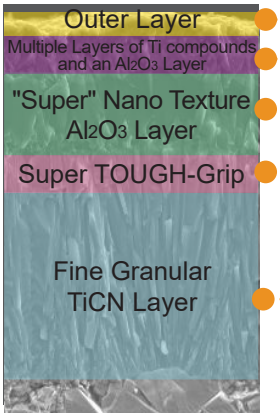
MC6100 series has a much lower level of stress than conventional CVD coatings due to the surface treatment. This divides the force of impacts during machining and protects from sudden fracturing.

## CVD Coated Grade for Steel Turning

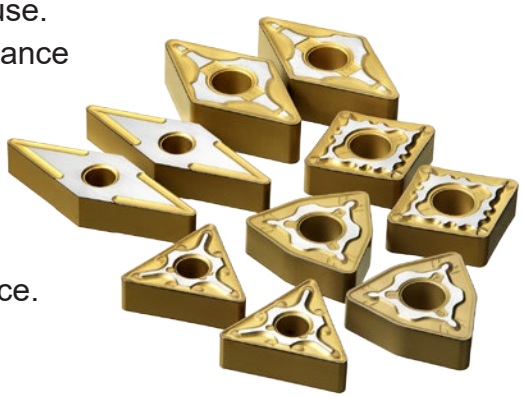
# MC6125



## First recommended grade for steel turning. Increased tool life plus stable performance covering a wide range of applications.




- Better identification of corner use.
- Achieves excellent wear resistance
- Outstanding wear resistance especially at high temperatures.
- Strong adhesion between the tough coating layers.
- Coating for high wear resistance.

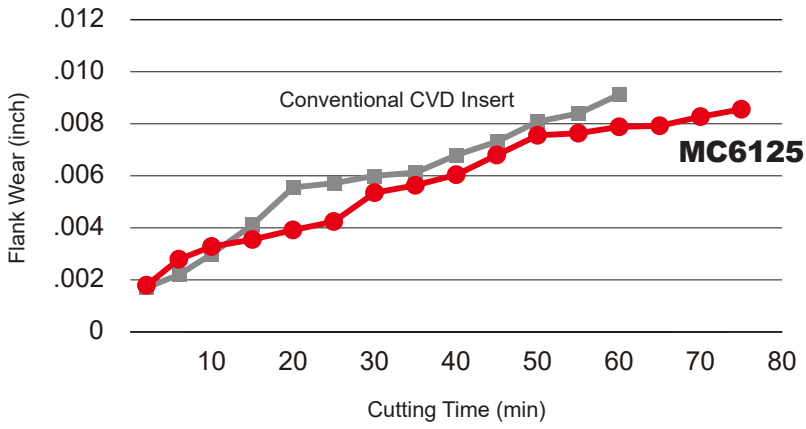


## Special Smooth Surface Treatment

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 AISI 1045 : Comparison of Wear Resistance

Increased tool life plus stable performance covering a wide range of applications.

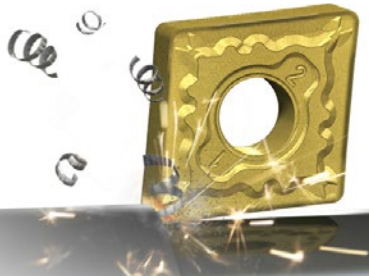



<Cutting Conditions>

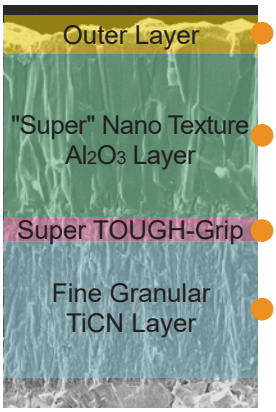
| | |
|---|---|
| Workpiece Material | : AISI 1045 |
| Inserts | : CNMG432MA |
| Cutting Speed | : vc = 655 SFM |
| Feed per Rev. | : f=.012 IPR |
| Depth of Cut | : ap =.059 inch |
| Cutting Mode | : Wet Cutting |

## 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.




Better identification of corner use.

Outstanding wear resistance especially at high temperatures.

Strong adhesion between the tough coating layers.

Coating for high wear resistance.

## Improved Outer Coating (Layer)

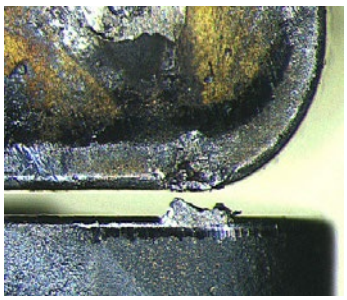
The outer layer of MC6115 restricts chip welding thereby improving the dimensional accuracy and surface roughness of components. This also enables easy recognition of whether the corner can continue machining.

## Example when machining AISI 5120H

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

### After 2 Minutes Machining

**MC6115 MH Breaker**



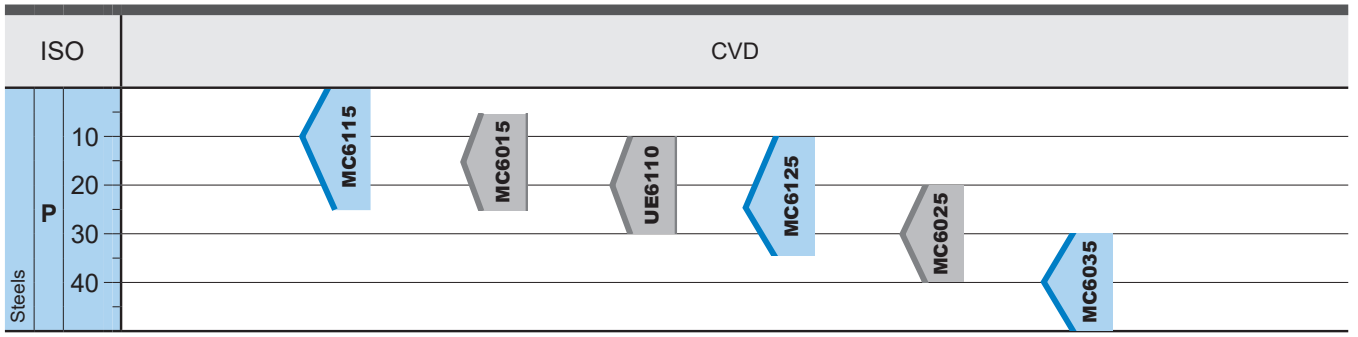
Conventional CVD Insert

<Cutting Conditions>

| | |
|---|---|
| Workpiece Material | : AISI 5120H 170HB |
| Inserts | : CNMG432MH |
| Cutting Speed | : vc = 655 SFM |
| Feed per Rev. | : f=.012 IPR |
| Depth of Cut | : ap =.059 inch |
| Cutting Mode | : Dry Cutting |

# CVD Coated Grade for Steel Turning

## Application Range

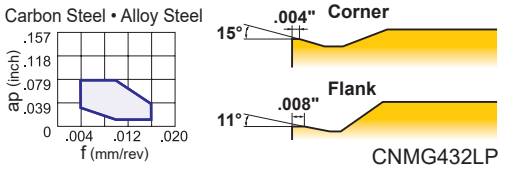
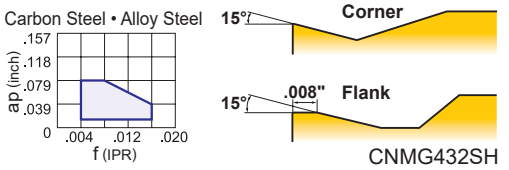
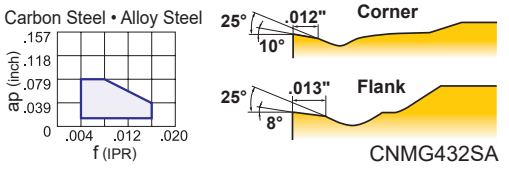
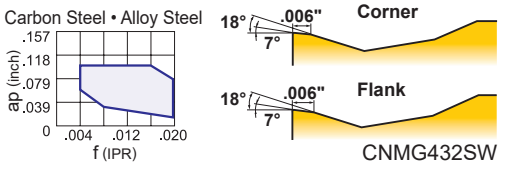
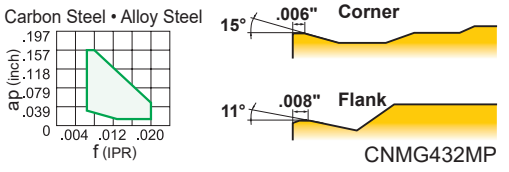
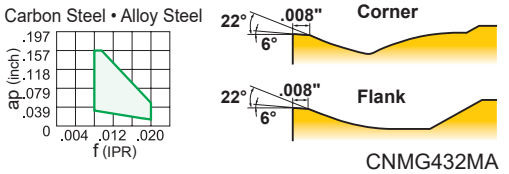
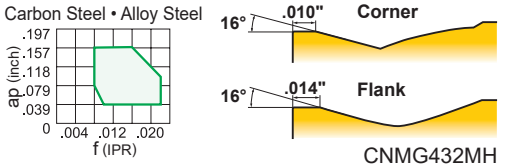
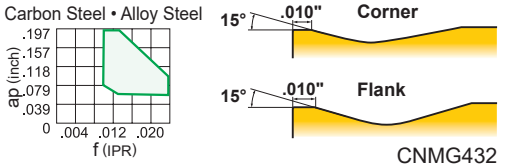
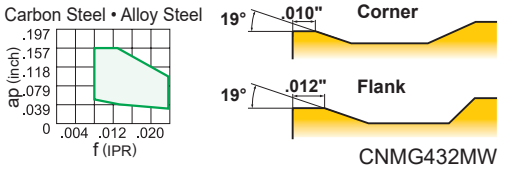



## Selection Criteria

| Workpiece Material | | Cutting Mode | Grade |
|---|---|---|---|
| P | Steels | Continuous Cutting<br>↑ Low<br>Medium<br>↓ High<br>Interrupted Cutting | **MC6115** |
| | | | **MC6125** |
| | | | **MC6035** |

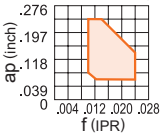
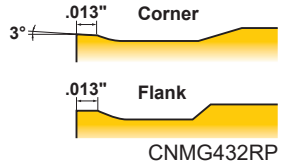
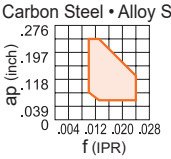
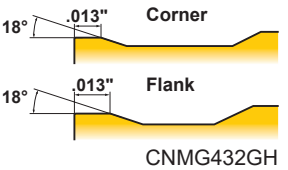
# Chip Breaker System for Steel Turning

## Negative Inserts

| Application | Tolerance | Chip Breaker Name and Picture | Features | Cross Section Geometry |
|---|---|---|---|---|
| Light Cutting | M | **LP**  | **First recommendation for light cutting of carbon steel and alloy steel**<br>Stable chip control in the light cutting range.<br>The curved edge allows smooth chip discharge. |   CNMG432LP |
| | | **SH**  | **Alternative chipbreaker for light cutting of carbon steel and alloy steel**<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. |   CNMG432SH |
| | | **SA**  | **Alternative chipbreaker for light cutting of carbon steel and alloy steel**<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. |   CNMG432SA |
| | | **SW**  | **Wiper insert for light cutting of carbon steel, alloy steel, stainless steel and cast iron**<br>In comparison to conventional chip breakers, the surface finish is maintained even if the feed per revolution is doubled.<br>Wiper design for increased productivity and improved surface finish. |   CNMG432SW |
| Medium Cutting | M | **MP**  | **First recommendation for medium cutting of carbon steel and alloy steel**<br>Suitable for medium to light cutting.<br>Breaker geometry appropriate for copying and back turning.<br>Cutting edge geometry for an optimum balance of sharpness and fracture resistance. |   CNMG432MP |
| | | **MA**  | **For medium cutting of carbon steel and alloy steel**<br>Ideal for general cutting applications.<br>Positive land provides sharp cutting action. |   CNMG432MA |
| | | **MH**  | **Alternative chipbreaker for medium cutting of carbon steel and alloy steel**<br>Flat land offers high edge strength.<br>Good chip control with suitable chip pocket. |   CNMG432MH |
| | | **Standard**  | **Alternative chipbreaker for medium cutting of carbon steel and alloy steel**<br>Flat land offers high edge strength.<br>Flat top breaker shape offers high edge strength. |   CNMG432 |
| | | **MW**  | **Wiper insert for medium cutting carbon steel, alloy steel, stainless steel and cast iron**<br>The wiper allows up to two times higher feed.<br>A wide chip pocket prevents chip jamming. |   CNMG432MW |

# Chip Breaker System for Steel Turning

## Negative Inserts

| Application | Tolerance | Chip Breaker Name and Picture | Features | Cross Section Geometry |
|---|---|---|---|---|
| Rough Cutting | M | **RP**  | **First recommendation for rough cutting of carbon steel and alloy steel**<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>  <br>CNMG432RP |
| | | **GH**  | **Alternative chip breaker for rough cutting of carbon steel, alloy steel and cast iron**<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>  <br>CNMG432GH |

## Recommended Cutting Conditions

### Negative Inserts (For External Turning)

(inch)

| Workpiece Material | | Properties | Cutting Range | | Priority | Grade | Chip Breaker | Cutting Speed **vc** (SFM) | Feed **f** (IPR) | Depth of Cut **ap** |
|---|---|---|---|---|---|---|---|---|---|---|
| P | Carbon and Alloy Steels | 180–280HB | ● | L | 1 | **MC6115** | **LP** | 820—1575 | .004—.016 | .012—.079 |
| | | | ● | L | 2 | **MC6125** | **LP** | 900—1395 | .004—.016 | .012—.079 |
| | | | ● | L | 3 | **MC6115** | **SH** | 820—1575 | .004—.016 | .012—.079 |
| | | | ● | L | 4 | **MC6125** | **SH** | 900—1395 | .004—.016 | .012—.079 |
| | | | ● | L | 5 | **MC6115** | **SA** | 820—1575 | .004—.016 | .012—.079 |
| | | | ● | L | 6 | **MC6125** | **SA** | 900—1395 | .004—.016 | .012—.079 |
| | | | ● | L | 7 | **MC6115** | **SW** | 820—1575 | .004—.020 | .012—.098 |
| | | | ● | L | 8 | **MC6125** | **SW** | 900—1395 | .004—.020 | .012—.098 |
| | | | ● | M | 1 | **MC6115** | **MP** | 755—1445 | .006—.020 | .012—.157 |
| | | | ● | M | 2 | **MC6125** | **MP** | 820—1280 | .006—.020 | .012—.157 |
| | | | ● | M | 3 | **MC6115** | **MA** | 755—1445 | .008—.020 | .012—.157 |
| | | | ● | M | 4 | **MC6125** | **MA** | 820—1280 | .008—.020 | .012—.157 |
| | | | ● | M | 5 | **MC6115** | **Std** | 755—1445 | .010—.024 | .059—.197 |
| | | | ● | M | 6 | **MC6125** | **Std** | 820—1280 | .010—.024 | .059—.197 |
| | | | ● | M | 7 | **MC6115** | **MW** | 755—1445 | .008—.024 | .035—.157 |
| | | | ● | M | 8 | **MC6125** | **MW** | 820—1280 | .008—.024 | .035—.157 |
| | | | ● | R | 1 | **MC6115** | **RP** | 705—1360 | .010—.024 | .059—.236 |
| | | | ● | R | 2 | **MC6125** | **RP** | 770—1215 | .010—.024 | .059—.236 |
| | | | ● | R | 3 | **MC6115** | **GH** | 705—1360 | .010—.024 | .059—.236 |
| | | | ● | R | 4 | **MC6125** | **GH** | 770—1215 | .010—.024 | .059—.236 |
| | | | ◐ | L | 1 | **MC6115** | **LP** | 820—1575 | .004—.016 | .012—.079 |
| | | | ◐ | L | 2 | **MC6125** | **LP** | 900—1395 | .004—.016 | .012—.079 |
| | | | ◐ | L | 3 | **MC6115** | **SH** | 820—1575 | .004—.016 | .012—.079 |
| | | | ◐ | L | 4 | **MC6125** | **SH** | 900—1395 | .004—.016 | .012—.079 |
| | | | ◐ | L | 5 | **MC6115** | **SA** | 820—1575 | .004—.016 | .012—.079 |
| | | | ◐ | L | 6 | **MC6125** | **SA** | 900—1395 | .004—.016 | .012—.079 |
| | | | ◐ | L | 7 | **MC6115** | **SW** | 820—1575 | .004—.020 | .012—.098 |
| | | | ◐ | L | 8 | **MC6125** | **SW** | 900—1395 | .004—.020 | .012—.098 |
| | | | ◐ | M | 1 | **MC6125** | **MP** | 820—1280 | .006—.020 | .012—.157 |
| | | | ◐ | M | 2 | **MC6115** | **MP** | 755—1445 | .006—.020 | .012—.157 |
| | | | ◐ | M | 3 | **MC6125** | **MA** | 820—1280 | .008—.020 | .012—.157 |
| | | | ◐ | M | 4 | **MC6115** | **MA** | 755—1445 | .008—.020 | .012—.157 |
| | | | ◐ | M | 5 | **MC6125** | **MH** | 820—1280 | .008—.022 | .039—.157 |
| | | | ◐ | M | 6 | **MC6115** | **MH** | 755—1445 | .008—.022 | .039—.157 |
| | | | ◐ | M | 7 | **MC6125** | **Std** | 820—1280 | .010—.024 | .059—.197 |
| | | | ◐ | M | 8 | **MC6115** | **Std** | 755—1445 | .010—.024 | .059—.197 |
| | | | ◐ | M | 9 | **MC6125** | **MW** | 820—1280 | .008—.024 | .035—.157 |
| | | | ◐ | M | 10 | **MC6115** | **MW** | 755—1445 | .008—.024 | .035—.157 |
| | | | ◐ | R | 1 | **MC6125** | **RP** | 770—1215 | .010—.024 | .059—.236 |
| | | | ◐ | R | 2 | **MC6115** | **RP** | 705—1360 | .010—.024 | .059—.236 |
| | | | ◐ | R | 3 | **MC6125** | **GH** | 770—1215 | .010—.024 | .059—.236 |
| | | | ◐ | R | 4 | **MC6115** | **GH** | 705—1360 | .010—.024 | .059—.236 |
| | | | ✣ | L | 1 | **MC6125** | **LP** | 900—1395 | .004—.016 | .012—.079 |
| | | | ✣ | L | 2 | **MC6125** | **SH** | 900—1395 | .004—.016 | .012—.079 |
| | | | ✣ | L | 3 | **MC6125** | **SA** | 900—1395 | .004—.016 | .012—.079 |
| | | | ✣ | M | 1 | **MC6125** | **MP** | 820—1280 | .006—.020 | .012—.157 |
| | | | ✣ | M | 2 | **MC6125** | **MA** | 820—1280 | .008—.020 | .012—.157 |
| | | | ✣ | M | 3 | **MC6125** | **MH** | 820—1280 | .008—.022 | .039—.157 |
| | | | ✣ | M | 4 | **MC6125** | **Std** | 820—1280 | .010—.024 | .059—.197 |
| | | | ✣ | M | 5 | **MC6125** | **MW** | 820—1280 | .008—.024 | .035—.157 |
| | | | ✣ | R | 1 | **MC6125** | **RP** | 770—1215 | .010—.024 | .059—.236 |
| | | | ✣ | R | 2 | **MC6125** | **GH** | 770—1215 | .010—.024 | .059—.236 |

Note1) Verify the recommended conditions for each boring bar as cutting conditions for internal machining will vary depending on the length of overhang.

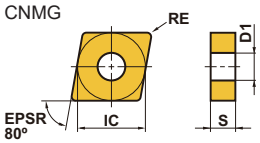
**Cutting Conditions** : ● : Stable Cutting ◐ : General Cutting ✣ : Unstable Cutting
**Cutting Area** : **L** : Light Cutting **M** : Medium Cutting **R** : Rough Cutting

# MC6100 Series

NEW

## Negative Inserts (With Hole)

M Class




| Light | Light | Light | Light | Medium | Medium |
|---|---|---|---|---|---|
| LP | SH | SA | SW | MP | MA |
|  |  |  |  (Wiper) |  |  |
| **Medium** | **Medium** | **Medium** | **Rough** | **Rough** | |
| MH | Standard | MW | RP | GH | |
|  |  |  (Wiper) |  |  | |

(inch)

| Order Number | Cutting Area | MC6115 | MC6125 | IC | S | RE | D1 |
|---|---|---|---|---|---|---|---|
| **CNMG431LP** | L | ● | ● | .500 | .187 | .016 | .203 |
| **CNMG432LP** | L | ● | ● | .500 | .187 | .031 | .203 |
| **CNMG433LP** | L | ● | ● | .500 | .187 | .047 | .203 |
| **CNMG431SH** | L | ● | ● | .500 | .187 | .016 | .203 |
| **CNMG432SH** | L | ● | ● | .500 | .187 | .031 | .203 |
| **CNMG433SH** | L | ● | ● | .500 | .187 | .047 | .203 |
| **CNMG431SA** | L | ● | ● | .500 | .187 | .016 | .203 |
| **CNMG432SA** | L | ● | ● | .500 | .187 | .031 | .203 |
| **CNMG433SA** | L | ● | ● | .500 | .187 | .047 | .203 |
| **CNMG431SW** | L | ● | ● | .500 | .187 | .016 | .203 |
| **CNMG432SW** | L | ● | ● | .500 | .187 | .031 | .203 |
| **CNMG433SW** | L | ● | ● | .500 | .187 | .047 | .203 |
| **CNMG431MP** | M | ● | ● | .500 | .187 | .016 | .203 |
| **CNMG432MP** | M | ● | ● | .500 | .187 | .031 | .203 |
| **CNMG433MP** | M | ● | ● | .500 | .187 | .047 | .203 |
| **CNMG434MP** | M | ● | ● | .500 | .187 | .063 | .203 |
| **CNMG542MP** | M | ● | ● | .625 | .250 | .031 | .250 |
| **CNMG543MP** | M | ● | ● | .625 | .250 | .047 | .250 |
| **CNMG544MP** | M | ● | ● | .625 | .250 | .063 | .250 |
| **CNMG431MA** | M | ● | ● | .500 | .187 | .016 | .203 |
| **CNMG432MA** | M | ● | ● | .500 | .187 | .031 | .203 |
| **CNMG433MA** | M | ● | ● | .500 | .187 | .047 | .203 |
| **CNMG434MA** | M | ● | ● | .500 | .187 | .063 | .203 |
| **CNMG542MA** | M | ● | ● | .625 | .250 | .031 | .250 |
| **CNMG543MA** | M | ● | ● | .625 | .250 | .047 | .250 |
| **CNMG544MA** | M | ● | ● | .625 | .250 | .063 | .250 |
| **CNMG643MA** | M | ● | ● | .750 | .250 | .047 | .312 |
| **CNMG644MA** | M | ● | ● | .750 | .250 | .063 | .312 |

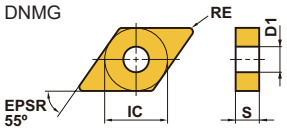
| Order Number | Cutting Area | MC6115 | MC6125 | IC | S | RE | D1 |
|---|---|---|---|---|---|---|---|
| **CNMG431MH** | M | ● | ● | .500 | .187 | .016 | .203 |
| **CNMG432MH** | M | ● | ● | .500 | .187 | .031 | .203 |
| **CNMG433MH** | M | ● | ● | .500 | .187 | .047 | .203 |
| **CNMG434MH** | M | ● | ● | .500 | .187 | .063 | .203 |
| **CNMG542MH** | M | ● | ● | .625 | .250 | .031 | .250 |
| **CNMG543MH** | M | ● | ● | .625 | .250 | .047 | .250 |
| **CNMG544MH** | M | ● | ● | .625 | .250 | .063 | .250 |
| **CNMG643MH** | M | ● | ● | .750 | .250 | .047 | .312 |
| **CNMG644MH** | M | ● | ● | .750 | .250 | .063 | .312 |
| **CNMG431** | M | ● | ● | .500 | .187 | .016 | .203 |
| **CNMG432** | M | ● | ● | .500 | .187 | .031 | .203 |
| **CNMG433** | M | ● | ● | .500 | .187 | .047 | .203 |
| **CNMG434** | M | ● | ● | .500 | .187 | .063 | .203 |
| **CNMG542** | M | ● | ● | .625 | .250 | .031 | .250 |
| **CNMG543** | M | ● | ● | .625 | .250 | .047 | .250 |
| **CNMG544** | M | ● | ● | .625 | .250 | .063 | .250 |
| **CNMG642** | M | ● | ● | .750 | .250 | .031 | .312 |
| **CNMG643** | M | ● | ● | .750 | .250 | .047 | .312 |
| **CNMG644** | M | ● | ● | .750 | .250 | .063 | .312 |
| **CNMG432MW** | M | ● | ● | .500 | .187 | .031 | .203 |
| **CNMG433MW** | M | ● | ● | .500 | .187 | .047 | .203 |
| **CNMG432RP** | R | ● | ● | .500 | .187 | .031 | .203 |
| **CNMG433RP** | R | ● | ● | .500 | .187 | .047 | .203 |
| **CNMG434RP** | R | ● | ● | .500 | .187 | .063 | .203 |
| **CNMG543RP** | R | ● | ● | .625 | .250 | .047 | .250 |
| **CNMG544RP** | R | ● | ● | .625 | .250 | .063 | .250 |
| **CNMG643RP** | R | ● | ● | .750 | .250 | .047 | .312 |
| **CNMG644RP** | R | ● | ● | .750 | .250 | .063 | .312 |
| **CNMG432GH** | R | ● | ● | .500 | .187 | .031 | .203 |
| **CNMG433GH** | R | ● | ● | .500 | .187 | .047 | .203 |
| **CNMG434GH** | R | ● | ● | .500 | .187 | .063 | .203 |
| **CNMG543GH** | R | ● | ● | .625 | .250 | .047 | .250 |
| **CNMG544GH** | R | ● | ● | .625 | .250 | .063 | .250 |
| **CNMG643GH** | R | ● | ● | .750 | .250 | .047 | .312 |
| **CNMG644GH** | R | ● | ● | .750 | .250 | .063 | .312 |

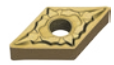
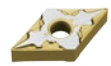
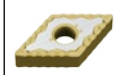
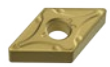
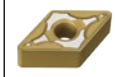
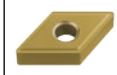
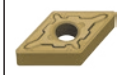
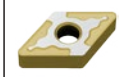
● = NEW

● : USA Stock
(10 inserts in one case)

# Negative Inserts (With Hole)

## M Class




| Light | Light | Light | | | |
|---|---|---|---|---|---|
| LP | SH | SA | | | |
|  |  |  | | | |
| **Medium** | **Medium** | **Medium** | **Medium** | **Rough** | **Rough** |
| MP | MA | MH | Standard | RP | GH |
|  |  |  |  |  |  |

(inch)

| Order Number | Cutting Area | MC6115 | MC6125 | IC | S | RE | D1 |
|---|---|---|---|---|---|---|---|
| **DNMG431LP** | L | ● | ● | .500 | .187 | .016 | .203 |
| **DNMG432LP** | L | ● | ● | .500 | .187 | .031 | .203 |
| **DNMG433LP** | L | ● | ● | .500 | .187 | .047 | .203 |
| **DNMG441LP** | L | ● | ● | .500 | .250 | .016 | .203 |
| **DNMG442LP** | L | ● | ● | .500 | .250 | .031 | .203 |
| **DNMG443LP** | L | ● | ● | .500 | .250 | .047 | .203 |
| **DNMG431SH** | L | ● | ● | .500 | .187 | .016 | .203 |
| **DNMG432SH** | L | ● | ● | .500 | .187 | .031 | .203 |
| **DNMG433SH** | L | ● | ● | .500 | .187 | .047 | .203 |
| **DNMG441SH** | L | ● | ● | .500 | .250 | .016 | .203 |
| **DNMG442SH** | L | ● | ● | .500 | .250 | .031 | .203 |
| **DNMG443SH** | L | ● | ● | .500 | .250 | .047 | .203 |
| **DNMG431SA** | L | ● | ● | .500 | .187 | .016 | .203 |
| **DNMG432SA** | L | ● | ● | .500 | .187 | .031 | .203 |
| **DNMG433SA** | L | ● | ● | .500 | .187 | .047 | .203 |
| **DNMG441SA** | L | ● | ● | .500 | .250 | .016 | .203 |
| **DNMG442SA** | L | ● | ● | .500 | .250 | .031 | .203 |
| **DNMG443SA** | L | ● | ● | .500 | .250 | .047 | .203 |

| Order Number | Cutting Area | MC6115 | MC6125 | IC | S | RE | D1 |
|---|---|---|---|---|---|---|---|
| **DNMG431MP** | M | ● | ● | .500 | .187 | .016 | .203 |
| **DNMG432MP** | M | ● | ● | .500 | .187 | .031 | .203 |
| **DNMG433MP** | M | ● | ● | .500 | .187 | .047 | .203 |
| **DNMG434MP** | M | ● | ● | .500 | .187 | .063 | .203 |
| **DNMG441MP** | M | ● | ● | .500 | .250 | .016 | .203 |
| **DNMG442MP** | M | ● | ● | .500 | .250 | .031 | .203 |
| **DNMG443MP** | M | ● | ● | .500 | .250 | .047 | .203 |
| **DNMG444MP** | M | ● | ● | .500 | .250 | .063 | .203 |
| **DNMG431MA** | M | ● | ● | .500 | .187 | .016 | .203 |
| **DNMG432MA** | M | ● | ● | .500 | .187 | .031 | .203 |
| **DNMG433MA** | M | ● | ● | .500 | .187 | .047 | .203 |
| **DNMG441MA** | M | ● | ● | .500 | .250 | .016 | .203 |
| **DNMG442MA** | M | ● | ● | .500 | .250 | .031 | .203 |
| **DNMG443MA** | M | ● | ● | .500 | .250 | .047 | .203 |
| **DNMG431MH** | M | ● | ● | .500 | .187 | .016 | .203 |
| **DNMG432MH** | M | ● | ● | .500 | .187 | .031 | .203 |
| **DNMG433MH** | M | ● | ● | .500 | .187 | .047 | .203 |
| **DNMG441MH** | M | ● | ● | .500 | .250 | .016 | .203 |
| **DNMG442MH** | M | ● | ● | .500 | .250 | .031 | .203 |
| **DNMG443MH** | M | ● | ● | .500 | .250 | .047 | .203 |
| **DNMG431** | M | ● | ● | .500 | .187 | .016 | .203 |
| **DNMG432** | M | ● | ● | .500 | .187 | .031 | .203 |
| **DNMG433** | M | ● | ● | .500 | .187 | .047 | .203 |
| **DNMG441** | M | ● | ● | .500 | .250 | .016 | .203 |
| **DNMG442** | M | ● | ● | .500 | .250 | .031 | .203 |
| **DNMG443** | M | ● | ● | .500 | .250 | .047 | .203 |
| **DNMG432RP** | R | ● | ● | .500 | .187 | .031 | .203 |
| **DNMG433RP** | R | ● | ● | .500 | .187 | .047 | .203 |
| **DNMG434RP** | R | ● | ● | .500 | .187 | .063 | .203 |
| **DNMG442RP** | R | ● | ● | .500 | .250 | .031 | .203 |
| **DNMG443RP** | R | ● | ● | .500 | .250 | .047 | .203 |
| **DNMG444RP** | R | ● | ● | .500 | .250 | .063 | .203 |
| **DNMG432GH** | R | ● | ● | .500 | .187 | .031 | .203 |
| **DNMG433GH** | R | ● | ● | .500 | .187 | .047 | .203 |
| **DNMG442GH** | R | ● | ● | .500 | .250 | .031 | .203 |
| **DNMG443GH** | R | ● | ● | .500 | .250 | .047 | .203 |

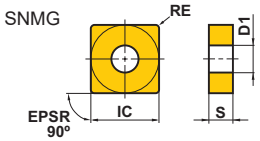
● = NEW

# MC6100 Series

NEW

## Negative Inserts (With Hole)

M Class




| Light | Light | Light | | | |
|---|---|---|---|---|---|
| LP | SH | SA | | | |
|  |  |  | | | |
| **Medium** | **Medium** | **Medium** | **Medium** | **Rough** | **Rough** |
| MP | MA | MH | Standard | RP | GH |
|  |  |  |  |  |  |

(inch)

| Order Number | Cutting Area | MC6115 | MC6125 | IC | S | RE | D1 |
|---|---|---|---|---|---|---|---|
| **SNMG431LP** | L | ● | ● | .500 | .187 | .016 | .203 |
| **SNMG432LP** | L | ● | ● | .500 | .187 | .031 | .203 |
| **SNMG433LP** | L | ● | ● | .500 | .187 | .047 | .203 |
| **SNMG432SH** | L | ● | ● | .500 | .187 | .031 | .203 |
| **SNMG432SA** | L | ● | ● | .500 | .187 | .031 | .203 |

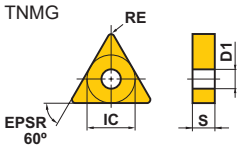
| Order Number | Cutting Area | MC6115 | MC6125 | IC | S | RE | D1 |
|---|---|---|---|---|---|---|---|
| **SNMG431MP** | M | ● | ● | .500 | .187 | .016 | .203 |
| **SNMG432MP** | M | ● | ● | .500 | .187 | .031 | .203 |
| **SNMG433MP** | M | ● | ● | .500 | .187 | .047 | .203 |
| **SNMG431MA** | M | ● | ● | .500 | .187 | .016 | .203 |
| **SNMG432MA** | M | ● | ● | .500 | .187 | .031 | .203 |
| **SNMG433MA** | M | ● | ● | .500 | .187 | .047 | .203 |
| **SNMG542MA** | M | ● | ● | .625 | .250 | .031 | .250 |
| **SNMG543MA** | M | ● | ● | .625 | .250 | .047 | .250 |
| **SNMG643MA** | M | ● | ● | .750 | .250 | .047 | .312 |
| **SNMG644MA** | M | ● | ● | .750 | .250 | .063 | .312 |
| **SNMG432MH** | M | ● | ● | .500 | .187 | .031 | .203 |
| **SNMG433MH** | M | ● | ● | .500 | .187 | .047 | .203 |
| **SNMG643MH** | M | ● | ● | .750 | .250 | .047 | .312 |
| **SNMG644MH** | M | ● | ● | .750 | .250 | .063 | .312 |
| **SNMG431** | M | ● | ● | .500 | .187 | .016 | .203 |
| **SNMG432** | M | ● | ● | .500 | .187 | .031 | .203 |
| **SNMG433** | M | ● | ● | .500 | .187 | .047 | .203 |
| **SNMG543** | M | ● | ● | .625 | .250 | .047 | .250 |
| **SNMG643** | M | ● | ● | .750 | .250 | .047 | .312 |
| **SNMG644** | M | ● | ● | .750 | .250 | .063 | .312 |
| **SNMG432RP** | R | ● | ● | .500 | .187 | .031 | .203 |
| **SNMG433RP** | R | ● | ● | .500 | .187 | .047 | .203 |
| **SNMG434RP** | R | ● | ● | .500 | .187 | .063 | .203 |
| **SNMG543RP** | R | ● | ● | .625 | .250 | .047 | .250 |
| **SNMG544RP** | R | ● | ● | .625 | .250 | .063 | .250 |
| **SNMG643RP** | R | ● | ● | .750 | .250 | .047 | .312 |
| **SNMG644RP** | R | ● | ● | .750 | .250 | .063 | .312 |
| **SNMG432GH** | R | ● | ● | .500 | .187 | .031 | .203 |
| **SNMG433GH** | R | ● | ● | .500 | .187 | .047 | .203 |
| **SNMG434GH** | R | ● | ● | .500 | .187 | .063 | .203 |
| **SNMG543GH** | R | ● | ● | .625 | .250 | .047 | .250 |
| **SNMG643GH** | R | ● | ● | .750 | .250 | .047 | .312 |
| **SNMG644GH** | R | ● | ● | .750 | .250 | .063 | .312 |

● = NEW

● : USA Stock
(10 inserts in one case)

# Negative Inserts (With Hole)

## M Class




| Light | Light | Light | | | |
|---|---|---|---|---|---|
| LP | SH | SA | | | |
| Medium | Medium | Medium | Medium | Rough | Rough |
| MP | MA | MH | Standard | RP | GH |

(inch)

| Order Number | Cutting Area | MC6115 | MC6125 | IC | S | RE | D1 |
|---|---|---|---|---|---|---|---|
| **TNMG331LP** | L | ● | ● | .375 | .187 | .016 | .150 |
| **TNMG332LP** | L | ● | ● | .375 | .187 | .031 | .150 |
| **TNMG333LP** | L | ● | ● | .375 | .187 | .047 | .150 |
| **TNMG432LP** | L | ● | ● | .500 | .187 | .031 | .203 |
| **TNMG433LP** | L | ● | ● | .500 | .187 | .047 | .203 |
| **TNMG331SH** | L | ● | ● | .375 | .187 | .016 | .150 |
| **TNMG332SH** | L | ● | ● | .375 | .187 | .031 | .150 |
| **TNMG432SH** | L | ● | ● | .500 | .187 | .031 | .203 |
| **TNMG331SA** | L | ● | ● | .375 | .187 | .016 | .150 |
| **TNMG332SA** | L | ● | ● | .375 | .187 | .031 | .150 |
| **TNMG333SA** | L | ● | ● | .375 | .187 | .047 | .150 |
| **TNMG432SA** | L | ● | ● | .500 | .187 | .031 | .203 |

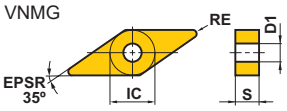
| Order Number | Cutting Area | MC6115 | MC6125 | IC | S | RE | D1 |
|---|---|---|---|---|---|---|---|
| **TNMG331MP** | M | ● | ● | .375 | .187 | .016 | .150 |
| **TNMG332MP** | M | ● | ● | .375 | .187 | .031 | .150 |
| **TNMG333MP** | M | ● | ● | .375 | .187 | .047 | .150 |
| **TNMG432MP** | M | ● | ● | .500 | .187 | .031 | .203 |
| **TNMG433MP** | M | ● | ● | .500 | .187 | .047 | .203 |
| **TNMG331MA** | M | ● | ● | .375 | .187 | .016 | .150 |
| **TNMG332MA** | M | ● | ● | .375 | .187 | .031 | .150 |
| **TNMG333MA** | M | ● | ● | .375 | .187 | .047 | .150 |
| **TNMG432MA** | M | ● | ● | .500 | .187 | .031 | .203 |
| **TNMG433MA** | M | ● | ● | .500 | .187 | .047 | .203 |
| **TNMG542MA** | M | ● | ● | .625 | .250 | .031 | .250 |
| **TNMG543MA** | M | ● | ● | .625 | .250 | .047 | .250 |
| **TNMG331MH** | M | ● | ● | .375 | .187 | .016 | .150 |
| **TNMG332MH** | M | ● | ● | .375 | .187 | .031 | .150 |
| **TNMG333MH** | M | ● | ● | .375 | .187 | .047 | .150 |
| **TNMG432MH** | M | ● | ● | .500 | .187 | .031 | .203 |
| **TNMG433MH** | M | ● | ● | .500 | .187 | .047 | .203 |
| **TNMG331** | M | ● | ● | .375 | .187 | .016 | .150 |
| **TNMG332** | M | ● | ● | .375 | .187 | .031 | .150 |
| **TNMG333** | M | ● | ● | .375 | .187 | .047 | .150 |
| **TNMG431** | M | ● | ● | .500 | .187 | .016 | .203 |
| **TNMG432** | M | ● | ● | .500 | .187 | .031 | .203 |
| **TNMG433** | M | ● | ● | .500 | .187 | .047 | .203 |
| **TNMG332RP** | R | ● | ● | .375 | .187 | .031 | .150 |
| **TNMG333RP** | R | ● | ● | .375 | .187 | .047 | .150 |
| **TNMG432RP** | R | ● | ● | .500 | .187 | .031 | .203 |
| **TNMG433RP** | R | ● | ● | .500 | .187 | .047 | .203 |
| **TNMG434RP** | R | ● | ● | .500 | .187 | .063 | .203 |
| **TNMG543RP** | R | ● | ● | .625 | .250 | .047 | .250 |
| **TNMG544RP** | R | ● | ● | .625 | .250 | .063 | .250 |
| **TNMG332GH** | R | ● | ● | .375 | .187 | .031 | .150 |
| **TNMG333GH** | R | ● | ● | .375 | .187 | .047 | .150 |
| **TNMG432GH** | R | ● | ● | .500 | .187 | .031 | .203 |
| **TNMG433GH** | R | ● | ● | .500 | .187 | .047 | .203 |
| **TNMG434GH** | R | ● | ● | .500 | .187 | .063 | .203 |
| **TNMG543GH** | R | ● | ● | .625 | .250 | .047 | .250 |
| **TNMG544GH** | R | ● | ● | .625 | .250 | .063 | .250 |

● = NEW

# MC6100 Series NEW

## Negative Inserts (With Hole)

M Class




| Light | Light | | |
|---|---|---|---|
| LP | SH | | |
|  |  | | |
| **Medium** | **Medium** | **Medium** | **Medium** |
| MP | MA | MH | Standard |
|  |  |  |  |

(inch)

| Order Number | Cutting Area | MC6115 | MC6125 | IC | S | RE | D1 |
|---|---|---|---|---|---|---|---|
| **VNMG331LP** | L | ● | ● | .375 | .187 | .016 | .150 |
| **VNMG332LP** | L | ● | ● | .375 | .187 | .031 | .150 |
| **VNMG331SH** | L | ● | ● | .375 | .187 | .016 | .150 |
| **VNMG332SH** | L | ● | ● | .375 | .187 | .031 | .150 |

| Order Number | Cutting Area | MC6115 | MC6125 | IC | S | RE | D1 |
|---|---|---|---|---|---|---|---|
| **VNMG331MP** | M | ● | ● | .375 | .187 | .016 | .150 |
| **VNMG332MP** | M | ● | ● | .375 | .187 | .031 | .150 |
| **VNMG333MP** | M | ● | ● | .375 | .187 | .047 | .150 |
| **VNMG331MA** | M | ● | ● | .375 | .187 | .016 | .150 |
| **VNMG332MA** | M | ● | ● | .375 | .187 | .031 | .150 |
| **VNMG331MH** | M | ● | ● | .375 | .187 | .016 | .150 |
| **VNMG332MH** | M | ● | ● | .375 | .187 | .031 | .150 |
| **VNMG331** | M | ● | ● | .375 | .187 | .016 | .150 |
| **VNMG332** | M | ● | ● | .375 | .187 | .031 | .150 |
| **VNMG333** | M | ● | ● | .375 | .187 | .047 | .150 |

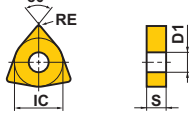
● = NEW

● : USA Stock
(10 inserts in one case)

# Negative Inserts (With Hole)

## M Class

WNMG EPSR 80° RE




| Light | Light | Light | Light | Medium | Medium |
|---|---|---|---|---|---|
| LP | SH | SA | SW | MP | MA |
|  |  |  |  (Wiper) |  |  |
| **Medium** | **Medium** | **Medium** | **Rough** | **Rough** | |
| MH | Standard | MW | RP | GH | |
|  |  |  (Wiper) |  |  | |

(inch)

| Order Number | Cutting Area | MC6115 | MC6125 | IC | S | RE | D1 |
|---|---|---|---|---|---|---|---|
| **WNMG431LP** | L | ● | ● | .500 | .187 | .016 | .203 |
| **WNMG432LP** | L | ● | ● | .500 | .187 | .031 | .203 |
| **WNMG433LP** | L | ● | ● | .500 | .187 | .047 | .203 |
| **WNMG431SH** | L | ● | ● | .500 | .187 | .016 | .203 |
| **WNMG432SH** | L | ● | ● | .500 | .187 | .031 | .203 |
| **WNMG433SH** | L | ● | ● | .500 | .187 | .047 | .203 |
| **WNMG431SA** | L | ● | ● | .500 | .187 | .016 | .203 |
| **WNMG432SA** | L | ● | ● | .500 | .187 | .031 | .203 |
| **WNMG433SA** | L | ● | ● | .500 | .187 | .047 | .203 |
| **WNMG431SW** | L | ● | ● | .500 | .187 | .016 | .203 |
| **WNMG432SW** | L | ● | ● | .500 | .187 | .031 | .203 |
| **WNMG433SW** | L | ● | ● | .500 | .187 | .047 | .203 |
| **WNMG431MP** | M | ● | ● | .500 | .187 | .016 | .203 |
| **WNMG432MP** | M | ● | ● | .500 | .187 | .031 | .203 |
| **WNMG433MP** | M | ● | ● | .500 | .187 | .047 | .203 |
| **WNMG434MP** | M | ● | ● | .500 | .187 | .063 | .203 |
| **WNMG431MA** | M | ● | ● | .500 | .187 | .016 | .203 |
| **WNMG432MA** | M | ● | ● | .500 | .187 | .031 | .203 |
| **WNMG433MA** | M | ● | ● | .500 | .187 | .047 | .203 |
| **WNMG434MA** | M | ● | ● | .500 | .187 | .063 | .203 |

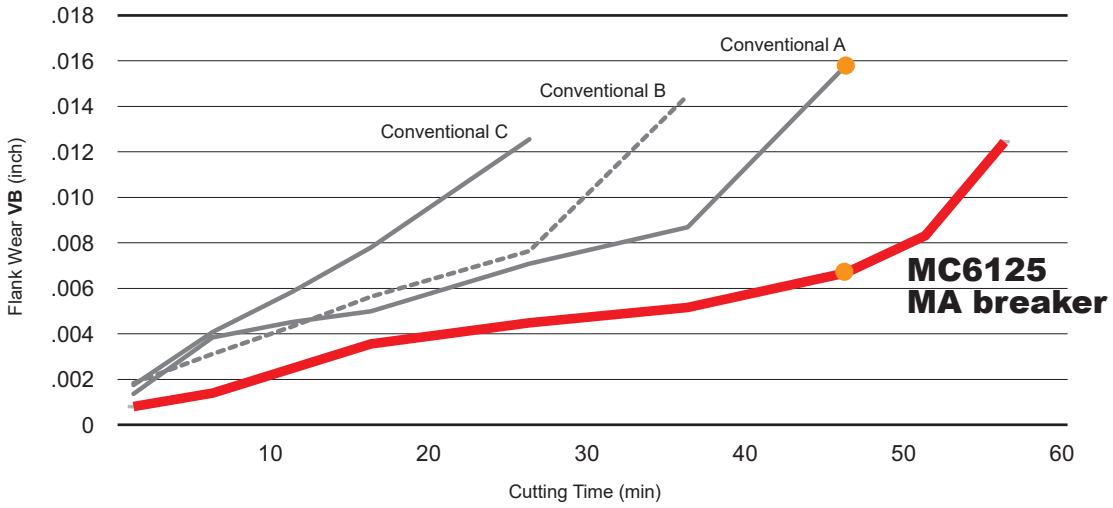
| Order Number | Cutting Area | MC6115 | MC6125 | IC | S | RE | D1 |
|---|---|---|---|---|---|---|---|
| **WNMG431MH** | M | ● | ● | .500 | .187 | .016 | .203 |
| **WNMG432MH** | M | ● | ● | .500 | .187 | .031 | .203 |
| **WNMG433MH** | M | ● | ● | .500 | .187 | .047 | .203 |
| **WNMG431** | M | ● | ● | .500 | .187 | .016 | .203 |
| **WNMG432** | M | ● | ● | .500 | .187 | .031 | .203 |
| **WNMG433** | M | ● | ● | .500 | .187 | .047 | .203 |
| **WNMG432MW** | M | ● | ● | .500 | .187 | .031 | .203 |
| **WNMG433MW** | M | ● | ● | .500 | .187 | .047 | .203 |
| **WNMG432RP** | R | ● | ● | .500 | .187 | .031 | .203 |
| **WNMG433RP** | R | ● | ● | .500 | .187 | .047 | .203 |
| **WNMG432GH** | R | ● | ● | .500 | .187 | .031 | .203 |
| **WNMG433GH** | R | ● | ● | .500 | .187 | .047 | .203 |

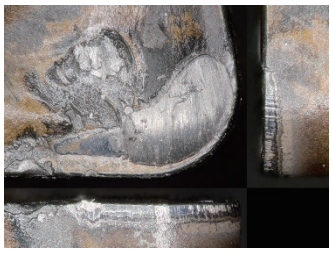
● = NEW

# Cutting Performance

## Machining ANSI 5120H : Comparison of Wear Resistance During Continuous Wet Cutting

The thick coating exclusively for MC6125 highly suppresses early wear.



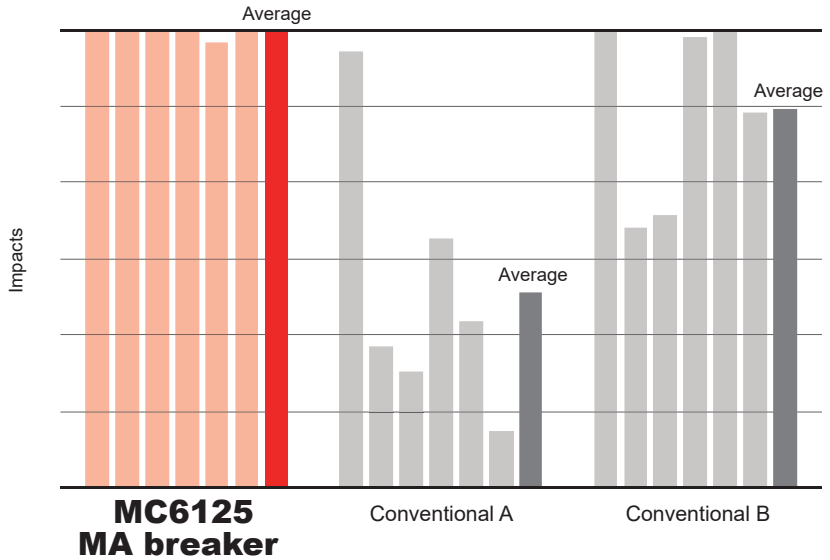
**MC6125**
**MA breaker** 46 min.

Conventional A 46 min.

<Cutting Conditions>
Workpiece Material : ANSI 5120H
Inserts : CNMG432-◯◯
Cutting Speed : vc=985 SFM
Feed per Rev. : f=.012 IPR
Depth of Cut : ap=.059 inch
Cutting Mode : Wet Cutting

## Comparison of Toughness During Interrupted Cutting

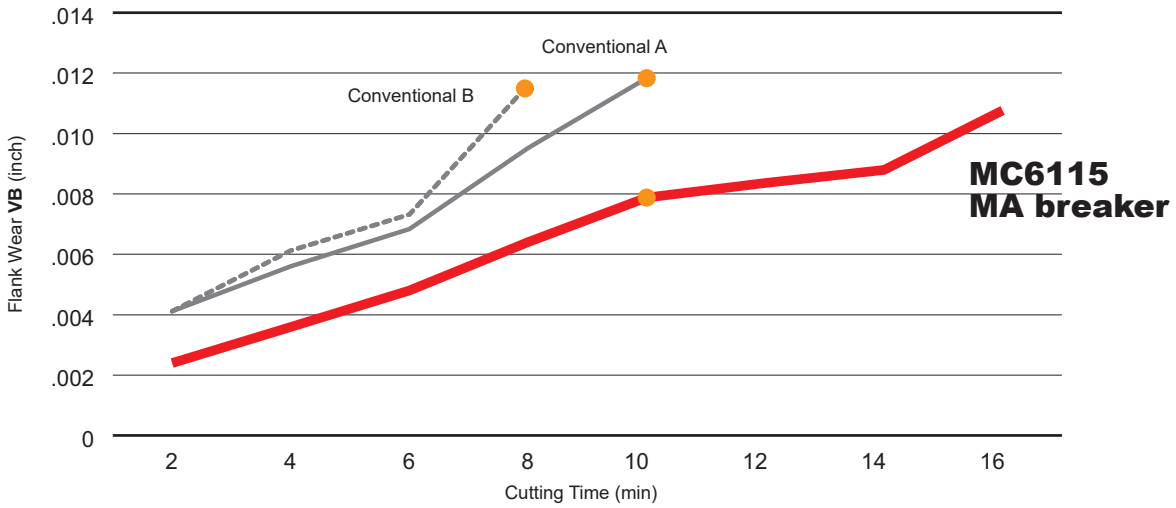
Provides stable cutting under severe cutting conditions that are likely to cause sudden fracturing.

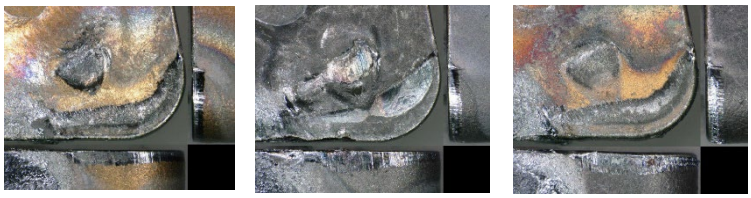



<Cutting Conditions>
Workpiece Material : AISI 4140
Inserts : CNMG432◯◯
Cutting Speed : vc=655 SFM
Feed per Rev. : f=.010 IPR
Depth of Cut : ap=.059 inch
Cutting Mode : Wet Cutting

## Machining AISI 1045 : Comparison of Wear Resistance During Continuous Dry Cutting

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



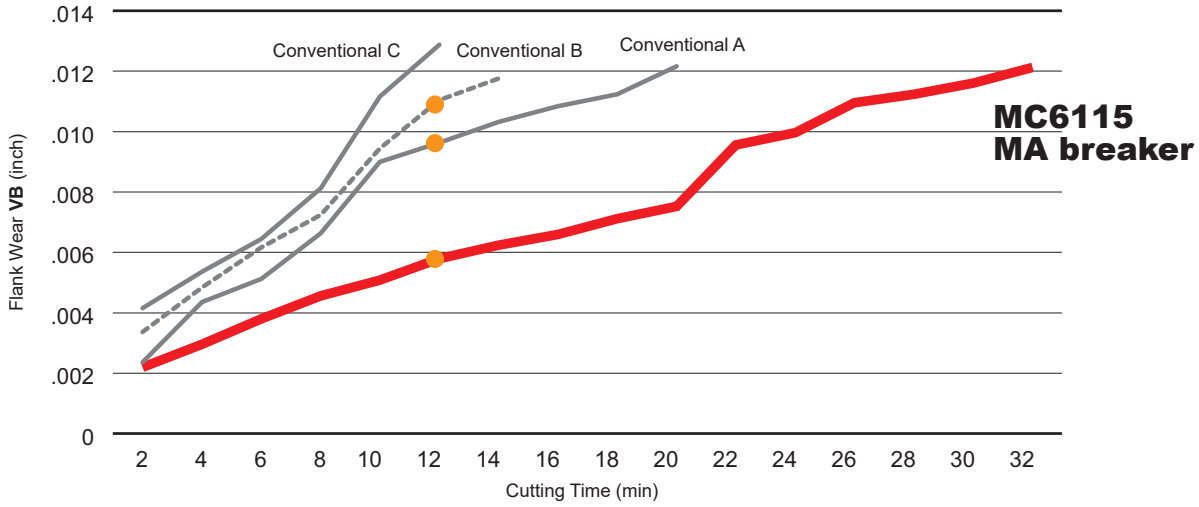



**MC6115** 10 min. Conventional A 10 min. Conventional B 8 min.

<Cutting Conditions>
Workpiece Material : AISI 1045
Inserts : CNMG432◌◌
Cutting Speed : vc=985 SFM
Feed per Rev. : f=.012 IPR
Depth of Cut : ap=.059 inch
Cutting Mode : Dry Cutting

## Machining AISI 52100 : Comparison of Wear Resistance During Continuous Wet Cutting

The thick coating provides high flank wear resistance.



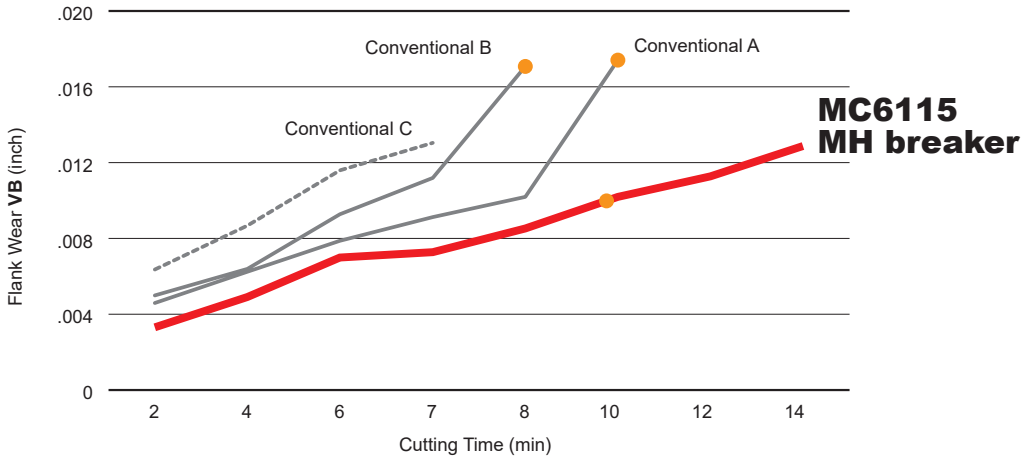

**MC6115** 12 min. Conventional A 12 min. Conventional B 12 min.

<Cutting Conditions>
Workpiece Material : AISI 52100
Inserts : CNMG432◌◌
Cutting Speed : vc=985 SFM
Feed per Rev. : f=.012 IPR
Depth of Cut : ap=.059 inch
Cutting Mode : Wet Cutting

# Cutting Performance

## Machining AISI 4140 : Comparison of Wear Resistance During Continuous Wet Cutting

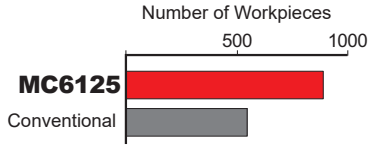
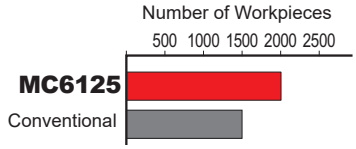
MC6115 with high edge strength breakers can also enable excellent wear resistance during high speed turning.

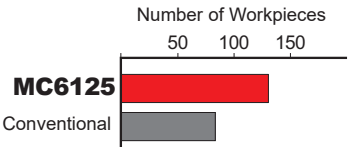
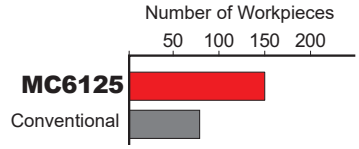


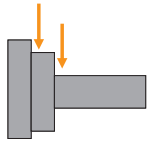
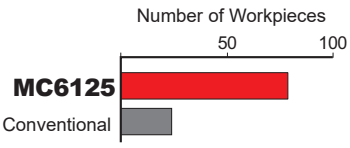

**MC6115** 10 min. Conventional A 10 min. Conventional B 8 min.

<Cutting Conditions>
Workpiece Material : AISI 4140
Inserts : CNMG432◌◌
Cutting Speed : vc=1150 SFM
Feed per Rev. : f=.012 IPR
Depth of Cut : ap=.059 inch
Cutting Mode : Wet Cutting

## Examples of Usage

| Insert | | CNMG432MA | WNMG432MP |
|---|---|---|---|
| Workpiece Material | | AISI 1045  | Carbon Steel  |
| Component | | Hex Bar Parts | Automotive Parts |
| Application | | Interrupted Finish Turning | External Turning and Facing |
| Cutting Conditions | Cutting Speed vc (SFM) | 490 | 260 |
| | Feed per Rev. f (IPR) | .008 | .004 - .020 |
| | Depth of Cut ap (inch) | .079, .063 | .020 |
| Cutting Mode | | Wet Cutting | Wet Cutting |
| Results | |   Conventional products fractured after chipping but MC6125 formed good chip shapes and achieved a longer tool life. |   MC6125 achieved more than 1.3 times longer tool life due to its high wear resistance. |

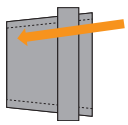
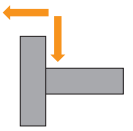
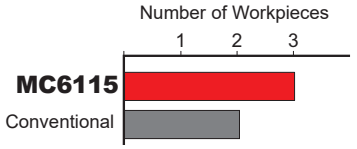
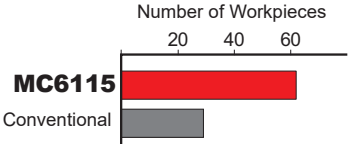
| Insert | | DNMG433S | CNMG432MH |
|---|---|---|---|
| Workpiece Material | | AISI 1053  | General Structural Steel  |
| Component | | – | Hun Parts |
| Application | | Interrupted Finish Turning | Face Turning |
| Cutting Conditions | Cutting Speed vc (SFM) | 655 | 655→785 |
| | Feed per Rev. f (IPR) | .012 | .010 |
| | Depth of Cut ap (inch) | .047 | .079 |
| Cutting Mode | | Wet Cutting | Wet Cutting |
| Results | |   MC6125 provided a stable cutting action and achieved 1.5 times more tool life than conventional products. |   MC6125 improved efficiency and tool life by increasing the cutting speed. |

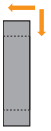
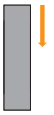
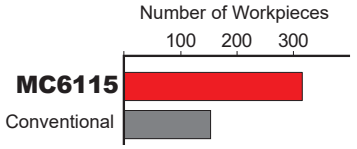
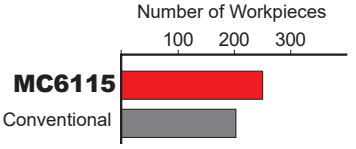
| Insert | | CNMG433RP |
|---|---|---|
| Workpiece Material | | AISI 5135  |
| Component | | Flange Parts |
| Application | | External Turning and Facing |
| Cutting Conditions | Cutting Speed vc (SFM) | 655 |
| | Feed per Rev. f (IPR) | .010 |
| | Depth of Cut ap (inch) | .059 |
| Cutting Mode | | Wet Cutting |
| Results | |   Conventional products machined an inconsistent number of components. MC6125 was more consistent and improved tool life. |

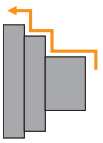
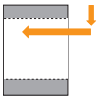
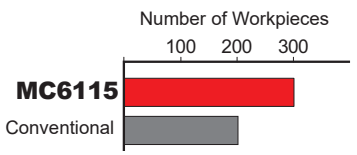
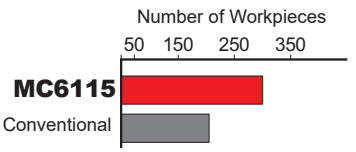
The application examples are from customers workpieces and can therefore differ from the recommended cutting conditions.

# CVD Coated Grade for Steel Turning

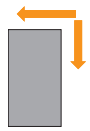
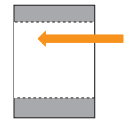
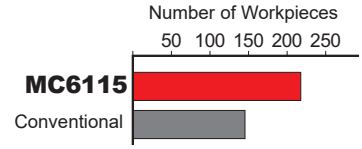
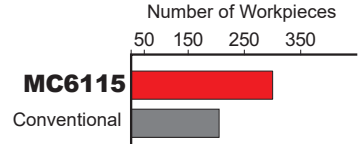
## Examples of Usage

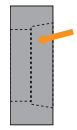
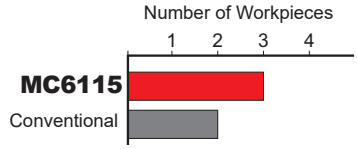
| Insert | | CNMG432MA | WNMG432MA |
|---|---|---|---|
| Workpiece Material | | AISI 4140  | AISI 5140  |
| Component | | Heavy Machinery Parts | Automotive Parts |
| Application | | Internal Turning | External Face Turning |
| Cutting Conditions | Cutting Speed vc (SFM) | 490 | 950 |
| | Feed per Rev. f (IPR) | .012 | .010 |
| | Depth of Cut ap (inch) | .059 | .039 |
| Cutting Mode | | Wet Cutting | Wet Cutting |
| Results | |  Tool life increased x 1.5 on a large workpiece (inner diameter 16.929 inch) |  The excellent wear resistance of MC6115 helped achieve double tool life. |

| Insert | | WNMG432MA | WNMG433MP |
|---|---|---|---|
| Workpiece Material | | AISI 52100  | AISI 5120H  |
| Component | | Bearing Parts | Machine Parts |
| Application | | External Face Turning | Face Turning |
| Cutting Conditions | Cutting Speed vc (SFM) | 650-910 | 770 |
| | Feed per Rev. f (IPR) | .008-.012 | .014 |
| | Depth of Cut ap (inch) | .039 | .039 |
| Cutting Mode | | Wet Cutting | Wet Cutting |
| Results | |  The excellent wear resistance of MC6115 helped achieve double tool life. |  MC6115 achieved longer tool life compared to a conventional product. |

| Insert | | WNMG432MP | WNMG434MA |
|---|---|---|---|
| Workpiece Material | | AISI 5140  | AISI 1049  |
| Component | | Hub | Joint Parts |
| Application | | External Turning and Facing | Internal Turning and Facing |
| Cutting Conditions | Cutting Speed vc (SFM) | 985 | 705 |
| | Feed per Rev. f (IPR) | .010-.014 | .010-.011 |
| | Depth of Cut ap (inch) | .039-.098 | .124 |
| Cutting Mode | | Wet Cutting | Wet Cutting |
| Results | |  Superior wear resistance compared to conventional products meant tool life was extended. |  Excellent wear resistance during rough machining of forged product applications helped achieve 150% tool life. |

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

| Insert | | DNMG443SA | CNMG432MP |
|---|---|---|---|
| Workpiece Material | | Bearing Steel  | AISI 5140  |
| Component | | Bearing Parts | Shaft Parts |
| Application | | External Turning and Facing | Internal Turning |
| Cutting Conditions | Cutting Speed vc (SFM) | 850 | 920 |
| | Feed per Rev. f (IPR) | .012-.014 | .011 |
| | Depth of Cut ap (inch) | .020 | .098 |
| Cutting Mode | | Wet Cutting | Wet Cutting |
| Results | |   Extreme resistance to chipping achieved 150% tool life and enabled easy identification of wear. |   Number of components machined increased by 50% due to improved wear resistance. |

| Insert | | WNMG432MP |
|---|---|---|
| Workpiece Material | | Heated Tool Steel  |
| Component | | Die Casting Parts |
| Application | | Internal Turning |
| Cutting Conditions | Cutting Speed vc (SFM) | 525 |
| | Feed per Rev. f (IPR) | .010 |
| | Depth of Cut ap (inch) | .079 |
| Cutting Mode | | Wet Cutting |
| Results | |   MC6115 gave 1.5 x longer tool life even when machining heat treated materials. |

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

# Memo

# Memo

## CVD Coated Grade for Steel Turning

# MC6100 Series

**For your safety**
●Don't touch breakers and chips without gloves. ●Please machine within recommended application range, and exchange expired tools with new parts in advance. ●Please use safety cover and wear safety glasses. ●When using compounded cutting oils, please take fire prevention. ●When attaching inserts or spare parts, please use the attached wrench or driver. ●When using tools in revolution machining, please make a trial run to check run-out, vibration, abnormal sounds etc.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(Tool specifications subject to change without notice.)


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