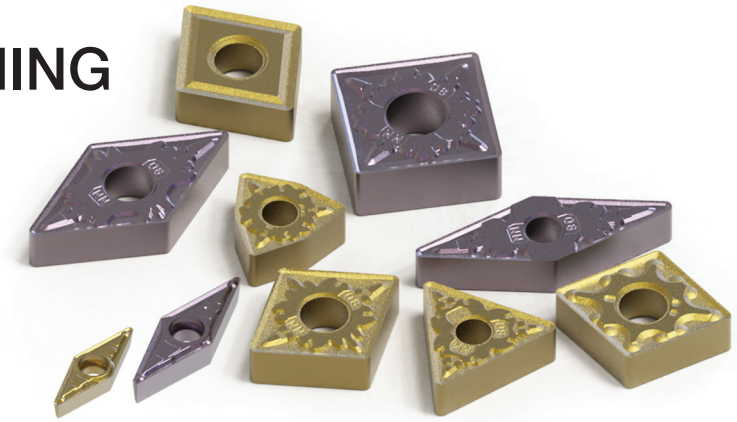
MITSUBISHI MATERIALS U.S.A.

MC/MP7100 Series

COATED GRADE FOR STAINLESS STEEL TURNING





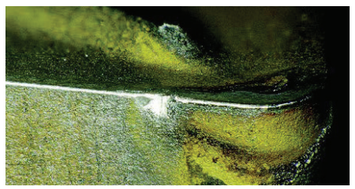
TOOL NEWS **B277A**

Coated Grade for Stainless Steel Turning

MC/MP7100 Series

Improved coating adhesion strength and dedicated carbide substrate suppresses notching during stainless steel turning.

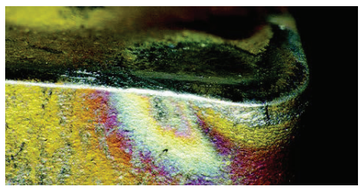
Stainless steels are widely used for components that require resistance to corrosion. When comparing stainless steels to other steels and cast irons, it has low hardness but is tough to machine and susceptible to work hardening. Due to these characteristics, turning inserts are prone to edge damage and weld chipping. Additionally, plastic deformation of the insert due to the heat generated makes more difficult to cut, resulting in unstable tool life.
The properties of stainless steels, such as corrosion and heat resistance, vary greatly depending on the metallurgical structure and composition. These small differences can make it appear as if a completely different workpiece material is being machined.
Mitsubishi Materials has the ability to combine coating and substrate technology to produce a series of grades to successfully machine stainless steels.



Notching



Fracture from welding chipping



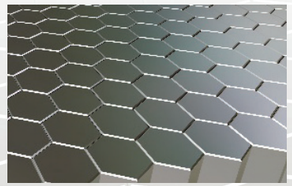
Plastic deformation

Features of The MC7100 Series Coating

"Super" Nano Texture Technology

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





*By Image

The ratio of Al_2O_3 crystal grains with the same orientation



Conventional CVD inserts

Grain size and growth direction are uneven.



Nano Texture

Uniformity of the grain size and growth direction has improved.



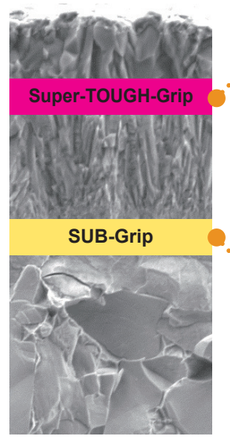
"Super" Nano Texture

Uniformity of the growth direction has drastically improved.

Crystal Orientation

Tough and Sub Grip Layers

The extra strength of the adhesion between the coating layers suppresses peeling during machining of stainless steels.



Super-TOUGH-Grip

The adhesion strength of the Al_2O_3 layer, which was prone to peeling due to the work-hardened layer when machining stainless steel, has been significantly improved.

SUB-Grip

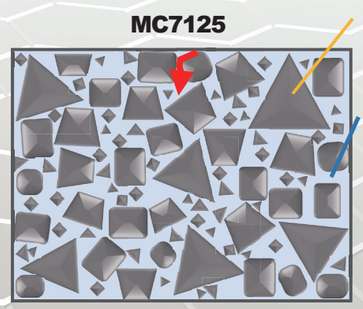
It increases the adhesion strength between the carbide substrate and the coating layer, and prevents the coating from peeling off due to welding.

Features of Carbide Substrate

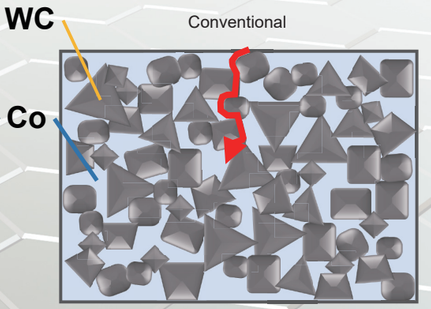
MC7115 Has crater wear and plastic deformation resistance that are ideal for high-speed cutting of stainless steel.

MC7125 By optimizing the particle size distribution, the boundary contact between the low toughness WC particles has been reduced and promotes hardness, thereby dramatically improving plastic deformation and fracture resistance.

MP7135 The dedicated carbide substrate has excellent wear resistance and greatly improved chipping resistance.



Reduces **WC** boundaries and suppresses crack growth

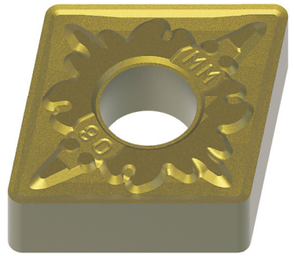


Cracks grow along the WC boundaries that are lower in toughness

For High Speed Turning

MC7115

CVD coated carbide grade specialized for high speed cutting.
For medium to large austenitic stainless steel parts, cutting speeds of 820 SFM or more reduce machining time.

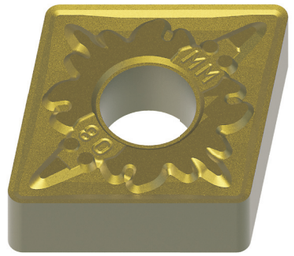


Note) The appearance color of MC7115 and MC7125 may vary depending on the product, but this does not affect the quality or performance.

The All Round Choice for Stainless Steel Turning

MC7125

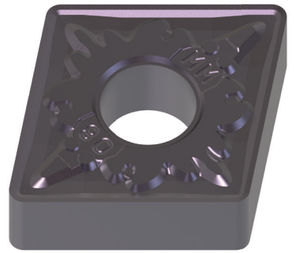
First recommended grade
Compatible with a wide range of applications,
from continuous cutting through to interrupted cutting.
Suitable for a wide variety of stainless steels.

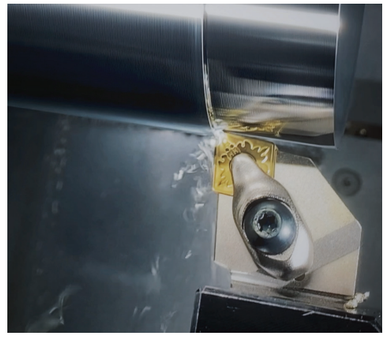


Tougher for Interrupted Cutting

MP7135

PVD coated carbide grade that is resistant to the impacts of interrupted cutting.
It is ideal for intermittent cutting of workpieces, as well as for rough machining of forged and cast products.





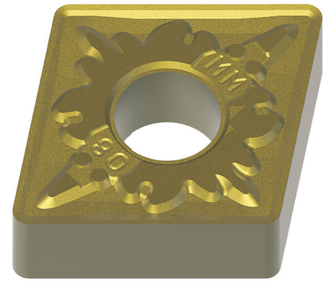


MC/MP7100 series machining video

YouTube

For High Speed Turning

MC7115



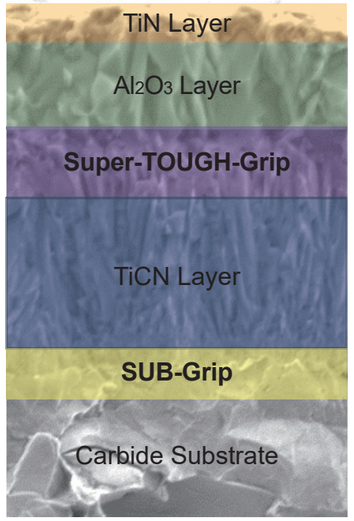
Increases the hardness of the base material, providing excellent resistance to plastic deformation and crater wear

Coating layer with high adhesive strength

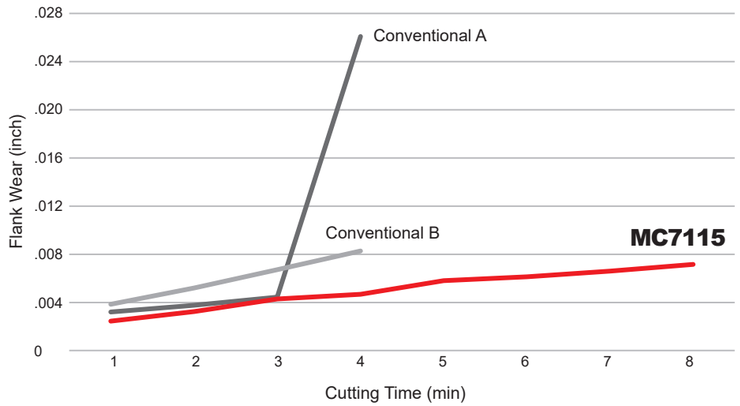
Tough and Super Tough Grip improve adhesion strength and maximize the effectiveness of the coating. "Super" Nano Texture Technology suppresses crater wear during high speed cutting.

Carbide Substrate That is Strong for High Speed Cutting

The hard carbide substrate is resistant to the high temperatures generated during high speed cutting and has excellent resistance to plastic deformation and crater wear.



Machining 304 : Comparison of wear resistance during wet cutting



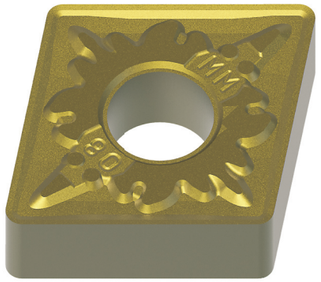
Tool life doubled

<Cutting Conditions>

Material	: AISI 304
Inserts	: CNMG432
Cutting Speed	: vc = 820 SFM
Feed per Rev.	: f = .012 IPR
Depth of Cut	: ap = .059 inch
Cutting Mode	: Wet Cutting

The All-Rounder for Stainless Steel Turning

MC7125



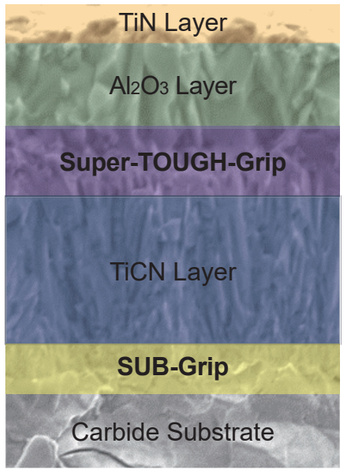
Incredibly stable with both plastic deformation and chipping resistance

Coating layer with high adhesive strength

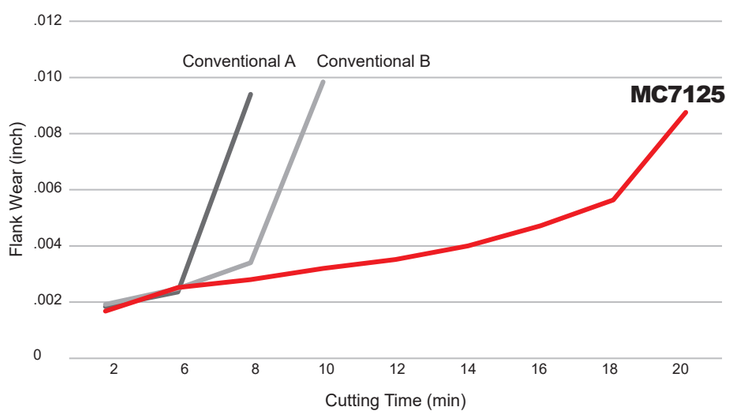
Tough and Super TOUGH-Grip dramatically improve adhesion strength and maximize the effectiveness of the coating.

Substrate resistant to plastic deformation and chipping

By optimizing the particle size distribution of the main component WC and improving its dispersibility, reduced contact between the WC particles dramatically improves resistance to plastic deformation and fracture.



Machining 316L : Comparison of wear resistance during wet cutting

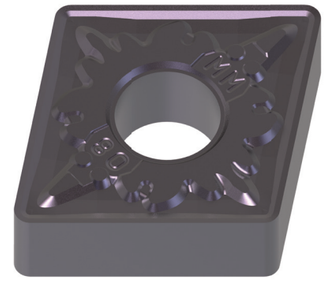


Tool life doubled

<Cutting Conditions>
Material : AISI 316L
Inserts : CNMG432◌◌
Cutting Speed : vc = 490 SFM
Feed per Rev. : f = .012 IPR
Depth of Cut : ap = .059 inch
Cutting Mode : Wet Cutting

Tougher for Interrupted Cutting

MP7135



The highly heat resistant coating and dedicated carbide substrate provide both wear resistance and chipping resistance.

AlTiN-based nano-layer coating

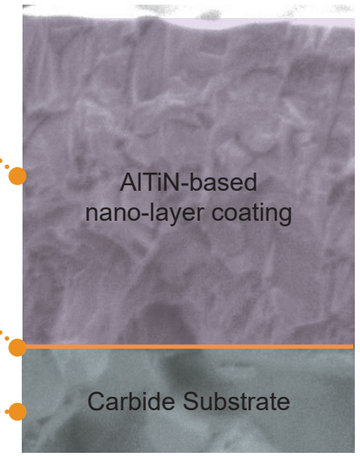
By layering the highly heat resistant AlTiN coating at the Nano level, excellent wear and chipping resistance has been achieve.

Technology to improve adhesion strength

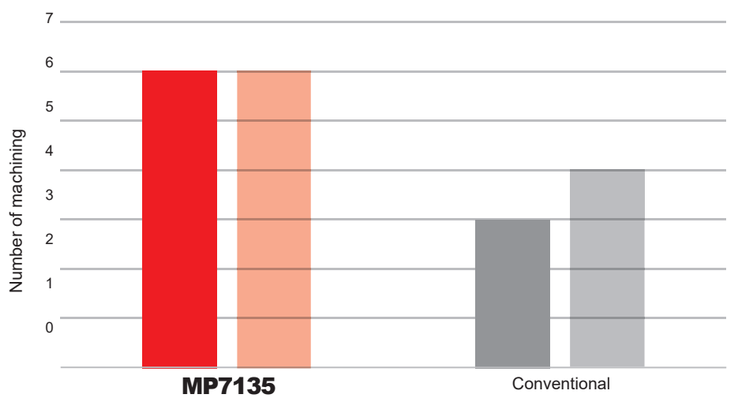
Suppresses peeling when machining stainless steel and exhibits excellent chipping resistance.

Dedicated carbide base material

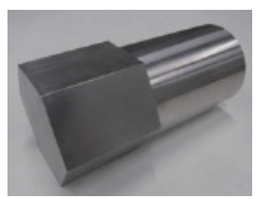
A carbide substrate exclusively for stainless steel that combines both wear and fracture resistance.



Machining 304 : Intermittent Cutting Comparison

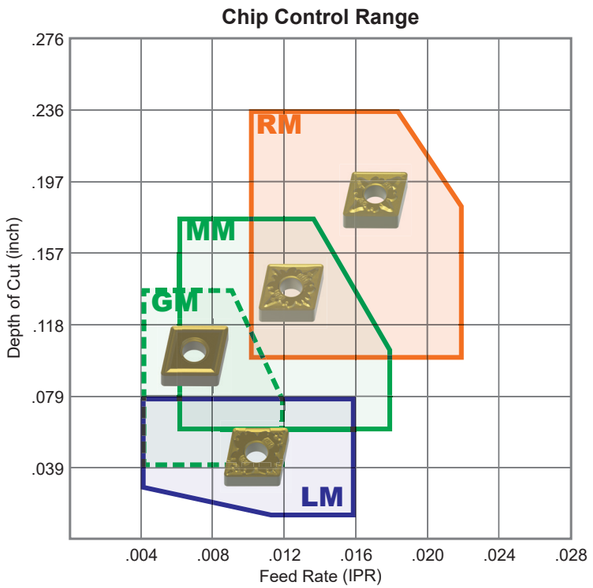


Almost double tool life



<Cutting Conditions>
Material : AISI 304
Inserts : CNMG432◌◌
Cutting Speed : vc = 395 SFM
Feed per Rev. : f = .010 IPR
Depth of Cut : .079 inch x 2 pass
Cutting Mode : Wet Cutting

Chipbreaker System (Negative Inserts)



M Stainless Steel

Negative insert for external turning

	Light Cutting	Medium Cutting	Rough Cutting
Stable Cutting	LM MC7115	MM MC7115	RM MC7115
General Cutting	LM MC7125	MM MC7125	RM MC7125
Unstable Cutting	LM MP7135	GM MP7135	RM MP7135

CUTTING CONDITIONS

Stable Cutting

Continuous Cutting
Constant Depth of Cut
Pre-machined Surfaces
Securely Clamped Component Cutting

General Cutting

Unstable Cutting

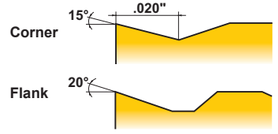
Heavy Interrupted Cutting
Irregular Depth of Cut
Low Clamping Rigidity Cutting

Main Chipbreaker

LM chipbreaker for light cutting

Excellent burr control
Reduces the incidence of burrs drastically because the sharpness properties and cutting edge strength are optimized with different rake angles.



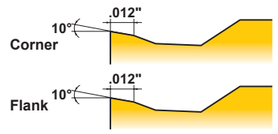


MM chipbreaker for medium cutting

New Design

Excellent welding resistance
The sharp design of the corner radius and main cutting edge improves welding resistance and prevents problems.

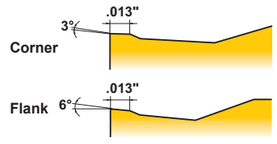




RM chipbreaker for rough cutting

Excellent fracture resistance
By optimizing the land angle and honing geometry, high cutting edge stability is achieved during interrupted machining.

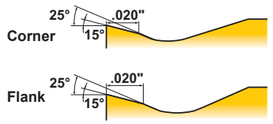




Interpolated Chipbreaker

GM chipbreaker

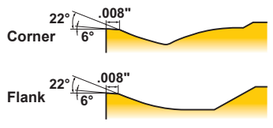
Sub chipbreaker of the main LM and MM chipbreaker.
Excellent in notching resistance for light cutting to medium cutting.



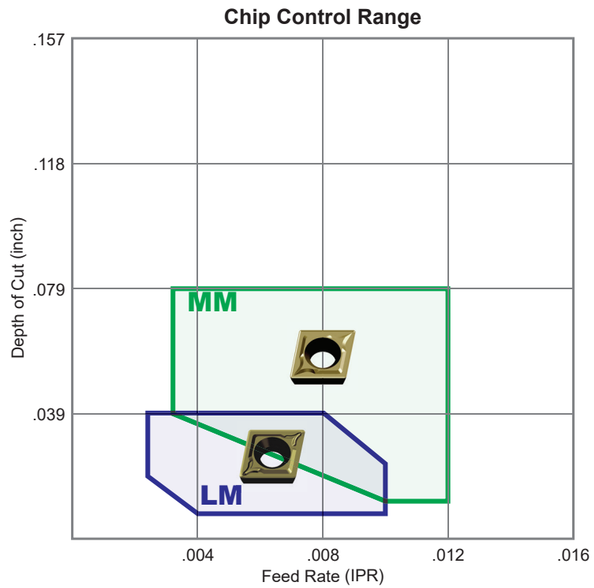
Multi-Assist Chipbreaker

MA chipbreaker

Suitable for medium cutting range.



Chipbreaker System (Positive Inserts)



M Stainless Steel

7° Positive Insert

	Light Cutting	Medium Cutting
Stable Cutting	LM MC7125	MM MC7125
General Cutting	LM MC7125	MM MC7125
Unstable Cutting	LM MP7135	MM MP7135

CUTTING CONDITIONS

Stable Cutting

Continuous Cutting
Constant Depth of Cut
Pre-machined Surfaces
Securely Clamped Component Cutting

General Cutting

Unstable Cutting

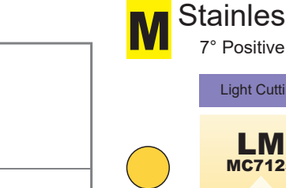
Heavy Interrupted Cutting
Irregular Depth of Cut
Low Clamping Rigidity Cutting

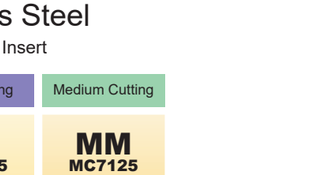
Main Chipbreaker

LM chipbreaker for light cutting

First recommendation for light cutting of stainless steel
The large rake angle gives a sharp cutting edge that prevents chip welding, which in turn helps to control the surface finish. The protruding chipbreaker provides an ideal range of chip control.

5° 7° 11° Positive Insert

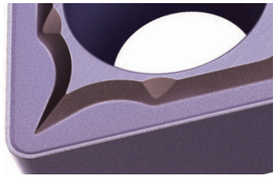


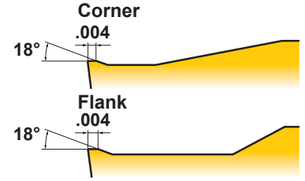


MM chipbreaker for medium cutting

First recommendation for medium cutting of stainless steel
The flat land enables a good balance of wear and fracture resistance. The wide pocket reduces vibration and chip jamming and also prevents increases in cutting resistance even at large depths of cut.

5° 7° Positive Insert

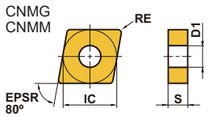




MC/MP7100 Series NEW

Negative Inserts (With Hole)

M Class



Light	Light	Medium	Medium	Medium	Medium
LM	SH	MM	MA	GM	GH
Rough	Heavy	Heavy	Heavy		
RM	HL	HM			

(inch)

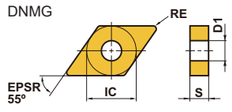
Order Number	Cutting Area	MC7115	MC7125	MP7135	IC	S	RE	D1
CNMG431LM	L	●	●	●	.500	.187	.016	.203
CNMG432LM	L	●	●	●	.500	.187	.031	.203
CNMG433LM	L	●	●	●	.500	.187	.047	.203
CNMG431SH	L			●	.500	.187	.016	.203
CNMG432SH	L			●	.500	.187	.031	.203
CNMG432MM	M	●	●	●	.500	.187	.031	.203
CNMG433MM	M	●	●	●	.500	.187	.047	.203
CNMG434MM	M	●	●	●	.500	.187	.063	.203
CNMG542MM	M	●	●	●	.625	.250	.031	.250
CNMG543MM	M	●	●	●	.625	.250	.047	.250
CNMG544MM	M	●	●	●	.625	.250	.063	.250
CNMG642MM	M	●	●	●	.750	.250	.031	.312
CNMG643MM	M	●	●	●	.750	.250	.047	.312
CNMG644MM	M	●	●	●	.750	.250	.063	.312
CNMG431MA	M		●	●	.500	.187	.016	.203
CNMG432MA	M		●	●	.500	.187	.031	.203
CNMG433MA	M		●	●	.500	.187	.047	.203
CNMG434MA	M		●	●	.500	.187	.063	.203
CNMG542MA	M			●	.625	.250	.031	.250
CNMG543MA	M			●	.625	.250	.047	.250
CNMG544MA	M			●	.625	.250	.063	.250
CNMG643MA	M			●	.750	.250	.047	.312
CNMG644MA	M		●	●	.750	.250	.063	.312
CNMG431GM	M		●	●	.500	.187	.016	.203
CNMG432GM	M		●	●	.500	.187	.031	.203
CNMG433GM	M		●	●	.500	.187	.047	.203
CNMG432GH	M			●	.500	.187	.031	.203
CNMG433GH	M			●	.500	.187	.047	.203
CNMG543GH	M			●	.625	.250	.047	.250
CNMG643GH	M			●	.750	.250	.047	.312
CNMG644GH	M			●	.750	.250	.063	.312

Order Number	Cutting Area	MC7115	MC7125	MP7135	IC	S	RE	D1
CNMG432RM	R	●	●	●	.500	.187	.031	.203
CNMG433RM	R	●	●	●	.500	.187	.047	.203
CNMG434RM	R	●	●	●	.500	.187	.063	.203
CNMG543RM	R	●	●	●	.625	.250	.047	.250
CNMG544RM	R	●	●	●	.625	.250	.063	.250
CNMG643RM	R	●	●	●	.750	.250	.047	.312
CNMG644RM	R	●	●	●	.750	.250	.063	.312
CNMM643HL	H		●		.750	.250	.047	.312
CNMM644HL	H		●		.750	.250	.063	.312
CNMM643HM	H		●		.750	.250	.047	.312
CNMM644HM	H		●		.750	.250	.063	.312

● : USA Stock
(10 inserts in one case)

Negative Inserts (With Hole)

M Class



Light	Light	Medium	Medium	Medium	Medium
LM	SH	MM	MA	GM	GH
Rough					
RM					

(inch)

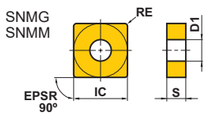
Order Number	Cutting Area	MC7115	MC7125	MP7135	IC	S	RE	D1
DNMG331LM	L	●	●	●	.375	.187	.016	.150
DNMG332LM	L	●	●	●	.375	.187	.031	.150
DNMG431LM	L	●	●	●	.500	.187	.016	.203
DNMG432LM	L	●	●	●	.500	.187	.031	.203
DNMG433LM	L	●	●	●	.500	.187	.047	.203
DNMG441LM	L	●	●	●	.500	.250	.016	.203
DNMG442LM	L	●	●	●	.500	.250	.031	.203
DNMG331SH	L			●	.375	.187	.016	.150
DNMG332SH	L			●	.375	.187	.031	.150
DNMG431SH	L			●	.500	.187	.016	.203
DNMG432SH	L			●	.500	.187	.031	.203
DNMG432MM	M	●	●	●	.500	.187	.031	.203
DNMG433MM	M		●	●	.500	.187	.047	.203
DNMG442MM	M	●	●	●	.500	.250	.031	.203
DNMG443MM	M	●	●	●	.500	.250	.047	.203
DNMG431MA	M		●	●	.500	.187	.016	.203
DNMG432MA	M		●	●	.500	.187	.031	.203
DNMG433MA	M		●	●	.500	.187	.047	.203
DNMG441MA	M		●	●	.500	.250	.016	.203
DNMG442MA	M		●	●	.500	.250	.031	.203
DNMG443MA	M		●	●	.500	.250	.047	.203
DNMG431GM	M		●	●	.500	.187	.016	.203
DNMG432GM	M		●	●	.500	.187	.031	.203
DNMG441GM	M		●	●	.500	.250	.016	.203
DNMG442GM	M		●	●	.500	.250	.031	.203
DNMG432GH	M			●	.500	.187	.031	.203
DNMG433GH	M			●	.500	.187	.047	.203
DNMG442GH	M			●	.500	.250	.031	.203
DNMG443GH	M			●	.500	.250	.047	.203

Order Number	Cutting Area	MC7115	MC7125	MP7135	IC	S	RE	D1
DNMG432RM	R	●	●	●	.500	.187	.031	.203
DNMG433RM	R		●	●	.500	.187	.047	.203
DNMG442RM	R		●	●	.500	.250	.031	.203
DNMG443RM	R		●	●	.500	.250	.047	.203
DNMG444RM	R		●	●	.500	.250	.063	.203

MC/MP7100 Series NEW

Negative Inserts (With Hole)

M Class



Light	Medium	Medium	Medium	Medium
LM	MM	MA	GM	GH
Rough	Heavy	Heavy	Heavy	Heavy
RM	HL	HM		

(inch)

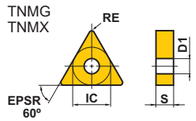
Order Number	Cutting Area	MC7115	MC7125	MP7135	IC	S	RE	D1
SNMG431LM	L	●	●	●	.500	.187	.016	.203
SNMG432LM	L	●	●	●	.500	.187	.031	.203
SNMG432MM	M	●	●	●	.500	.187	.031	.203
SNMG433MM	M	●	●	●	.500	.187	.047	.203
SNMG434MM	M	●	●	●	.500	.187	.063	.203
SNMG542MM	M		●	●	.625	.250	.031	.250
SNMG543MM	M	●	●	●	.625	.250	.047	.250
SNMG544MM	M		●		.625	.250	.063	.250
SNMG643MM	M		●	●	.750	.250	.047	.312
SNMG644MM	M		●	●	.750	.250	.063	.312
SNMG431MA	M		●	●	.500	.187	.016	.203
SNMG432MA	M		●	●	.500	.187	.031	.203
SNMG433MA	M		●	●	.500	.187	.047	.203
SNMG542MA	M		●	●	.625	.250	.031	.250
SNMG543MA	M		●	●	.625	.250	.047	.250
SNMG644MA	M		●	●	.750	.250	.063	.312
SNMG431GM	M		●	●	.500	.187	.016	.203
SNMG432GM	M		●	●	.500	.187	.031	.203
SNMG433GM	M		●	●	.500	.187	.047	.203
SNMG432GH	M			●	.500	.187	.031	.203
SNMG433GH	M			●	.500	.187	.047	.203
SNMG434GH	M			●	.500	.187	.063	.203
SNMG643GH	M			●	.750	.250	.047	.312
SNMG644GH	M			●	.750	.250	.063	.312

Order Number	Cutting Area	MC7115	MC7125	MP7135	IC	S	RE	D1
SNMG432RM	R	●	●	●	.500	.187	.031	.203
SNMG433RM	R	●	●	●	.500	.187	.047	.203
SNMG434RM	R	●	●	●	.500	.187	.063	.203
SNMG543RM	R	●	●	●	.625	.250	.047	.250
SNMG544RM	R	●			.625	.250	.063	.250
SNMG643RM	R	●	●	●	.750	.250	.047	.312
SNMG644RM	R	●	●	●	.750	.250	.063	.312
SNMM643HL	H		●		.750	.250	.047	.312
SNMM644HL	H		●		.750	.250	.063	.312
SNMM643HM	H		●		.750	.250	.047	.312
SNMM644HM	H		●		.750	.250	.063	.312
SNMM858HM	H		●		1.000	.313	.126	.359

● : USA Stock
(10 inserts in one case)

Negative Inserts (With Hole)

M Class



Light	Light	Light	Medium	Medium	Medium
LM	SH	SW (Wiper)	MM	MA	GM
Medium	Medium	Rough			
GH	R/L-ES	RM			

(inch)

Order Number	Cutting Area	MC7115	MC7125	MP7135	IC	S	RE	D1
TNMG331LM	L	●	●	●	.375	.187	.016	.150
TNMG332LM	L	●	●	●	.375	.187	.031	.150
TNMG333LM	L	●	●	●	.375	.187	.047	.150
TNMG331SH	L			●	.375	.187	.016	.150
TNMG332SH	L			●	.375	.187	.031	.150
TNMX332SW	L		●		.375	.187	.031	.150
TNMG332MM	M	●	●	●	.375	.187	.031	.150
TNMG333MM	M	●	●	●	.375	.187	.047	.150
TNMG432MM	M	●	●	●	.500	.187	.031	.203
TNMG433MM	M		●	●	.500	.187	.047	.203
TNMG434MM	M		●		.500	.187	.063	.203
TNMG331MA	M		●	●	.375	.187	.016	.150
TNMG332MA	M		●	●	.375	.187	.031	.150
TNMG333MA	M		●	●	.375	.187	.047	.150
TNMG432MA	M		●	●	.500	.187	.031	.203
TNMG433MA	M		●	●	.500	.187	.047	.203
TNMG331GM	M		●	●	.375	.187	.016	.150
TNMG332GM	M		●	●	.375	.187	.031	.150
TNMG333GM	M		●	●	.375	.187	.047	.150
TNMG432GM	M		●	●	.500	.187	.031	.203

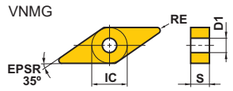
Order Number	Cutting Area	MC7115	MC7125	MP7135	IC	S	RE	D1
TNMG332GH	M			●	.375	.187	.031	.150
TNMG432GH	M			●	.500	.187	.031	.203
TNMG433GH	M			●	.500	.187	.047	.203
TNMG331RES	M		●	●	.375	.187	.016	.150
TNMG331LES	M		●	●	.375	.187	.016	.150
TNMG332RES	M		●	●	.375	.187	.031	.150
TNMG332LES	M		●	●	.375	.187	.031	.150
TNMG432RES	M			●	.500	.187	.031	.203
TNMG432LES	M			●	.500	.187	.031	.203
TNMG332RM	R	●	●	●	.375	.187	.031	.150
TNMG333RM	R	●	●	●	.375	.187	.047	.150
TNMG432RM	R		●	●	.500	.187	.031	.203
TNMG433RM	R		●	●	.500	.187	.047	.203
TNMG434RM	R		●	●	.500	.187	.063	.203

MC/MP7100 Series NEW

Negative Inserts (With Hole)

M Class

VNMG



Light	Medium	Medium	Medium
LM	MM	MA	GM
			

(inch)

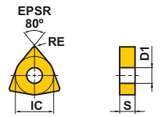
Order Number	Cutting Area	MC7115	MC7125	MP7135	IC	S	RE	D1
VNMG331LM	L	●	●	●	.375	.187	.016	.150
VNMG332LM	L	●	●	●	.375	.187	.031	.150
VNMG332MM	M	●	●	●	.375	.187	.031	.150
VNMG331MA	M		●	●	.375	.187	.016	.150
VNMG332MA	M		●	●	.375	.187	.031	.150
VNMG331GM	M		●	●	.375	.187	.016	.150
VNMG332GM	M		●	●	.375	.187	.031	.150

● : USA Stock
(10 inserts in one case)

Negative Inserts (With Hole)

M Class

WNMG



Light	Light	Medium	Medium	Medium	Medium
LM	SH	MM	MA	GM	GH
					
Rough					
RM					
					

(inch)

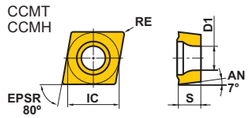
Order Number	Cutting Area	MC7115	MC7125	MP7135	IC	S	RE	D1
WNMG331LM	L	●	●	●	.375	.187	.016	.150
WNMG332LM	L	●	●	●	.375	.187	.031	.150
WNMG431LM	L	●	●	●	.500	.187	.016	.203
WNMG432LM	L	●	●	●	.500	.187	.031	.203
WNMG32.51SH	L			●	.375	.156	.016	.150
WNMG32.52SH	L			●	.375	.156	.031	.150
WNMG331SH	L			●	.375	.187	.016	.150
WNMG332SH	L			●	.375	.187	.031	.150
WNMG431SH	L			●	.500	.187	.016	.203
WNMG432SH	L			●	.500	.187	.031	.203
WNMG332MM	M	●	●	●	.375	.187	.031	.150
WNMG333MM	M		●	●	.375	.187	.047	.150
WNMG432MM	M	●	●	●	.500	.187	.031	.203
WNMG433MM	M	●	●	●	.500	.187	.047	.203
WNMG32.51MA	M		●	●	.375	.156	.016	.150
WNMG32.52MA	M		●	●	.375	.156	.031	.150
WNMG32.53MA	M		●	●	.375	.156	.047	.150
WNMG332MA	M		●	●	.375	.187	.031	.150
WNMG333MA	M		●	●	.375	.187	.047	.150
WNMG431MA	M		●	●	.500	.187	.016	.203
WNMG432MA	M		●	●	.500	.187	.031	.203
WNMG433MA	M		●	●	.500	.187	.047	.203
WNMG331GM	M		●	●	.375	.187	.016	.150
WNMG332GM	M		●	●	.375	.187	.031	.150
WNMG431GM	M		●	●	.500	.187	.016	.203
WNMG432GM	M		●	●	.500	.187	.031	.203
WNMG433GM	M		●	●	.500	.187	.047	.203
WNMG432GH	M			●	.500	.187	.031	.203
WNMG433GH	M			●	.500	.187	.047	.203

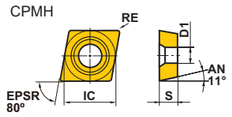
Order Number	Cutting Area	MC7115	MC7125	MP7135	IC	S	RE	D1
WNMG332RM	R	●	●	●	.375	.187	.031	.150
WNMG333RM	R		●	●	.375	.187	.047	.150
WNMG432RM	R	●	●	●	.500	.187	.031	.203
WNMG433RM	R	●	●	●	.500	.187	.047	.203

MC/MP7100 Series NEW

7°, 11° Positive Inserts (With Hole)

M Class





Finish	Light	Medium	Medium
FM	LM	MM	MV
Light	Medium	Medium	
LM	MV		

(inch)

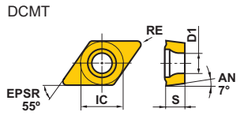
Order Number	Cutting Area	MC7115	MC7125	MP7135	IC	S	RE	D1
CCMT21.50.5FM	F		●		.250	.094	.008	.110
CCMT21.51FM	F	●	●	●	.250	.094	.016	.110
CCMT32.50.5FM	F		●		.375	.156	.008	.173
CCMT32.51FM	F	●	●	●	.375	.156	.016	.173
CCMT32.52FM	F	●	●	●	.375	.156	.031	.173
CCMT21.51LM	L	●	●	●	.250	.094	.016	.110
CCMT21.52LM	L	●	●	●	.250	.094	.031	.110
CCMT32.51LM	L	●	●	●	.375	.156	.016	.173
CCMT32.52LM	L	●	●	●	.375	.156	.031	.173
CCMT21.50.5MM	M		●	●	.250	.094	.008	.110
CCMT21.51MM	M	●	●	●	.250	.094	.016	.110
CCMT21.52MM	M	●	●	●	.250	.094	.031	.110
CCMT32.50.5MM	M		●	●	.375	.156	.008	.173
CCMT32.51MM	M	●	●	●	.375	.156	.016	.173
CCMT32.52MM	M	●	●	●	.375	.156	.031	.173
CCMT431MM	M	●	●	●	.500	.187	.016	.217
CCMT432MM	M	●	●	●	.500	.187	.031	.217
CCMT433MM	M	●	●	●	.500	.187	.047	.217
CCMH21.50.5MV	M		●	●	.250	.094	.008	.110
CCMH21.51MV	M		●	●	.250	.094	.016	.110

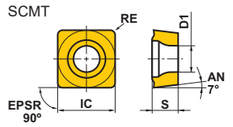
Order Number	Cutting Area	MC7115	MC7125	MP7135	IC	S	RE	D1
CPMH2.51.51LM	L	●	●	●	.313	.094	.016	.138
CPMH2.51.52LM	L	●	●	●	.313	.094	.031	.138
CPMH321LM	L	●	●	●	.375	.125	.016	.177
CPMH322LM	L	●	●	●	.375	.125	.031	.177
CPMH2.51.51MV	M		●	●	.313	.094	.016	.138
CPMH2.51.52MV	M		●	●	.313	.094	.031	.138
CPMH321MV	M		●	●	.375	.125	.016	.177
CPMH322MV	M		●	●	.375	.125	.031	.177

● : USA Stock
(10 inserts in one case)

7° Positive Inserts (With Hole)

M Class





Finish	Light	Medium	Medium
FM	LM	MM	MV
Finish	Light	Medium	
LM	MM		

(inch)

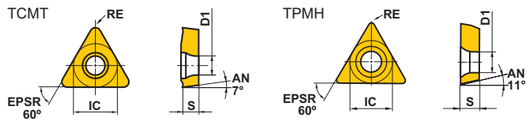
Order Number	Cutting Area	MC7115	MC7125	MP7135	IC	S	RE	D1
DCMT21.50.5FM	F		●		.250	.094	.008	.110
DCMT21.51FM	F	●	●		.250	.094	.016	.110
DCMT32.50.5FM	F		●		.375	.156	.008	.173
DCMT32.51FM	F	●	●	●	.375	.156	.016	.173
DCMT32.52FM	F	●	●	●	.375	.156	.031	.173
DCMT21.50.5LM	L		●		.250	.094	.008	.110
DCMT21.51LM	L	●	●	●	.250	.094	.016	.110
DCMT21.52LM	L	●	●	●	.250	.094	.031	.110
DCMT32.50.5LM	L		●		.375	.156	.008	.173
DCMT32.51LM	L	●	●	●	.375	.156	.016	.173
DCMT32.52LM	L	●	●	●	.375	.156	.031	.173
DCMT21.50.5MM	M		●	●	.250	.094	.008	.110
DCMT21.51MM	M	●	●	●	.250	.094	.016	.110
DCMT21.52MM	M	●	●	●	.250	.094	.031	.110
DCMT32.50.5MM	M		●		.375	.156	.008	.173
DCMT32.51MM	M	●	●	●	.375	.156	.016	.173
DCMT32.52MM	M	●	●	●	.375	.156	.031	.173
DCMT431MM	M	●	●	●	.500	.187	.016	.217
DCMT432MM	M	●	●	●	.500	.187	.031	.217
DCMT21.50.5MV	M		●	●	.250	.094	.008	.110
DCMT21.51MV	M		●	●	.250	.094	.016	.110
DCMT21.52MV	M		●	●	.250	.094	.031	.110
DCMT32.50.5MV	M		●		.375	.156	.008	.173
DCMT32.51MV	M		●	●	.375	.156	.016	.173
DCMT32.52MV	M		●	●	.375	.156	.031	.173

Order Number	Cutting Area	MC7115	MC7125	MP7135	IC	S	RE	D1
SCMT32.51LM	L	●	●	●	.375	.156	.016	.173
SCMT32.52LM	L	●	●	●	.375	.156	.031	.173
SCMT32.51MM	M	●	●	●	.375	.156	.016	.173
SCMT32.52MM	M	●	●	●	.375	.156	.031	.173
SCMT431MM	M	●	●	●	.500	.187	.016	.217
SCMT432MM	M	●	●	●	.500	.187	.031	.217

MC/MP7100 Series NEW

7°, 11° Positive Inserts (With Hole)

M Class



Finish	Light	Medium
FM	LM	MM
Light	Medium	
LM	MV	

(inch)

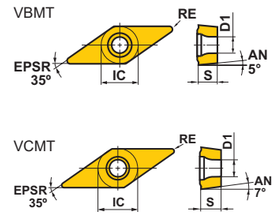
Order Number	Cutting Area	MC7115	MC7125	MP7135	IC	S	RE	D1
TCMT1.81.51FM	F	●	●	●	.219	.094	.016	.098
TCMT1.81.51LM	L		●	●	.219	.094	.016	.098
TCMT21.51LM	L		●	●	.250	.094	.016	.110
TCMT21.52LM	L		●	●	.250	.094	.031	.110
TCMT32.51LM	L	●	●	●	.375	.156	.016	.173
TCMT32.52LM	L	●	●	●	.375	.156	.031	.173
TCMT1.81.51MM	M		●	●	.219	.094	.016	.098
TCMT1.81.52MM	M			●	.219	.094	.031	.098
TCMT21.51MM	M		●	●	.250	.094	.016	.110
TCMT21.52MM	M	●	●	●	.250	.094	.031	.110
TCMT2.521MM	M			●	.313	.125	.016	.134
TCMT32.51MM	M	●	●	●	.375	.156	.016	.173
TCMT32.52MM	M	●	●	●	.375	.156	.031	.173
TCMT32.53MM	M		●	●	.375	.156	.047	.173

Order Number	Cutting Area	MC7115	MC7125	MP7135	IC	S	RE	D1
TPMH1.81.51LM	L		●	●	.219	.094	.016	.114
TPMH221LM	L		●	●	.250	.125	.016	.134
TPMH222LM	L		●	●	.250	.125	.031	.134
TPMH321LM	L		●	●	.375	.125	.016	.173
TPMH322LM	L		●	●	.375	.125	.031	.173
TPMH1.51.50.5MV	M		●	●	.187	.094	.008	.094
TPMH1.51.51MV	M		●	●	.187	.094	.016	.094
TPMH1.81.51MV	M		●	●	.219	.094	.016	.114
TPMH1.81.52MV	M		●	●	.219	.094	.031	.114
TPMH220.5MV	M		●	●	.250	.125	.008	.134
TPMH221MV	M		●	●	.250	.125	.016	.134
TPMH222MV	M		●	●	.250	.125	.031	.134
TPMH321MV	M		●	●	.375	.125	.016	.173
TPMH322MV	M		●	●	.375	.125	.031	.173

● : USA Stock
(10 inserts in one case)

5°, 7° Positive Inserts (With Hole)

M Class



Finish	Light	Medium	Medium
FM	LM	MM	MV
			(Wiper)
Finish	Light	Medium	Medium
FM	LM	MM	MV

(inch)

Order Number	Cutting Area	MC7115	MC7125	MP7135	IC	S	RE	D1
VBMT220.5FM	F		●	●	.250	.125	.008	.114
VBMT221FM	F	●	●	●	.250	.125	.016	.114
VBMT222FM	F	●	●		.250	.125	.031	.114
VBMT331FM	F	●	●	●	.375	.187	.016	.173
VBMT332FM	F	●	●		.375	.187	.031	.173
VBMT221LM	L	●	●	●	.250	.125	.016	.114
VBMT222LM	L	●	●	●	.250	.125	.031	.114
VBMT331LM	L	●	●	●	.375	.187	.016	.173
VBMT332LM	L	●	●	●	.375	.187	.031	.173
VBMT331MM	M	●	●	●	.375	.187	.016	.173
VBMT332MM	M	●	●	●	.375	.187	.031	.173
VBMT221MV	M		●	●	.250	.125	.016	.114
VBMT222MV	M		●	●	.250	.125	.031	.114
VBMT331MV	M		●	●	.375	.187	.016	.173
VBMT332MV	M		●	●	.375	.187	.031	.173

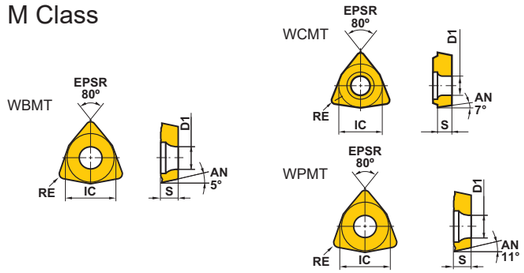
Order Number	Cutting Area	MC7115	MC7125	MP7135	IC	S	RE	D1
VCMT220.5FM	F		●	●	.250	.125	.008	.110
VCMT221FM	F	●	●	●	.250	.125	.016	.110
VCMT331FM	F	●	●	●	.375	.187	.016	.173
VCMT221LM	L	●	●	●	.250	.125	.016	.110
VCMT222LM	L	●	●	●	.250	.125	.031	.110
VCMT331LM	L	●	●	●	.375	.187	.016	.173
VCMT332LM	L	●	●	●	.375	.187	.031	.173
VCMT331MM	M	●	●	●	.375	.187	.016	.173
VCMT332MM	M	●	●	●	.375	.187	.031	.173
VCMT333MM	M		●	●	.375	.187	.047	.173
VCMT1.51.50.5MV	M		●	●	.187	.094	.008	.094
VCMT1.51.51MV	M		●	●	.187	.094	.016	.094

MC/MP7100 Series

NEW

5°, 7°, 11° Positive Inserts (With Hole)

M Class



Medium		Medium
L-MV		MM
		
Medium		
MV		
		

(inch)

Order Number	Cutting Area	MC7115	MC7125	MP7135	IC	S	RE	D1
WBMT1.51.50.5LMV	M		●		.187	.094	.008	.091
WBMT1.51.51LMV	M		●		.187	.094	.016	.091
WCMT1.210.5MM	M		●	●	.156	.063	.008	.091
WCMT1.211MM	M		●	●	.156	.063	.016	.091
WCMT1.51.50.5MM	M		●	●	.375	.094	.008	.173
WCMT1.51.51MM	M		●	●	.375	.094	.016	.173
WCMT21.50.5MM	M		●	●	.156	.094	.008	.091
WCMT21.51MM	M		●	●	.156	.094	.016	.091
WCMT32.51MM	M		●	●	.375	.156	.016	.173
WCMT32.52MM	M		●	●	.375	.156	.031	.173

Order Number	Cutting Area	MC7115	MC7125	MP7135	IC	S	RE	D1
WPMT21.51MV	M		●	●	.250	.094	.016	.110
WPMT321MV	M		●	●	.375	.125	.016	.173
WPMT322MV	M		●	●	.375	.125	.031	.173

● : USA Stock
(10 inserts in one case)

Recommended Cutting Conditions

Negative Inserts (For External Turning)

Cutting Range		Priority	Grade	Chipbreaker	Cutting Speed vc (SFM)	Feed f (IPR)	Depth of Cut ap (inch)
M Austenitic Stainless Steel Hardness≤200 HB							
●	L	1	**MC7115**	**LM**	605–970	.004–.014	.012–.079
●	L	2	**MC7125**	**LM**	575–785	.004–.014	.012–.079
●	L	3	**MC7125**	**SW**	575–785	.004–.020	.012–.098
●	M	1	**MC7115**	**MM**	560–885	.006–.018	.028–.197
●	R	1	**MC7115**	**RM**	525–835	.010–.022	.059–.236
●	H	1	**MC7125**	**HL**	440–605	.012–.028	.118–.295
◐	L	1	**MC7125**	**LM**	575–785	.004–.014	.012–.079
◐	M	1	**MC7125**	**MM**	525–720	.006–.018	.028–.197
◐	M	2	**MC7125**	**GM**	525–720	.006–.020	.020–.157
◐	M	3	**MC7125**	**MA**	525–720	.008–.020	.012–.157
◐	M	4	**MC7125**	**R/L-ES**	525–720	.008–.020	.031–.157
◐	M	5	**MP7135**	**GM**	395–510	.006–.020	.020–.157
◐	M	6	**MP7135**	**MM**	395–510	.006–.018	.028–.197
◐	R	1	**MC7125**	**RM**	490–670	.010–.022	.059–.236
◐	R	2	**MP7135**	**RM**	360–475	.010–.022	.059–.236
◐	R	3	**MP7135**	**GH**	360–475	.010–.024	.059–.236
◐	H	1	**MC7125**	**HL**	440–605	.012–.028	.118–.295
◐	H	2	**MC7125**	**HM**	440–605	.020–.043	.079–.394
✣	L	1	**MP7135**	**LM**	425–560	.004–.014	.012–.079
✣	L	2	**MP7135**	**SH**	425–560	.004–.016	.012–.079
✣	M	1	**MP7135**	**GM**	395–510	.006–.020	.020–.157
✣	M	2	**MP7135**	**MM**	395–510	.006–.018	.028–.197
✣	M	3	**MP7135**	**MA**	395–510	.008–.020	.012–.157
✣	M	4	**MC7125**	**R/L-ES**	525–720	.008–.020	.031–.157
✣	R	1	**MP7135**	**RM**	360–475	.010–.022	.059–.236
✣	R	2	**MP7135**	**GH**	360–475	.010–.024	.059–.236
✣	H	1	**MC7125**	**HL**	440–605	.012–.028	.118–.295
✣	H	2	**MC7125**	**HM**	440–605	.020–.043	.079–.394
M Austenitic Stainless Steel Hardness>200 HB							
●	L	1	**MC7115**	**LM**	510–805	.004–.014	.012–.079
●	L	2	**MC7125**	**LM**	475–655	.004–.014	.012–.079
●	M	1	**MC7115**	**MM**	460–740	.006–.018	.028–.020
●	R	1	**MC7115**	**RM**	440–705	.010–.022	.059–.236
●	H	1	**MC7125**	**HL**	360–510	.012–.028	.118–.295
●	H	2	**MC7125**	**HM**	360–510	.020–.043	.079–.394
◐	L	1	**MC7125**	**LM**	475–655	.004–.014	.012–.079
◐	M	1	**MC7125**	**MM**	425–590	.006–.018	.028–.197
◐	M	2	**MC7125**	**GM**	425–590	.006–.020	.020–.157
◐	M	3	**MC7125**	**MA**	425–590	.008–.020	.012–.157
◐	M	4	**MP7135**	**GM**	330–425	.006–.020	.020–.157
◐	M	5	**MP7135**	**MM**	330–425	.006–.018	.028–.197
◐	M	6	**MP7135**	**MA**	330–425	.008–.020	.012–.157
◐	R	1	**MC7125**	**RM**	410–575	.010–.022	.059–.236
◐	R	2	**MP7135**	**RM**	310–395	.010–.022	.059–.236
◐	R	3	**MP7135**	**GH**	310–395	.010–.024	.059–.236
◐	H	1	**MC7125**	**HL**	360–510	.012–.028	.118–.295
◐	H	2	**MC7125**	**HM**	360–510	.020–.043	.079–.394
✣	L	1	**MP7135**	**LM**	360–460	.004–.014	.012–.079
✣	L	2	**MP7135**	**SH**	360–460	.004–.016	.012–.079
✣	M	1	**MP7135**	**GM**	330–425	.006–.020	.020–.157
✣	M	2	**MP7135**	**MM**	330–425	.006–.018	.028–.197
✣	M	3	**MP7135**	**MA**	330–425	.008–.020	.012–.157
✣	R	1	**MP7135**	**RM**	310–395	.010–.022	.059–.236
✣	R	2	**MP7135**	**GH**	310–395	.010–.024	.059–.236
✣	H	1	**MC7125**	**HL**	360–510	.012–.028	.118–.295
✣	H	2	**MC7125**	**HM**	360–510	.020–.043	.079–.394
M Ferritic and Martensitic Stainless Steel Hardness≤200 HB							
●	L	1	**MC7115**	**LM**	605–970	.004–.014	.012–.079
●	L	2	**MC7125**	**LM**	575–785	.004–.014	.012–.079
●	M	1	**MC7115**	**MM**	560–885	.006–.018	.028–.197
●	R	1	**MC7115**	**RM**	525–835	.010–.022	.059–.236
●	H	1	**MC7125**	**HL**	440–605	.012–.028	.118–.295
●	H	2	**MC7125**	**HM**	440–605	.020–.043	.079–.394

Cutting Range		Priority	Grade	Chipbreaker	Cutting Speed vc (SFM)	Feed f (IPR)	Depth of Cut ap (inch)
M Ferritic and Martensitic Stainless Steel Hardness≤200 HB							
◐	L	1	**MC7125**	**LM**	575–785	.004–.014	.012–.079
◐	M	1	**MC7125**	**MM**	525–720	.006–.018	.028–.197
◐	M	2	**MC7125**	**GM**	525–720	.006–.020	.020–.157
◐	M	3	**MC7125**	**MA**	525–720	.008–.020	.012–.157
◐	M	4	**MP7135**	**GM**	395–510	.006–.020	.020–.157
◐	M	5	**MP7135**	**MM**	395–510	.006–.018	.028–.197
◐	M	6	**MP7135**	**MA**	395–510	.008–.020	.012–.157
◐	R	1	**MC7125**	**RM**	490–670	.010–.022	.059–.236
◐	R	2	**MP7135**	**RM**	360–475	.010–.022	.059–.236
◐	R	3	**MP7135**	**GH**	360–475	.010–.024	.059–.236
◐	H	1	**MC7125**	**HL**	440–605	.012–.028	.118–.295
◐	H	2	**MC7125**	**HM**	440–605	.020–.043	.079–.394
✣	L	1	**MP7135**	**LM**	425–560	.004–.014	.012–.079
✣	L	2	**MP7135**	**SH**	425–560	.004–.016	.012–.079
✣	M	1	**MP7135**	**GM**	395–510	.006–.020	.020–.157
✣	M	2	**MP7135**	**MM**	395–510	.006–.018	.028–.197
✣	M	3	**MP7135**	**MA**	395–510	.008–.020	.012–.157
✣	R	1	**MP7135**	**RM**	360–475	.010–.022	.059–.236
✣	R	2	**MP7135**	**GH**	360–475	.010–.024	.059–.236
✣	H	1	**MC7125**	**HL**	440–605	.012–.028	.118–.295
✣	H	2	**MC7125**	**HM**	440–605	.020–.043	.079–.394
M Ferritic and Martensitic Stainless Steel Hardness>200 HB							
●	L	1	**MC7115**	**LM**	510–805	.004–.014	.012–.079
●	L	2	**MC7125**	**LM**	475–655	.004–.014	.012–.079
●	L	3	**MC7125**	**SW**	475–655	.004–.020	.012–.098
●	M	1	**MC7115**	**MM**	460–740	.006–.018	.028–.197
●	R	1	**MC7115**	**RM**	440–705	.010–.022	.059–.236
●	H	1	**MC7125**	**HL**	360–510	.012–.028	.118–.295
●	H	2	**MC7125**	**HM**	360–510	.020–.043	.079–.394
◐	L	1	**MC7125**	**LM**	475–655	.004–.014	.012–.079
◐	M	1	**MC7125**	**MM**	425–590	.006–.018	.028–.197
◐	M	2	**MC7125**	**GM**	425–590	.006–.020	.020–.157
◐	M	3	**MC7125**	**MA**	425–590	.008–.020	.012–.157
◐	M	4	**MP7135**	**GM**	330–425	.006–.020	.020–.157
◐	M	5	**MP7135**	**MM**	330–425	.006–.018	.028–.197
◐	M	6	**MP7135**	**R/L-ES**	330–425	.008–.020	.031–.157
◐	R	1	**MC7125**	**RM**	410–575	.010–.022	.059–.236
◐	H	1	**MC7125**	**HL**	360–510	.012–.028	.118–.295
◐	H	2	**MC7125**	**HM**	360–510	.020–.043	.079–.394
✣	L	1	**MP7135**	**LM**	360–460	.004–.014	.012–.079
✣	L	2	**MP7135**	**SH**	360–460	.004–.016	.012–.079
✣	M	1	**MP7135**	**GM**	330–425	.006–.020	.020–.157
✣	M	2	**MP7135**	**MM**	330–425	.006–.018	.028–.197
✣	M	3	**MP7135**	**MA**	330–425	.008–.020	.012–.157
✣	M	3	**MP7135**	**R/L-ES**	330–425	.008–.020	.031–.157
✣	R	1	**MP7135**	**RM**	310–395	.010–.022	.059–.236
✣	R	2	**MP7135**	**GH**	310–395	.010–.024	.059–.236
✣	H	1	**MC7125**	**HL**	360–510	.012–.028	.118–.295
✣	H	2	**MC7125**	**HM**	360–510	.020–.043	.079–.394
M Two-phase Stainless Steel Hardness≤280 HB							
●	L	1	**MP7135**	**LM**	280–375	.004–.014	.012–.079
●	L	2	**MP7135**	**SH**	280–375	.004–.016	.012–.079
●	L	3	**MC7125**	**LM**	375–525	.004–.014	.012–.079
●	L	4	**MC7115**	**LM**	410–655	.004–.014	.012–.079
●	M	1	**MP7135**	**GM**	260–345	.006–.020	.020–.157
●	M	2	**MP7135**	**MM**	260–345	.006–.018	.028–.197
●	M	3	**MP7135**	**MA**	260–345	.008–.020	.012–.157
●	M	4	**MC7125**	**MM**	345–475	.006–.018	.028–.197
●	M	5	**MC7125**	**GM**	345–475	.006–.020	.020–.157
●	M	6	**MC7125**	**MA**	345–475	.008–.020	.012–.157
●	M	7	**MC7115**	**MM**	375–590	.006–.018	.028–.197
●	R	1	**MP7135**	**RM**	245–330	.010–.022	.059–.236
●	R	2	**MP7135**	**GH**	245–330	.010–.024	.059–.236

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

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

Negative Inserts (For External Turning)

Cutting Range		Priority	Grade	Chipbreaker	Cutting Speed vc (SFM)	Feed f (IPR)	Depth of Cut ap (inch)
M Two-phase Stainless Steel Hardness≤280 HB							
●	R	3	**MC7125**	**RM**	330—460	.010—.022	.059—.236
●	H	1	**MC7125**	**HL**	295—410	.012—.028	.118—.295
●	H	2	**MC7125**	**HM**	295—410	.020—.043	.079—.394
◐	L	1	**MP7135**	**LM**	280—375	.004—.014	.012—.079
◐	L	2	**MP7135**	**SH**	280—375	.004—.016	.012—.079
◐	L	3	**MC7125**	**LM**	375—525	.004—.014	.012—.079
◐	M	1	**MP7135**	**GM**	260—345	.006—.020	.020—.157
◐	M	2	**MP7135**	**MM**	260—345	.006—.018	.028—.197
◐	M	3	**MP7135**	**MA**	260—345	.008—.020	.012—.157
◐	M	4	**MC7125**	**MM**	345—475	.006—.018	.028—.197
◐	M	5	**MC7125**	**GM**	345—475	.006—.020	.020—.157
◐	M	6	**MC7125**	**MA**	345—475	.008—.020	.012—.157
◐	R	1	**MP7135**	**RM**	245—330	.010—.022	.059—.236
◐	R	2	**MP7135**	**GH**	245—330	.010—.024	.059—.236
◐	R	3	**MC7125**	**RM**	330—460	.010—.022	.059—.236
◐	H	1	**MC7125**	**HL**	295—410	.012—.028	.118—.295
◐	H	2	**MC7125**	**HM**	295—410	.020—.043	.079—.394
✣	L	1	**MP7135**	**LM**	280—375	.004—.014	.012—.079
✣	L	2	**MP7135**	**SH**	280—375	.004—.016	.012—.079
✣	M	1	**MP7135**	**GM**	260—345	.006—.020	.020—.157
✣	M	2	**MP7135**	**MM**	260—345	.006—.018	.028—.197
✣	M	3	**MP7135**	**MA**	260—345	.008—.020	.012—.157
✣	R	1	**MP7135**	**RM**	245—330	.010—.022	.059—.236
✣	R	2	**MP7135**	**GH**	245—330	.010—.024	.059—.236
✣	H	1	**MC7125**	**HL**	295—410	.012—.028	.118—.295
✣	H	2	**MC7125**	**HM**	295—410	.020—.043	.079—.394
M Precipitation-Hardening Stainless Steel Hardness<450 HB							
●	L	1	**MC7115**	**LM**	360—540	.004—.014	.012—.079
●	L	2	**MC7125**	**LM**	310—395	.004—.014	.012—.079
●	M	1	**MC7115**	**MM**	330—490	.006—.018	.028—.197
●	R	1	**MC7115**	**RM**	310—460	.010—.022	.059—.236
●	H	1	**MC7125**	**HL**	245—295	.016—.039	.059—.315
●	H	2	**MC7125**	**HM**	245—295	.020—.043	.079—.394
◐	L	1	**MC7125**	**LM**	310—395	.004—.014	.012—.079
◐	L	2	**MP7135**	**LM**	230—310	.004—.014	.012—.079
◐	L	3	**MP7135**	**SH**	230—310	.004—.016	.012—.079
◐	M	1	**MC7125**	**MM**	295—360	.006—.018	.028—.197
◐	M	2	**MC7125**	**GM**	295—360	.006—.020	.020—.157
◐	M	3	**MC7125**	**MA**	295—360	.004—.012	.020—.118
◐	M	4	**MP7135**	**GM**	210—295	.006—.020	.020—.157
◐	M	5	**MP7135**	**MM**	210—295	.006—.018	.028—.197
◐	M	6	**MP7135**	**MA**	210—295	.004—.012	.020—.118
◐	R	1	**MC7125**	**RM**	280—330	.010—.022	.059—.236
◐	R	2	**MP7135**	**RM**	195—280	.010—.022	.059—.236
◐	R	3	**MP7135**	**GH**	195—280	.010—.024	.059—.236
◐	H	1	**MC7125**	**HL**	245—295	.016—.039	.059—.315
◐	H	2	**MC7125**	**HM**	245—295	.020—.039	.079—.394
✣	L	1	**MP7135**	**LM**	230—310	.004—.014	.012—.079
✣	L	2	**MP7135**	**SH**	230—310	.004—.016	.012—.079
✣	M	1	**MP7135**	**GM**	210—295	.006—.020	.020—.157
✣	M	2	**MP7135**	**MM**	210—295	.006—.018	.028—.197
✣	M	3	**MP7135**	**MA**	210—295	.004—.012	.020—.118
✣	R	1	**MP7135**	**RM**	195—280	.010—.022	.059—.236
✣	R	2	**MP7135**	**GH**	195—280	.010—.024	.059—.236
✣	H	1	**MC7125**	**HL**	245—295	.016—.039	.059—.315
✣	H	2	**MC7125**	**HM**	245—295	.020—.043	.079—.394

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

Recommended Cutting Conditions

7° Positive Inserts (For External Turning)

Cutting Range		Priority	Grade	Chipbreaker	Cutting Speed vc (SFM)	Feed f (IPR)	Depth of Cut ap (inch)
M Austenitic Stainless Steel Hardness≤200 HB							
●	F	1	**MC7115**	**FM**	525—835	.002—.008	.008—.035
●	F	2	**MC7125**	**FM**	490—690	.002—.008	.008—.035
●	L	1	**MC7125**	**LM**	490—690	.002—.010	.008—.039
●	L	2	**MC7115**	**LM**	525—835	.002—.010	.008—.039
●	M	1	**MC7125**	**MM**	410—575	.003—.012	.012—.079
●	M	2	**MC7125**	**MV**	410—575	.003—.012	.012—.079
●	M	3	**MC7115**	**MM**	440—705	.003—.012	.012—.079
◐	F	1	**MC7125**	**FM**	490—690	.002—.008	.008—.035
◐	L	1	**MC7125**	**LM**	490—690	.002—.010	.008—.039
◐	L	2	**MP7135**	**LM**	375—475	.002—.010	.008—.039
◐	M	1	**MC7125**	**MM**	410—575	.003—.012	.012—.079
◐	M	2	**MC7125**	**MV**	410—575	.003—.012	.012—.079
✣	F	1	**MP7135**	**FM**	375—475	.002—.008	.008—.035
✣	L	1	**MP7135**	**LM**	375—475	.002—.010	.008—.039
✣	M	1	**MP7135**	**MM**	310—395	.003—.012	.012—.079
✣	M	2	**MP7135**	**MV**	310—395	.003—.012	.012—.079
M Austenitic Stainless Steel Hardness>200 HB							
●	F	1	**MC7115**	**FM**	440—705	.002—.008	.008—.035
●	F	2	**MC7125**	**FM**	410—575	.002—.008	.008—.035
●	L	1	**MC7125**	**LM**	410—575	.002—.010	.008—.039
●	L	2	**MC7115**	**LM**	440—705	.002—.010	.008—.039
●	M	1	**MC7125**	**MM**	345—475	.003—.012	.012—.079
●	M	2	**MC7125**	**MV**	345—475	.003—.012	.012—.079
●	M	3	**MC7115**	**MM**	360—590	.003—.012	.012—.079
◐	F	1	**MC7125**	**FM**	410—575	.002—.008	.008—.035
◐	L	1	**MC7125**	**LM**	410—575	.002—.010	.008—.039
◐	L	2	**MP7135**	**LM**	310—395	.002—.010	.008—.039
◐	M	1	**MC7125**	**MM**	345—475	.003—.012	.012—.079
◐	M	2	**MC7125**	**MV**	345—475	.003—.012	.012—.079
✣	F	1	**MP7135**	**FM**	310—395	.002—.008	.008—.035
✣	L	1	**MP7135**	**LM**	310—395	.002—.010	.008—.039
✣	M	1	**MP7135**	**MM**	260—330	.003—.012	.012—.079
✣	M	2	**MP7135**	**MV**	260—330	.003—.012	.012—.079
M Ferritic and Martensitic Stainless Steel Hardness≤200 HB							
●	F	1	**MC7125**	**FM**	490—690	.002—.008	.008—.035
●	L	1	**MC7125**	**LM**	490—690	.002—.010	.008—.039
●	L	2	**MC7115**	**LM**	525—835	.002—.010	.008—.039
●	M	1	**MC7125**	**MM**	410—575	.003—.012	.012—.079
●	M	2	**MC7125**	**MV**	410—575	.003—.012	.012—.079
●	M	3	**MC7115**	**MM**	440—705	.003—.012	.012—.079
◐	F	1	**MC7125**	**FM**	490—690	.002—.008	.008—.035
◐	L	1	**MC7125**	**LM**	490—690	.002—.010	.008—.039
◐	L	2	**MP7135**	**LM**	375—475	.002—.010	.008—.039
◐	M	1	**MC7125**	**MM**	410—575	.003—.012	.012—.079
◐	M	2	**MC7125**	**MV**	410—575	.003—.012	.012—.079
✣	F	1	**MP7135**	**FM**	375—475	.002—.008	.008—.035
✣	L	1	**MP7135**	**LM**	375—475	.002—.010	.008—.039
✣	M	1	**MP7135**	**MM**	310—395	.003—.012	.012—.079
✣	M	2	**MP7135**	**MV**	310—395	.003—.012	.012—.079
M Ferritic and Martensitic Stainless Steel Hardness>200 HB							
●	F	1	**MC7125**	**FM**	410—575	.002—.008	.008—.035
●	F	2	**MC7115**	**FM**	440—705	.002—.008	.008—.035
●	L	1	**MC7125**	**LM**	410—575	.002—.010	.008—.039
●	L	2	**MC7115**	**LM**	440—705	.002—.010	.008—.039
●	M	1	**MC7125**	**MM**	345—475	.003—.012	.012—.079
●	M	2	**MC7125**	**MV**	345—475	.003—.012	.012—.079
●	M	3	**MC7115**	**MM**	360—590	.003—.012	.012—.079
◐	F	1	**MC7125**	**FM**	410—575	.002—.008	.008—.035
◐	L	1	**MC7125**	**LM**	410—575	.002—.010	.008—.039
◐	L	2	**MP7135**	**LM**	310—395	.002—.010	.008—.039
◐	M	1	**MC7125**	**MM**	345—475	.003—.012	.012—.079
◐	M	2	**MC7125**	**MV**	345—475	.003—.012	.012—.079
✣	F	1	**MP7135**	**FM**	310—395	.002—.008	.008—.035
✣	L	1	**MP7135**	**LM**	310—395	.002—.010	.008—.039
✣	M	1	**MP7135**	**MM**	260—330	.003—.012	.012—.079
✣	M	2	**MP7135**	**MV**	260—330	.003—.012	.012—.079
M Two-phase Stainless Steel Hardness≤280 HB							
●	F	1	**MP7135**	**FM**	245—330	.002—.008	.008—.035
●	L	1	**MP7135**	**LM**	245—330	.002—.010	.008—.039
●	L	2	**MC7125**	**LM**	330—460	.002—.010	.008—.039
●	L	3	**MC7115**	**LM**	360—575	.002—.010	.008—.039
●	M	1	**MP7135**	**MM**	210—260	.003—.012	.012—.079
●	M	2	**MC7125**	**MM**	280—375	.003—.012	.012—.079
●	M	3	**MC7125**	**MV**	280—375	.003—.012	.012—.079
●	M	4	**MC7115**	**MM**	295—475	.003—.012	.012—.079
◐	F	1	**MC7125**	**FM**	330—460	.002—.008	.008—.035
◐	L	1	**MC7125**	**LM**	330—460	.002—.010	.008—.039
◐	M	1	**MC7125**	**MM**	280—375	.003—.012	.012—.079
◐	M	2	**MC7125**	**MV**	280—375	.003—.012	.012—.079
✣	F	1	**MP7135**	**FM**	245—330	.002—.008	.008—.035
✣	L	1	**MP7135**	**LM**	245—330	.002—.010	.008—.039
✣	M	1	**MP7135**	**MM**	210—260	.003—.012	.012—.079
✣	M	2	**MP7135**	**MV**	210—260	.003—.012	.012—.079
M Precipitation-Hardening Stainless Steel Hardness<450 HB							
●	F	1	**MC7115**	**FM**	310—460	.002—.008	.008—.035
●	L	1	**MC7115**	**LM**	310—460	.002—.008	.008—.039
●	L	2	**MC7125**	**LM**	280—345	.002—.008	.008—.039
●	M	1	**MC7115**	**MM**	260—395	.003—.010	.012—.079
●	M	2	**MC7125**	**MM**	230—280	.003—.010	.012—.079
◐	F	1	**MC7125**	**FM**	280—345	.002—.008	.008—.035
◐	F	2	**MP7135**	**FM**	195—280	.002—.008	.008—.035
◐	L	1	**MC7125**	**LM**	280—345	.002—.008	.008—.039
◐	L	2	**MP7135**	**LM**	195—280	.002—.008	.008—.039
◐	M	1	**MC7125**	**MM**	230—280	.003—.010	.012—.079
◐	M	2	**MC7125**	**MV**	230—280	.003—.012	.012—.079
◐	M	3	**MP7135**	**MM**	165—230	.003—.010	.012—.079
✣	F	1	**MP7135**	**FM**	195—280	.002—.008	.008—.035
✣	L	1	**MP7135**	**LM**	195—280	.002—.008	.008—.039
✣	M	1	**MP7135**	**MM**	165—230	.003—.010	.012—.079
✣	M	2	**MP7135**	**MV**	165—230	.003—.012	.012—.079

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

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

11° Positive Inserts (For External Turning)

Cutting Range		Priority	Grade	Chipbreaker	Cutting Speed vc (SFM)	Feed f (IPR)	Depth of Cut ap (inch)
M Austenitic Stainless Steel Hardness≤200 HB							
●	L	1	**MC7125**	**LM**	490–690	.002–.010	.008–.039
●	L	2	**MC7115**	**LM**	525–835	.002–.010	.008–.039
●	M	1	**MC7125**	**MM**	410–575	.003–.012	.012–.079
●	M	2	**MC7115**	**MM**	440–705	.003–.012	.012–.079
◐	L	1	**MC7125**	**LM**	490–690	.002–.010	.008–.039
◐	M	1	**MC7125**	**MM**	410–575	.003–.012	.012–.079
◐	M	2	**MC7125**	**MV**	410–575	.003–.012	.012–.079
✣	L	1	**MP7135**	**LM**	375–475	.002–.010	.008–.039
✣	M	1	**MP7135**	**MM**	310–395	.003–.012	.012–.079
✣	M	2	**MP7135**	**MV**	310–395	.003–.012	.012–.079
M Austenitic Stainless Steel Hardness>200 HB							
●	L	1	**MC7125**	**LM**	410–575	.002–.010	.008–.039
●	L	2	**MC7115**	**LM**	440–705	.002–.010	.008–.039
●	M	1	**MC7125**	**MM**	345–475	.003–.012	.012–.079
●	M	2	**MC7125**	**MV**	345–475	.003–.012	.012–.079
●	M	3	**MC7115**	**MM**	360–590	.003–.012	.012–.079
◐	L	1	**MC7125**	**LM**	410–575	.002–.010	.008–.039
◐	M	1	**MC7125**	**MM**	345–475	.003–.012	.012–.079
◐	M	2	**MC7125**	**MV**	345–475	.003–.012	.012–.079
✣	L	1	**MP7135**	**LM**	310–395	.002–.010	.008–.039
✣	M	1	**MP7135**	**MM**	260–330	.003–.012	.012–.079
✣	M	2	**MP7135**	**MV**	260–330	.003–.012	.012–.079
M Ferritic and Martensitic Stainless Steel Hardness≤200 HB							
●	L	1	**MC7125**	**LM**	490–690	.002–.010	.008–.039
●	L	2	**MC7115**	**LM**	525–835	.002–.010	.008–.039
●	M	1	**MC7125**	**MM**	410–575	.003–.012	.012–.079
●	M	2	**MC7125**	**MV**	410–575	.003–.012	.012–.079
●	M	3	**MC7115**	**MM**	440–705	.003–.012	.012–.079
◐	L	1	**MC7125**	**LM**	490–690	.002–.010	.008–.039
◐	M	1	**MC7125**	**MM**	410–575	.003–.012	.012–.079
◐	M	2	**MC7125**	**MV**	410–575	.003–.012	.012–.079
✣	L	1	**MP7135**	**LM**	375–475	.002–.010	.008–.039
✣	M	1	**MP7135**	**MM**	310–395	.003–.012	.012–.079
✣	M	2	**MP7135**	**MV**	310–395	.003–.012	.012–.079

Cutting Range		Priority	Grade	Chipbreaker	Cutting Speed vc (SFM)	Feed f (IPR)	Depth of Cut ap (inch)
M Ferritic and Martensitic Stainless Steel Hardness>200 HB							
●	L	1	**MC7125**	**LM**	410–575	.002–.010	.008–.039
●	L	2	**MC7115**	**LM**	440–705	.002–.010	.008–.039
●	M	1	**MC7125**	**MM**	345–475	.003–.012	.012–.079
●	M	2	**MC7125**	**MV**	345–475	.003–.012	.012–.079
●	M	3	**MC7115**	**MM**	360–590	.003–.012	.012–.079
◐	L	1	**MC7125**	**LM**	410–575	.002–.010	.008–.039
◐	M	1	**MC7125**	**MM**	345–475	.003–.012	.012–.079
✣	L	1	**MP7135**	**LM**	310–395	.002–.010	.008–.039
✣	M	1	**MP7135**	**MM**	260–330	.003–.012	.012–.079
✣	M	2	**MP7135**	**MV**	260–330	.003–.012	.012–.079
M Two-phase Stainless Steel Hardness≤280 HB							
●	L	1	**MC7125**	**LM**	330–460	.002–.010	.008–.039
●	L	2	**MC7115**	**LM**	360–575	.002–.010	.008–.039
●	M	1	**MC7125**	**MM**	280–375	.003–.012	.012–.079
●	M	2	**MC7125**	**MV**	280–375	.003–.012	.012–.079
●	M	3	**MC7115**	**MM**	295–475	.003–.012	.012–.079
◐	L	1	**MP7135**	**LM**	245–330	.002–.010	.008–.039
◐	L	2	**MC7125**	**LM**	330–460	.002–.010	.008–.039
◐	M	1	**MC7125**	**MM**	280–375	.003–.012	.012–.079
◐	M	2	**MC7125**	**MV**	280–375	.003–.012	.012–.079
✣	L	1	**MP7135**	**LM**	245–330	.002–.010	.008–.039
✣	M	1	**MP7135**	**MM**	210–260	.003–.012	.012–.079
✣	M	2	**MP7135**	**MV**	210–260	.003–.012	.012–.079
M Precipitation-Hardening Stainless Steel Hardness<450 HB							
●	L	1	**MC7125**	**LM**	280–345	.002–.008	.008–.039
●	L	2	**MC7115**	**LM**	310–460	.002–.008	.008–.039
●	M	1	**MC7125**	**MM**	230–280	.003–.010	.012–.079
●	M	2	**MC7125**	**MV**	230–280	.003–.012	.012–.079
◐	L	1	**MC7125**	**LM**	280–345	.002–.008	.008–.039
◐	M	1	**MC7125**	**MM**	230–280	.003–.010	.012–.079
◐	M	2	**MC7125**	**MV**	230–280	.003–.012	.012–.079
✣	L	1	**MP7135**	**LM**	195–280	.002–.008	.008–.039
✣	M	1	**MC7125**	**MM**	230–280	.003–.010	.012–.079
✣	M	2	**MC7125**	**MV**	230–280	.003–.012	.012–.079

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

Memo

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FOR YOUR SAFETY

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

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