

New CVD Coated Grade for High Speed Steel Turning

Expanded  
Inserts

## UE6105

# Leading edge technology for high efficiency steel turning

■ 2 in 1 technology ensures longer tool life.



**2**  
**IN** **>** **1**  
TECHNOLOGY

# New CVD Coated Grade for High Speed Steel Turning

# UE6105

## Features

### Superior machining performance achieved using 2 in 1 technology

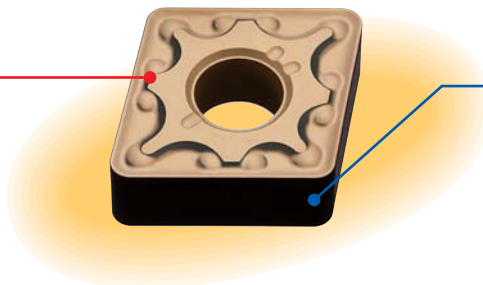
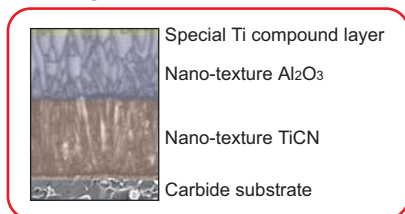
#### High Crater Wear Resistance

The gold Ti compound coating on the rake face exhibits high crater wear resistance. It also enhances the crater wear resistance of the nano-texture Al<sub>2</sub>O<sub>3</sub>.

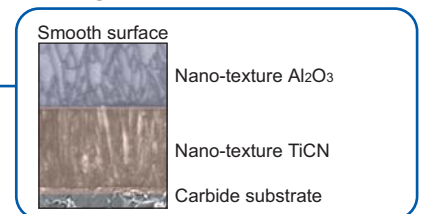
#### High Flank Wear Resistance

The black coating on the flank face has an extremely smooth surface, this prevents abnormal wear and weld chipping, leading to improved surface finishes and stable tool life.

#### Coating structure on the rake face



#### Coating structure on the flank face



### Superior wear resistance when dry high-speed machining.

UE6105-MA breaker	Competitor's
Cutting Speed : 350m/min	Cutting Speed : 300m/min
Cutting Time : 4min	Cutting Time : 4min
	<p>Large crater wear</p> <p>Large flank wear</p>

#### <Cutting Conditions>

Insert : CNMG120408-○○○  
 Tool : PCLNL2525M12  
 Feed : 0.3mm/rev  
 Depth of cut : 1.5mm  
 Coolant : Dry cutting  
 External continuous cutting  
 ○○○ indicates types of general-purpose chipbreakers from respective companies.

### State-of-the-art coating featuring 2 in 1 technology

#### 1 Wear resistant nano-texture Al<sub>2</sub>O<sub>3</sub>

High speed and high efficiency machining can be achieved due to the thickened Al<sub>2</sub>O<sub>3</sub> layer.

#### 2 Black super-smooth coating

Improved surface finishes and stable tool life can be obtained due to the use of the black super smooth coating. This coating limits wear development and weld chipping.

#### Comparison of Al<sub>2</sub>O<sub>3</sub> structure

Conventional Al<sub>2</sub>O<sub>3</sub>

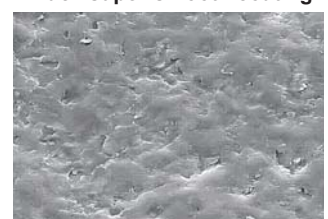
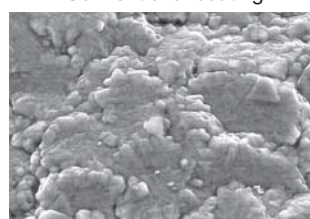
Nano-texture Al<sub>2</sub>O<sub>3</sub>



#### Comparison of coating surface

Conventional coating

Black super-smooth coating



# Application Range and Recommended Cutting Conditions

- **UE6105** is the first recommendation for high speed steel turning.  
Suitable for turning mild, carbon and alloy steels.

Application Range	
ISO	Steel
P01	NEW UE6105
P10	UE6110
P20	UE6020
P30	UE6035
P40	UE6035

Recommended Cutting Conditions			
Work Material	Hardness	Cutting Mode	Recommended Cutting Speed (m/min)
Mild steel	≤180HB	General Cutting	400 (270–500)
Carbon steel Alloy steel	≥180HB	General Cutting	300 (200–380)

**Negative Inserts**

Workpiece **P** Mild Steel

**Negative Inserts**

Workpiece **P** Carbon Steel Alloy Steel

**Cutting Conditions**

- **Stable Cutting**: Continuous Cutting, Constant depth of cutting, Pre-machined, Securely clamped component cutting
- **General Cutting**
- ⊕ **Unstable Cutting**: Heavy interrupted cutting, Irregular depth of cutting, Low clamping rigidity cutting

**Cutting Area**

- F** Finish Cutting (ap≤0.5mm)
- S** Light Cutting (ap=0.5–1.5mm)
- M** Medium Cutting (ap=1.5–4.0mm)
- G** Semi-heavy Cutting (ap=4.0–7.0mm)

## Cutting Performance

### Wear Resistance

#### Continuous high speed cutting of alloy steel

UE6105 has excellent wear resistance when cutting alloy steel!

<Cutting Conditions>

Insert : CNMG120408-○○○  
 Tool : PCLNL2525M12  
 Cutting Speed : 300m/min  
 Feed : 0.3mm/rev  
 Depth of cut : 1.5mm  
 Coolant : Dry cutting  
 External continuous cutting ○○○ indicates chipbreaker.

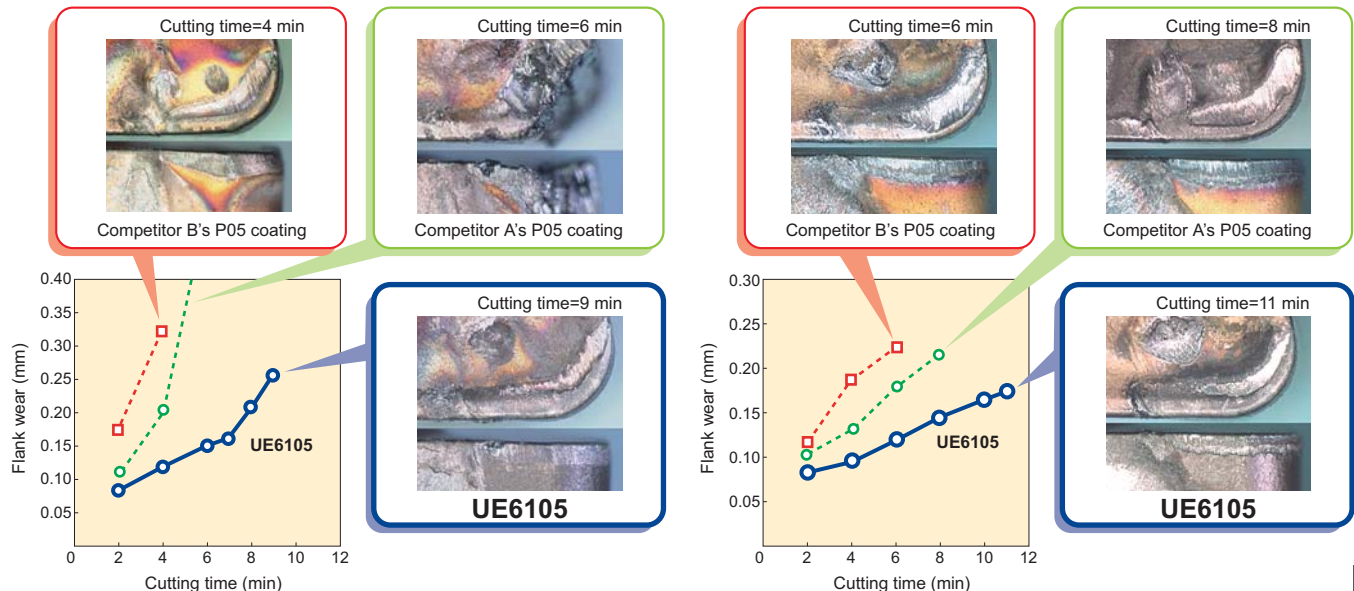
### Wear Resistance

#### Continuous high speed cutting of alloy steel

UE6105 has excellent wear resistance when cutting alloy steel!


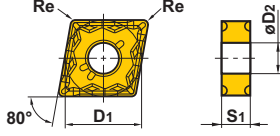

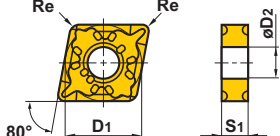

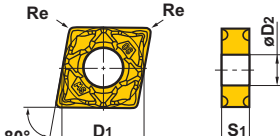

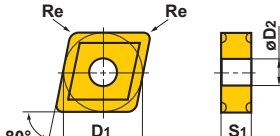

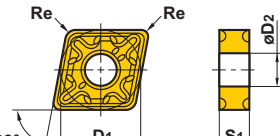

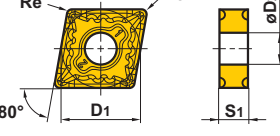

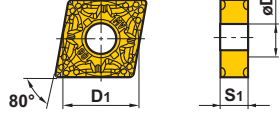
<Cutting Conditions>


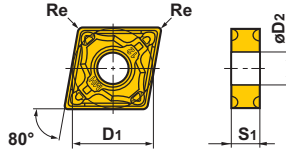

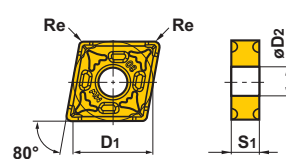

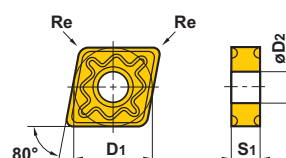

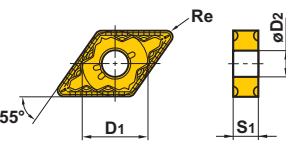

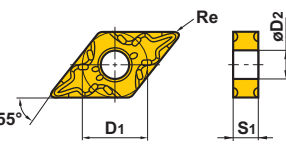

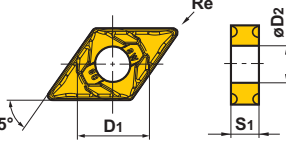

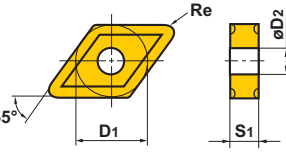
Insert : CNMG120408-○○○  
 Tool : PCLNL2525M12  
 Cutting speed : 350m/min  
 Feed : 0.3mm/rev  
 Depth of cut : 1.5mm  
 Coolant : Wet cutting  
 External continuous cutting ○○○ indicates chipbreaker.



## Inserts


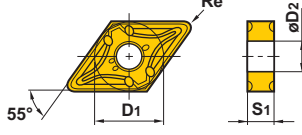

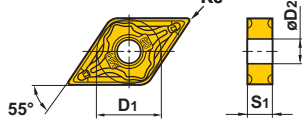

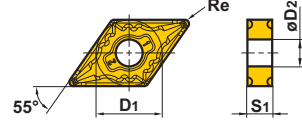

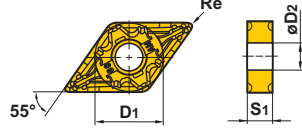

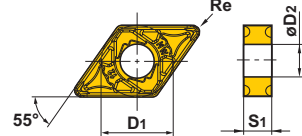

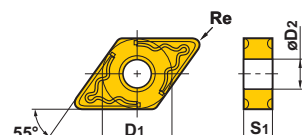

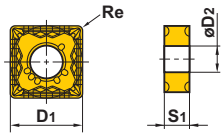
### ● Negative Inserts (With hole)


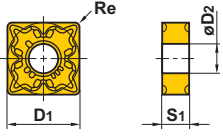

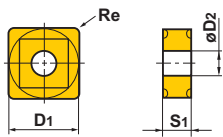

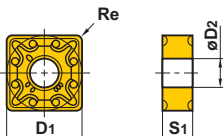

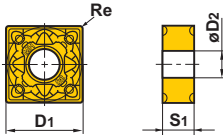

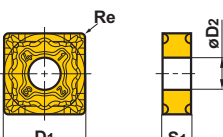

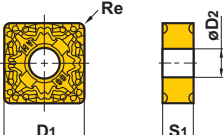

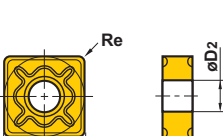
Shape	Order Number	Stock	Dimensions (mm)				Geometry
		<i>UE6105</i>	D <sub>1</sub>	S <sub>1</sub>	Re	D <sub>2</sub>	
SA Breaker 	CNMG120404-SA	●	12.7	4.76	0.4	5.16	
	120408-SA	●	12.7	4.76	0.8	5.16	
	120412-SA	●	12.7	4.76	1.2	5.16	
Light Cutting							
SH Breaker 	CNMG120404-SH	●	12.7	4.76	0.4	5.16	
	120408-SH	●	12.7	4.76	0.8	5.16	
	120412-SH	●	12.7	4.76	1.2	5.16	
Light Cutting							
SW Breaker 	CNMG120404-SW	●	12.7	4.76	0.4	5.16	
	120408-SW	●	12.7	4.76	0.8	5.16	
	120412-SW	●	12.7	4.76	1.2	5.16	
Light Cutting (Wiper)							
Standard Breaker 	CNMG120404	●	12.7	4.76	0.4	5.16	
	120408	●	12.7	4.76	0.8	5.16	
	120412	●	12.7	4.76	1.2	5.16	
	120416	●	12.7	4.76	1.6	5.16	
	160608	●	15.875	6.35	0.8	6.35	
	160612	●	15.875	6.35	1.2	6.35	
	160616	●	15.875	6.35	1.6	6.35	
	190608	●	19.05	6.35	0.8	7.93	
	190612	●	19.05	6.35	1.2	7.93	
190616	●	19.05	6.35	1.6	7.93		
Medium Cutting							
MA Breaker 	CNMG120404-MA	●	12.7	4.76	0.4	5.16	
	120408-MA	●	12.7	4.76	0.8	5.16	
	120412-MA	●	12.7	4.76	1.2	5.16	
	120416-MA	●	12.7	4.76	1.6	5.16	
	160608-MA	●	15.875	6.35	0.8	6.35	
	160612-MA	●	15.875	6.35	1.2	6.35	
	160616-MA	●	15.875	6.35	1.6	6.35	
190612-MA	●	19.05	6.35	1.2	7.93		
Medium Cutting							
MP Breaker 	CNMG120404-MP	●	12.7	4.76	0.4	5.16	
	120408-MP	●	12.7	4.76	0.8	5.16	
	120412-MP	●	12.7	4.76	1.2	5.16	
	120416-MP	●	12.7	4.76	1.6	5.16	
	160608-MP	●	15.875	6.35	0.8	6.35	
	160612-MP	●	15.875	6.35	1.2	6.35	
160616-MP	●	15.875	6.35	1.6	6.35		
Medium Cutting							
MV Breaker 	CNMG120404-MV	●	12.7	4.76	0.4	5.16	
	120408-MV	●	12.7	4.76	0.8	5.16	
	120412-MV	●	12.7	4.76	1.2	5.16	
	120416-MV	●	12.7	4.76	1.6	5.16	
Medium Cutting							

Shape	Order Number	Stock	Dimensions (mm)				Geometry
		<i>UE6105</i>	D1	S1	Re	D2	
<b>MH</b> Breaker   Medium Cutting	<b>CNMG120404-MH</b>	●	12.7	4.76	0.4	5.16	
	120408-MH	●	12.7	4.76	0.8	5.16	
	120412-MH	●	12.7	4.76	1.2	5.16	
	120416-MH	●	12.7	4.76	1.6	5.16	
	160608-MH	●	15.875	6.35	0.8	6.35	
	160612-MH	●	15.875	6.35	1.2	6.35	
	160616-MH	●	15.875	6.35	1.6	6.35	
	190612-MH	●	19.05	6.35	1.2	7.93	
	190616-MH	●	19.05	6.35	1.6	7.93	
<b>MW</b> Breaker   Medium Cutting (Wiper)	<b>CNMG120408-MW</b>	●	12.7	4.76	0.8	5.16	
	120412-MW	●	12.7	4.76	1.2	5.16	
<b>GH</b> Breaker   Semi-Heavy Cutting	<b>CNMG120408-GH</b>	●	12.7	4.76	0.8	5.16	
	120412-GH	●	12.7	4.76	1.2	5.16	
	120416-GH	●	12.7	4.76	1.6	5.16	
	160612-GH	●	15.875	6.35	1.2	6.35	
	160616-GH	●	15.875	6.35	1.6	6.35	
	190612-GH	●	19.05	6.35	1.2	7.93	
<b>SA</b> Breaker   Light Cutting	<b>DNMG150404-SA</b>	●	12.7	4.76	0.4	5.16	
	150408-SA	●	12.7	4.76	0.8	5.16	
	150412-SA	●	12.7	4.76	1.2	5.16	
	150604-SA	●	12.7	6.35	0.4	5.16	
	150608-SA	●	12.7	6.35	0.8	5.16	
	150612-SA	●	12.7	6.35	1.2	5.16	
<b>SH</b> Breaker   Light Cutting	<b>DNMG110404-SH</b>	●	9.525	4.76	0.4	3.81	
	110408-SH	●	9.525	4.76	0.8	3.81	
	150404-SH	●	12.7	4.76	0.4	5.16	
	150408-SH	●	12.7	4.76	0.8	5.16	
	150412-SH	●	12.7	4.76	1.2	5.16	
	150604-SH	●	12.7	6.35	0.4	5.16	
	150608-SH	●	12.7	6.35	0.8	5.16	
	150612-SH	●	12.7	6.35	1.2	5.16	
<b>SW</b> Breaker   Light Cutting (Wiper)	<b>NEW DNMX110404-SW</b>	●	9.525	4.76	0.4	3.81	
	<b>NEW 110408-SW</b>	●	9.525	4.76	0.8	3.81	
	150404-SW	●	12.7	4.76	0.4	5.16	
	150408-SW	●	12.7	4.76	0.8	5.16	
	150412-SW	●	12.7	4.76	1.2	5.16	
	150604-SW	●	12.7	6.35	0.4	5.16	
	150608-SW	●	12.7	6.35	0.8	5.16	
	150612-SW	●	12.7	6.35	1.2	5.16	
<b>Standard</b> Breaker   Medium Cutting	<b>DNMG150404</b>	●	12.7	4.76	0.4	5.16	
	150408	●	12.7	4.76	0.8	5.16	
	150412	●	12.7	4.76	1.2	5.16	
	150604	●	12.7	6.35	0.4	5.16	
	150608	●	12.7	6.35	0.8	5.16	
	150612	●	12.7	6.35	1.2	5.16	

## Inserts


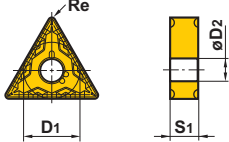

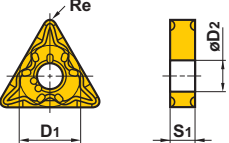

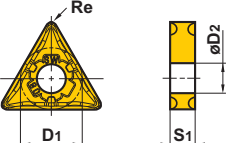

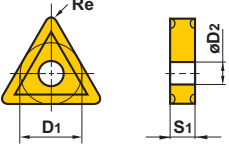

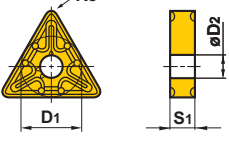

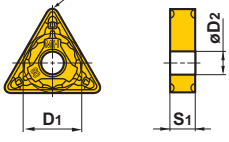

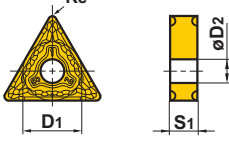

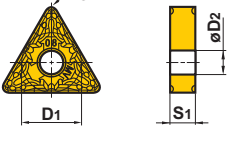
### ● Negative Inserts (With hole)

Shape	Order Number	Stock	Dimensions (mm)				Geometry
		<i>UE6105</i>	D1	S1	Re	D2	
<b>MA</b> Breaker    Medium Cutting	<b>DNMG110404-MA</b>	●	9.525	4.76	0.4	3.81	
	110408-MA	●	9.525	4.76	0.8	3.81	
	110412-MA	●	9.525	4.76	1.2	3.81	
	150404-MA	●	12.7	4.76	0.4	5.16	
	150408-MA	●	12.7	4.76	0.8	5.16	
	150412-MA	●	12.7	4.76	1.2	5.16	
	150604-MA	●	12.7	6.35	0.4	5.16	
	150608-MA	●	12.7	6.35	0.8	5.16	
	150612-MA	●	12.7	6.35	1.2	5.16	
<b>MH</b> Breaker    Medium Cutting	<b>DNMG150404-MH</b>	●	12.7	4.76	0.4	5.16	
	150408-MH	●	12.7	4.76	0.8	5.16	
	150412-MH	●	12.7	4.76	1.2	5.16	
	150604-MH	●	12.7	6.35	0.4	5.16	
	150608-MH	●	12.7	6.35	0.8	5.16	
<b>MP</b> Breaker    Medium Cutting	<b>DNMG150404-MP</b>	●	12.7	4.76	0.4	5.16	
	150408-MP	●	12.7	4.76	0.8	5.16	
	150412-MP	●	12.7	4.76	1.2	5.16	
	150416-MP	●	12.7	4.76	1.6	5.16	
	150604-MP	●	12.7	6.35	0.4	5.16	
	150608-MP	●	12.7	6.35	0.8	5.16	
	150612-MP	●	12.7	6.35	1.2	5.16	
<b>MV</b> Breaker    Medium Cutting	<b>DNMG150404-MV</b>	●	12.7	4.76	0.4	5.16	
	150408-MV	●	12.7	4.76	0.8	5.16	
	150412-MV	●	12.7	4.76	1.2	5.16	
	150604-MV	●	12.7	6.35	0.4	5.16	
	150608-MV	●	12.7	6.35	0.8	5.16	
<b>MW</b> Breaker    Medium Cutting (Wiper)	<b>DNMX150408-MW</b>	●	12.7	4.76	0.8	5.16	
	150412-MW	●	12.7	4.76	1.2	5.16	
	150608-MW	●	12.7	6.35	0.8	5.16	
	150612-MW	●	12.7	6.35	1.2	5.16	
<b>GH</b> Breaker    Semi-Heavy Cutting	<b>DNMG150408-GH</b>	●	12.7	4.76	0.8	5.16	
	150412-GH	●	12.7	4.76	1.2	5.16	
	150608-GH	●	12.7	6.35	0.8	5.16	
	150612-GH	●	12.7	6.35	1.2	5.16	
<b>SA</b> Breaker    Light Cutting	<b>SNMG120408-SA</b>	●	12.7	4.76	0.8	5.16	

Shape	Order Number	Stock	Dimensions (mm)				Geometry
		<i>UE6105</i>	D1	S1	Re	D2	
<b>SH</b> Breaker  Light Cutting	<b>SNMG120408-SH</b>	●	12.7	4.76	0.8	5.16	
<b>Standard</b> Breaker  Medium Cutting	<b>NEW</b> <b>SNMG090304</b>	●	9.525	3.18	0.4	3.81	
	<b>090308</b>	●	9.525	3.18	0.8	3.81	
	<b>120404</b>	●	12.7	4.76	0.4	5.16	
	<b>120408</b>	●	12.7	4.76	0.8	5.16	
	<b>120412</b>	●	12.7	4.76	1.2	5.16	
	<b>150612</b>	●	15.875	6.35	1.2	6.35	
	<b>190612</b>	●	19.05	6.35	1.2	7.93	
	<b>190616</b>	●	19.05	6.35	1.6	7.93	
<b>MA</b> Breaker  Medium Cutting	<b>SNMG120404-MA</b>	●	12.7	4.76	0.4	5.16	
	<b>120408-MA</b>	●	12.7	4.76	0.8	5.16	
	<b>120412-MA</b>	●	12.7	4.76	1.2	5.16	
	<b>150608-MA</b>	●	15.875	6.35	0.8	6.35	
	<b>150612-MA</b>	●	15.875	6.35	1.2	6.35	
	<b>190612-MA</b>	●	19.05	6.35	1.2	7.93	
	<b>190616-MA</b>	●	19.05	6.35	1.6	7.93	
<b>MH</b> Breaker  Medium Cutting	<b>SNMG120408-MH</b>	●	12.7	4.76	0.8	5.16	
	<b>120412-MH</b>	●	12.7	4.76	1.2	5.16	
	<b>190612-MH</b>	●	19.05	6.35	1.2	7.93	
	<b>190616-MH</b>	●	19.05	6.35	1.6	7.93	
<b>MP</b> Breaker  Medium Cutting	<b>SNMG120404-MP</b>	●	12.7	4.76	0.4	5.16	
	<b>120408-MP</b>	●	12.7	4.76	0.8	5.16	
	<b>120412-MP</b>	●	12.7	4.76	1.2	5.16	
<b>MV</b> Breaker  Medium Cutting	<b>SNMG120404-MV</b>	●	12.7	4.76	0.4	5.16	
	<b>120408-MV</b>	●	12.7	4.76	0.8	5.16	
	<b>120412-MV</b>	●	12.7	4.76	1.2	5.16	
<b>GH</b> Breaker  Semi-Heavy Cutting	<b>SNMG120408-GH</b>	●	12.7	4.76	0.8	5.16	
	<b>120412-GH</b>	●	12.7	4.76	1.2	5.16	
	<b>120416-GH</b>	●	12.7	4.76	1.6	5.16	
	<b>150612-GH</b>	●	15.875	6.35	1.2	6.35	
	<b>190612-GH</b>	●	19.05	6.35	1.2	7.93	
	<b>190616-GH</b>	●	19.05	6.35	1.6	7.93	

## Inserts


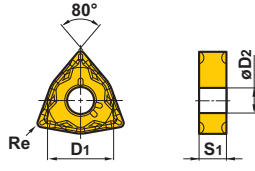

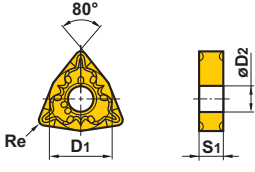

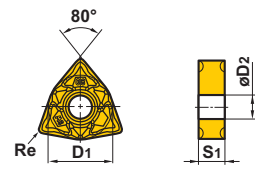

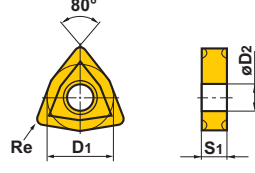

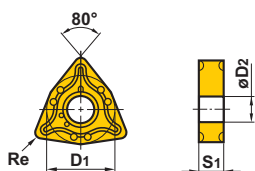

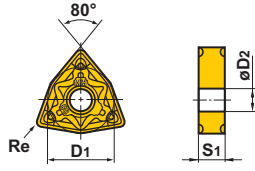

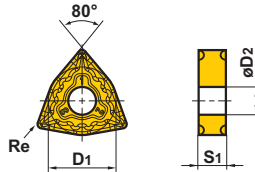
### ● Negative Inserts (With hole)


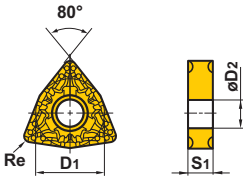

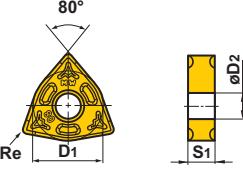

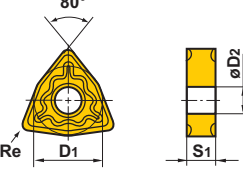
Shape	Order Number	Stock	Dimensions (mm)				Geometry
		<i>UE6105</i>	D1	S1	Re	D2	
<b>SA</b> Breaker 	<b>TNMG160404-SA</b>	●	9.525	4.76	0.4	3.81	
	<b>160408-SA</b>	●	9.525	4.76	0.8	3.81	
	<b>160412-SA</b>	●	9.525	4.76	1.2	3.81	
	<b>220408-SA</b>	●	12.7	4.76	0.8	5.16	
Light Cutting							
<b>SH</b> Breaker 	<b>TNMG160404-SH</b>	●	9.525	4.76	0.4	3.81	
	<b>160408-SH</b>	●	9.525	4.76	0.8	3.81	
	<b>220408-SH</b>	●	12.7	4.76	0.8	5.16	
Light Cutting							
<b>SW</b> Breaker 	<b>TNMX160404-SW</b>	●	9.525	4.76	0.4	3.81	
	<b>160408-SW</b>	●	9.525	4.76	0.8	3.81	
Light Cutting (Wiper)							
<b>Standard</b> Breaker 	<b>TNMG160404</b>	●	9.525	4.76	0.4	3.81	
	<b>160408</b>	●	9.525	4.76	0.8	3.81	
	<b>160412</b>	●	9.525	4.76	1.2	3.81	
	<b>220404</b>	●	12.7	4.76	0.4	5.16	
	<b>220408</b>	●	12.7	4.76	0.8	5.16	
	<b>220412</b>	●	12.7	4.76	1.2	5.16	
Medium Cutting							
<b>MA</b> Breaker 	<b>TNMG160404-MA</b>	●	9.525	4.76	0.4	3.81	
	<b>160408-MA</b>	●	9.525	4.76	0.8	3.81	
	<b>160412-MA</b>	●	9.525	4.76	1.2	3.81	
	<b>220408-MA</b>	●	12.7	4.76	0.8	5.16	
	<b>220412-MA</b>	●	12.7	4.76	1.2	5.16	
	<b>270608-MA</b>	●	15.875	6.35	0.8	6.35	
Medium Cutting							
<b>MH</b> Breaker 	<b>TNMG160404-MH</b>	●	9.525	4.76	0.4	3.81	
	<b>160408-MH</b>	●	9.525	4.76	0.8	3.81	
	<b>160412-MH</b>	●	9.525	4.76	1.2	3.81	
	<b>220408-MH</b>	●	12.7	4.76	0.8	5.16	
	<b>220412-MH</b>	●	12.7	4.76	1.2	5.16	
Medium Cutting							
<b>MP</b> Breaker 	<b>TNMG160404-MP</b>	●	9.525	4.76	0.4	3.81	
	<b>160408-MP</b>	●	9.525	4.76	0.8	3.81	
	<b>160412-MP</b>	●	9.525	4.76	1.2	3.81	
	<b>220408-MP</b>	●	12.7	4.76	0.8	5.16	
	<b>220412-MP</b>	●	12.7	4.76	1.2	5.16	
Medium Cutting							
<b>MV</b> Breaker 	<b>TNMG160404-MV</b>	●	9.525	4.76	0.4	3.81	
	<b>160408-MV</b>	●	9.525	4.76	0.8	3.81	
	<b>160412-MV</b>	●	9.525	4.76	1.2	3.81	
	<b>220408-MV</b>	●	12.7	4.76	0.8	5.16	
	<b>220412-MV</b>	●	12.7	4.76	1.2	5.16	
Medium Cutting							

Shape	Order Number	Stock	Dimensions (mm)				Geometry
		<i>UE6105</i>	D1	S1	Re	D2	
<b>MW</b> Breaker  Medium Cutting (Wiper)	<b>TNMX160408-MW</b>	●	9.525	4.76	0.8	3.81	
	<b>160412-MW</b>	●	9.525	4.76	1.2	3.81	
<b>GH</b> Breaker  Semi-Heavy Cutting	<b>TNMG160408-GH</b>	●	9.525	4.76	0.8	3.81	
	<b>160412-GH</b>	●	9.525	4.76	1.2	3.81	
	<b>220408-GH</b>	●	12.7	4.76	0.8	5.16	
	<b>220412-GH</b>	●	12.7	4.76	1.2	5.16	
	<b>220416-GH</b>	●	12.7	4.76	1.6	5.16	
	<b>270612-GH</b>	●	15.875	6.35	1.2	6.35	
<b>SH</b> Breaker  Light Cutting	<b>VNMG160404-SH</b>	●	9.525	4.76	0.4	3.81	
	<b>160408-SH</b>	●	9.525	4.76	0.8	3.81	
<b>Standard</b> Breaker  Medium Cutting	<b>VNMG160404</b>	●	9.525	4.76	0.4	3.81	
	<b>160408</b>	●	9.525	4.76	0.8	3.81	
	<b>160412</b>	●	9.525	4.76	1.2	3.81	
<b>MA</b> Breaker  Medium Cutting	<b>VNMG160404-MA</b>	●	9.525	4.76	0.4	3.81	
	<b>160408-MA</b>	●	9.525	4.76	0.8	3.81	
<b>MH</b> Breaker  Medium Cutting	<b>VNMG160404-MH</b>	●	9.525	4.76	0.4	3.81	
	<b>160408-MH</b>	●	9.525	4.76	0.8	3.81	
<b>MP</b> Breaker  Medium Cutting	<b>VNMG160404-MP</b>	●	9.525	4.76	0.4	3.81	
	<b>160408-MP</b>	●	9.525	4.76	0.8	3.81	
	<b>160412-MP</b>	●	9.525	4.76	1.2	3.81	
<b>MV</b> Breaker  Medium Cutting	<b>VNMG160404-MV</b>	●	9.525	4.76	0.4	3.81	
	<b>160408-MV</b>	●	9.525	4.76	0.8	3.81	


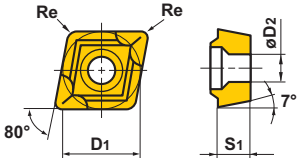

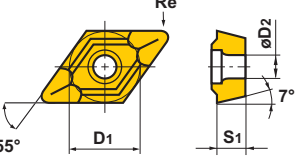

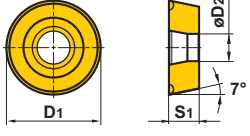

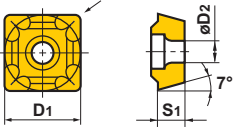
## Inserts

### ● Negative Inserts (With hole)

Shape	Order Number	Stock	Dimensions (mm)				Geometry
		<i>UE6105</i>	D1	S1	Re	D2	
<b>SA</b> Breaker 	<b>WNMG080404-SA</b>	●	12.7	4.76	0.4	3.81	
	<b>080408-SA</b>	●	12.7	4.76	0.8	3.81	
	<b>080412-SA</b>	●	12.7	4.76	1.2	3.81	
Light Cutting							
<b>SH</b> Breaker 	<b>WNMG06T304-SH</b>	●	9.525	3.97	0.4	3.81	
	<b>06T308-SH</b>	●	9.525	3.97	0.8	3.81	
	<b>060404-SH</b>	●	9.525	4.76	0.4	3.81	
	<b>060408-SH</b>	●	9.525	4.76	0.8	3.81	
	<b>080404-SH</b>	●	12.7	4.76	0.4	5.16	
	<b>080408-SH</b>	●	12.7	4.76	0.8	5.16	
Light Cutting	<b>080412-SH</b>	●	12.7	4.76	1.2	5.16	
<b>SW</b> Breaker 	<b>WNMG060404-SW</b>	●	9.525	4.76	0.4	3.81	
	<b>060408-SW</b>	●	9.525	4.76	0.8	3.81	
	<b>080404-SW</b>	●	12.7	4.76	0.4	5.16	
	<b>080408-SW</b>	●	12.7	4.76	0.8	5.16	
	Light Cutting (Wiper)	<b>080412-SW</b>	●	12.7	4.76	1.2	
<b>Standard</b> Breaker 	<b>WNMG080404</b>	●	12.7	4.76	0.4	5.16	
	<b>080408</b>	●	12.7	4.76	0.8	5.16	
	<b>080412</b>	●	12.7	4.76	1.2	5.16	
Medium Cutting							
<b>MA</b> Breaker 	<b>WNMG06T304-MA</b>	●	9.525	3.97	0.4	3.81	
	<b>06T308-MA</b>	●	9.525	3.97	0.8	3.81	
	<b>06T312-MA</b>	●	9.525	3.97	1.2	3.81	
	<b>060404-MA</b>	●	9.525	4.76	0.4	3.81	
	<b>060408-MA</b>	●	9.525	4.76	0.8	3.81	
	<b>060412-MA</b>	●	9.525	4.76	1.2	3.81	
	<b>080404-MA</b>	●	12.7	4.76	0.4	5.16	
	<b>080408-MA</b>	●	12.7	4.76	0.8	5.16	
	Medium Cutting	<b>080412-MA</b>	●	12.7	4.76	1.2	
<b>080416-MA</b>	●	12.7	4.76	1.6	5.16		
<b>MH</b> Breaker 	<b>WNMG080404-MH</b>	●	12.7	4.76	0.4	5.16	
	<b>080408-MH</b>	●	12.7	4.76	0.8	5.16	
	<b>080412-MH</b>	●	12.7	4.76	1.2	5.16	
Medium Cutting							
<b>MP</b> Breaker 	<b>WNMG06T304-MP</b>	●	9.525	3.97	0.4	3.81	
	<b>06T308-MP</b>	●	9.525	3.97	0.8	3.81	
	<b>06T312-MP</b>	●	9.525	3.97	1.2	3.81	
	<b>060404-MP</b>	●	9.525	4.76	0.4	3.81	
	<b>060408-MP</b>	●	9.525	4.76	0.8	3.81	
	<b>060412-MP</b>	●	9.525	4.76	1.2	3.81	
	<b>080404-MP</b>	●	12.7	4.76	0.4	5.16	
	<b>080408-MP</b>	●	12.7	4.76	0.8	5.16	
	Medium Cutting	<b>080412-MP</b>	●	12.7	4.76	1.2	
<b>080416-MP</b>	●	12.7	4.76	1.6	5.16		


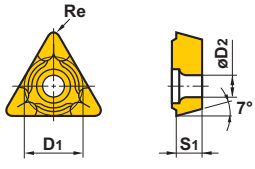

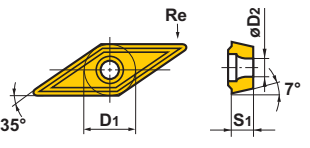
Shape	Order Number	Stock	Dimensions (mm)				Geometry
		<i>UE6105</i>	D1	S1	Re	D2	
<b>MV</b> Breaker    Medium Cutting	<b>WNMG06T304-MV</b>	●	9.525	3.97	0.4	3.81	
	<b>06T308-MV</b>	●	9.525	3.97	0.8	3.81	
	<b>06T312-MV</b>	●	9.525	3.97	1.2	3.81	
	<b>060404-MV</b>	●	9.525	4.76	0.4	3.81	
	<b>060408-MV</b>	●	9.525	4.76	0.8	3.81	
	<b>060412-MV</b>	●	9.525	4.76	1.2	3.81	
	<b>080404-MV</b>	●	12.7	4.76	0.4	5.16	
	<b>080408-MV</b>	●	12.7	4.76	0.8	5.16	
	<b>080412-MV</b>	●	12.7	4.76	1.2	5.16	
<b>MW</b> Breaker    Medium Cutting (Wiper)	<b>WNMG060408-MW</b>	●	9.525	4.76	0.8	3.81	
	<b>060412-MW</b>	●	9.525	4.76	1.2	3.81	
	<b>080408-MW</b>	●	12.7	4.76	0.8	5.16	
	<b>080412-MW</b>	●	12.7	4.76	1.2	5.16	
<b>GH</b> Breaker    Semi-Heavy Cutting	<b>WNMG080408-GH</b>	●	12.7	4.76	0.8	5.16	
	<b>080412-GH</b>	●	12.7	4.76	1.2	5.16	

### ● 7° Positive inserts (With hole)

Shape	Order Number	Stock	Dimensions (mm)				Geometry
		<i>UE6105</i>	D1	S1	Re	D2	
<b>Standard</b> Breaker    Medium Cutting	<b>CCMT060204</b>	●	6.35	2.38	0.4	2.8	
	<b>09T304</b>	●	9.525	3.97	0.4	4.4	
	<b>09T308</b>	●	9.525	3.97	0.8	4.4	
	<b>120404</b>	●	12.7	4.76	0.4	5.5	
	<b>120408</b>	●	12.7	4.76	0.8	5.5	
<b>Standard</b> Breaker    Medium Cutting	<b>DCMT070204</b>	●	6.35	2.38	0.4	2.8	
	<b>11T304</b>	●	9.525	3.97	0.4	4.4	
	<b>11T308</b>	●	9.525	3.97	0.8	4.4	
<b>Standard</b> Breaker    Medium Cutting	<b>RCMX1204M0</b>	●	12	4.76	—	4.2	
	<b>1606M0</b>	●	16	6.35	—	5.2	
	<b>2006M0</b>	●	20	6.35	—	6.5	
	<b>2507M0</b>	●	25	7.94	—	7.2	
	<b>3209M0</b>	●	32	9.52	—	9.5	
<b>Standard</b> Breaker    Medium Cutting	<b>SCMT09T304</b>	●	9.525	3.97	0.4	4.4	
	<b>09T308</b>	●	9.525	3.97	0.8	4.4	
	<b>120404</b>	●	12.7	4.76	0.4	5.5	
	<b>120408</b>	●	12.7	4.76	0.8	5.5	

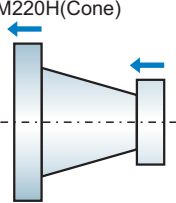
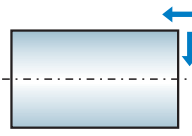
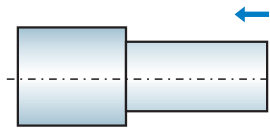
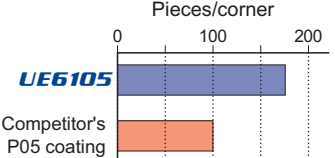
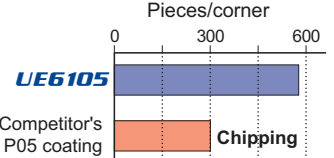
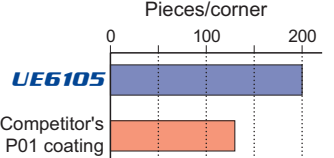
## Inserts

### ● 7° Positive inserts (With hole)

Shape	Order Number	Stock	Dimensions (mm)				Geometry
		UE6105	D1	S1	Re	D2	
 Standard Breaker Medium Cutting	TCMT110204	●	6.35	2.38	0.4	2.8	
	110208	●	6.35	2.38	0.8	2.8	
	16T304	●	9.525	3.97	0.4	4.4	
	16T308	●	9.525	3.97	0.8	4.4	
 Standard Breaker Medium Cutting	VCMT160404	●	9.525	4.76	0.4	4.4	
	160408	●	9.525	4.76	0.8	4.4	

● : Inventory maintained.

## Application Examples

Insert	CNMG160612-GH	CNMG120408-SW	WNMG080412-GH	
Work material	JIS SNCM220H(Cone) 	JIS SUJ2(Bar) 	JIS SUM23(Shaft) 	
Cutting conditions	Cutting speed (m/min)	270	400	370
	Feed (mm/rev)	0.5	0.2-0.25	0.4
	Depth of cut (mm)	3.0	1.0-1.5	3.5
Coolant	Wet	Wet	Dry	
Result	<p>Pieces/corner</p>  <p>UE6105 shown excellent wear resistance and achieved 1.5 times longer tool life than the competitor grade.</p>	<p>Pieces/corner</p>  <p>UE6105 shown excellent chipping resistance and achieved 1.5 times longer tool life than the competitor grade.</p>	<p>Pieces/corner</p>  <p>UE6105 shown excellent wear resistance and achieved 1.5 times longer tool life than the competitor grade.</p>	

#### 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 spanner. ● When using rotating tools, please make a trial run to check run-out, vibration and abnormal sounds etc.

# MITSUBISHI MATERIALS CORPORATION

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(Tools specifications subject to change without notice.)