

mitsubishi

MITSUBISHI CARBIDE

TOOLS NEWS

2006. 4. Update B061G

Expanded
Inserts

CVD coated grade targeted
for turning of cast iron and ductile cast iron

UC5105/UC5115

The latest smooth coating technology ensuring stable, reliable cutting.

**New high technology grade
for efficient turning
of cast iron.**

● Inserts suitable for steel turning
now available.



CVD coated grade targeted for turning of cast iron and ductile cast iron

UC5105/UC5115

Features of UC5105/UC5115

Very effective on cast iron and ductile cast iron

Newly developed "All-Black Super-Even Coat"

Improved wear resistance

Dramatically increased wear resistance due to the thick Al₂O₃ (Aluminium oxide), and the strong, fibrous TiCN (Titanium Carbon Nitride) coating layers.

Improved chipping resistance

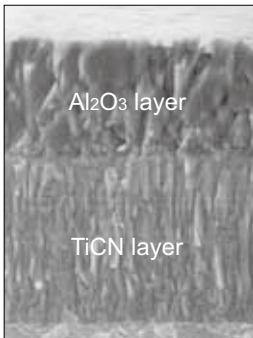
The new, smoother-than-normal surface coating prevents welding and edge chipping to allow reliable and stable cutting.

UC5105

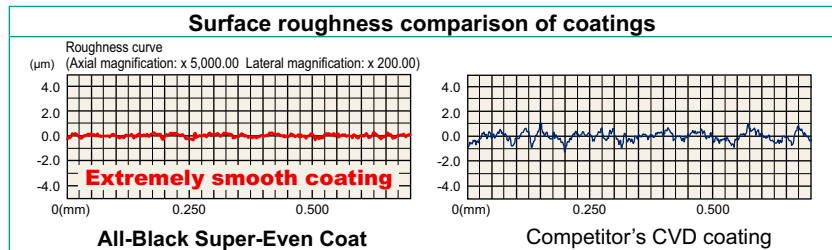
With a very hard carbide substrate and "All-Black Super-Even Coat." Effective for high-speed turning of cast iron and ductile cast iron.

UC5115

With a very tough carbide substrate and "All-Black Super-Even Coat." The first recommended grade for general turning of cast iron and ductile cast iron.



Structure of UC5105/UC5115



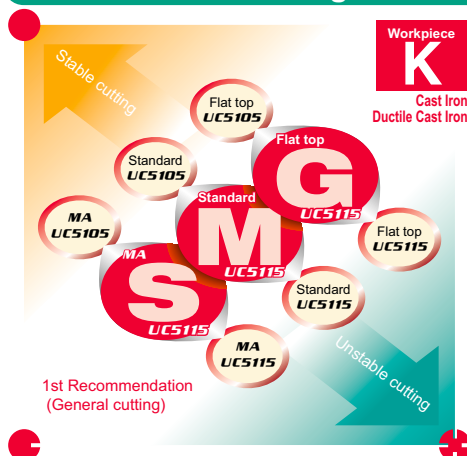
Application Range and Recommended Cutting Conditions

TOOL NAVI SYSTEM

UC5105 with high wear resistance for continuous and high speed turning.

UC5115 with an excellent balance of toughness and wear resistance. Also extremely suitable for long life, high-speed continuous turning of steel.

Negative Inserts for Cast Iron and Ductile Cast Iron



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

- S Light cutting (ap=0.5—1.5mm)
- G Semi-heavy cutting (ap=4.0—7.0mm)
- M Medium cutting (ap=1.5—4.0mm)

Application range


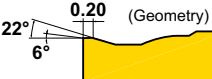

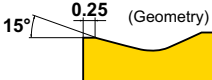

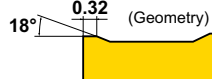
ISO	Application range
K01	UC5105
K10	UC5105
K20	UC5115
K30	UC5115




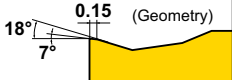

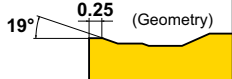
Recommended cutting conditions

Work Material	Tensile strength	Cutting speed (m/min)	
		UC5105	UC5115
K Grey cast iron	≤300MPa	300 (200—400)	250 (150—300)
	≤450MPa	300 (200—400)	250 (150—300)
Ductile cast iron	500—800MPa	230 (180—300)	200 (150—250)
P Carbon Steel Alloy Steel	Hardness 180—280HB	—	300 (220—370)


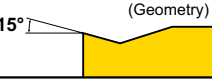

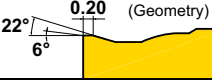
Chip breaker range for UC5115


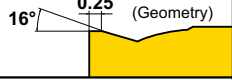

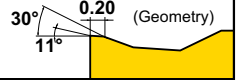
For Cast Iron Cutting

Application	Breaker	Features
Light Cutting	MA 	Positive land for sharp cutting action.  (Geometry)
Medium Cutting	Standard 	Flat land gives high cutting edge strength.  (Geometry)
Semi-Heavy Cutting	GH 	Suitable for interrupted cutting and removing scale. For high feed cutting due to a combination of a wide land and large chip pocket.  (Geometry)

Application	Breaker	Features
Semi-Heavy Cutting	Flat top 	Most effective for unstable machining because of the high edge strength.  (Geometry)
Efficient Light Cutting	SW 	With a wiper geometry for high feed rates in the light cutting application area.  (Geometry)
Efficient Medium Cutting	MW 	With a wiper geometry for high feed cutting in any application area.  (Geometry)

For Steel Cutting

Application	Breaker	Features
Light Cutting	SH 	Positive land for sharp cutting action. Good chip control in the light cutting application area.  (Geometry)
Medium Cutting	MA 	Positive land for sharp cutting action. Good chip control in any application area.  (Geometry)

Application	Breaker	Features
Medium Cutting	MH 	Flat land gives high cutting edge strength. Good chip control in any application area.  (Geometry)
Medium Cutting	MV 	Positive land for sharp cutting action. Chip breaker geometry suitable for copying and back turning. Good chip control in any application area.  (Geometry)

Cutting Performance of UC5105 / UC5115

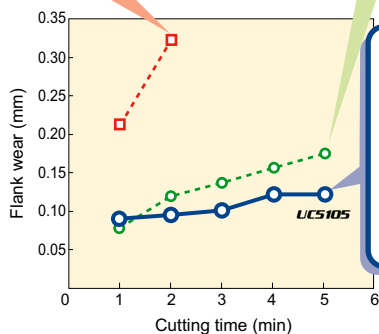
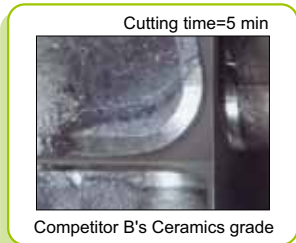
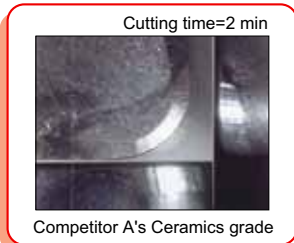
Wear Resistance

High speed turning of Gray cast iron (JIS FC300) (vc=600m/min)

UC5105 exhibits extraordinary wear resistance similar to that of ceramic grades!

<Cutting conditions>

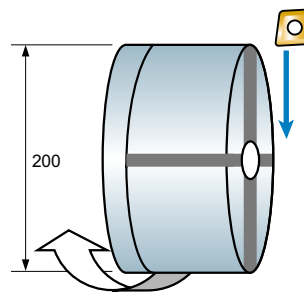
- Insert : CNMA120408
- Tool : PCLNL2525M12
- Cutting speed: 600m/min
- Feed : 0.3mm/rev
- Depth of cut : 1.5mm
- Coolant : Dry cutting
- External continuous cutting



Fracture Resistance

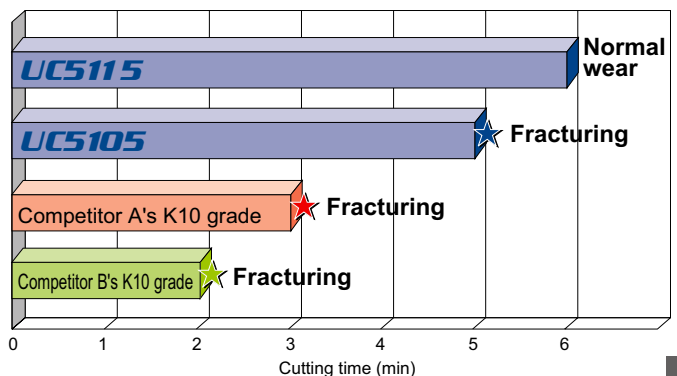
Interrupted facing of ductile cast iron (JIS FCD450)

UC5115 displays exceptional chipping resistance with an extremely reliable cutting edge!



<Cutting conditions>


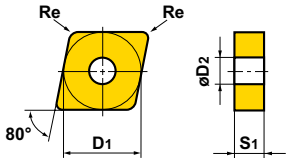

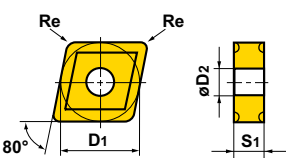

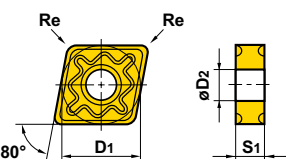


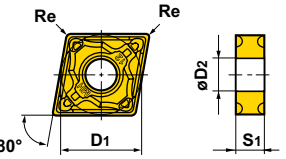

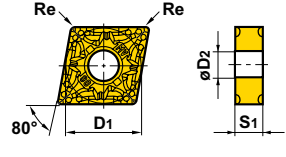
- Insert : CNMA120408
- Tool : PCLNL2525M12
- Cutting speed: 120m/min
- Feed : 0.3mm/rev
- Depth of cut : 1.5mm
- Coolant : Wet cutting




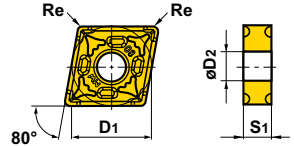

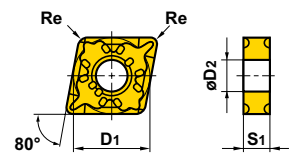

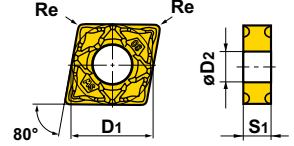

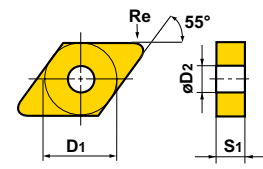

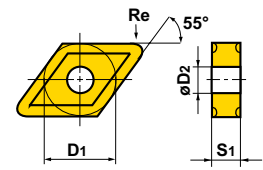

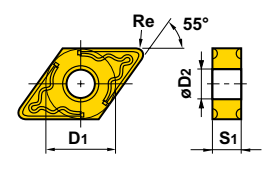

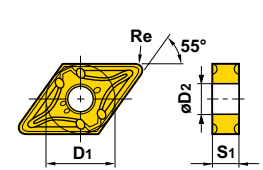

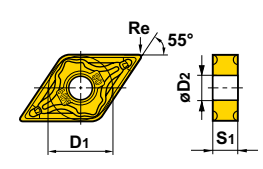
UC5105/UC5115

Inserts

● Negative Insert (With hole)

Sharp	Order Number	Stock		Dimensions (mm)				Geometry
		UC5105	UC5115	D1	S1	Re	D2	
	CNMA 120404	●	●	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	
	160612	●	●	15.875	6.35	1.2	6.35	
	160616	●	●	15.875	6.35	1.6	6.35	
	190612	●	●	19.05	6.35	1.2	7.93	
	190616	●	●	19.05	6.35	1.6	7.93	
	CNMG 120404	●	●	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	
	160612	●	●	15.875	6.35	1.2	6.35	
	160616	●	●	15.875	6.35	1.6	6.35	
	190612	●	●	19.05	6.35	1.2	7.93	
	190616	●	●	19.05	6.35	1.6	7.93	
	CNMG 120408-GH	●	●	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	
	190616-GH	●	●	19.05	6.35	1.6	7.93	
		CNMG 120404-MA	●	●	12.7	4.76	0.4	
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	
190616-MA	●	●	19.05	6.35	1.6	7.93		
	NEW CNMG120404-MH		●	12.7	4.76	0.4	5.16	
	NEW 120408-MH		●	12.7	4.76	0.8	5.16	
	NEW 120412-MH		●	12.7	4.76	1.2	5.16	
	NEW 120416-MH		●	12.7	4.76	1.6	5.16	
	NEW 160608-MH		●	15.875	6.35	0.8	6.35	
	NEW 160612-MH		●	15.875	6.35	1.2	6.35	
	NEW 160616-MH		●	15.875	6.35	1.6	6.35	
	NEW 190612-MH		●	19.05	6.35	1.2	7.93	
	NEW 190616-MH		●	19.05	6.35	1.6	7.93	
	NEW CNMG120404-MV		□	12.7	4.76	0.4	5.16	
	NEW 120408-MV		□	12.7	4.76	0.8	5.16	
	NEW 120412-MV		□	12.7	4.76	1.2	5.16	
	NEW 120416-MV		□	12.7	4.76	1.6	5.16	


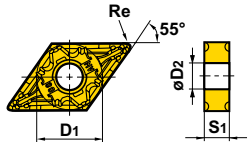

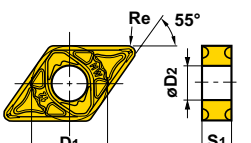

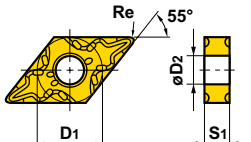

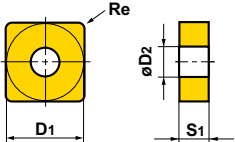

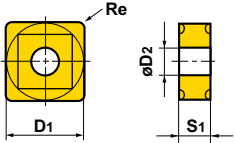

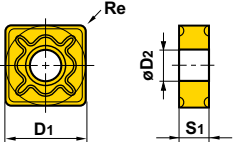

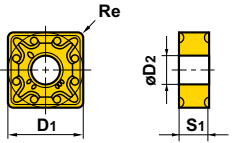

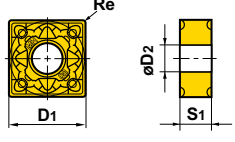
● : Inventory maintained. □ : Non stock, produced to order only.

Sharp	Order Number	Stock		Dimensions (mm)				Geometry
		UC5105	UC5115	D1	S1	Re	D2	
MW Breaker  Medium Cutting (Wiper)	CNMG120408-MW	●	●	12.7	4.76	0.8	5.16	
	120412-MW	●	●	12.7	4.76	1.2	5.16	
SH Breaker  Light Cutting	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	
SW Breaker  Light Cutting (Wiper)	CNMG120404-SW		●	12.7	4.76	0.4	5.16	
	120408-SW		●	12.7	4.76	0.8	5.16	
Flat Top  Medium Cutting	DNMA150404	●	●	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	
	150416	□	□	12.7	4.76	1.6	5.16	
	150608	●	●	12.7	6.35	0.8	5.16	
	150612	●	●	12.7	6.35	1.2	5.16	
Standard Breaker  Medium Cutting	DNMG150404	●	●	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	
GH Breaker  Semi-Heavy Cutting	DNMG150408-GH	●	●	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	
MA Breaker  Medium Cutting	DNMG150404-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	
	150608-MA	●	●	12.7	6.35	0.8	5.16	
	150612-MA	●	●	12.7	6.35	1.2	5.16	
MH Breaker  Medium Cutting	DNMG150404-MH		●	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	
	150612-MH		●	12.7	6.35	1.2	5.16	


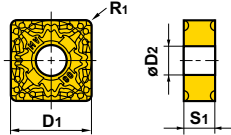

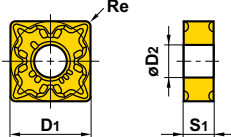

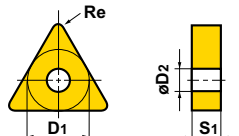

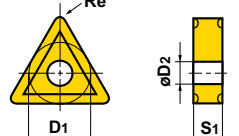

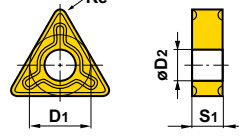

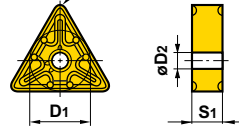

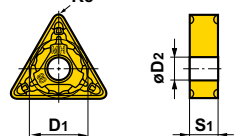

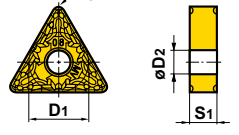
UC5105/UC5115

Inserts

● Negative Insert (With hole)

Sharp	Order Number	Stock		Dimensions (mm)				Geometry
		UC5105	UC5115	D1	S1	Re	D2	
 MV Breaker Medium Cutting	NEW DNMG150404-MV		☐	12.7	4.76	0.4	5.16	
	NEW 150408-MV		☐	12.7	4.76	0.8	5.16	
	NEW 150412-MV		☐	12.7	4.76	1.2	5.16	
	NEW 150416-MV		☐	12.7	4.76	1.6	5.16	
	NEW 150604-MV		☐	12.7	6.35	0.4	5.16	
	NEW 150608-MV		☐	12.7	6.35	0.8	5.16	
	NEW 150612-MV		☐	12.7	6.35	1.2	5.16	
	NEW 150616-MV		☐	12.7	6.35	1.6	5.16	
 MW Breaker Medium Cutting (Wiper)	DNMX150408-MW	☐	☐	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	
 SH Breaker Light Cutting	NEW DNMG150404-SH		☐	12.7	4.76	0.4	5.16	
	NEW 150408-SH		☐	12.7	4.76	0.8	5.16	
	NEW 150412-SH		☐	12.7	4.76	1.2	5.16	
	NEW 150604-SH		☐	12.7	6.35	0.4	5.16	
	NEW 150608-SH		☐	12.7	6.35	0.8	5.16	
	NEW 150612-SH		☐	12.7	6.35	1.2	5.16	
 Flat Top	SNMA090308	●	●	9.525	3.18	0.8	3.81	
	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	
	190612	●	●	19.05	6.35	1.2	7.93	
	190616	●	●	19.05	6.35	1.6	7.93	
 Standard Breaker Medium Cutting	SNMG120408	●	●	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	
	150612	☐	☐	15.875	6.35	1.2	6.35	
	190612	●	●	19.05	6.35	1.2	7.93	
	190616	●	●	19.05	6.35	1.6	7.93	
 GH Breaker Semi-Heavy Cutting	SNMG120408-GH	●	●	12.7	4.76	0.8	5.16	
	120412-GH	●	●	12.7	4.76	1.2	5.16	
 MA Breaker Medium Cutting	NEW SNMG120404-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	
	150612-MA	☐	☐	15.875	6.35	1.2	6.35	
	190612-MA	●	●	19.05	6.35	1.2	7.93	
 MH Breaker Medium Cutting	NEW SNMG120404-MH		●	12.7	4.76	0.4	5.16	
	NEW 120408-MH		●	12.7	4.76	0.8	5.16	
	NEW 120412-MH		●	12.7	4.76	1.2	5.16	
	NEW 190612-MH		●	19.05	6.35	1.2	7.93	
	NEW 190616-MH		●	19.05	6.35	1.6	7.93	


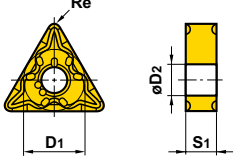

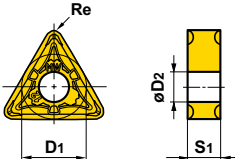

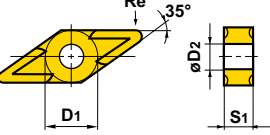

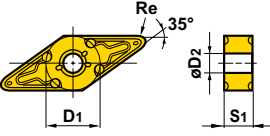

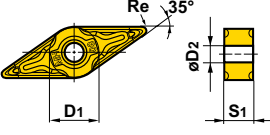

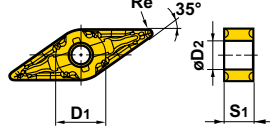

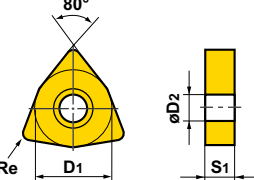

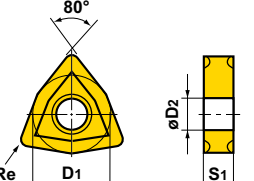

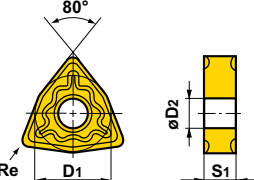
● : Inventory maintained. ☐ : Non stock, produced to order only.

Sharp	Order Number	Stock		Dimensions (mm)				Geometry
		UC5105	UC5115	D1	S1	Re	D2	
MV Breaker  Medium Cutting	NEW SNMG120404-MV		☐	12.7	4.76	0.4	5.16	
	NEW 120408-MV		☐	12.7	4.76	0.8	5.16	
	NEW 120412-MV		☐	12.7	4.76	1.2	5.16	
SH Breaker  Light Cutting	NEW SNMG120404-SH		☐	12.7	4.76	0.4	5.16	
	NEW 120408-SH		☐	12.7	4.76	0.8	5.16	
	NEW 120412-SH		☐	12.7	4.76	1.2	5.16	
Flat Top 	TNMA160404	●	●	9.525	4.76	0.4	3.81	
	160408	●	●	9.525	4.76	0.8	3.81	
	160412	●	●	9.525	4.76	1.2	3.81	
	160416	●	●	9.525	4.76	1.6	3.81	
	160420	●	●	9.525	4.76	2.0	3.81	
	220408	●	●	12.7	4.76	0.8	5.16	
	220412	●	●	12.7	4.76	1.2	5.16	
	220416	●	●	12.7	4.76	1.6	5.16	
Standard Breaker  Medium Cutting	TNMG160404	●	●	9.525	4.76	0.4	3.81	
	160408	●	●	9.525	4.76	0.8	3.81	
	160412	●	●	9.525	4.76	1.2	3.81	
	160416	●	●	9.525	4.76	1.6	3.81	
	160420	●	●	9.525	4.76	2.0	3.81	
	220408	●	●	12.7	4.76	0.8	5.16	
	220412	●	●	12.7	4.76	1.2	5.16	
	220416	●	●	12.7	4.76	1.6	5.16	
GH Breaker  Semi-Heavy Cutting	TNMG160408-GH	●	●	9.525	4.76	0.8	3.81	
	160412-GH	●	●	9.525	4.76	1.2	3.81	
	220408-GH	●	●	12.7	4.76	0.8	5.16	
	220412-GH	●	●	12.7	4.76	1.2	5.16	
MA Breaker  Medium Cutting	TNMG160404-MA	●	●	9.525	4.76	0.4	3.81	
	160408-MA	●	●	9.525	4.76	0.8	3.81	
	160412-MA	●	●	9.525	4.76	1.2	3.81	
	160416-MA	●	●	9.525	4.76	1.6	3.81	
	220408-MA	●	●	12.7	4.76	0.8	5.16	
	220412-MA	●	●	12.7	4.76	1.2	5.16	
	220416-MA	●	●	12.7	4.76	1.6	5.16	
MH Breaker  Medium Cutting	NEW TNMG160404-MH		●	9.525	4.76	0.4	3.81	
	NEW 160408-MH		●	9.525	4.76	0.8	3.81	
	NEW 160412-MH		●	9.525	4.76	1.2	3.81	
	NEW 220408-MH		●	12.7	4.76	0.8	5.16	
	NEW 220412-MH		●	12.7	4.76	1.2	5.16	
MV Breaker  Medium Cutting	NEW TNMG160404-MV		☐	9.525	4.76	0.4	3.81	
	NEW 160408-MV		☐	9.525	4.76	0.8	3.81	
	NEW 160412-MV		☐	9.525	4.76	1.2	3.81	


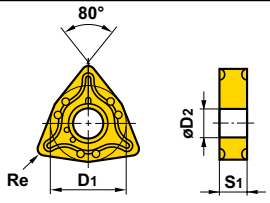

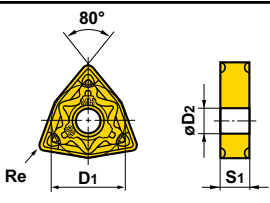

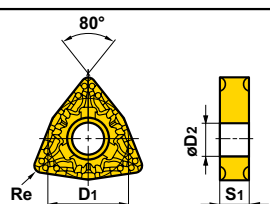
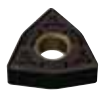
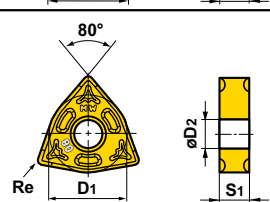

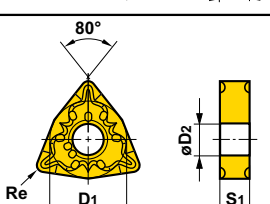

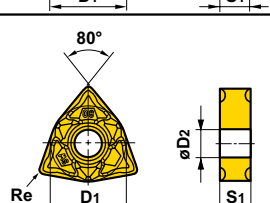
UC5105/UC5115

Inserts


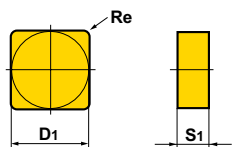

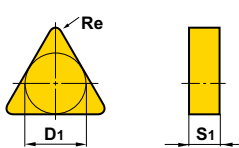
● Negative Insert (With hole)

Sharp	Order Number	Stock		Dimensions (mm)				Geometry
		UC5105	UC5115	D1	S1	Re	D2	
SH Breaker  Light Cutting	NEW TNMG160404-SH		☐	9.525	4.76	0.4	3.81	
	NEW 160408-SH		☐	9.525	4.76	0.8	3.81	
MW Breaker  Medium Cutting (Wiper)	TNMX160408-MW	☐	☐	9.525	4.76	0.8	3.81	
	160412-MW	☐	☐	9.525	4.76	1.2	3.81	
Standard Breaker  Medium Cutting	VNMG160404	●	●	9.525	4.76	0.4	3.81	
	160408	●	●	9.525	4.76	0.8	3.81	
	160412	●	●	9.525	4.76	1.2	3.81	
MA Breaker  Medium Cutting	VNMG160404-MA	●	●	9.525	4.76	0.4	3.81	
	160408-MA	●	●	9.525	4.76	0.8	3.81	
MH Breaker  Medium Cutting	NEW VNMG160404-MH		●	9.525	4.76	0.4	3.81	
	NEW 160408-MH		●	9.525	4.76	0.8	3.81	
MV Breaker  Medium Cutting	NEW VNMG160404-MV		☐	9.525	4.76	0.4	3.81	
	NEW 160408-MV		☐	9.525	4.76	0.8	3.81	
Flat Top  Medium Cutting	WNMA080404	●	●	12.7	4.76	0.4	5.16	
	080408	●	●	12.7	4.76	0.8	5.16	
	080412	●	●	12.7	4.76	1.2	5.16	
	080416	●	●	12.7	4.76	1.6	5.16	
Standard Breaker  Medium Cutting	WNMG080404	●	●	12.7	4.76	0.4	5.16	
	080408	●	●	12.7	4.76	0.8	5.16	
	080412	●	●	12.7	4.76	1.2	5.16	
	080416	●	●	12.7	4.76	1.6	5.16	
GH Breaker  Semi-Heavy Cutting	WNMG080408-GH	●	●	12.7	4.76	0.8	5.16	
	080412-GH	●	●	12.7	4.76	1.2	5.16	

● : Inventory maintained. ☐ : Non stock, produced to order only.

Sharp	Order Number	Stock		Dimensions (mm)				Geometry
		UC5105	UC5115	D1	S1	Re	D2	
MA Breaker  Medium Cutting	WNUMG080404-MA	●	●	12.7	4.76	0.4	5.16	
	080408-MA	●	●	12.7	4.76	0.8	5.16	
	080412-MA	●	●	12.7	4.76	1.2	5.16	
	080416-MA	●	●	12.7	4.76	1.6	5.16	
MH Breaker  Medium Cutting	WNUMG080404-MH		●	12.7	4.76	0.4	5.16	
	080408-MH		●	12.7	4.76	0.8	5.16	
	080412-MH		●	12.7	4.76	1.2	5.16	
MV Breaker  Medium Cutting	WNUMG080404-MV		□	12.7	4.76	0.4	5.16	
	080408-MV		□	12.7	4.76	0.8	5.16	
	080412-MV		□	12.7	4.76	1.2	5.16	
MW Breaker  Medium Cutting (Wiper)	WNUMG060408-MW	□	□	9.525	4.76	0.8	3.81	
	060412-MW	□	□	9.525	4.76	1.2	3.81	
	080408-MW	●	●	12.7	4.76	0.8	5.16	
	080412-MW	●	●	12.7	4.76	1.2	5.16	
SH Breaker  Light Cutting	WNUMG080404-SH		□	12.7	4.76	0.4	5.16	
	080408-SH		□	12.7	4.76	0.8	5.16	
	080412-SH		□	12.7	4.76	1.2	5.16	
SW Breaker  Light Cutting (Wiper)	WNUMG080404-SW		●	12.7	4.76	0.4	5.16	
	080408-SW		●	12.7	4.76	0.8	5.16	


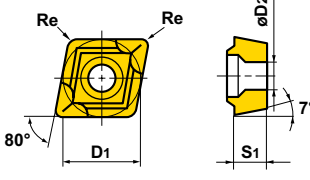

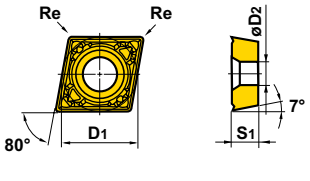

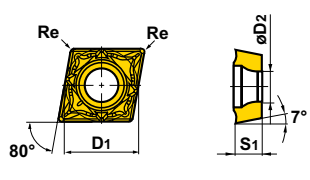

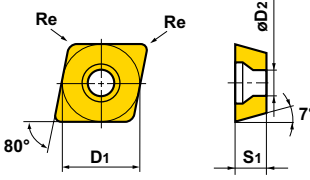

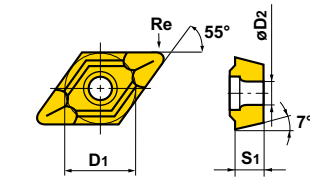

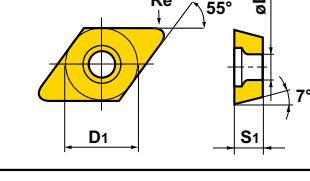

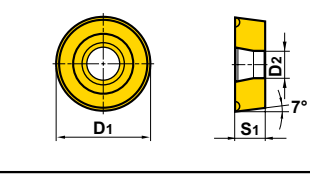

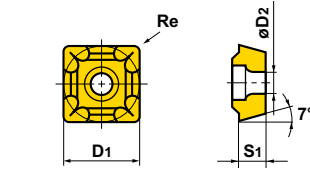
●Negative Insert (Without hole)

Sharp	Order Number	Stock		Dimensions (mm)				Geometry
		UC5105	UC5115	D1	S1	Re	D2	
	SNMN120408	●	●	12.7	4.76	0.8	—	
	120412	●	●	12.7	4.76	1.2	—	
	120416	●	●	12.7	4.76	1.6	—	
	TNMN160408	●	●	9.525	4.76	0.8	—	
	160412	●	●	9.525	4.76	1.2	—	
	160416	●	●	9.525	4.76	1.6	—	
	160420	●	●	9.525	4.76	2.0	—	


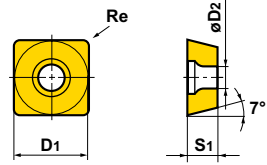

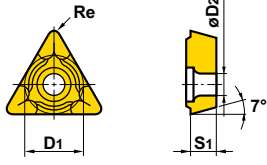

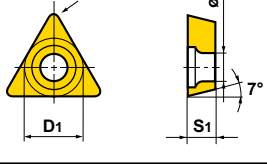

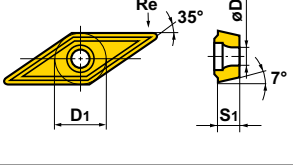

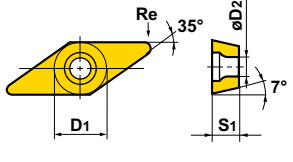
UC5105/UC5115

Inserts


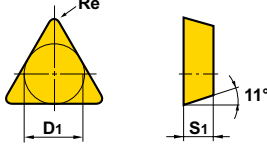
● Positive Insert (With hole)

Sharp	Order Number	Stock		Dimensions (mm)				Geometry
		UC5105	UC5115	D1	S1	Re	D2	
Standard Breaker 	CCMT060204		●	6.35	2.38	0.4	2.8	
	NEW 060208		□	6.35	2.38	0.8	2.8	
	09T304		●	9.525	3.97	0.4	4.4	
	09T308		●	9.525	3.97	0.8	4.4	
	120404		●	12.7	4.76	0.4	5.5	
	120408		●	12.7	4.76	0.8	5.5	
	120412		□	12.7	4.76	1.2	5.5	
Medium Cutting								
MW Breaker 	NEW CCMT120404-MW		□	12.7	4.76	0.4	5.5	
	NEW 120408-MW		□	12.7	4.76	0.8	5.5	
Medium Cutting (Wiper)								
SW Breaker 	NEW CCMT060204-SW		□	6.35	2.38	0.4	2.8	
	NEW 09T302-SW		□	9.525	3.97	0.2	4.4	
	NEW 09T304-SW		□	9.525	3.97	0.4	4.4	
Light Cutting (Wiper)								
Flat Top 	CCMW060204	●	●	6.35	2.38	0.4	2.8	
	09T304	●	●	9.525	3.97	0.4	4.4	
	09T308	●	●	9.525	3.97	0.8	4.4	
	120404	●	●	12.7	4.76	0.4	5.5	
	120408	●	●	12.7	4.76	0.8	5.5	
	120412	□	□	12.7	4.76	1.2	5.5	
Medium Cutting								
Standard Breaker 	DCMT070204		□	6.35	2.38	0.4	2.8	
	NEW 070208		□	6.35	2.38	0.8	2.8	
	11T304		●	9.525	3.97	0.4	4.4	
	11T308		●	9.525	3.97	0.8	4.4	
	150404		□	12.7	4.76	0.4	5.5	
	150408		□	12.7	4.76	0.8	5.5	
Medium Cutting								
Flat Top 	DCMW070204	□	□	6.35	2.38	0.4	2.8	
	11T304	●	●	9.525	3.97	0.4	4.4	
	11T308	●	●	9.525	3.97	0.8	4.4	
	150404		□	12.7	4.76	0.4	5.5	
	150408	□	□	12.7	4.76	0.8	5.5	
Medium Cutting								
Standard Breaker 	RCMX1204M0		●	12	4.76	—	4.2	
Medium Cutting								
Standard Breaker 	SCMT09T304		●	9.525	3.97	0.4	4.4	
	09T308		●	9.525	3.97	0.8	4.4	
	120404		●	12.7	4.76	0.4	5.5	
	120408		●	12.7	4.76	0.8	5.5	
	120412		□	12.7	4.76	1.2	5.5	
Medium Cutting								

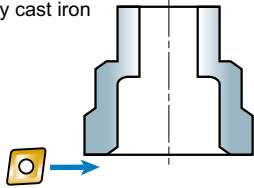
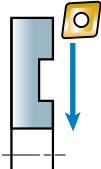
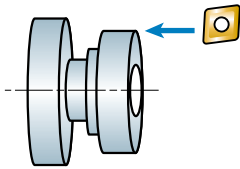
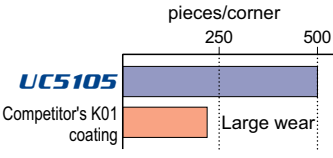
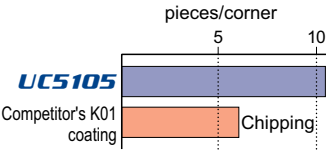
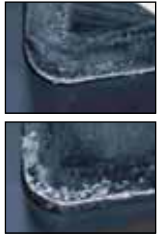
● : Inventory maintained. □ : Non stock, produced to order only.

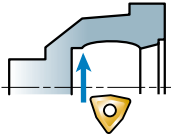
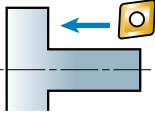
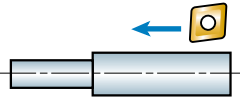
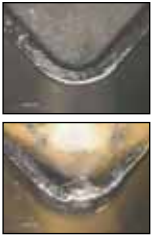
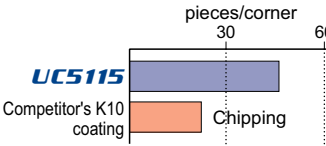
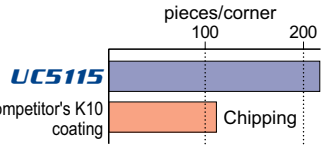
Sharp	Order Number	Stock		Dimensions (mm)				Geometry
		UC5105	UC5115	D1	S1	Re	D2	
Flat Top 	SCMW09T304	●	●	9.525	3.97	0.4	4.4	
	09T308	●	●	9.525	3.97	0.8	4.4	
	120404	●	●	12.7	4.76	0.4	5.5	
	120408	●	●	12.7	4.76	0.8	5.5	
	120412		□		12.7	4.76	1.2	
Standard Breaker  Medium Cutting	TCMT110204		□	6.35	2.38	0.4	2.8	
	16T304		●	9.525	3.97	0.4	4.4	
	16T308		●		9.525	3.97	0.8	
Flat Top 	TCMW110204	□	□	6.35	2.38	0.4	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	
Flat Top 	VCMW160404	□	□	9.525	4.76	0.4	4.4	
	160408	●	●	9.525	4.76	0.8	4.4	

● Positive Insert (Without hole)

Sharp	Order Number	Stock		Dimensions (mm)				Geometry
		UC5105	UC5115	D1	S1	Re	D2	
	TPMN110304	●	●	6.35	3.18	0.4	—	
	110308	●	●	6.35	3.18	0.8	—	
	160304	●	●	9.525	3.18	0.4	—	
	160308	●	●	9.525	3.18	0.8	—	
	160312	□	□	9.525	3.18	1.2	—	
	220408	□	□	12.7	4.76	0.8	—	

UC5105/UC5115**Application Examples**

Insert (Grade)	CNMA120408(UC5105)	CNMA120412 (UC5105)	CNMA120408 (UC5105)
Workpiece	Gray cast iron 	Ductile cast iron 	Ductile cast iron 
Component	Hub	Wheel	Retainer ring
Cutting Conditions	Cutting Speed (m/min)	250	330
	Feed (mm/rev)	0.30	0.36
	Depth of Cut (mm)	2.5	3.2
Coolant	Wet cutting	Wet cutting	Wet cutting
Results	 UC5105 achieved more than double the tool life.	 UC5105 achieved 1.5 times longer tool life without any abnormal wear.	 UC5105 70 pieces/corner Competitor's K01 coating 46 pieces/corner

Insert (Grade)	WNMG080412-GH (UC5115)	CNMG120408 (UC5115)	DNMG150608-MH (UC5115)
Workpiece	Ductile cast iron (JIS FCD550) 	Ductile cast iron (JIS FCD600) 	Alloy Steel (JIS SCM420) 
Component	Differential case	Crank shaft	Shaft
Cutting Conditions	Cutting Speed (m/min)	160	270
	Feed (mm/rev)	0.25	0.30
	Depth of Cut (mm)	1-2	3.5
Coolant	Wet cutting	Wet cutting	Wet cutting
Results	 UC5115 100 pieces/corner Competitor's K10 coating 100 pieces/corner	 UC5115 , more than 1.7 times longer tool life without chipping.	 UC5115 , more than 2 times longer tool life without chipping.

For Your Safety

●Don't touch 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 cover and wear safety glasses. ●When using compounded cutting oils, please take fire preventions. ●When attaching inserts or spare parts, please use the attached wrench or spanner.

MITSUBISHI MATERIALS CORPORATION


The Scope of the Registration:
Design, Development and
Production of Cemented
Carbide Tools and Carbide
Blanks



The Scope of the Registration:
Design, Development and
Production of Cutting Tools,
Wear-resistant Tools, Rock
Drilling Tools, Cemented
Carbide Blanks and Coated
Products



JAB
ENTREPRENEUR
PICKED

MITSUBISHI MATERIALS CORPORATION
Marketing Dept.

KFC bldg., 7F, 1-6-1, Yokoami, Sumida-ku, Tokyo 130-0015, Japan
 TEL +81-3-5819-8772 FAX +81-3-5819-8774

MMC HARTMETALL GmbH

Comeniusstr.2, 40670, Meerbusch GERMANY
 TEL +49-2159-9189-0 FAX +49-2159-918966

MITSUBISHI MATERIALS U.S.A. CORPORATION
Headquarters

17401, Eastman Street, Irvine, California, 92614, USA
 TEL +1-949-862-5100 FAX +1-949-862-5180

MMC METAL SINGAPORE PTE LTD.

10, Arumugam Road, #04-00 Lion Industrial Bldg., 409957, SINGAPORE
 TEL +65-6743-9370 FAX +65-6749-1469

Mitsubishi Carbide Home page : <http://www.mitsubishicarbide.com>
 (Tools specifications subject to change without notice.)