

7000 Series Grades for Stainless Steel Turning

Series
Expansion

A revolution in stainless steel turning

Excellent resistance to notch wear with good burr control.
Outstanding tool life achieved through high resistance to
plastic deformation.

NEW - 5° and 7° positive inserts now included.



MC7015
MC7025
MP7035

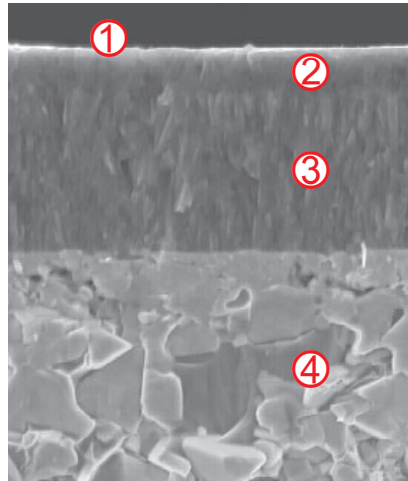


LM
MM
RM
GM

7000 Series Grades for Stainless Steel Turning

CVD coated grade

MC7015/MC7025

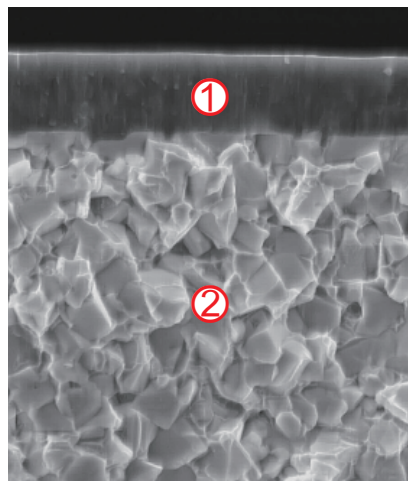


- ① Smooth cutting edge
Prevents chip welding
- ② Thin layer,
Nano-texture Al_2O_3
Controls abnormal damage
- ③ Tough,
Nano-texture TiCN
High wear resistance
- ④ Special carbide
substrate
Resists chipping & plastic
deformation

Newly
developed

PVD coated grade

MP7035

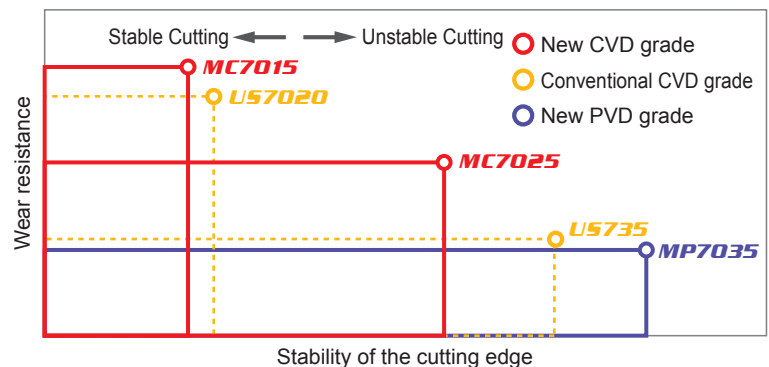


- ① (Al, Ti)N coating
Prevents chip welding
- ② Special carbide
substrate
Improved fracture &
thermal shock resistance

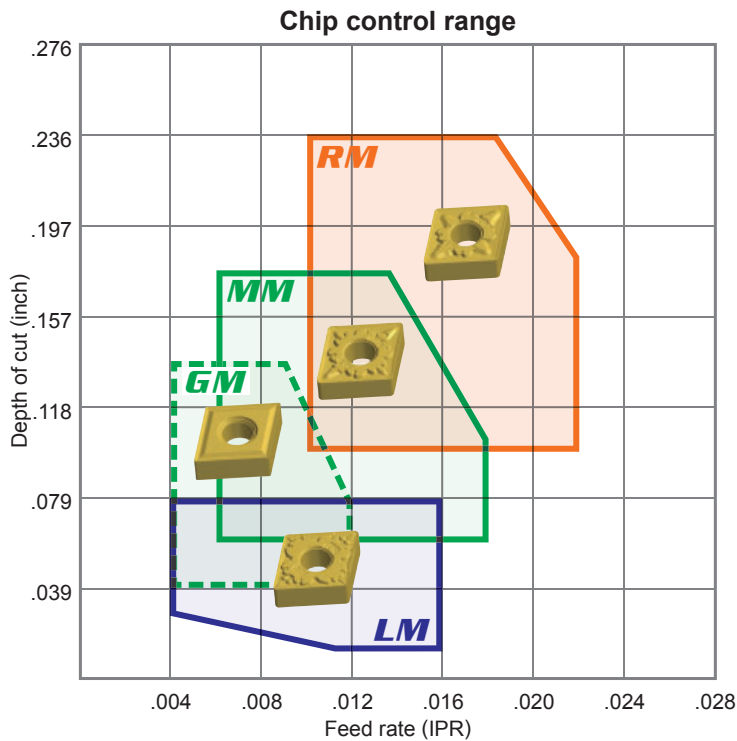
Application range

ISO Category Codes	Stainless Steel
M01	NEW MC7015
M10	
M20	NEW MC7025
M30	
M40	NEW MP7035

Concept of grade



Breaker system for stainless steel turning (Negative inserts)



M Stainless Steel

Negative insert for external turning

	Light Cutting	Medium Cutting	Rough Cutting
●	LM MC7015	MM MC7015	RM MC7015
◐	LM MC7025	MM MC7025	RM MC7025
⊕	LM MP7035	MM MP7035	RM MP7035

CUTTING CONDITIONS

●	Stable Cutting
◐	General Cutting
⊕	Unstable Cutting

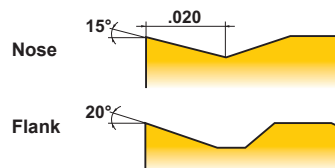
Continuous Cutting
Constant Depth of Cut
Pre-machined Surfaces
Securely Clamped Component Cutting

Heavy Interrupted Cutting
Irregular Depth of Cut
Low Clamping Rigidity Cutting

Main breaker

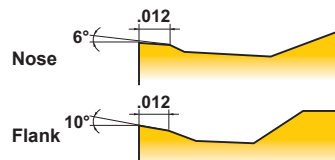
LM breaker for light cutting

Excellent burr control
Cutting edge sharpness and strength are optimized with varying rake angles drastically reducing the incidence of burrs.



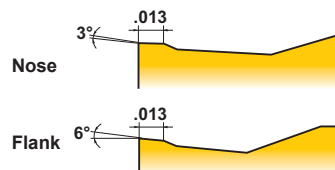
MM breaker for medium cutting

Excellent resistance to plastic deformation
Simulation analysis technology yielded the optimum land geometry, controlling plastic deformation and providing increased tool life.



RM breaker for rough cutting

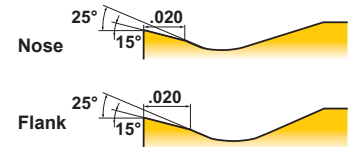
Excellent fracture resistance
During interrupted machining, high cutting edge stability is achieved through optimized edge land angle and hone.



Sub breaker

GM breaker

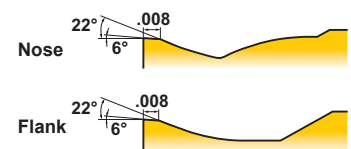
Sub breaker of the main LM and MM chip breaker.
Excellent in notching resistance for light cutting to medium cutting.



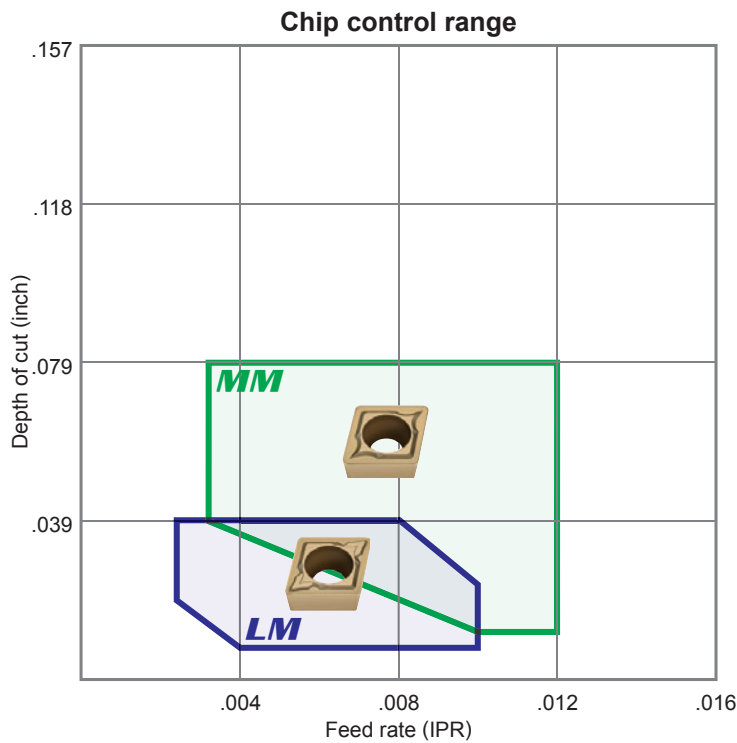
Multi-Assist breaker

MA breaker

Suitable for medium cutting range.



Breaker system for stainless steel turning (Positive inserts)



M Stainless Steel 7° Positive Insert

	Light Cutting	Medium Cutting
●	LM MC7025	MM MC7025
●	LM MC7025	MM MC7025
⊕	LM MP7035	MM MP7035

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

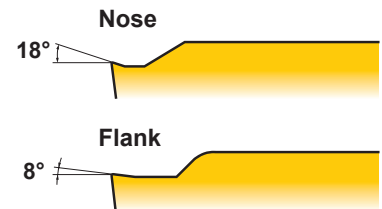
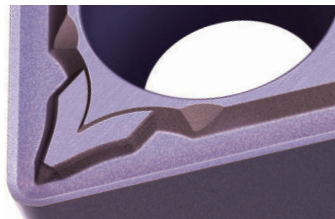
Main breaker

LM breaker for light cutting

First recommendation for light cutting of stainless steel

A high rake angle provides a sharp cutting edge preventing chip welding which, in turn, helps maintain surface finish. The chip breaking peninsula provides a wide range of chip control.

5° 7° Positive Insert

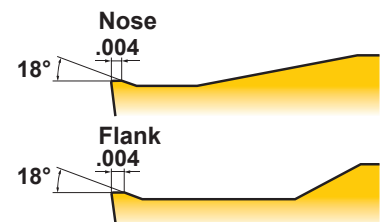
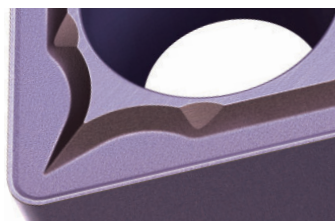


MM breaker for medium cutting

First recommendation for medium cutting of stainless steel

The flat land provides 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

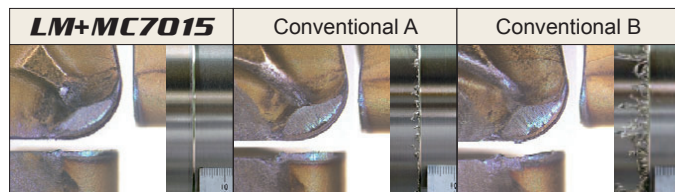


Cutting performance

MC7015

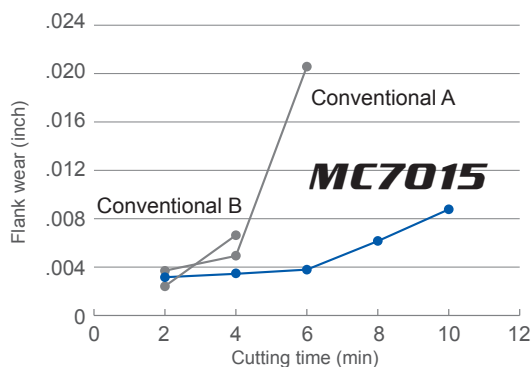
Wear resistance comparison

Tool life comparison was made at a 1mm depth of cut where burrs were most likely to occur.
MC7015 grade with the LM chipbreaker demonstrated good burr control and long tool life.



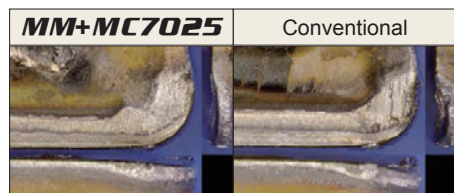
<Cutting conditions>

Inserts : CNMG43200
Work piece : ANSI 304
Cutting speed : 985 SFM
Feed rate : .008 IPR
Depth of cut : .039 inch
Coolant : Wet cutting



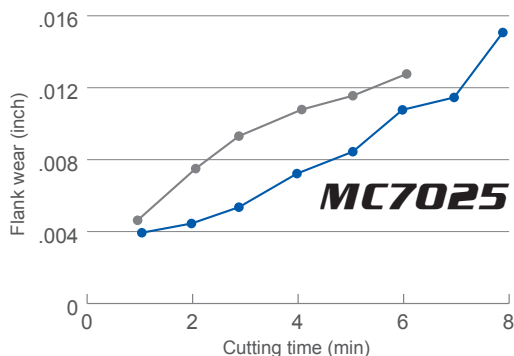
MC7025

Wear resistance comparison



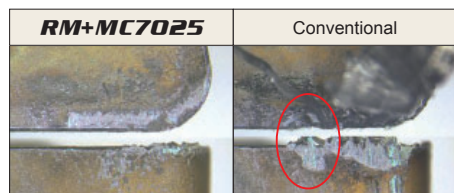
<Cutting conditions>

Inserts : CNMG43200
Work piece : AISI 304
Cutting speed : 590 SFM
Feed rate : .053 IPR
Depth of cut : .157 inch
Coolant : Wet cutting



Fracture resistance comparison

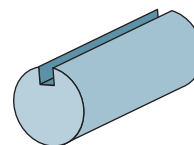
Fracture resistance was tested by turning a component with a slot.
(Impact frequency: 150/pass)



Notch wear and large welding

<Cutting conditions>

Inserts : CNMG43200
Work piece : ANSI 304
Cutting speed : 390 SFM
Feed rate : .012 IPR
Depth of cut : .079 inch
Coolant : Wet cutting



MP7035

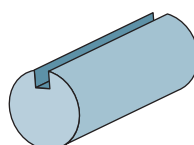
Fracture resistance comparison

Fracture resistance was tested by turning a component with a slot.
(Impact frequency: 300/pass)



<Cutting conditions>

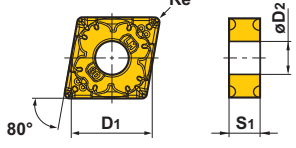
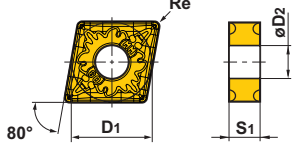
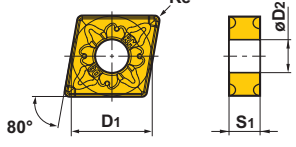
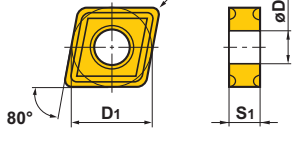
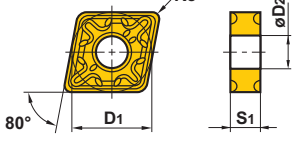
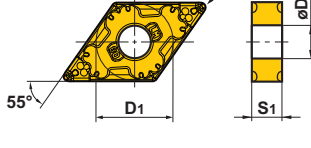
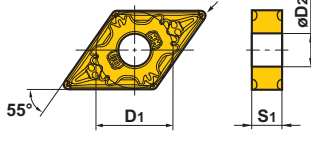
Inserts : CNMG43200
Work piece : ANSI 316
Cutting speed : 165 SFM
Feed rate : .006 IPR
Depth of cut : .039 inch
Coolant : Wet cutting



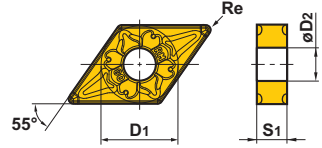
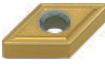
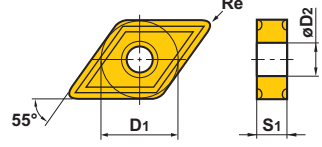
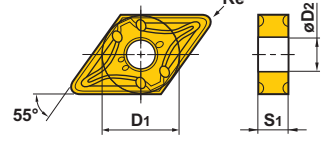
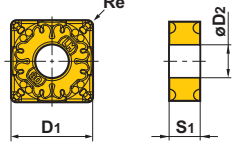
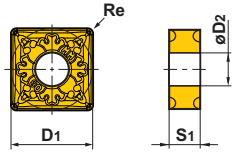
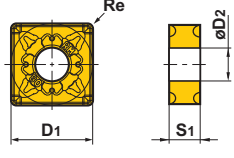
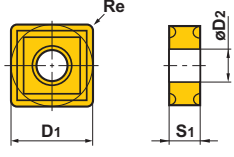
7000 Series Grades for Stainless Steel Turning

INSERTS

● Negative Inserts (With hole)

Shape	Order Number	(ISO) Number	Stock			Dimensions (inch)				Geometry
			MC7015	MC7025	MP7035	D1	S1	Re	D2	
LM  Light Cutting	CNMG431LM	CNMG120404-LM	●	●	●	.500	.187	.016	.203	
	432LM	120408-LM	●	●	●	.500	.187	.031	.203	
	433LM	120412-LM	●	●	●	.500	.187	.047	.203	
MM  Medium Cutting	CNMG432MM	CNMG120408-MM	●	●	●	.500	.187	.031	.203	
	433MM	120412-MM	●	●	●	.500	.187	.047	.203	
	434MM	120416-MM	●	●	●	.500	.187	.063	.203	
	542MM	160608-MM	●	●	●	.625	.250	.031	.250	
	543MM	160612-MM	●	●	●	.625	.250	.047	.250	
	544MM	160616-MM	●	●	●	.625	.250	.063	.250	
	642MM	190608-MM	●	●	●	.750	.250	.031	.312	
	643MM	190612-MM	●	●	●	.750	.250	.047	.312	
	644MM	190616-MM	●	●	●	.750	.250	.063	.312	
RM  Rough Cutting	CNMG432RM	CNMG120408-RM	●	●	●	.500	.187	.031	.203	
	433RM	120412-RM	●	●	●	.500	.187	.047	.203	
	434RM	120416-RM	●	●	●	.500	.187	.063	.203	
	543RM	160612-RM	●	●	●	.625	.250	.047	.250	
	544RM	160616-RM	●	●	●	.625	.250	.063	.250	
	643RM	190612-RM	●	●	●	.750	.250	.047	.312	
	644RM	190616-RM	●	●	●	.750	.250	.063	.312	
GM  Medium Cutting	CNMG431GM	CNMG120404-GM	●	●	●	.500	.187	.016	.203	
	432GM	120408-GM	●	●	●	.500	.187	.031	.203	
	433GM	120412-GM	●	●	●	.500	.187	.047	.203	
MA  Medium Cutting	CNMG431MA	CNMG120404-MA	●	●	●	.500	.187	.016	.203	
	432MA	120408-MA	●	●	●	.500	.187	.031	.203	
	433MA	120412-MA	●	●	●	.500	.187	.047	.203	
LM  Light Cutting	DNMG331LM	DNMG110404-LM	●	●	●	.375	.187	.016	.150	
	332LM	110408-LM	●	●	●	.375	.187	.031	.150	
	431LM	150404-LM	●	●	●	.500	.187	.016	.203	
	432LM	150408-LM	●	●	●	.500	.187	.031	.203	
	433LM	150412-LM	●	●	●	.500	.187	.047	.203	
	441LM	150604-LM	●	●	●	.500	.250	.016	.203	
	442LM	150608-LM	●	●	●	.500	.250	.031	.203	
	443LM	150612-LM	●	●	●	.500	.250	.047	.203	
MM  Medium Cutting	DNMG432MM	DNMG150408-MM	●	●	●	.500	.187	.031	.203	
	433MM	150412-MM	●	●	●	.500	.187	.047	.203	
	442MM	150608-MM	●	●	●	.500	.250	.031	.203	
	443MM	150612-MM	●	●	●	.500	.250	.047	.203	

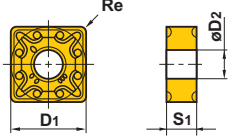
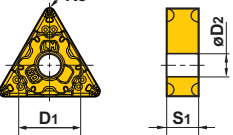
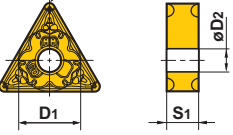
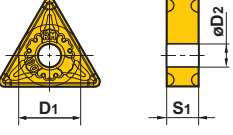
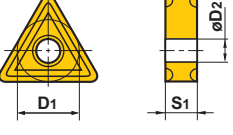
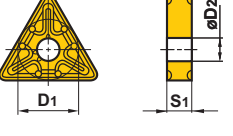
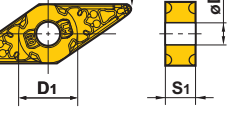
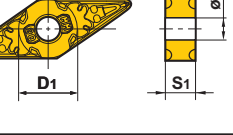
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Shape	Order Number	(ISO) Number	Stock			Dimensions (inch)				Geometry
			MC7015	MC7025	MP7035	D1	S1	Re	D2	
RM  Rough Cutting	DNMG432RM	DNMG150408-RM	●	●	●	.500	.187	.031	.203	
	433RM	150412-RM	●	●	●	.500	.187	.047	.203	
	434RM	150416-RM	●	●	●	.500	.187	.063	.203	
	442RM	150608-RM	●	●	●	.500	.250	.031	.203	
	443RM	150612-RM	●	●	●	.500	.250	.047	.203	
	444RM	150616-RM	●	●	●	.500	.250	.063	.203	
GM  Medium Cutting	DNMG431GM	DNMG150404-GM	●	●	●	.500	.187	.016	.203	
	432GM	150408-GM	●	●	●	.500	.187	.031	.203	
	433GM	150412-GM	●	●	●	.500	.187	.047	.203	
	441GM	150604-GM	●	●	●	.500	.250	.016	.203	
	442GM	150608-GM	●	●	●	.500	.250	.031	.203	
	443GM	150612-GM	●	●	●	.500	.250	.047	.203	
MA  Medium Cutting	DNMG431MA	DNMG150404-MA	●	●	●	.500	.187	.016	.203	
	432MA	150408-MA	●	●	●	.500	.187	.031	.203	
	433MA	150412-MA	●	●	●	.500	.187	.047	.203	
	441MA	150604-MA	●	●	●	.500	.250	.016	.203	
	442MA	150608-MA	●	●	●	.500	.250	.031	.203	
	443MA	150612-MA	●	●	●	.500	.250	.047	.203	
LM  Light Cutting	SNMG431LM	SNMG120404-LM	●	●	●	.500	.187	.016	.203	
	432LM	120408-LM	●	●	●	.500	.187	.031	.203	
MM  Medium Cutting	SNMG432MM	SNMG120408-MM	●	●	●	.500	.187	.031	.203	
	433MM	120412-MM	●	●	●	.500	.187	.047	.203	
	434MM	120416-MM	●	●	●	.500	.187	.063	.203	
	542MM	150608-MM	●	●	●	.625	.250	.031	.250	
	543MM	150612-MM	●	●	●	.625	.250	.047	.250	
	544MM	150616-MM	●	●	●	.625	.250	.063	.250	
	643MM	190612-MM	●	●	●	.750	.250	.047	.312	
	644MM	190616-MM	●	●	●	.750	.250	.063	.312	
RM  Rough Cutting	SNMG432RM	SNMG120408-RM	●	●	●	.500	.187	.031	.203	
	433RM	120412-RM	●	●	●	.500	.187	.047	.203	
	434RM	120416-RM	●	●	●	.500	.187	.063	.203	
	543RM	150612-RM	●	●	●	.625	.250	.047	.250	
	544RM	150616-RM	●	●	●	.625	.250	.063	.250	
	643RM	190612-RM	●	●	●	.750	.250	.047	.312	
	644RM	190616-RM	●	●	●	.750	.250	.063	.312	
GM  Medium Cutting	SNMG431GM	SNMG120404-GM	●	●	●	.500	.187	.016	.203	
	432GM	120408-GM	●	●	●	.500	.187	.031	.203	
	433GM	120412-GM	●	●	●	.500	.187	.047	.203	

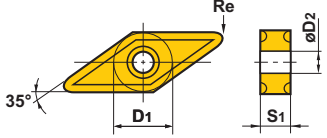
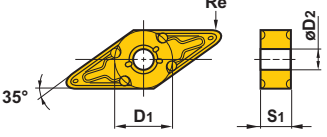
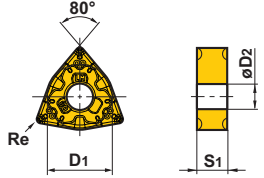
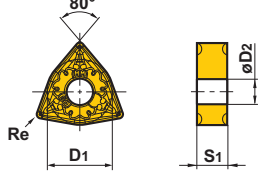
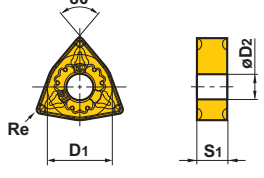
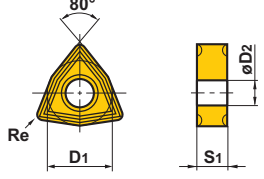
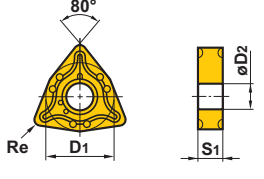
7000 Series Grades for Stainless Steel Turning

INSERTS

● Negative Inserts (With hole)

Shape	Order Number	(ISO) Number	Stock			Dimensions (inch)				Geometry
			MC7015	MC7025	MP7035	D1	S1	Re	D2	
MA  Medium Cutting	SNMG431MA	SNMG120404-MA	●	●		.500	.187	.016	.203	
	432MA	120408-MA	●	●		.500	.187	.031	.203	
	433MA	120412-MA	●	●		.500	.187	.047	.203	
LM  Light Cutting	TNMG331LM	TNMG160404-LM	●	●	●	.375	.187	.016	.150	
	332LM	160408-LM	●	●	●	.375	.187	.031	.150	
	333LM	160412-LM	●	●	●	.375	.187	.047	.150	
MM  Medium Cutting	TNMG332MM	TNMG160408-MM	●	●	●	.375	.187	.031	.150	
	333MM	160412-MM	●	●	●	.375	.187	.047	.150	
	432MM	220408-MM	●	●	●	.500	.187	.031	.203	
	433MM	220412-MM	●	●	●	.500	.187	.047	.203	
	434MM	220416-MM	●	●	●	.500	.187	.063	.203	
RM  Rough Cutting	TNMG332RM	TNMG160408-RM	●	●	●	.375	.187	.031	.150	
	333RM	160412-RM	●	●	●	.375	.187	.047	.150	
	432RM	220408-RM	●	●	●	.500	.187	.031	.203	
	433RM	220412-RM	●	●	●	.500	.187	.047	.203	
	434RM	220416-RM	●	●	●	.500	.187	.063	.203	
GM  Medium Cutting	TNMG331GM	TNMG160404-GM	●	●	●	.375	.187	.016	.150	
	332GM	160408-GM	●	●	●	.375	.187	.031	.150	
	333GM	160412-GM	●	●	●	.375	.187	.047	.150	
	432GM	220408-GM	●	●	●	.500	.187	.031	.203	
	433GM	220412-GM	●	●	●	.500	.187	.047	.203	
MA  Medium Cutting	TNMG331MA	TNMG160404-MA	●	●		.375	.187	.016	.150	
	332MA	160408-MA	●	●		.375	.187	.031	.150	
	333MA	160412-MA	●	●		.375	.187	.047	.150	
	432MA	220408-MA	●	●		.500	.187	.031	.203	
	433MA	220412-MA	●	●		.500	.187	.047	.203	
LM  Light Cutting	VNMG331LM	VNMG160404-LM	●	●	●	.375	.187	.016	.150	
	332LM	160408-LM	●	●	●	.375	.187	.031	.150	
MM  Medium Cutting	VNMG332MM	VNMG160408-MM	●	●	●	.375	.187	.031	.150	

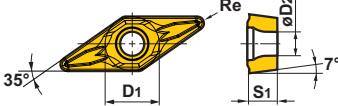
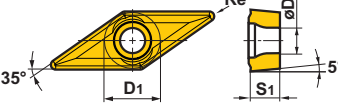
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Shape	Order Number	(ISO) Number	Stock			Dimensions (inch)				Geometry
			MC7015	MC7025	MP7035	D1	S1	Re	D2	
GM 	VNMG331GM	VNMG160404-GM	●	●	●	.375	.187	.016	.150	
	332GM	160408-GM	●	●	●	.375	.187	.031	.150	
Medium Cutting										
MA 	VNMG331MA	VNMG160404-MA	●	●	●	.375	.187	.016	.150	
	332MA	160408-MA	●	●	●	.375	.187	.031	.150	
Medium Cutting										
LM 	WNMG331LM	WNMG060404-LM	●	●	●	.375	.187	.016	.150	
	332LM	060408-LM	●	●	●	.375	.187	.031	.150	
	431LM	080404-LM	●	●	●	.500	.187	.016	.203	
	432LM	080408-LM	●	●	●	.500	.187	.031	.203	
Light Cutting										
MM 	WNMG332MM	WNMG060408-MM	●	●	●	.375	.187	.031	.150	
	333MM	060412-MM	●	●	●	.375	.187	.047	.150	
	432MM	080408-MM	●	●	●	.500	.187	.031	.203	
	433MM	080412-MM	●	●	●	.500	.187	.047	.203	
Medium Cutting										
RM 	WNMG332RM	WNMG060408-RM	●	●	●	.375	.187	.031	.150	
	333RM	060412-RM	●	●	●	.375	.187	.047	.150	
	432RM	080408-RM	●	●	●	.500	.187	.031	.203	
	433RM	080412-RM	●	●	●	.500	.187	.047	.203	
Rough Cutting										
GM 	WNMG331GM	WNMG060404-GM	●	●	●	.375	.187	.016	.150	
	332GM	060408-GM	●	●	●	.375	.187	.031	.150	
	431GM	080404-GM	●	●	●	.500	.187	.016	.203	
	432GM	080408-GM	●	●	●	.500	.187	.031	.203	
	433GM	080412-GM	●	●	●	.500	.187	.047	.203	
Medium Cutting										
MA 	WNMG332MA	WNMG060408-MA	●	●	●	.375	.187	.031	.150	
	333MA	060412-MA	●	●	●	.375	.187	.047	.150	
	431MA	080404-MA	●	●	●	.500	.187	.016	.203	
	432MA	080408-MA	●	●	●	.500	.187	.031	.203	
	433MA	080412-MA	●	●	●	.500	.187	.047	.203	
Medium Cutting										

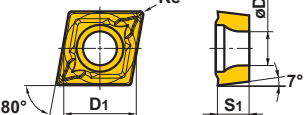
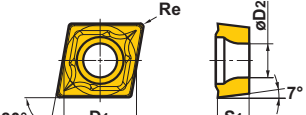
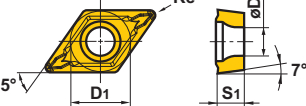
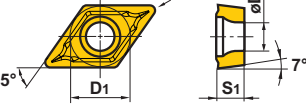
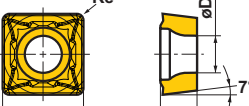
7000 Series Grades for Stainless Steel Turning

INSERTS

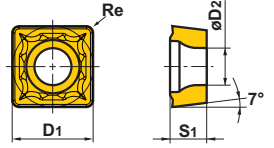
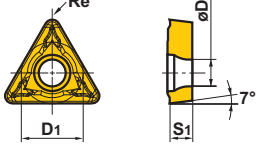
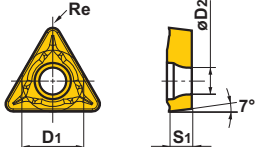
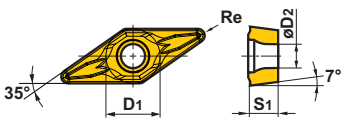
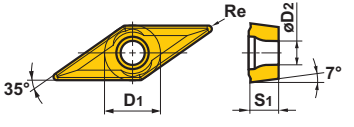
● 5° Positive inserts (With hole)

Shape	Order Number	(ISO) Number	Stock			Dimensions (inch)				Geometry
			MC7015	MC7025	MP7035	D1	S1	Re	D2	
NEW LM 	VBMT221LM	VBMT110304-LM	●	●		.250	.125	.016	.114	
	222LM	110308-LM	●	●		.250	.125	.031	.114	
	331LM	160404-LM	●	●		.375	.187	.016	.173	
	332LM	160408-LM	●	●		.375	.187	.031	.173	
Light Cutting										
NEW MM 	VBMT331MM	VBMT160404-MM	●	●		.375	.187	.016	.173	
	332MM	160408-MM	●	●		.375	.187	.031	.173	
Medium Cutting										

● 7° Positive inserts (With hole)

Shape	Order Number	(ISO) Number	Stock			Dimensions (inch)				Geometry
			MC7015	MC7025	MP7035	D1	S1	Re	D2	
NEW LM 	CCMT21.51LM	CCMT060204-LM	●	●		.250	.094	.016	.110	
	21.52LM	060208-LM	●	●		.250	.094	.031	.110	
	32.51LM	09T304-LM	●	●		.375	.156	.016	.173	
	32.52LM	09T308-LM	●	●		.375	.156	.031	.173	
Light Cutting										
NEW MM 	CCMT21.51MM	CCMT060204-MM	●	●		.250	.094	.016	.110	
	21.52MM	060208-MM	●	●		.250	.094	.031	.110	
	32.51MM	09T304-MM	●	●		.375	.156	.016	.173	
	32.52MM	09T308-MM	●	●		.375	.156	.031	.173	
	431MM	120404-MM	●	●		.500	.187	.016	.217	
	432MM	120408-MM	●	●		.500	.187	.031	.217	
Medium Cutting	433MM	120412-MM	●	●		.500	.187	.047	.217	
NEW LM 	DCMT21.51LM	DCMT070204-LM	●	●		.250	.094	.016	.110	
	21.52LM	070208-LM	●	●		.250	.094	.031	.110	
	32.51LM	11T304-LM	●	●		.375	.156	.016	.173	
	32.52LM	11T308-LM	●	●		.375	.156	.031	.173	
Light Cutting										
NEW MM 	DCMT21.51MM	DCMT070204-MM	●	●		.250	.094	.016	.110	
	21.52MM	070208-MM	●	●		.250	.094	.031	.110	
	32.51MM	11T304-MM	●	●		.375	.156	.016	.173	
	32.52MM	11T308-MM	●	●		.375	.156	.031	.173	
	431MM	150404-MM	●	●		.500	.187	.016	.217	
Medium Cutting	432MM	150408-MM	●	●		.500	.187	.031	.217	
NEW LM 	SCMT32.51LM	SCMT09T304-LM	●	●		.375	.156	.016	.173	
	32.52LM	SCMT09T308-LM	●	●		.375	.156	.031	.173	
Light Cutting										

● : Inventory maintained.

Shape	Order Number	(ISO) Number	Stock			Dimensions (inch)				Geometry
			MC7015	MC7025	MP7035	D1	S1	Re	D2	
NEW MM 	SCMT32.51MM	SCMT09T304-MM	●	●		.375	.156	.016	.173	
	32.52MM	09T308-MM	●	●		.375	.156	.031	.173	
	431MM	120404-MM	●	●		.500	.187	.016	.217	
	432MM	120408-MM	●	●		.500	.187	.031	.217	
Medium Cutting										
NEW LM 	TCMT1.81.51LM	TCMT090204-LM	●	●		.219	.094	.016	.098	
	1.81.52LM	090208-LM	●	●		.219	.094	.031	.098	
	21.51LM	110204-LM	●	●		.250	.094	.016	.110	
	21.52LM	110208-LM	●	●		.250	.094	.031	.110	
	32.51LM	16T304-LM	●	●		.375	.156	.016	.173	
	32.52LM	16T308-LM	●	●		.375	.156	.031	.173	
Light Cutting										
NEW MM 	TCMT1.81.51MM	TCMT090204-MM	●	●		.219	.094	.016	.098	
	1.81.52MM	090208-MM	●	●		.219	.094	.031	.098	
	21.51MM	110204-MM	●	●		.250	.094	.016	.110	
	21.52MM	110208-MM	●	●		.250	.094	.031	.110	
	2.521MM	130304-MM	●	●		.313	.125	.016	.134	
	32.51MM	16T304-MM	●	●		.375	.156	.016	.173	
	32.52MM	16T308-MM	●	●		.375	.156	.031	.173	
	32.53MM	16T312-MM	●	●		.375	.156	.047	.173	
Medium Cutting										
NEW LM 	VCMT221LM	VCMT110304-LM	●	●		.250	.125	.016	.110	
	222LM	110308-LM	●	●		.250	.125	.031	.110	
	331LM	160404-LM	●	●		.375	.187	.016	.173	
	332LM	160408-LM	●	●		.375	.187	.031	.173	
Light Cutting										
NEW MM 	VCMT331MM	VCMT160404-MM	●	●		.375	.187	.016	.173	
	332MM	160408-MM	●	●		.375	.187	.031	.173	
	333MM	160412-MM	●	●		.375	.187	.047	.173	
Medium Cutting										

7000 Series Grades for Stainless Steel Turning

RECOMMENDED CUTTING CONDITIONS

Negative Inserts (External turning tools)

Work Material	Hardness	Cutting Conditions	Cutting Range	Breaker	Grade	Cutting Speed (SFM)	Feed Rate (IPR)	Depth of Cut (inch)
M	Austenitic Stainless Steel (AISI 304, 316, etc.)	Stable Cutting	Light Cutting	LM	MC7015	575—785	.004—.012	.012—.080
			Medium Cutting	MM	MC7015	510—705	.006—.018	.028—.197
			Rough Cutting	RM	MC7015	490—670	.010—.022	.060—.236
		General Cutting	Light Cutting	LM	MC7025	525—705	.004—.012	.012—.080
			Medium Cutting	MM	MC7025	475—640	.006—.018	.028—.197
			Rough Cutting	RM	MC7025	460—605	.010—.022	.060—.236
		Unstable Cutting	Light Cutting	LM	MP7035	310—510	.004—.012	.012—.080
			Medium Cutting	MM	MP7035	280—460	.006—.018	.028—.197
			Rough Cutting	RM	MP7035	280—440	.010—.022	.060—.236
	Austenitic Stainless Steel (AISI 304LN, 316LN, etc.)	Stable Cutting	Light Cutting	LM	MC7015	475—655	.004—.012	.012—.080
			Medium Cutting	MM	MC7015	425—590	.006—.018	.028—.197
			Rough Cutting	RM	MC7015	410—575	.010—.022	.060—.236
		General Cutting	Light Cutting	LM	MC7025	440—590	.004—.012	.012—.080
			Medium Cutting	MM	MC7025	410—540	.006—.018	.028—.197
			Rough Cutting	RM	MC7025	375—510	.010—.022	.060—.236
		Unstable Cutting	Light Cutting	LM	MP7035	260—425	.004—.012	.012—.080
			Medium Cutting	MM	MP7035	245—390	.006—.018	.028—.197
			Rough Cutting	RM	MP7035	230—375	.010—.022	.06—.236
	Duplex Stainless Steel (ASTM 32900, etc.)	Stable Cutting	Light Cutting	LM	MC7015	390—540	.004—.012	.012—.080
			Medium Cutting	MM	MC7015	345—490	.006—.018	.028—.197
			Rough Cutting	RM	MC7015	330—460	.010—.022	.060—.236
		General Cutting	Light Cutting	LM	MC7025	360—490	.004—.012	.012—.080
			Medium Cutting	MM	MC7025	330—440	.006—.018	.028—.197
			Rough Cutting	RM	MC7025	310—410	.010—.022	.060—.236
		Unstable Cutting	Light Cutting	LM	MP7035	215—345	.004—.012	.012—.080
			Medium Cutting	MM	MP7035	195—310	.006—.018	.028—.197
			Rough Cutting	RM	MP7035	180—295	.010—.022	.060—.236
	Ferritic and Martensitic Stainless Steels (AISI 410, 430, etc.)	Stable Cutting	Light Cutting	LM	MC7015	575—785	.004—.012	.012—.080
			Medium Cutting	MM	MC7015	510—705	.006—.018	.028—.197
			Rough Cutting	RM	MC7015	490—670	.010—.022	.060—.236
		General Cutting	Light Cutting	LM	MC7025	525—705	.004—.012	.012—.080
			Medium Cutting	MM	MC7025	475—640	.006—.018	.028—.197
			Rough Cutting	RM	MC7025	460—605	.010—.024	.060—.236
		Unstable Cutting	Light Cutting	LM	MP7035	310—510	.004—.012	.012—.080
			Medium Cutting	MM	MP7035	280—460	.006—.018	.028—.197
			Rough Cutting	RM	MP7035	280—440	.010—.022	.060—.236

Work Material	Hardness	Cutting Conditions	Cutting Range	Breaker	Grade	Cutting Speed (SFM)	Feed Rate (IPR)	Depth of Cut (inch)
M	Ferritic and Martensitic Stainless Steels (AISI-431)	Stable Cutting	Light Cutting	LM	MC7015	475—655	.004—.012	.012—.080
			Medium Cutting	MM	MC7015	425—590	.006—.018	.028—.197
			Rough Cutting	RM	MC7015	410—575	.010—.022	.060—.236
		General Cutting	Light Cutting	LM	MC7025	440—590	.004—.012	.012—.080
			Medium Cutting	MM	MC7025	410—540	.006—.018	.028—.197
			Rough Cutting	RM	MC7025	375—510	.010—.024	.060—.236
		Unstable Cutting	Light Cutting	LM	MP7035	260—425	.004—.012	.012—.080
			Medium Cutting	MM	MP7035	245—390	.006—.018	.028—.197
			Rough Cutting	RM	MP7035	230—375	.010—.022	.060—.236
	Hardened Stainless Steels (17-4PH, 17-7 PH, etc.)	Stable Cutting	Light Cutting	LM	MC7015	310—440	.004—.012	.012—.080
			Medium Cutting	MM	MC7015	295—390	.006—.018	.028—.197
			Rough Cutting	RM	MC7015	280—375	.010—.022	.060—.236
		General Cutting	Light Cutting	LM	MC7025	295—390	.004—.012	.012—.080
			Medium Cutting	MM	MC7025	260—360	.006—.018	.028—.197
			Rough Cutting	RM	MC7025	260—345	.010—.024	.060—.236
		Unstable Cutting	Light Cutting	LM	MP7035	180—280	.004—.012	.012—.080
			Medium Cutting	MM	MP7035	165—260	.006—.018	.028—.197
			Rough Cutting	RM	MP7035	145—245	.010—.022	.060—.236

*Please use with reference to the recommended conditions of the boring bar in internal machining.

7000 Series Grades for Stainless Steel Turning

RECOMMENDED CUTTING CONDITIONS

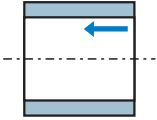
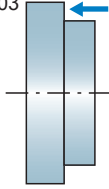
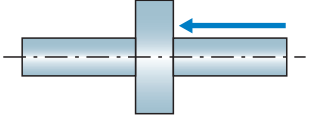
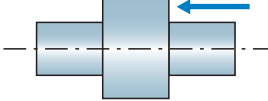
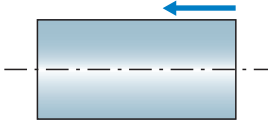
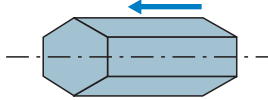
7° Positive Insert (External turning tools)

Work Material	Hardness	Cutting Conditions	Cutting Range	Breaker	Grade	Cutting Speed (SFM)	Feed Rate (IPR)	Depth of Cut (inch)
M	Austenitic Stainless Steel (AISI 304, 316, etc.)	Stable Cutting	Light Cutting	LM	MC7025	460—620	.002—.010	.008—.039
			Medium Cutting	MM	MC7025	375—510	.003—.012	.012—.079
		General Cutting	Light Cutting	LM	MC7025	460—620	.002—.010	.008—.039
			Medium Cutting	MM	MC7025	375—510	.003—.012	.012—.079
		Unstable Cutting	Light Cutting	LM	MP7035	280—440	.002—.010	.008—.039
			Medium Cutting	MM	MP7035	230—375	.003—.012	.012—.079
	Austenitic Stainless Steel (AISI 304LN, 316LN, etc.)	Stable Cutting	Light Cutting	LM	MC7025	395—525	.002—.010	.008—.039
			Medium Cutting	MM	MC7025	330—425	.003—.012	.012—.079
		General Cutting	Light Cutting	LM	MC7025	395—525	.002—.010	.008—.039
			Medium Cutting	MM	MC7025	330—425	.003—.012	.012—.079
		Unstable Cutting	Light Cutting	LM	MP7035	230—375	.002—.010	.008—.039
			Medium Cutting	MM	MP7035	195—310	.003—.012	.012—.079
	Duplex Stainless Steel (ASTM 32900, etc.)	Stable Cutting	Light Cutting	LM	MC7025	310—425	.002—.010	.008—.039
			Medium Cutting	MM	MC7025	260—345	.003—.012	.012—.079
		General Cutting	Light Cutting	LM	MC7025	310—425	.002—.010	.008—.039
			Medium Cutting	MM	MC7025	260—345	.003—.012	.012—.079
		Unstable Cutting	Light Cutting	LM	MP7035	180—310	.002—.010	.008—.039
			Medium Cutting	MM	MP7035	150—245	.003—.012	.012—.079
	Ferritic and Martensitic Stainless Steels (AISI 410, 430, etc.)	Stable Cutting	Light Cutting	LM	MC7025	460—620	.002—.010	.008—.039
			Medium Cutting	MM	MC7025	375—510	.003—.012	.012—.079
		General Cutting	Light Cutting	LM	MC7025	460—620	.002—.010	.008—.039
			Medium Cutting	MM	MC7025	375—510	.003—.012	.012—.079
		Unstable Cutting	Light Cutting	LM	MP7035	280—440	.002—.010	.008—.039
			Medium Cutting	MM	MP7035	230—375	.003—.012	.012—.079
	Ferritic and Martensitic Stainless Steels (AISI—431)	Stable Cutting	Light Cutting	LM	MC7025	395—525	.002—.010	.008—.039
			Medium Cutting	MM	MC7025	330—425	.003—.012	.012—.079
		General Cutting	Light Cutting	LM	MC7025	395—525	.002—.010	.008—.039
			Medium Cutting	MM	MC7025	330—425	.003—.012	.012—.079
		Unstable Cutting	Light Cutting	LM	MP7035	230—375	.002—.010	.008—.039
			Medium Cutting	MM	MP7035	195—310	.003—.012	.012—.079
	Hardened Stainless Steel (17-4PH, 17-7 PH, etc.)	Stable Cutting	Light Cutting	LM	MC7025	260—345	.002—.010	.008—.039
			Medium Cutting	MM	MC7025	210—295	.003—.012	.012—.079
		General Cutting	Light Cutting	LM	MC7025	260—345	.002—.010	.008—.039
			Medium Cutting	MM	MC7025	210—295	.003—.012	.012—.079
		Unstable Cutting	Light Cutting	LM	MP7035	150—245	.002—.010	.008—.039
			Medium Cutting	MM	MP7035	130—210	.003—.012	.012—.079

*Recommended cutting conditions for 7° 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.

EXAMPLES OF USAGE

Insert		WNMG432MM	CNMG543RM	CNMG432MM
Work Piece	AISI 304		ASTM S 31803	AISI 321
				
Cutting Conditions	Cutting Speed (SFM)	475	165	720
	Feed Rate (IPR)	.005	.018	.011
	Depth of Cut (inch)	.079	.157	.063
Coolant		Wet	Wet	Wet
Results	Competitor's MC7025   5 pieces machined 10 pieces machined		Competitor's MC7025   8 pieces machined 8 pieces machined	Competitor's MC7015   Fracture 4 pieces machined 8 pieces machined
Insert		CNMG432LM	WNMG432MM	CNMG432LM
Work Piece	ASTM N 08367		AISI 316	AISI 304
				
Cutting Conditions	Cutting Speed (SFM)	230	400	260
	Feed Rate (IPR)	.008	.012	.004
	Depth of Cut (inch)	.043	.087	.079
Coolant		Wet	Wet	Wet
Results	Competitor's MC7025   12 pieces machined 15 pieces machined		Competitor's MC7015   60 pieces machined 60 pieces machined	Competitor's MP7035   5 pieces machined 5 pieces machined

For your safety

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

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