

New Products

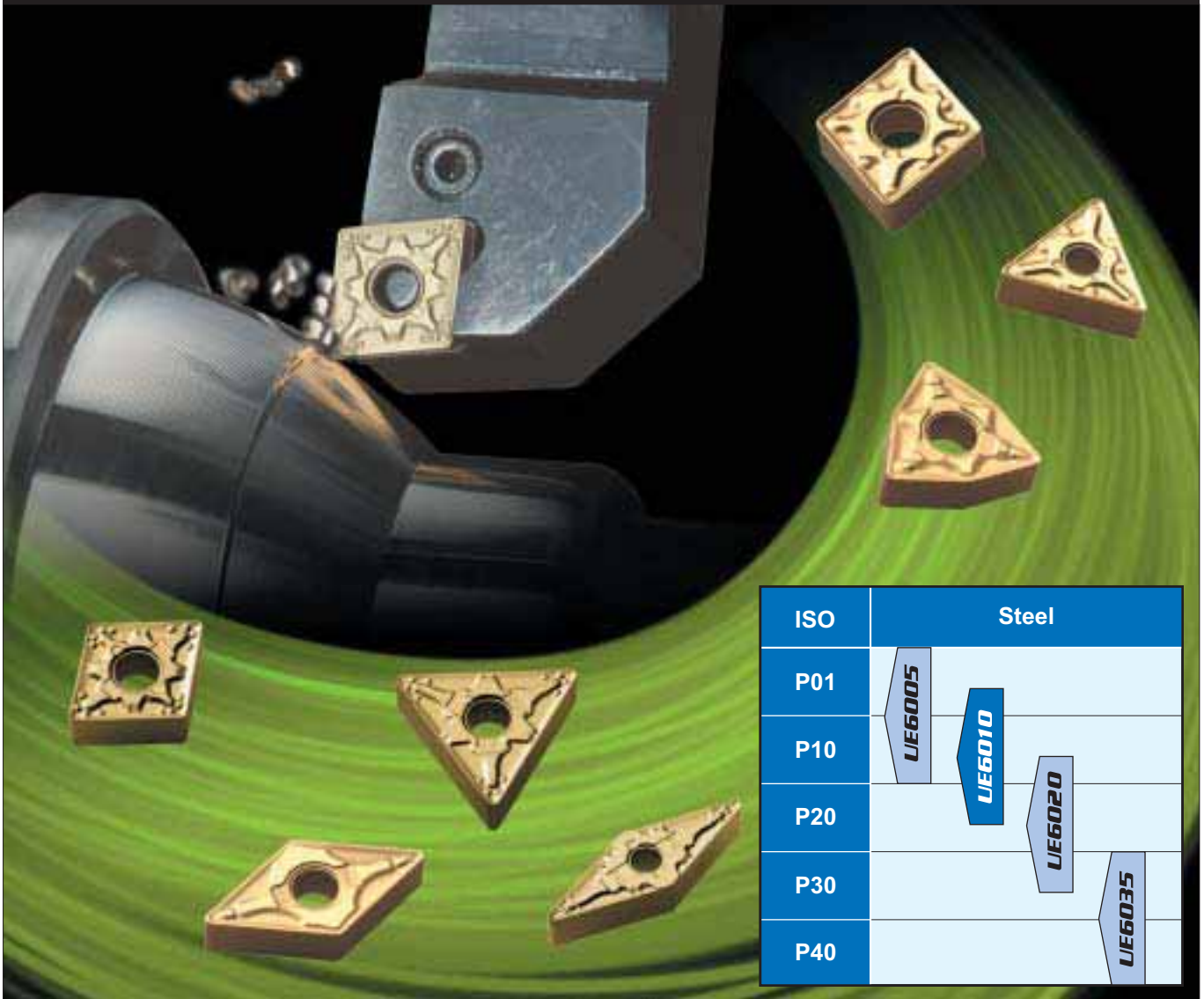


Completing **UE** series
for steel cutting

New CVD coated grade
for turning of steels

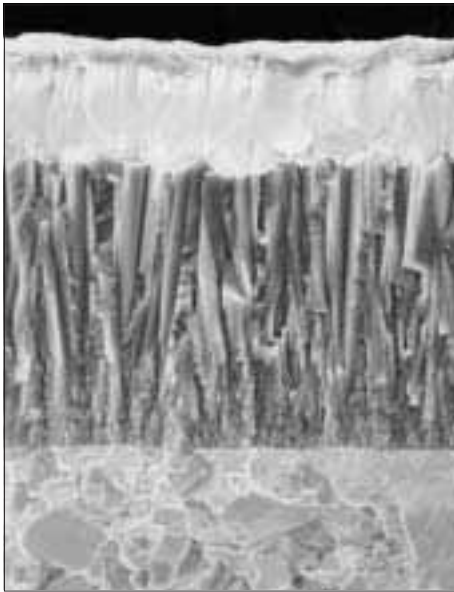
UE6010

General-purpose coated grade of the next generation with improved wear & fracture resistance !



Features of **UE6010**

- General-purpose grade achieving significantly improved tool life due to the employment of thick outer layer of flat-alumina deposited by Even Coating Technology.



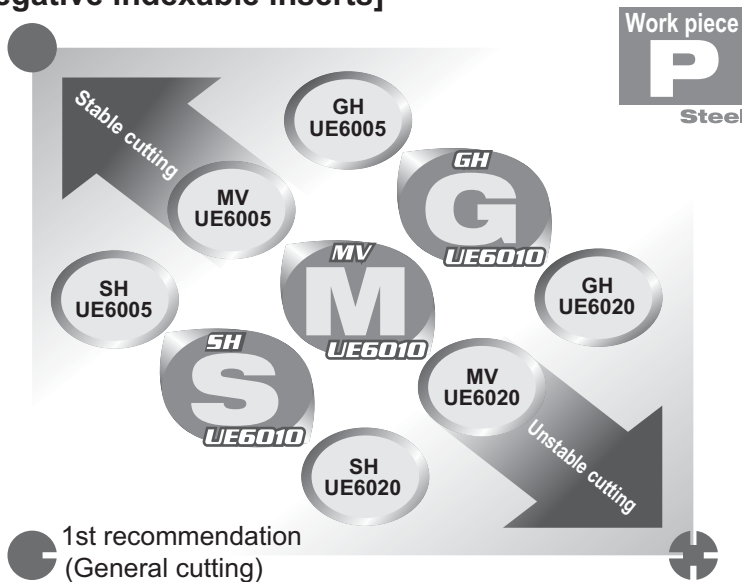
- **Improved wear resistance**
With the thickened outer layer of flat-alumina (Al₂O₃, fine grained aluminum oxide with a smooth surface) achieving increased adhesion strength to the carbide substrate, **UE6010** displays highly improved wear resistance.
- **Improved fracture resistance**
Due to the tougher surface layer of the substrate, **UE6010** is highly fracture resistant, preventing abnormal tool breakage such as chipping and fracture.
- **Preventing occurrence of welding**
The surface of the coating layers is lamination of special titanium compound that is vapor deposited by Even Coating technology. This prevents the occurrence of welding, which is the cause of chipping at the top cutting edge.

Application range and recommended cutting conditions for **UE6010**

TOOL NAVI SYSTEM

UE6010 is the most highly recommended grade for turning of steels. It covers a wide range of cutting areas, from light cutting to semi-heavy cutting.

[Negative indexable inserts]



● 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)
- M Medium cutting (ap=1.5-4mm)
- G Semi-heavy cutting (ap=4-7mm)

● Application range

ISO	Steel
P01	UE6005, UE6010
P10	UE6005, UE6010, UE6020
P20	UE6010, UE6020
P30	UE6020, UE6035
P40	UE6035

● Recommended cutting conditions

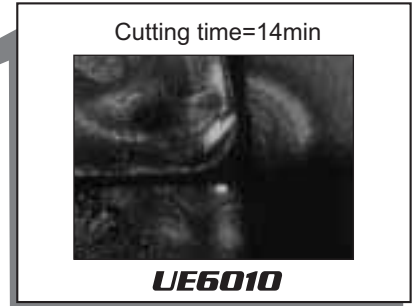
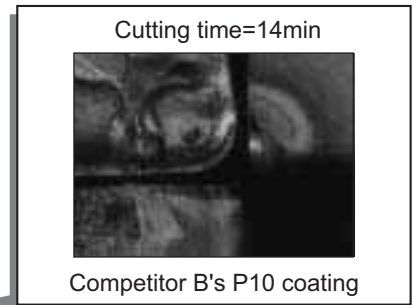
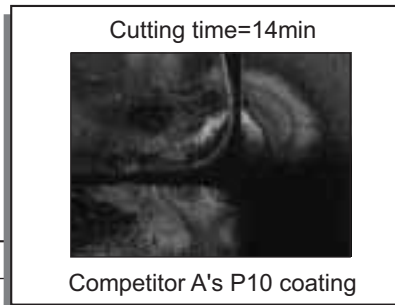
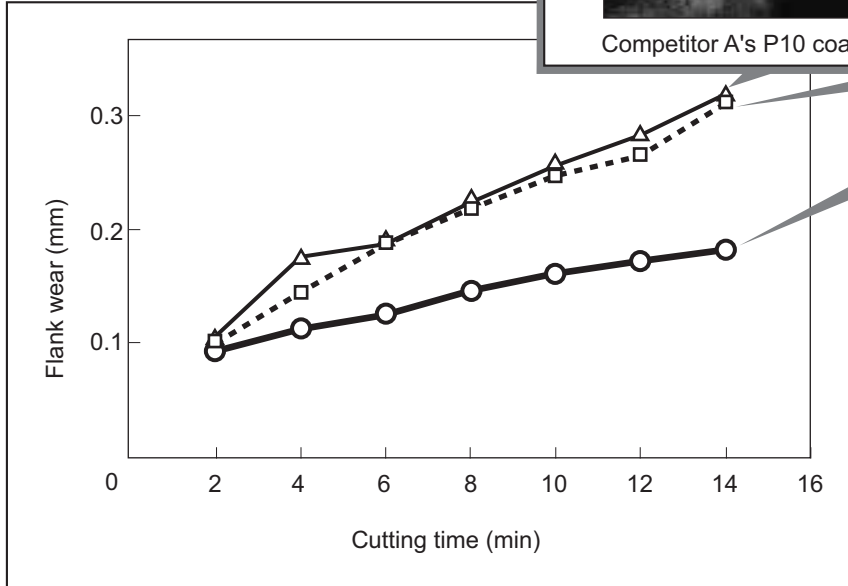
Workpiece	Hardness	Cutting conditions	Cutting speed (m/min)
Mild steel JIS SS400C, S10C etc.	≤180HB	General cutting	300 (250 - 350)
Carbon steel Alloy steel JIS S45C, SCM440, etc.	≥180HB	General cutting	200 (150 - 250)

Cutting performance of **UE6010**

● Wear resistance

Alloy steel JIS SNCM439 (270HB)

Cutting speed: 200m/min



<Cutting conditions>

Insert : CNMG120408-○○○

Tool : PCLNL2525M12

Cutting speed : 200 m/min

Feed : 0.3mm/rev

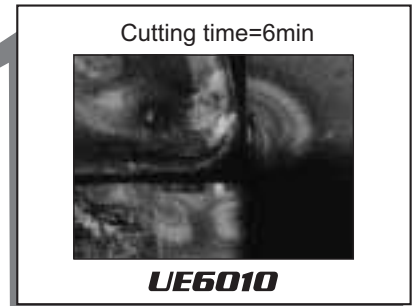
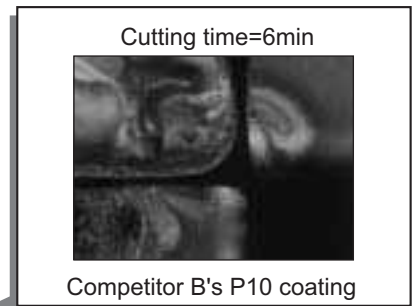
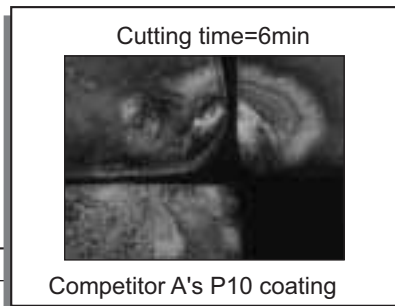
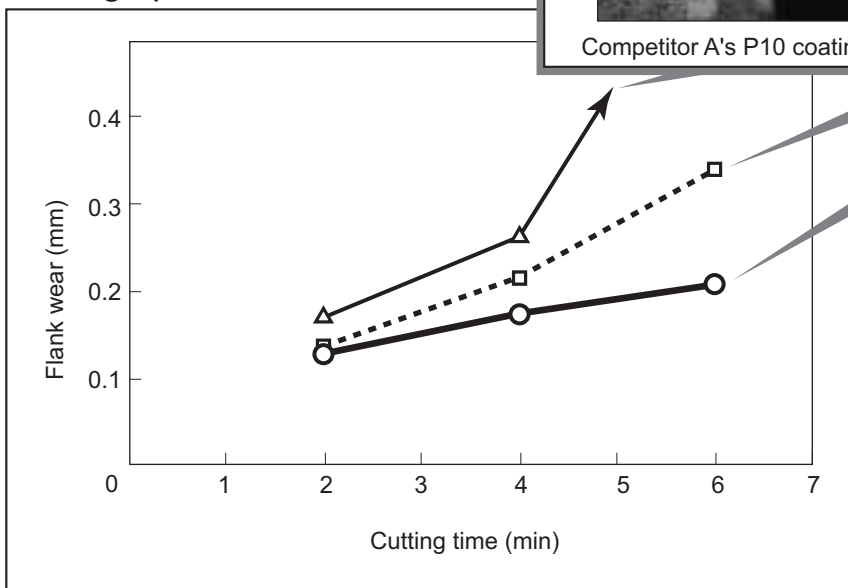
Depth of cut : 1.5mm

Wet, continuous, external turning

○○○ indicates each company's general-purpose chipbreaker

UE6010 displays excellent performance in high speed cutting where conventional grades experience difficulty.

Cutting speed: 250m/min



<Cutting conditions>

Insert : CNMG120408-○○○

Tool : PCLNL2525M12

Cutting speed : 250 m/min

Feed : 0.3mm/rev

Depth of cut : 1.5mm

Wet, continuous, external turning

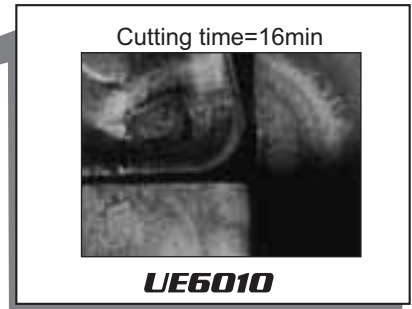
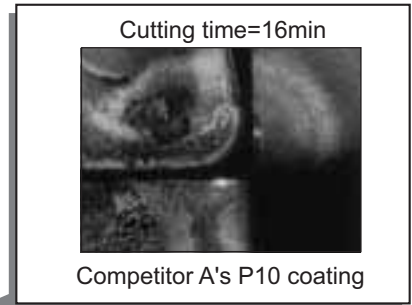
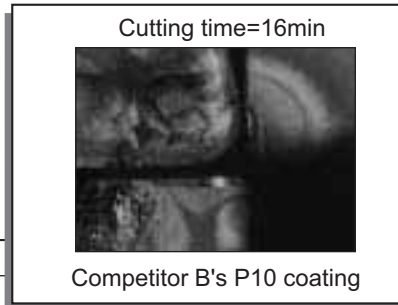
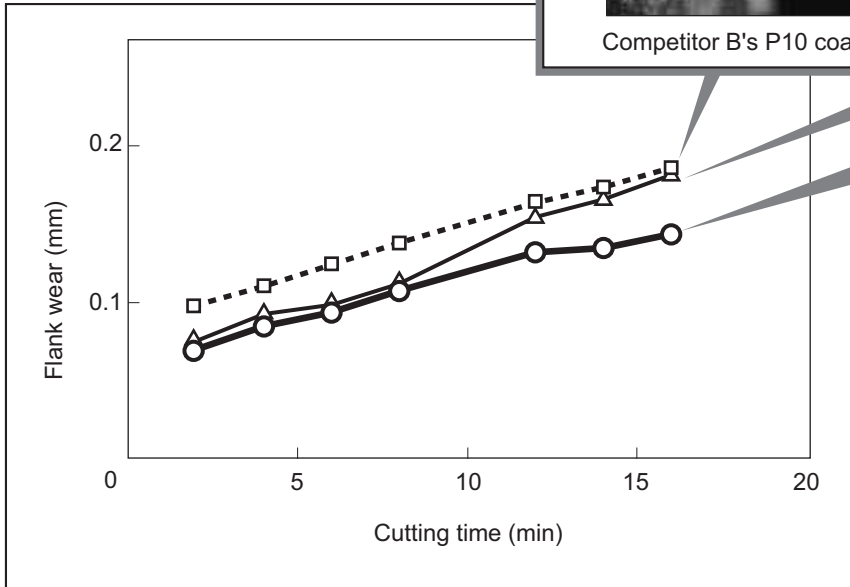
○○○ indicates each company's general-purpose chipbreaker

Cutting performance of **UE6010**

● Wear resistance

Bearing JIS SUJ2

Cutting speed: 200m/min



<Cutting conditions>

Insert : CNMG120408-

Tool : PCLNL2525M12

Cutting speed : 200 m/min

Feed : 0.3mm/rev

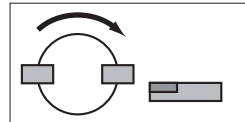
Depth of cut : 1.5mm

Wet, continuous, external turning

indicates each company's general-purpose chipbreaker

● Fracture resistance

Alloy steel JIS SNCM439(270HB)



Feed(mm/rev)	0.19		0.21		0.24		0.26	
Cutting time(min)	1	2	1	2	1	2	1	2
UE6010								
Competitor A's P10 coating								
Competitor B's P10 coating								

Normal wear

Fracture

<Cutting conditions>

Insert : CNMG120408-

Tool : PCLNL2525M12

Cutting speed : 100 m/min




































Depth of cut : 3.0mm


Dry cutting

indicates each company's general-purpose chipbreaker

Standard inserts for *UE6010*






Negative insert






Application	Shape	Order number	Stock	Application	Shape	Order number	Stock			
Finishing		 CNMG120404-FH	●		CNMG...	 CNMG090304				
		 CNMG120408-FH	●			 CNMG090308	●			
Light cutting		 CNMG090304-SH	●			 CNMG09T304	●			
		 CNMG090308-SH	●			 CNMG09T308	●			
		 CNMG090312-SH	●			CNMG120404	●			
		 CNMG09T304-SH	●			CNMG120408	●			
		 CNMG09T308-SH	●			CNMG120412	●			
		 CNMG09T312-SH				CNMG120416	●			
		CNMG120404-SH	●			CNMG160608	●			
		CNMG120408-SH	●			CNMG160612	●			
	CNMG120412-SH	●	CNMG160616	●						
	CNMG160608	●	CNMG190608	●						
Medium cutting		CNMG120404-SA	●		CNMG...-MS	 CNMG090304-MS				
		CNMG120408-SA	●			 CNMG090308-MS	●			
		CNMG120412-SA	●			 CNMG09T304-MS				
		CNMG160612-SA	●			 CNMG09T308-MS	●			
Medium cutting		CNMG120404-MV	●			CNMG...-MW		CNMG120404-MS	●	
		CNMG120408-MV	●					CNMG120408-MS	●	
		CNMG120412-MV	●					CNMG120412-MS	●	
		CNMG120416-MV	●					CNMG160612-MS	●	
	Medium cutting		CNMG120404-MH			●	CNMG...-GH		CNMG120408-GH	●
			CNMG120408-MH			●			CNMG120412-GH	●
			CNMG120412-MH	●	CNMG160612-GH	●				
			 CNMG120416-MH	●	CNMG190612-GH	●				
CNMG160612-MH	●		CNMG190616-GH	●						
 CNMG190616-MH										
Medium cutting		CNMG120404-MA	●	Semi-heavy cutting		 CNMM120408-HZ	○			
		CNMG120408-MA	●			 CNMM120412-HZ	○			
		CNMG120412-MA	●			 CNMM160612-HZ	○			
		CNMG120416-MA	●			 CNMM160616-HZ	○			
		CNMG160608-MA	●			 CNMM190612-HZ	○			
		CNMG160612-MA	●			 CNMM190616-HZ	○			
		CNMG160616-MA	●							
		CNMG190612-MA	●							
		CNMG190616-MA	●							

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Standard inserts for *UE6010*

Negative insert












Application	Shape	Order number	Stock
Heavy cutting		<i>New</i> CNMM160612-HX	
		<i>New</i> CNMM160616-HX	
		<i>New</i> CNMM190612-HX	○
		<i>New</i> CNMM190616-HX	○
		<i>New</i> CNMM190624-HX	○
		<i>New</i> CNMM250724-HX	○
		<i>New</i> CNMM250732-HX	○
		<i>New</i> CNMM250924-HX	○
		<i>New</i> CNMM250932-HX	○
		<i>New</i> CNMM190616-HV	●
		<i>New</i> CNMM190624-HV	●
		<i>New</i> CNMM250724-HV	●
		<i>New</i> CNMM250924-HV	●
			●
Finishing		<i>New</i> DNMG150404-FH	●
		<i>New</i> DNMG150408-FH	●
Light cutting		DNMG110404-SH	●
		DNMG110408-SH	●
		DNMG150404-SH	●
		DNMG150408-SH	●
		DNMG150412-SH	●
		DNMG150404-SA	●
		DNMG150408-SA	●
		DNMG150412-SA	●

Application	Shape	Order number	Stock
Medium cutting		DNMG150404-MV	●
		DNMG150408-MV	●
		DNMG150412-MV	●
		<i>New</i> DNMG150416-MV	○
		DNMG150604-MV	●
		DNMG150608-MV	●
		DNMG150612-MV	●
		<i>New</i> DNMG150616-MV	○
			DNMG150404-MH
	DNMG150408-MH		●
	DNMG150412-MH		●
		DNMG150404-MA	●
		DNMG150408-MA	●
		DNMG150412-MA	●
		DNMG150604-MA	●
		DNMG150608-MA	●
		DNMG150612-MA	●
		DNMG110408	●
DNMG150404		●	
DNMG150408		●	
DNMG150412		●	
DNMG150604		●	
DNMG150608		●	
DNMG150612		●	
DNMG150616	●		
	DNMG110408-MS	●	
	DNMG150404-MS	●	
	DNMG150408-MS	●	
	DNMG150604-MS	●	
	DNMG150608-MS	●	

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Standard inserts for *UE6010*
























Negative insert



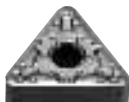
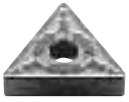

Application	Shape	Order number	Stock	Application	Shape	Order number	Stock	
Semi-heavy cutting		DNMG150408-GH	●	Medium cutting		SNMG120404-MV ^{New}	○	
		DNMG150412-GH	●			SNMG120408-MV	●	
		DNMG150608-GH	●			SNMG120412-MV	●	
		DNMG150612-GH	●			SNMG120408-MH	●	
		DNMM150408-HZ ^{New}	○				SNMG120412-MH	●
		DNMM150412-HZ ^{New}	○				SNMG120404-MA	●
		DNMM150416-HZ ^{New}	○				SNMG120408-MA	●
		DNMM150608-HZ ^{New}	○				SNMG120412-MA	●
		DNMM150612-HZ ^{New}	○				SNMG150608-MA	●
		DNMM150616-HZ ^{New}	○		SNMG150612-MA	●		
		KNMX190504-R ^{New}	●		SNMG190616-MA	●		
		KNMX190504-L ^{New}				SNMG090304 ^{New}	●	
		KNMX190508-R ^{New}	●			SNMG090308 ^{New}	●	
		KNMX190508-L ^{New}				SNMG120404	●	
		KNMX190512-R ^{New}	●			SNMG120408	●	
KNMX190512-L ^{New}			SNMG120412	●				
		SNMG120416	●					
Medium cutting		RNMG120400	●	SNMG120420	●			
		RNMG190600	●	SNMG150612	●			
		RNMG250900	●	SNMG190612	●			
Light cutting		SNMG120404-SH	●	SNMG190616	●			
		SNMG120408-SH	●		SNMG120408-MS	●		
		SNMG120412-SH	●					
		SNMG120404-SA	●					
		SNMG120408-SA	●					
		SNMG120412-SA	●					


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Standard inserts for **UE6010**

Negative insert







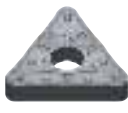
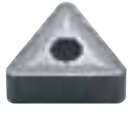




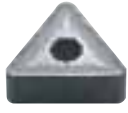

Application	Shape	Order number	Stock
Semi-heavy cutting		SNMG120408-GH	●
		SNMG120412-GH	●
		SNMG120416-GH	●
		SNMG150612-GH	●
		SNMG190612-GH	●
		SNMG190616-GH	●
		 SNMM120408-HZ	○
		 SNMM120412-HZ	○
		 SNMM150612-HZ	○
		 SNMM190612-HZ	○
		 SNMM190616-HZ	○
		Heavy cutting	
 SNMM190612-HX			
 SNMM190616-HX	○		
 SNMM190624-HX	○		
 SNMM250724-HX	○		
 SNMM250732-HX	○		
 SNMM250924-HX	○		
 SNMM250932-HX	○		
	 SNMM190616-HV		●
	 SNMM190624-HV		●
	 SNMM250724-HV		●
	 SNMM250924-HV		●
	Finishing		 TNMG160404-FH
TNMG160408-FH			●
 TNMG160408-FH			●

Application	Shape	Order number	Stock	
Light cutting		TNMG160404-SH	●	
		TNMG160408-SH	●	
		TNMG220408-SH	●	
		TNMG160404-SA	●	
		TNMG160408-SA	●	
		TNMG160412-SA	●	
		TNMG220408-SA	●	
		TNMG220412-SA	●	
	Medium cutting		TNMG160404-MV	●
			TNMG160408-MV	●
TNMG160412-MV			●	
TNMG220408-MV			●	
TNMG220412-MV			●	
			TNMG160404-MH	●
		TNMG160408-MH	●	
		TNMG160412-MH	●	
		TNMG220408-MH	●	
		TNMG160404-MA	●	
	TNMG160408-MA	●		
	TNMG160412-MA	●		
	TNMG220408-MA	●		
	TNMG220412-MA	●		
	TNMG270608-MA	●		
TNMG270612-MA	●			

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Standard inserts for *UE6010*

Negative insert






Application	Shape	Order number	Stock	Application	Shape	Order number	Stock		
Medium cutting		TM <small>New</small> TNMG110304	●		VNMG...-MV	VNMG160404-MV	●		
		TM <small>New</small> TNMG110308	●			VNMG160408-MV	VNMG160408-MV	●	
		TNMG160304	●		VNMG...-MH			VNMG160404-MH	●
		TNMG160308	●			VNMG160408-MH		VNMG160408-MH	●
		TNMG160404	●		VNMG...-MA			VNMG160404-MA	●
		TNMG160408	●			VNMG160408-MA		VNMG160408-MA	●
		TNMG160412	●		VNMG...-GH			VNMG160404	●
		TNMG160416	●			VNMG160408		VNMG160408	●
		TNMG160416	●		VNMG220404		VNMG...-MS		VNMG160404-MS
		TNMG220404	●			VNMG160408-MS			VNMG160408-MS
		TNMG220408	●				TNMM...-HZ	TM <small>New</small> TNMM160408-HZ	○
		TNMG220412	●			TM <small>New</small> TNMM220408-HZ		○	
		TNMG220416	●		TM <small>New</small> TNMM220412-HZ	○			
		TNMG220420	●		TM <small>New</small> TNMM220416-HZ	○			
	TNMG270608	●	TNMM...-HV			TM <small>New</small> WNMG080404-FH	●		
	TNMG270612	●				TM <small>New</small> WNMG080408-FH	●		
	TNMG270616	●							
	TNMG330924	●							
	Semi-heavy cutting		TNMG160408-GH	●		VNMG...	VNMG160404	●	
TNMG160412-GH			●	VNMG160408			VNMG160408	●	
TNMG220408-GH	●		VNMG160412				VNMG160412	●	
TNMG220412-GH	●					VNMG...-MS		VNMG160404-MS	●
TNMG220416-GH	●			VNMG160408-MS				VNMG160408-MS	●
TNMG270612-GH	●								
Heavy cutting									

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Standard inserts for *UE6010*

Negative insert






















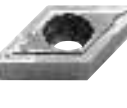









































Application	Shape	Order number	Stock	
Light cutting		WNUMG...-SH <i>New</i> WNUMG06T304-SH ●	●	
		<i>New</i> WNUMG06T308-SH ●	●	
		<i>New</i> WNUMG06T312-SH ●	●	
		WNUMG060404-SH ●	●	
		WNUMG060408-SH ●	●	
		WNUMG060412-SH ●	●	
		WNUMG080404-SH ●	●	
		WNUMG080408-SH ●	●	
		WNUMG080412-SH ●	●	
		WNUMG...-SA WNUMG080404-SA ●	●	
		WNUMG080408-SA ●	●	
		WNUMG080412-SA ●	●	
	Medium cutting		WNUMG...-MV <i>New</i> WNUMG06T304-MV ○	○
			<i>New</i> WNUMG06T308-MV ○	○
<i>New</i> WNUMG06T312-MV ○			○	
<i>New</i> WNUMG060404-MV ○			○	
<i>New</i> WNUMG060408-MV ○			○	
<i>New</i> WNUMG060412-MV ○			○	
WNUMG080404-MV ●			●	
WNUMG080408-MV ●			●	
WNUMG080412-MV ●			●	
		WNUMG...MH WNUMG080404-MH ●	●	
		WNUMG080408-MH ●	●	
		WNUMG080412-MH ●	●	

























































Application	Shape	Order number	Stock
Medium cutting		WNUMG...-MA <i>New</i> WNUMG06T304-MA ●	●
		<i>New</i> WNUMG06T308-MA ●	●
		<i>New</i> WNUMG06T312-MA ●	●
		WNUMG060404-MA ●	●
		WNUMG060408-MA ●	●
		WNUMG060412-MA ●	●
		WNUMG080404-MA ●	●
		WNUMG080408-MA ●	●
		WNUMG080412-MA ●	●
		WNUMG100612-MA ●	●
		WNUMG... WNUMG080404 ●	●
		WNUMG080408 ●	●
		WNUMG080412 ●	●
		<i>New</i> WNUMG080416 ●	●
	WNUMG...MS <i>New</i> WNUMG06T304-MS ●	●	
	<i>New</i> WNUMG06T308-MS ●	●	
	WNUMG060404-MS ●	●	
	WNUMG060408-MS ●	●	
	WNUMG080404-MS ●	●	
	WNUMG080408-MS ●	●	
	WNUMG080412-MS ●	●	
	WNUMG...-MW WNUMG080408-MW ●	●	
	WNUMG080412-MW ●	●	
Sem-heavy cutting		WNUMG...-GH WNUMG080408-GH ●	●
		WNUMG080412-GH ●	●


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Standard inserts for *UE6010*

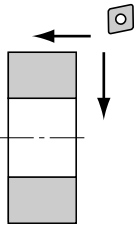
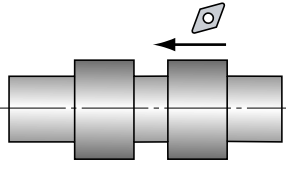
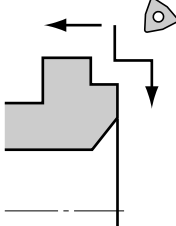






Positive insert

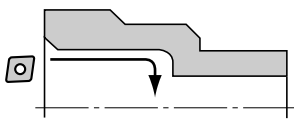
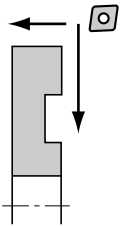
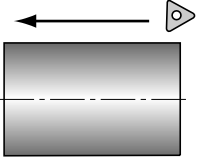




Application	Shape	Order number	Stock
Medium cutting		 CCMT060202	●
		 CCMT060204	●
		 CCMT060208	●
		 CCMT080304	●
		 CCMT080308	●
		 CCMT09T302	●
		 CCMT09T304	●
		 CCMT09T308	●
		 CCMT120404	●
		 CCMT120408	●
		 CCMT120412	●
		 DCMT070202	●
		 DCMT070204	●
		 DCMT070208	●
	 DCMT11T302	●	
	 DCMT11T304	●	
	 DCMT11T308	●	
	 DCMT150404	●	
	 DCMT150408	●	
	 DCMT150412	●	
		 SCMT09T304	●
		 SCMT09T308	●
		 SCMT120404	●
		 SCMT120408	●
		 TCMT080204	●
		 TCMT090204	●
		 TCMT110202	●
		 TCMT110204	●
		 TCMT130302	●
		 TCMT130304	●
		 TCMT16T304	●
		 TCMT16T308	●
		 VCMT110304	●
 VCMT160404		●	
 VCMT160408		●	
 VCMT160412		●	
	 WCMT020102		
	 WCMT020104		
	 WCMTL30202		
	 WCMTL30204		
	 WCMT040202		
	 WCMT040204		
	 WCMT06T304		
	 WCMT06T308		
	 RCMT0602M0	●	
	 RCMT0803M0	●	
	 RCMX1003M0	●	
	 RCMX1204M0	●	
	 RCMX1606M0	●	
	 RCMX2006M0	●	
	 RCMX2507M0	●	
Finishing		 CPMT080204-SQ	●
		 CPMT080208-SQ	●
		 CPMT090304-SQ	●
		 CPMT090308-SQ	●

Application	Shape	Order number	Stock
Medium cutting		 CPMT080204-MQ	●
		 CPMT080208-MQ	●
		 CPMT090304-MQ	●
		 CPMT090308-MQ	●
		 CPMX080204	
		 CPMX080208	●
		 CPMX090304	●
		 CPMX090308	●
		 SPMR090304	
		 SPMR090308	●
		 SPMR120304	●
		 SPMR120308	●
		 SPMR120312	
		 SPMN120304	●
		 SPMN120308	●
		 SPMN120312	
		 SPMN190412	●
		 TPMV090204-MQ	●
		 TPMV090208-MQ	●
		 TPMV110304-MQ	●
		 TPMV110308-MQ	●
		 TPMT160304-MQ	●
		 TPMT160308-MQ	●
		 TPRM090204	●
		 TPRM110302	●
		 TPRM110304	●
		 TPRM110308	●
		 TPRM160304	●
		 TPRM160308	●
		 TPRM160312	●
		 TPRM110304	●
		 TPMN110308	●
		 TPMN160304	●
 TPMN160308		●	
 TPMN160408		●	
 TPMN220404		●	
 TPMN220408		●	
 TPMN220412		●	
 TPMN220416		●	
Finishing		 WPMT040204-SQ	
		 WPMT040208-SQ	
		 WPMT060304-SQ	
		 WPMT060308-SQ	
Medium cutting		 WPMT040204-MQ	●
		 WPMT060304-MQ	●
		 WPMT060308-MQ	●

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

Application examples for **UE6010**

Insert	CNMG120408-MA	DNMG150408-MA	WNMG080408-MV
Workpiece	Alloy steel (JIS SNCM420) 	Alloy steel (JIS SCr420H) 	Alloy steel (JIS SCM420) 
Cutting speed (m/min)	220	230	420
Feed (mm/rev)	0.2	0.35	0.2
Depth of cut (mm)	2.0	2.0	0.85
Coolant	Wet cutting	Wet cutting	Wet cutting
Result	<p>Pieces/corner</p> <p>500 1000</p> <p>UE6010 </p> <p>Competitor's P10 coating </p> <p>UE6010 achieved more than double the tool life.</p>	<p>Pieces/corner</p> <p>200 400</p> <p>UE6010 </p> <p>Competitor's P20 coating </p> <p>• No abnormal wear at scaling when using UE6010. • UE6010 achieved 1.5 times longer tool life.</p>	<p>Pieces/corner</p> <p>250 500</p> <p>UE6010 </p> <p>Competitor's P10 coating </p> <p>UE6010 displayed better chip discharge performance and achieved 1.5 times longer tool life.</p>

Insert	CNMG120412-MV	CNMG120408-MV	TNMG160408-MA
Workpiece	Carbon steel (JIS S45C) 	Alloy steel (JIS SCM420) 	Carbon steel (JIS S45C) 
Cutting speed (m/min)	280	360	320
Feed (mm/rev)	0.25	0.2	0.3
Depth of cut (mm)	1.5	2.0	2.0
Coolant	Wet cutting	Wet cutting	Wet cutting
Result	<p>Cutting conditions</p> <p>UE6010 </p> <p>80 pieces/corner</p> <p>Competitor A's P20 coating </p> <p>40 pieces/corner</p>	<ul style="list-style-type: none"> • Due to its excellent chip discharge performance, UE6010 breaker left no scratch on the finished surface, which had been a problem. • Among various breakers, UE6010 breaker is the first to simultaneously and fully satisfies needs for smooth chip discharge and long tool life. 	<p>Cutting edge condition:</p> <p>UE6010 </p> <p>400 pieces/corner</p> <p>Competitor A's P20 coating </p> <p>200 pieces/corner</p>

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