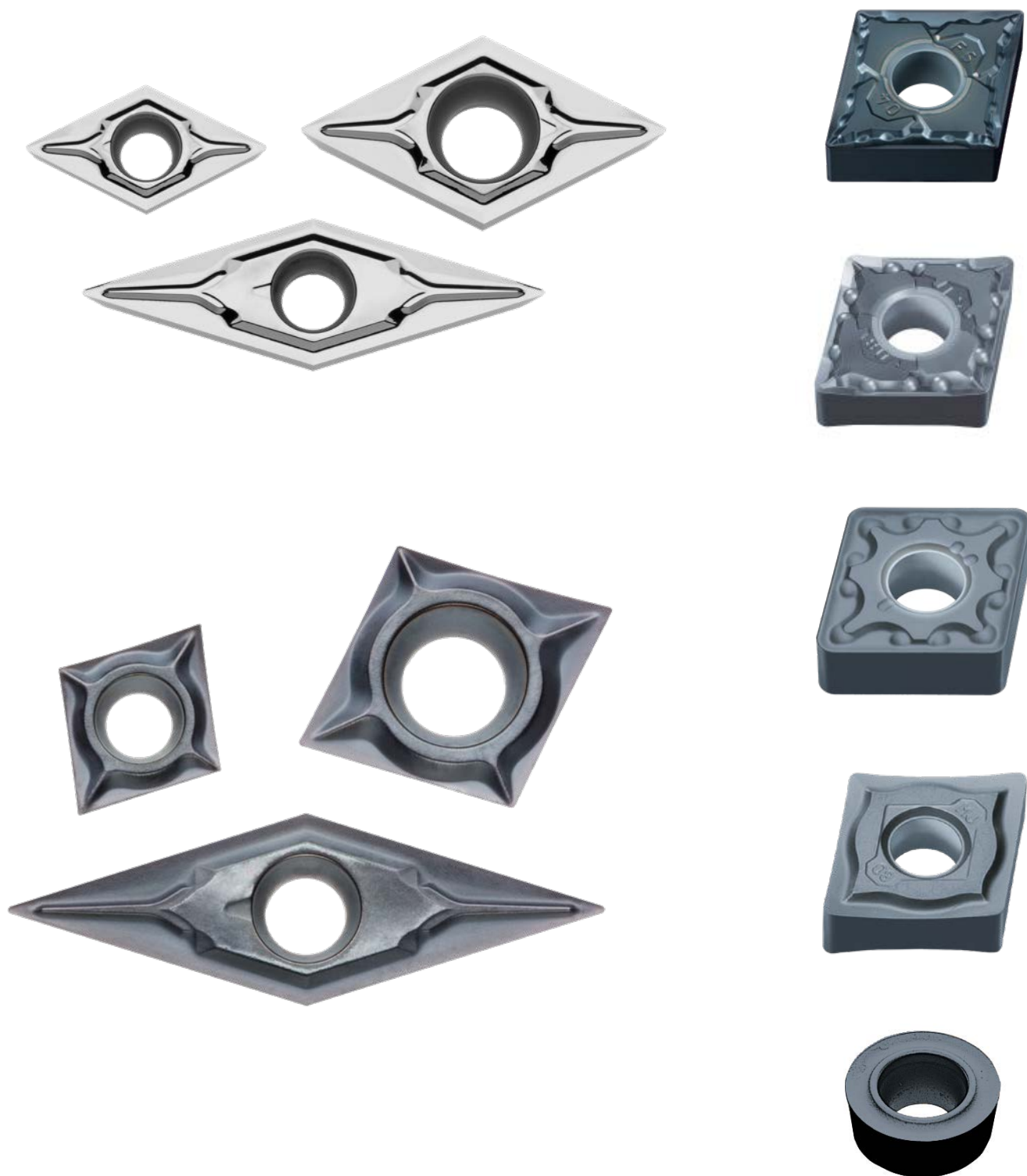


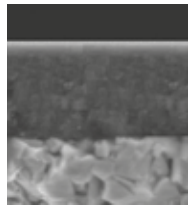
MP / MT9000

ISO TURNING INSERTS
FOR DIFFICULT TO CUT MATERIALS



MP9005 / MP9015 / MP9025

PVD COATED CARBIDE GRADE

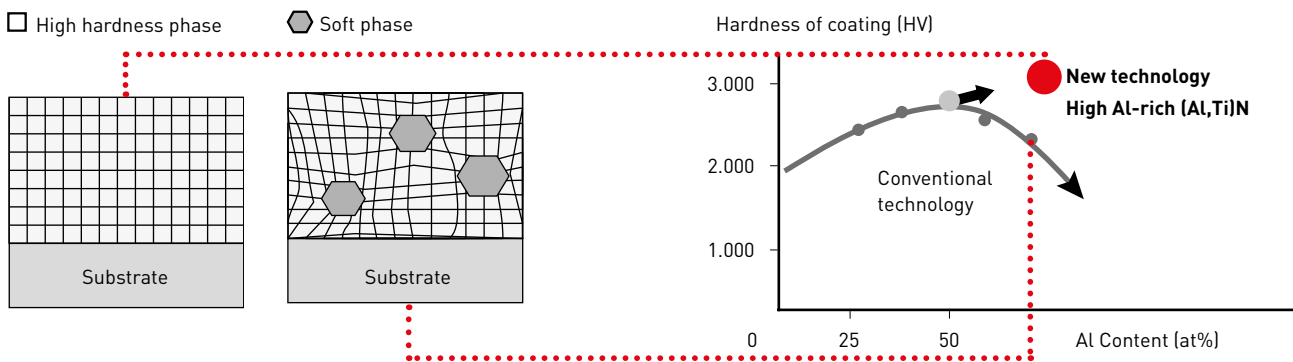


..... High Al-rich (Al,Ti)N single layer coating technology

..... Special cemented carbide substrate

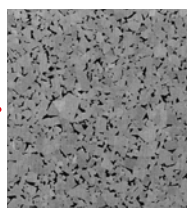
HIGH AL AND CONVENTIONAL COATING COMPARISON

The new technology, high Al-rich (Al,Ti)N single layer coating provides stabilisation of the high hardness phase and succeeds in dramatically improving wear, crater and welding resistance.



MT9005 / MT9015

CARBIDE GRADE (NON COATED)



MT9015

ISO	Grade	Concept	Application
S	S05	MP9005/MT9005 High quality hard grade focusing on wear resistance	Heat resistant alloy Finish-medium cutting
	S10	MP9015 First recommendation for general applications	Heat resistant alloy Medium-rough cutting
	S15	MP9025 Prevents severe damage for increased stability	Heat resistant alloy Interrupted - Light-rough cutting
		MT9015 New cemented carbide with sharp cutting edge, excellent wear and fracture resistance	Titanium alloy General cutting

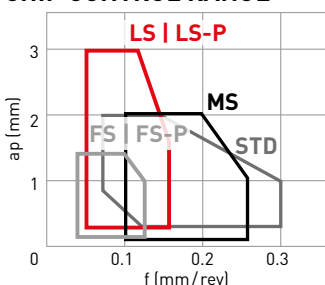
ISO	PVD	
S	S01	MP9005, MT9005
	S10	MP9015, MT9015
	S20	MP9025, MT9015
	S30	MP9025
		MP9005, MT9005

CHIPBREAKER SYSTEM

POSITIVE INSERTS / PRECISION POSITIVE INSERTS

Tolerance	Features	Cross section geometry
FINISHING		
G	FS <i>Positive inserts</i> FIRST RECOMMENDATION FOR FINISHING DIFFICULT TO CUT MATERIALS Ideal for heat-resistant, titanium and cobalt chromium alloys. Sharp cutting edges provide excellent surface finishes and geometric tolerance. Highly efficient chip discharge is possible due to curved cutting edges.	Nose: 14° Flank: 9°
	FS-P <i>Positive inserts</i> FIRST RECOMMENDATION FOR FINISHING OF TITANIUM ALLOYS Ideal for titanium and copper alloys. Sharp cutting edges provide excellent surface finishes and geometric tolerance. Highly efficient chip discharge is possible due to curved cutting edges. Polished, mirror finish of insert surfaces drastically improves welding resistance and extends tool life.	Nose: 14° Flank: 9°
LIGHT CUTTING		
M	LS <i>Positive inserts / PRECISION positive inserts</i> FIRST RECOMMENDATION FOR LIGHT CUTTING OF DIFFICULT TO CUT MATERIALS Ideal for heat-resistant, titanium and cobalt chromium alloys. Excellent chip control at low to medium depths of cut.	Nose: 18° Flank: 8°
	LS-P <i>Positive inserts</i> FIRST RECOMMENDATION FOR LIGHT CUTTING OF TITANIUM ALLOYS Ideal for titanium and copper alloys. Excellent chip control at low to medium depths of cut. Polished, mirror finish of insert surfaces drastically improves welding resistance and extends tool life.	Nose: 12° Flank: 6°
MEDIUM CUTTING		
M	MS <i>PRECISION positive inserts</i> FIRST RECOMMENDATION FOR MEDIUM CUTTING OF DIFFICULT TO CUT MATERIALS A wide chip pocket copes with variations in cutting resistance and reduces vibration and chip jamming even at large, varying depths of cut.	Nose: 18° (0.1) Flank: 18° (0.1)
	STD <i>Positive inserts</i> FIRST RECOMMENDATION FOR MEDIUM CUTTING OF DIFFICULT TO CUT MATERIALS Balance of edge strength and sharpness due to a combination of a flat land and large rake angle.	Nose: 15° Flank: 15°

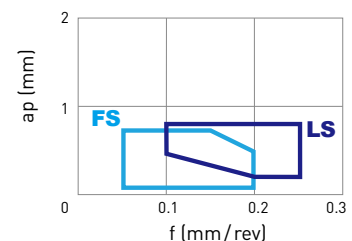
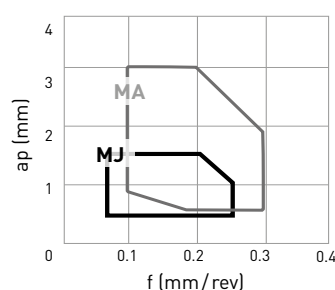
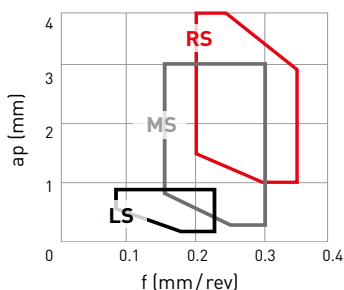
CHIP CONTROL RANGE



CHIPBREAKER SYSTEM – NEGATIVE INSERTS/ PRECISION NEGATIVE INSERTS

Tolerance	Features	Cross section geometry
FINISHING		
M	<p>FS NEW</p> <p><i>PRECISION negative inserts</i> FIRST RECOMMENDATION FOR FINISHING DIFFICULT TO CUT MATERIALS Excellent chip breaking even at very small depths of cut. The large rake angle and precision grade enables excellent sharpness.</p>	<p>Nose: 25°, 0.22 Flank: 25°, 0.44</p>
LIGHT CUTTING		
M	<p>LS NEW</p> <p><i>Negative inserts / PRECISION negative inserts</i> FIRST RECOMMENDATION FOR LIGHT CUTTING OF DIFFICULT TO CUT MATERIALS Enhanced chip disposal for depths of cut smaller than the corner radius.</p>	<p>Nose: 20°, 0.4 Flank: 20°, 0.6</p>
M	<p>MJ</p> <p><i>Negative inserts</i> FIRST RECOMMENDATION FOR LIGHT CUTTING OF DIFFICULT TO CUT MATERIALS Double sided chipbreaker and a single sided chipbreaker (D type, V type). The sharp edge produces a good surface finish. Ideal for heat-resistant and titanium alloys. The curved edge allows smooth chip discharge.</p>	<p>Nose: 13° Flank: 9°</p>
MEDIUM CUTTING		
M	<p>MS</p> <p><i>Negative inserts</i> FIRST RECOMMENDATION FOR MEDIUM CUTTING OF DIFFICULT TO CUT MATERIALS Double sided chipbreaker. The sharp edge provides superior performance.</p>	<p>Nose: 25°, 15°, 0.5 Flank: 25°, 15°, 0.5</p>
M	<p>MA</p> <p><i>Negative inserts</i> MULTI-ASSIST CHIPBREAKER FOR MEDIUM CUTTING OF DIFFICULT TO CUT MATERIALS Double sided chipbreaker. Positive land provides a sharp cutting action.</p>	<p>Nose: 22°, 6°, 0.2 Flank: 22°, 6°, 0.2</p>
ROUGHING		
M	<p>RS</p> <p><i>Negative inserts</i> FIRST RECOMMENDATION FOR ROUGH CUTTING OF DIFFICULT TO CUT MATERIALS During low speed cutting the positive land controls chip welding and abrasion at the depth of cut line.</p>	<p>Nose: 20°, 10°, 0.2 Flank: 20°, 0.2</p>

CHIP CONTROL RANGE



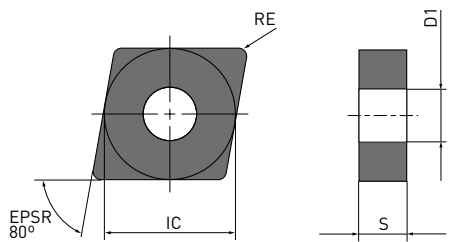
CNGG, DNGG

NEGATIVE INSERTS (WITH HOLE)

S

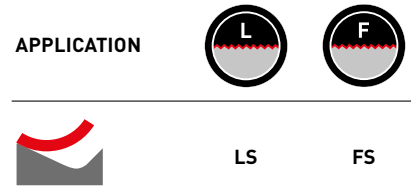
G Class

CNGG

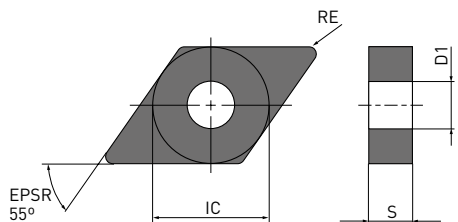




CHIPBREAKER IDENTIFICATION

APPLICATION



DNGG



Order number	 	MP9005	MP9015	MP9025	MT9015	IC	S	RE	D1
CNGG1204V5-FS	F	●	●		★	12.7	4.76	0.05	5.16
CNGG120401-FS	F	●	●	●	★	12.7	4.76	0.1	5.16
CNGG120402-FS	F	●	●	●	★	12.7	4.76	0.2	5.16
CNGG120404-FS	F	●	●	●	★	12.7	4.76	0.4	5.16
CNGG120408-FS	F	●	●	●	★	12.7	4.76	0.8	5.16
CNGG120402-LS	L	●	●	●	★	12.7	4.76	0.2	5.16
CNGG120404-LS	L	●	●	●	★	12.7	4.76	0.4	5.16
CNGG120408-LS	L	●	●	●	★	12.7	4.76	0.8	5.16
DNGG150402-FS	F	●	●	●	★	12.7	4.76	0.2	5.16
DNGG150404-FS	F	●	●	●	★	12.7	4.76	0.4	5.16
DNGG150408-FS	F	●	●	●	★	12.7	4.76	0.8	5.16
DNGG150604-FS	F	●	●	●	★	12.7	6.35	0.4	5.16
DNGG150608-FS	F	●	●	●	★	12.7	6.35	0.8	5.16
DNGG150402-LS	L	●	●	●	★	12.7	4.76	0.2	5.16
DNGG150404-LS	L	●	●	●	★	12.7	4.76	0.4	5.16
DNGG150408-LS	L	●	●	●	★	12.7	4.76	0.8	5.16
DNGG150604-LS	L	●	●	●	★	12.7	6.35	0.4	5.16
DNGG150608-LS	L	●	●	●	★	12.7	6.35	0.8	5.16

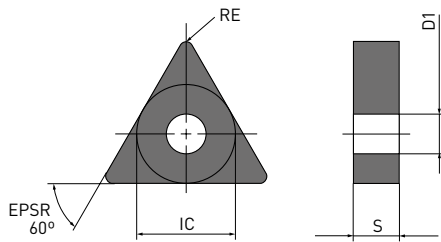
TNGG, VNGG

NEGATIVE INSERTS (WITH HOLE)

S

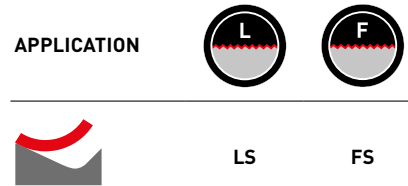
G Class

TNGG

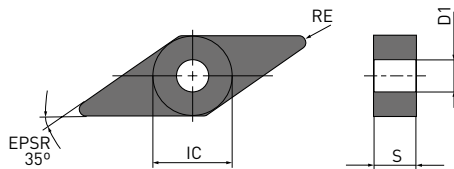




CHIPBREAKER IDENTIFICATION

APPLICATION



VNGG



Order number	 	MP9005	MP9015	MP9025	MT9015	IC	S	RE	D1
TNGG160402-FS	F	●	●	●	★	9.525	4.76	0.2	3.81
TNGG160404-FS	F	●	●	●	★	9.525	4.76	0.4	3.81
TNGG160408-FS	F	●	●	●	★	9.525	4.76	0.8	3.81
TNGG160402-LS	L	●	●	●	★	9.525	4.76	0.2	3.81
TNGG160404-LS	L	●	●	●	★	9.525	4.76	0.4	3.81
TNGG160408-LS	L	●	●	●	★	9.525	4.76	0.8	3.81
VNGG1604V5-FS	F	●	●		★	9.525	4.76	0.05	3.81
VNGG160401-FS	F	●	●	●	★	9.525	4.76	0.1	3.81
VNGG160402-FS	F	●	●	●	★	9.525	4.76	0.2	3.81
VNGG160404-FS	F	●	●	●	★	9.525	4.76	0.4	3.81
VNGG160408-FS	F	●	●	●	★	9.525	4.76	0.8	3.81
VNGG160402-LS	L	●	●	●	★	9.525	4.76	0.2	3.81
VNGG160404-LS	L	●	●	●	★	9.525	4.76	0.4	3.81
VNGG160408-LS	L	●	●	●	★	9.525	4.76	0.8	3.81

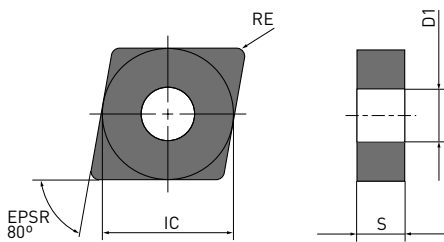
CNMG

NEGATIVE INSERTS (WITH HOLE)

S

M Class

CNMG



CHIPBREAKER IDENTIFICATION

APPLICATION



LS

MA, MJ, MS

RS

Order number	L M		MP9005	MP9015	MP9025	MT9015	IC	S	RE	D1
	R									
CNMG090304-LS	L		●	●	●		9.525	3.18	0.4	3.81
CNMG090308-LS	L		●	●	●		9.525	3.18	0.8	3.81
CNMG120402-LS	L		●	●	●	●	12.7	4.76	0.2	5.16
CNMG120404-LS	L		●	●	●	●	12.7	4.76	0.4	5.16
CNMG120408-LS	L		●	●	●	●	12.7	4.76	0.8	5.16
CNMG090304-MS	M		●	●	●		9.525	3.18	0.4	3.81
CNMG090308-MS	M		●	●	●		9.525	3.18	0.8	3.81
CNMG120404-MS	M		●	●	●	●	12.7	4.76	0.4	5.16
CNMG120408-MS	M		●	●	●	●	12.7	4.76	0.8	5.16
CNMG120412-MS	M		●	●	●	●	12.7	4.76	1.2	5.16
CNMG160612-MS	M		★	★	●	★	15.875	6.35	1.2	6.35
CNMG160616-MS	M		★	★	●	★	15.875	6.35	1.6	6.35
CNMG120404-MA	M			●	●		12.7	4.76	0.4	5.16
CNMG120408-MA	M			●	●		12.7	4.76	0.8	5.16
CNMG120412-MA	M			●	●		12.7	4.76	1.2	5.16
CNMG120416-MA	M			●	●		12.7	4.76	1.6	5.16
CNMG120404-MJ	M		●	●			12.7	4.76	0.4	5.16
CNMG120408-MJ	M		●	●			12.7	4.76	0.8	5.16
CNMG120412-MJ	M		●	●			12.7	4.76	1.2	5.16
CNMG120416-MJ	M		●	●			12.7	4.76	1.6	5.16
CNMG120408-RS	R			●	●	●	12.7	4.76	0.8	5.16
CNMG120412-RS	R			●	●	●	12.7	4.76	1.2	5.16
CNMG120416-RS	R			●	●	★	12.7	4.76	1.6	5.16
CNMG160612-RS	R			●	●	★	15.875	6.35	1.2	6.35
CNMG160616-RS	R			●	●	★	15.875	6.35	1.6	6.35
CNMG190612-RS	R			●	●	★	19.05	6.35	1.2	7.93
CNMG190616-RS	R			●	●	★	19.05	6.35	1.6	7.93

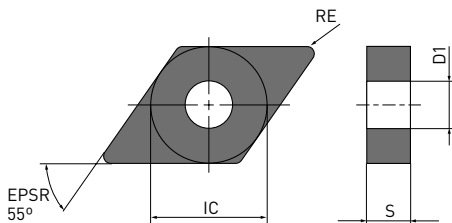
DNMG

NEGATIVE INSERTS (WITH HOLE)

S

M Class

DNMG



CHIPBREAKER IDENTIFICATION




APPLICATION



LS

MA, MJ, MS

RS

Order number			MP9005	MP9015	MP9025	MT9015	IC	S	RE	D1
										
DNMG150402-LS	L		●	●	●	●	12.7	4.76	0.2	5.16
DNMG150404-LS	L		●	●	●	●	12.7	4.76	0.4	5.16
DNMG150408-LS	L		●	●	●	●	12.7	4.76	0.8	5.16
DNMG150604-LS	L		●	●	●	●	12.7	6.35	0.4	5.16
DNMG150608-LS	L		●	●	●	●	12.7	6.35	0.8	5.16
DNMG150404-MS	M		●	●	●	●	12.7	4.76	0.4	5.16
DNMG150408-MS	M		●	●	●	●	12.7	4.76	0.8	5.16
DNMG150412-MS	M		●	●	●	★	12.7	4.76	1.2	5.16
DNMG150604-MS	M		●	●	●	●	12.7	6.35	0.4	5.16
DNMG150608-MS	M		●	●	●	●	12.7	6.35	0.8	5.16
DNMG150612-MS	M		●	●	●	★	12.7	6.35	1.2	5.16
DNMG150404-MA	M			●	●		12.7	4.76	0.4	5.16
DNMG150408-MA	M			●	●		12.7	4.76	0.8	5.16
DNMG150412-MA	M			●	●		12.7	4.76	1.2	5.16
DNMG150604-MA	M			●	●		12.7	6.35	0.4	5.16
DNMG150608-MA	M			●	●		12.7	6.35	0.8	5.16
DNMG150612-MA	M			●	●		12.7	6.35	1.2	5.16
DNMG150404-MJ	M		●	●			12.7	4.76	0.4	5.16
DNMG150408-MJ	M		●	●			12.7	4.76	0.8	5.16
DNMG150412-MJ	M		●	●			12.7	4.76	1.2	5.16
DNMG150416-MJ	M		●	●			12.7	4.76	1.6	5.16
DNMG150604-MJ	M		●	●			12.7	6.35	0.4	5.16
DNMG150608-MJ	M		●	●			12.7	6.35	0.8	5.16
DNMG150612-MJ	M		●	●			12.7	6.35	1.2	5.16
DNMG150616-MJ	M		●	●			12.7	6.35	1.6	5.16
DNMG150408-RS	R			●	●	●	12.7	4.76	0.8	5.16
DNMG150412-RS	R			●	●	●	12.7	4.76	1.2	5.16
DNMG150416-RS	R			●	●	★	12.7	4.76	1.6	5.16
DNMG150608-RS	R			●	●	●	12.7	6.35	0.8	5.16
DNMG150612-RS	R			●	●	●	12.7	6.35	1.2	5.16
DNMG150616-RS	R			●	●	★	12.7	6.35	1.6	5.16

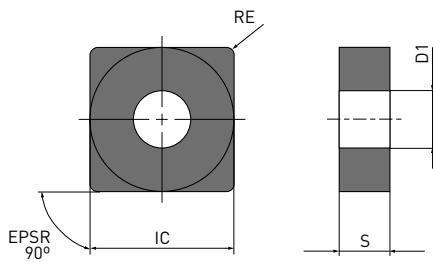
SNMG, TNMG

NEGATIVE INSERTS (WITH HOLE)

S

M Class

SNMG



CHIPBREAKER IDENTIFICATION

APPLICATION

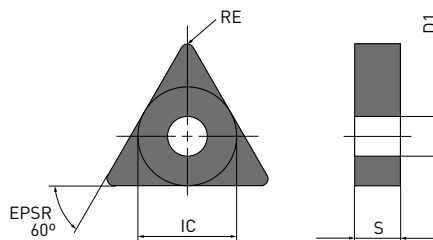




LS

MA, MJ, MS



RS

TNMG



Order number			MP9005	MP9015	MP9025	MT9015	IC	S	RE	D1
										
SNMG120404-MS	M		●	●	●	●	12.7	4.76	0.4	5.16
SNMG120408-MS	M		●	●	●	●	12.7	4.76	0.8	5.16
SNMG120412-MS	M		●	●	●	★	12.7	4.76	1.2	5.16
SNMG150612-MS	M		★	★	●	★	15.875	6.35	1.2	6.35
SNMG150616-MS	M		★	★	●	★	15.875	6.35	1.6	6.35
SNMG190612-MS	M		●	●	●		19.05	6.35	1.2	7.93
SNMG120404-MA	M			●	●		12.7	4.76	0.4	5.16
SNMG120408-MA	M			●	●		12.7	4.76	0.8	5.16
SNMG120412-MA	M			●	●		12.7	4.76	1.2	5.16
SNMG120416-MA	M			●	●		12.7	4.76	1.6	5.16
SNMG120408-RS	R			●	●	●	12.7	4.76	0.8	5.16
SNMG120412-RS	R			●	●	●	12.7	4.76	1.2	5.16
SNMG120416-RS	R			●	●	★	12.7	4.76	1.6	5.16
SNMG150616-RS	R			★	●	★	15.875	6.35	1.6	6.35
SNMG190612-RS	R			●	●		19.05	6.35	1.2	7.93
SNMG190616-RS	R			★	●	★	19.05	6.35	1.6	7.93

SNMG, TNMG – NEGATIVE INSERTS (WITH HOLE)

Order number	 		MP9005	MP9015	MP9025	MT9015	IC	S	RE	D1
	L	M								
TNMG160402-LS	L		●	●	●	●	9.525	4.76	0.2	3.81
TNMG160404-LS	L		●	●	●	●	9.525	4.76	0.4	3.81
TNMG160408-LS	L		●	●	●	●	9.525	4.76	0.8	3.81
TNMG160404-MS	M		●	●	●	●	9.525	4.76	0.4	3.81
TNMG160408-MS	M		●	●	●	●	9.525	4.76	0.8	3.81
TNMG160412-MS	M		●	●	●	★	9.525	4.76	1.2	3.81
TNMG220408-MS	M		●	●	●	★	12.7	4.76	0.8	5.16
TNMG220412-MS	M		●	●	●	★	12.7	4.76	1.2	5.16
TNMG160404-MA	M			●	●		9.525	4.76	0.4	3.81
TNMG160408-MA	M			●	●		9.525	4.76	0.8	3.81
TNMG160412-MA	M			●	●		9.525	4.76	1.2	3.81
TNMG220408-MA	M			●	●		12.7	4.76	0.8	5.16
TNMG220412-MA	M			●	●		12.7	4.76	1.2	5.16
TNMG220416-MA	M			●	●		12.7	4.76	1.6	5.16
TNMG270616-MA	M			●	●		15.875	6.35	1.6	6.35
TNMG330924-MA	M			●	●		19.05	9.52	2.4	7.93
TNMG160404-MJ	M		●	●			9.525	4.76	0.4	3.81
TNMG160408-MJ	M		●	●			9.525	4.76	0.8	3.81
TNMG160412-MJ	M		●	●			9.525	4.76	1.2	3.81
TNMG160408-RS	R			●	●	●	9.525	4.76	0.8	3.81
TNMG160412-RS	R			●	●	●	9.525	4.76	1.2	3.81
TNMG220408-RS	R			●	●	★	12.7	4.76	0.8	5.16
TNMG220412-RS	R			●	●	★	12.7	4.76	1.2	5.16

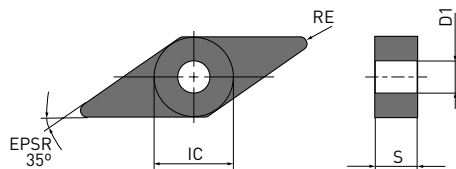
VNMG, WNMG

NEGATIVE INSERTS (WITH HOLE)

S

M Class

VNMG



CHIPBREAKER IDENTIFICATION

APPLICATION

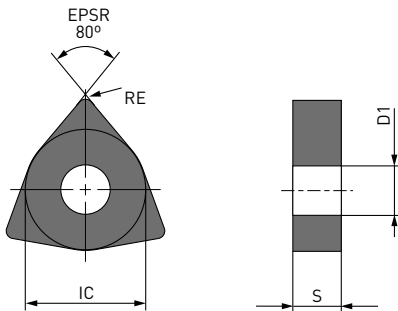





LS

MA, MJ, MS



RS

WNMG



Order number	 		MP9005	MP9015	MP9025	MT9015	IC	S	RE	D1
										
VNMG160402-LS	L		●	●	●	●	9.525	4.76	0.2	3.81
VNMG160404-LS	L		●	●	●	●	9.525	4.76	0.4	3.81
VNMG160408-LS	L		●	●	●	●	9.525	4.76	0.8	3.81
VNMG160404-MS	M		●	●	●	●	9.525	4.76	0.4	3.81
VNMG160408-MS	M		●	●	●	●	9.525	4.76	0.8	3.81
VNMG160404-MJ	M		●	●			9.525	4.76	0.4	3.81
VNMG160408-MJ	M		●	●			9.525	4.76	0.8	3.81
VNMG160412-MJ	M		●	●			9.525	4.76	1.2	3.81

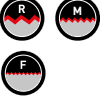

VNMG, WNMG - NEGATIVE INSERTS (WITH HOLE)

Order number			MP9005	MP9015	MP9025	MT9015	IC	S	RE	D1
										
WNMG080402-LS	L		●	●	●	●	12.7	4.76	0.2	5.16
WNMG080404-LS	L		●	●	●	●	12.7	4.76	0.4	5.16
WNMG080408-LS	L		●	●	●	●	12.7	4.76	0.8	5.16
WNMG080404-MS	M		●	●	●	●	12.7	4.76	0.4	5.16
WNMG080408-MS	M		●	●	●	●	12.7	4.76	0.8	5.16
WNMG080412-MS	M		●	●	●	★	12.7	4.76	1.2	5.16
WNMG080404-MA	M			●	●		12.7	4.76	0.4	5.16
WNMG080408-MA	M			●	●		12.7	4.76	0.8	5.16
WNMG080412-MA	M			●	●		12.7	4.76	1.2	5.16
WNMG080416-MA	M			●	●		12.7	4.76	1.6	5.16
WNMG080408-MJ	M		●	●			12.7	4.76	0.8	5.16
WNMG080412-MJ	M		●	●			12.7	4.76	1.2	5.16
WNMG080416-MJ	M		●	●			12.7	4.76	1.6	5.16
WNMG080408-RS	R			●	●	●	12.7	4.76	0.8	5.16
WNMG080412-RS	R			●	●	●	12.7	4.76	1.2	5.16
WNMG080416-RS	R			●	●	★	12.7	4.76	1.6	5.16
WNMG100612-RS	R			●	●	★	15.875	6.35	1.2	6.35

MP / MT9000

RECOMMENDED CUTTING CONDITIONS



NEGATIVE INSERTS

Material	Conditions			Grade	Vc	f	ap
M Precipitation hardening stainless steels (DIN X5CrNiCuNb17-4)	●	L	LS	MP9005	125 – 175	0.10 – 0.25	0.2 – 0.8
		M	MS	MP9005	115 – 160	0.10 – 0.25	0.5 – 4.0
		R	RS	MP9015	105 – 150	0.20 – 0.35	1.0 – 4.0
	●	L	LS	MP9015	120 – 165	0.10 – 0.25	0.2 – 0.8
		M	MS	MP9015	110 – 150	0.10 – 0.25	0.5 – 4.0
		R	RS	MP9015	100 – 140	0.20 – 0.35	1.0 – 4.0
	✚	L	LS	MP9025	80 – 95	0.10 – 0.25	0.2 – 0.8
		M	MS	MP9025	75 – 90	0.16 – 0.50	0.5 – 4.0
		R	RS	MP9025	70 – 85	0.20 – 0.35	1.0 – 4.0
S Titanium alloy (Ti-6Al-4V)	●	L	LS	MT9015	40 – 85	0.10 – 0.25	0.2 – 0.8
		M	MS	MT9015	40 – 80	0.10 – 0.25	0.5 – 4.0
		R	RS	MT9015	35 – 75	0.20 – 0.35	1.0 – 4.0
	●	L	LS	MT9015	40 – 85	0.10 – 0.25	0.2 – 0.8
		M	MS	MT9015	40 – 80	0.10 – 0.25	0.5 – 4.0
		R	RS	MT9015	35 – 75	0.20 – 0.35	1.0 – 4.0
S Ni-based heat-resistant alloy (Inconel [®] 718, Hastelloy [®] , WASPALLOY [®])	●	L	LS	MP9005	30 – 110	0.10 – 0.25	0.2 – 0.8
		M	MS	MP9005	30 – 100	0.10 – 0.25	0.5 – 4.0
		R	RS	MP9015	20 – 75	0.20 – 0.35	1.0 – 4.0
	●	L	LS	MP9015	25 – 85	0.10 – 0.25	0.2 – 0.8
		M	MS	MP9015	25 – 80	0.10 – 0.25	0.5 – 4.0
		R	RS	MP9015	20 – 75	0.20 – 0.35	1.0 – 4.0
S Cobalt base alloy (Tribaloy [®] , Stellite [®])	✚	L	LS	MP9025	20 – 30	0.10 – 0.25	0.2 – 0.8
		M	MS	MP9025	20 – 30	0.10 – 0.25	0.5 – 4.0
		R	RS	MP9025	20 – 30	0.20 – 0.35	1.0 – 4.0

1. When cutting conditions are unstable, please refer to page 4 for the recommended chipbreaker and grade.
2. Verify the recommended conditions for each boring bar as cutting conditions for internal machining will vary depending on the length of overhang.
3. MC7015, MC7025 and MP7035 grade are also recommended for precipitation hardening stainless steels.

NEW

PRECISION NEGATIVE INSERTS

Material	Conditions			Grade	Vc	f	ap	
S Titanium alloy (Ti-6Al-4V)	●	F	FS	MT9015	45 – 95	0.05 – 0.20	0.1 – 0.7	
		L	LS	MT9015	40 – 85	0.10 – 0.25	0.2 – 0.8	
	●	F	FS	MT9015	45 – 95	0.05 – 0.20	0.1 – 0.7	
		L	LS	MT9015	40 – 85	0.10 – 0.25	0.2 – 0.8	
	✚	F	FS	MT9015	45 – 95	0.05 – 0.20	0.1 – 0.7	
		L	LS	MT9015	40 – 85	0.10 – 0.25	0.2 – 0.8	
S Ni-based heat-resistant alloy (Inconel [®] 718, Hastelloy [®] , WASPALLOY [®])	●	F	FS	MP9005	60 – 120	0.05 – 0.20	0.1 – 0.7	
		L	LS	MP9005	55 – 110	0.10 – 0.25	0.2 – 0.8	
	●	F	FS	MP9015	45 – 95	0.05 – 0.20	0.1 – 0.7	
		L	LS	MP9015	40 – 85	0.10 – 0.25	0.2 – 0.8	
	S Cobalt base alloy (Tribaloy [®] , Stellite [®])	✚	F	FS	MP9025	35 – 50	0.05 – 0.20	0.1 – 0.7
			L	LS	MP9025	30 – 45	0.10 – 0.25	0.2 – 0.8

Cutting conditions: ●: Stable cutting ●: General cutting ✚: Unstable cutting

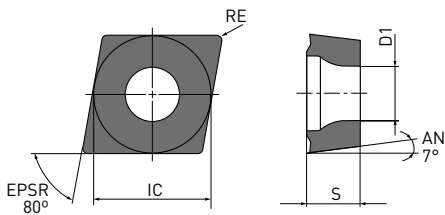
CCMT, DCMT, SCMT

7° POSITIVE INSERTS (WITH HOLE)

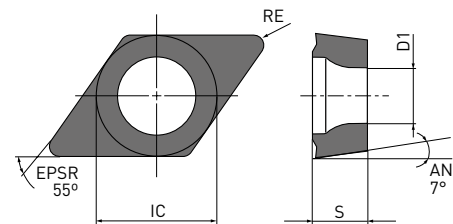
S

M Class

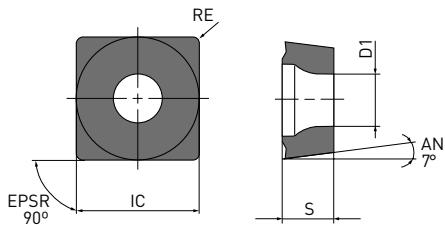
CCMT



DCMT



SCMT





CHIPBREAKER IDENTIFICATION

APPLICATION




LS

MS

Order number	 	MP9005	MP9015	MP9025	MT9005	IC	S	RE	D1
CCMT060202-LS	L	●	●	●	●	6.35	2.38	0.2	2.8
CCMT060204-LS	L	●	●	●	●	6.35	2.38	0.4	2.8
CCMT060202-MS	M	●	●	●	●	6.35	2.38	0.2	2.8
CCMT060204-MS	M	●	●	●	●	6.35	2.38	0.4	2.8
CCMT060208-MS	M	●	●	●	●	6.35	2.38	0.8	2.8
CCMT09T302-LS	L	●	●	●	●	9.525	3.97	0.2	4.4
CCMT09T304-LS	L	●	●	●	●	9.525	3.97	0.4	4.4
CCMT09T308-LS	L	●	●	●	●	9.525	3.97	0.8	4.4
CCMT09T302-MS	M	●	●	●	●	9.525	3.97	0.2	4.4
CCMT09T304-MS	M	●	●	●	●	9.525	3.97	0.4	4.4
CCMT09T308-MS	M	●	●	●	●	9.525	3.97	0.8	4.4
CCMT120404-MS	M	●	●	●	●	12.7	4.76	0.4	5.5
CCMT120408-MS	M	●	●	●	●	12.7	4.76	0.8	5.5
CCMT120412-MS	M	●	●	●	●	12.7	4.76	1.2	5.5

CCMT, DCMT, SCMT - 7° POSITIVE INSERTS (WITH HOLE)

Order number			MP9005	MP9015	MP9025	MT9005	IC	S	RE	D1
	L	M								
DCMT070202-LS	L		●	●	●	●	6.35	2.38	0.2	2.8
DCMT070204-LS	L		●	●	●	●	6.35	2.38	0.4	2.8
DCMT11T302-LS	L		●	●	●	●	9.525	3.97	0.2	4.4
DCMT11T304-LS	L		●	●	●	●	9.525	3.97	0.4	4.4
DCMT11T308-LS	L		●	●	●	●	9.525	3.97	0.8	4.4
DCMT11T312-MS	M		●	●	●	●	9.525	3.97	1.2	4.4
DCMT070204-MS	M		●	●	●	●	6.35	2.38	0.4	2.8
DCMT070208-MS	M		●	●	●	●	6.35	2.38	0.8	2.8
DCMT11T304-MS	M		●	●	●	●	9.525	3.97	0.4	4.4
DCMT11T308-MS	M		●	●	●	●	9.525	3.97	0.8	4.4
SCMT09T304-MS	M		●	●	●	●	9.525	3.97	0.4	4.4
SCMT09T308-MS	M		●	●	●	●	9.525	3.97	0.8	4.4
SCMT120404-MS	M		●	●	●	●	12.7	4.76	0.4	5.5
SCMT120408-MS	M		●	●	●	●	12.7	4.76	0.8	5.5
SCMT120412-MS	M		●	●	●	●	12.7	4.76	1.2	5.5

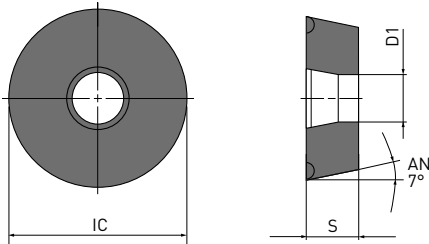
RCMT

7° POSITIVE INSERTS (WITH HOLE)

S

M Class

RCMT




CHIPBREAKER IDENTIFICATION

APPLICATION



STD

Order number		MP9005	MP9015	MP9025	MT9005	MT9015	IC	S	RE	D1
RCMT0602M0	M	●	●	●	●	●	6	2.38	-	2.8
RCMT0803M0	M	●	●	●	●	●	8	3.18	-	3.4
RCMT10T3M0	M	●	●	●	●	●	10	3.97	-	4.4
RCMT1204M0	M	●	●	●	●	●	12	4.76	-	4.4
RCMT1606M0	M	●	●	●	●	●	16	6.35	-	5.5

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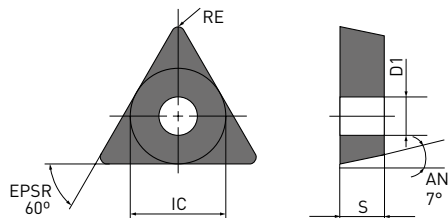
TCMT, VBMT, VCMT

5°/7° POSITIVE INSERTS (WITH HOLE)

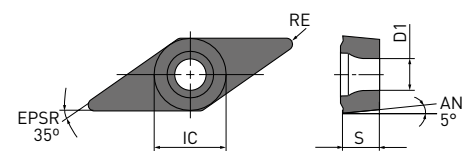
S

M Class

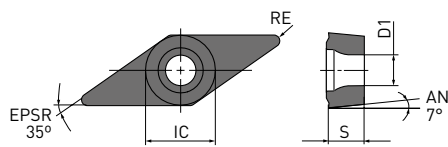
TCMT



VBMT



VCMT





CHIPBREAKER IDENTIFICATION

APPLICATION




LS

MS

Order number	 	MP9005	MP9015	MP9025	MT9005	IC	S	RE	D1
TCMT090202-LS	L	●	●	●	●	5.56	2.38	0.2	2.5
TCMT090204-MS	M	●	●	●	●	5.56	2.38	0.4	2.5
TCMT090208-MS	M	●	●	●	●	5.56	2.38	0.8	2.5
TCMT110202-LS	L	●	●	●	●	6.35	2.38	0.2	2.8
TCMT110204-MS	M	●	●	●	●	6.35	2.38	0.4	2.8
TCMT110208-MS	M	●	●	●	●	6.35	2.38	0.8	2.8
TCMT16T304-MS	M	●	●	●	●	9.525	3.97	0.4	4.4
TCMT16T308-MS	M	●	●	●	●	9.525	3.97	0.8	4.4
TCMT16T312-MS	M	●	●	●	●	9.525	3.97	1.2	4.4
VBMT110302-LS	L	●	●	●	●	6.35	3.18	0.2	2.85
VBMT110304-LS	L	●	●	●	●	6.35	3.18	0.4	2.85
VBMT110308-LS	L	●	●	●	●	6.35	3.18	0.8	2.85
VBMT160404-LS	L	●	●	●	●	9.525	4.76	0.4	4.4
VBMT160408-LS	L	●	●	●	●	9.525	4.76	0.8	4.4
VBMT160402-MS	M	●	●	●	●	9.525	4.76	0.2	4.43
VBMT160404-MS	M	●	●	●	●	9.525	4.76	0.4	4.4
VBMT160408-MS	M	●	●	●	●	9.525	4.76	0.8	4.4
VBMT160412-MS	M	●	●	●	●	9.525	4.76	1.2	4.43

TCMT, VBMT, VCMT - 5°/7° POSITIVE INSERTS (WITH HOLE)

Order number			MP9005	MP9015	MP9025	MT9005	IC	S	RE	D1
	L	M								
VCMT110302-LS	L		●	●	●	●	6.35	3.18	0.2	2.8
VCMT110304-LS	L		●	●	●	●	6.35	3.18	0.4	2.8
VCMT110302-MS	M		●	●	●		6.35	3.18	0.2	2.8
VCMT110304-MS	M		●	●	●	●	6.35	3.18	0.4	2.8
VCMT110308-MS	M		●	●	●	●	6.35	3.18	0.8	2.8
VCMT160404-LS	L		●	●	●	●	9.525	4.76	0.4	4.4
VCMT160408-LS	L		●	●	●	●	9.525	4.76	0.8	4.4
VCMT160404-MS	M		●	●	●	●	9.525	4.76	0.4	4.4
VCMT160408-MS	M		●	●	●	●	9.525	4.76	0.8	4.4

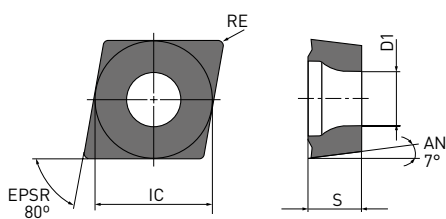
CCGT, DCGT, VCGT

7° PRECISION POSITIVE INSERTS MINUS TOLERANCE (WITH HOLE)

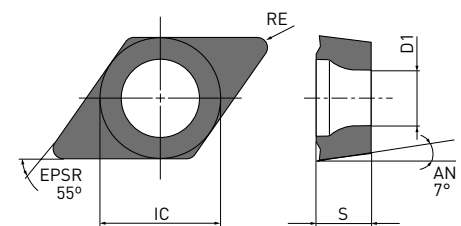
S

G Class

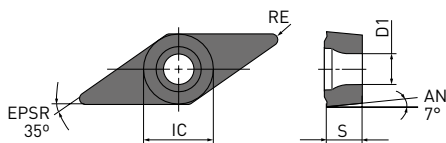
CCGT



DCGT



VCGT





CHIPBREAKER IDENTIFICATION

APPLICATION




FS

LS

Order number	 	MP9005	MP9015	MP9025	IC	S	RE	D1
CCGT060201M-FS	F	●	●	●	6.35	2.38	0.08	2.8
CCGT060201M-LS	L	●	●	●	6.35	2.38	0.08	2.8
CCGT060202M-FS	F	●	●	●	6.35	2.38	0.18	2.8
CCGT060202M-LS	L	●	●	●	6.35	2.38	0.18	2.8
CCGT09T301M-FS	F	●	●	●	9.525	3.97	0.08	4.4
CCGT09T301M-LS	L	●	●	●	9.525	3.97	0.08	4.4
CCGT09T302M-FS	F	●	●	●	9.525	3.97	0.18	4.4
CCGT09T302M-LS	L	●	●	●	9.525	3.97	0.18	4.4
CCGT09T304M-FS	F	●	●	●	9.525	3.97	0.38	4.4
CCGT09T304M-LS	L	●	●	●	9.525	3.97	0.38	4.4

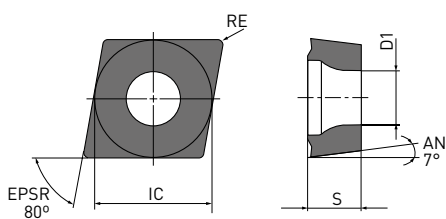
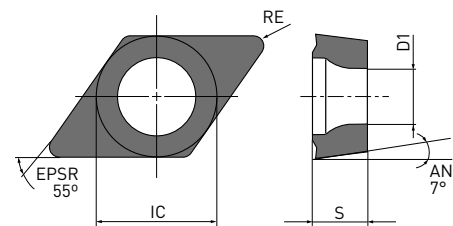
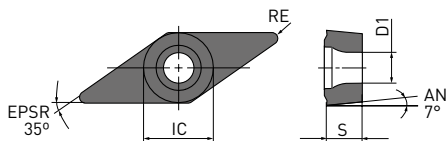
CCGT, DCGT, VCGT - 7° PRECISION POSITIVE INSERTS MINUS TOLERANCE (WITH HOLE)

Order number			MP9005	MP9015	MP9025	IC	S	RE	D1
	F	L							
DCGT070201M-FS	F		●	●	●	6.35	2.38	0.08	2.8
DCGT070201M-LS	L		●	●	●	6.35	2.38	0.08	2.8
DCGT070202M-FS	F		●	●	●	6.35	2.38	0.18	2.8
DCGT070202M-LS	L		●	●	●	6.35	2.38	0.18	2.8
DCGT070204M-FS	F		●	●	●	6.35	2.38	0.38	2.8
DCGT070204M-LS	L		●	●	●	6.35	2.38	0.38	2.8
DCGT11T301M-FS	F		●	●	●	9.525	3.97	0.08	4.4
DCGT11T301M-LS	L		●	●	●	9.525	3.97	0.08	4.4
DCGT11T302M-FS	F		●	●	●	9.525	3.97	0.18	4.4
DCGT11T302M-LS	L		●	●	●	9.525	3.97	0.18	4.4
DCGT11T304M-FS	F		●	●	●	9.525	3.97	0.38	4.4
DCGT11T304M-LS	L		●	●	●	9.525	3.97	0.38	4.4
VCGT110301M-LS	L		●	●	●	6.35	3.18	0.08	2.8
VCGT110302M-LS	L		●	●	●	6.35	3.18	0.18	2.8
VCGT110304M-LS	L		●	●	●	6.35	3.18	0.38	2.8
VCGT130301M-LS	L		●	●	●	7.94	3.18	0.08	3.4
VCGT130302M-LS	L		●	●	●	7.94	3.18	0.18	3.4
VCGT130304M-LS	L		●	●	●	7.94	3.18	0.38	3.4



CCGT, DCGT, VCGT

7° PRECISION POSITIVE INSERTS


MINUS TOLERANCE / POLISHED (WITH HOLE)

S
G Class
CCGT

DCGT

VCGT

CHIPBREAKER IDENTIFICATION
APPLICATION

FS-P
LS-P

Order number	 	MT9005	IC	S	RE	D1
CCGT060201M-FS-P	F	●	6.35	2.38	0.08	2.8
CCGT060202M-FS-P	F	●	6.35	2.38	0.18	2.8
CCGT09T301M-FS-P	F	●	9.525	3.97	0.08	4.4
CCGT09T302M-FS-P	F	●	9.525	3.97	0.18	4.4
CCGT09T304M-FS-P	F	●	9.525	3.97	0.38	4.4
DCGT070201M-FS-P	F	●	6.35	2.38	0.08	2.8
DCGT070202M-FS-P	F	●	6.35	2.38	0.18	2.8
DCGT070204M-FS-P	F	●	6.35	2.38	0.38	2.8
DCGT11T301M-FS-P	F	●	9.525	3.97	0.08	4.4
DCGT11T302M-FS-P	F	●	9.525	3.97	0.18	4.4
DCGT11T304M-FS-P	F	●	9.525	3.97	0.38	4.4

CCGT, DCGT, VCGT - 7° PRECISION POSITIVE INSERTS MINUS TOLERANCE / POLISHED (WITH HOLE)

Order number		MT9005	IC	S	RE	D1
CCGT060201M-LS-P	L	●	6.35	2.38	0.08	2.8
CCGT060202M-LS-P	L	●	6.35	2.38	0.18	2.8
CCGT09T301M-LS-P	L	●	9.525	3.97	0.08	4.4
CCGT09T302M-LS-P	L	●	9.525	3.97	0.18	4.4
CCGT09T304M-LS-P	L	●	9.525	3.97	0.38	4.4
DCGT070201M-LS-P	L	●	6.35	2.38	0.08	2.8
DCGT070202M-LS-P	L	●	6.35	2.38	0.18	2.8
DCGT070204M-LS-P	L	●	6.35	2.38	0.38	2.8
DCGT11T301M-LS-P	L	●	9.525	3.97	0.08	4.4
DCGT11T302M-LS-P	L	●	9.525	3.97	0.18	4.4
DCGT11T304M-LS-P	L	●	9.525	3.97	0.38	4.4
VCGT110301M-LS-P	L	●	6.35	3.18	0.08	2.8
VCGT110302M-LS-P	L	●	6.35	3.18	0.18	2.8
VCGT110304M-LS-P	L	●	6.35	3.18	0.38	2.8
VCGT130301M-LS-P	L	●	7.94	3.18	0.08	3.4
VCGT130302M-LS-P	L	●	7.94	3.18	0.18	3.4
VCGT130304M-LS-P	L	●	7.94	3.18	0.38	3.4



1. FS-P/LS-P: polished chipbreaker for improved chip evacuation.



MP / MT9000

RECOMMENDED CUTTING CONDITIONS



PRECISION POSITIVE INSERTS

Material	Conditions			Grade	Vc	f	ap
M Precipitation hardening stainless steels (DIN X5CrNiCuNb17-4)	●	F	FS	MP9005	40-80	0.04-0.10	0.2-1.4
		L	LS	MP9005	40-80	0.04-0.15	0.3-2.0
	●	F	FS	MP9015	40-80	0.04-0.10	0.2-1.4
		L	LS	MP9015	40-80	0.04-0.15	0.3-2.0
	✘	L	LS	MP9015	30-60	0.04-0.10	0.3-1.0
S Titanium alloy (Ti-6Al-4V)	●	F	FS-P	MT9005	40-80	0.04-0.12	0.2-1.4
		L	LS-P	MT9005	40-80	0.04-0.20	0.3-3.0
	●	F	FS-P	MT9005	40-80	0.04-0.12	0.2-1.4
		L	LS-P	MT9005	40-80	0.04-0.12	0.3-2.0
	✘	L	LS-P	MT9005	30-60	0.04-0.10	0.2-1.4
	●	F	FS	MP9005	40-80	0.04-0.10	0.2-1.4
		L	LS	MP9005	40-80	0.04-0.15	0.2-2.0
	●	F	FS	MP9015	40-80	0.04-0.10	0.2-1.4
L		LS	MP9015	40-80	0.04-0.15	0.3-2.0	
S Cobalt chromium alloys (Co-Cr-Mo Alloys)	●	F	FS	MP9005	40-80	0.04-0.10	0.2-1.4
		L	LS	MP9005	40-80	0.04-0.15	0.2-2.0
	●	F	FS	MP9015	40-80	0.04-0.10	0.2-1.4
		L	LS	MP9015	40-80	0.04-0.15	0.3-2.0
	✘	L	LS	MP9015	30-60	0.04-0.10	0.3-1.0
	S Precipitation hardening stainless steels (X5CrNiCuNb17-4)	●	F	FS	MP9015	25-95	0.04-0.12
L			LS	MP9015	25-95	0.04-0.12	0.3-2.0
●		F	FS	MP9015	20-75	0.04-0.12	0.2-1.4
		L	LS	MP9015	20-75	0.04-0.12	0.3-2.0
✘		L	LS	MP9015	20-60	0.04-0.10	0.3-1.0
S Ni-based heat-resistant alloy (Inconel [®] 718, Hastelloy [®] , WASPALLOY [®])		●	F	FS	MP9015	25-95	0.04-0.12
	L		LS	MP9015	25-95	0.04-0.12	0.3-2.0
	●	F	FS	MP9015	20-75	0.04-0.12	0.2-1.4
		L	LS	MP9015	20-75	0.04-0.12	0.3-2.0
	✘	L	LS	MP9015	20-60	0.04-0.10	0.3-1.0

1. Verify the recommended conditions for each boring bar as the cutting conditions for internal machining will vary depending on the length of overhang.

POSITIVE INSERTS

Cutting conditions : ●: Stable cutting ●: General cutting ✘: Unstable cutting

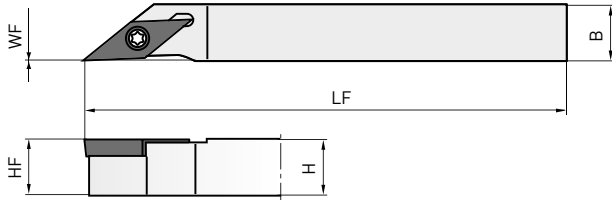
Material	Conditions			Grade	Vc	f	ap
M Precipitation hardening stainless steels (DIN X5CrNiCuNb17-4)	●	L	LS	MP9015	105-140	0.06-0.20	0.2-1.0
		M	MS	MP9015	85-120	0.08-0.25	0.3-2.0
	●	L	LS	MP9015	105-140	0.06-0.20	0.2-1.0
		M	MS	MP9015	85-120	0.08-0.25	0.3-2.0
	✘	L	LS	MP9025	70-80	0.06-0.20	0.2-1.0
S Titanium alloy (Ti-6Al-4V)	●	L	LS	MT9005	40-80	0.06-0.20	0.2-1.0
		M	MS	MT9005	35-65	0.08-0.25	0.3-2.0
	●	L	LS	MT9005	40-80	0.06-0.20	0.2-1.0
		M	MS	MT9005	35-65	0.08-0.25	0.3-2.0
	●	L	LS	MT9005	40-80	0.06-0.20	0.2-1.0
		M	MS	MT9005	35-65	0.08-0.25	0.3-2.0
	✘	L	LS	MT9005	40-80	0.06-0.20	0.2-1.0
	✘	M	MS	MT9005	35-65	0.08-0.25	0.3-2.0
S Ni-based heat-resistant alloy (Inconel [®] 718, Hastelloy [®] , WASPALLOY [®])		●	L	LS	MP9005	25-95	0.06-0.20
	M		MS	MP9005	20-80	0.08-0.25	0.3-0.2
	●	L	LS	MP9015	20-75	0.06-0.20	0.2-1.0
		M	MS	MP9015	20-75	0.06-0.20	0.2-1.0
	●	L	LS	MP9025	15-25	0.06-0.20	0.2-1.0
		M	MS	MP9025	15-30	0.08-0.25	0.3-2.0

1. Verify the recommended conditions for each boring bar as the cutting conditions for internal machining will vary depending on the length of overhang.

Cutting conditions : ●: Stable cutting ●: General cutting ✘: Unstable cutting

SVJC

TOOL HOLDER FOR VC*T11 / 13 INSERTS



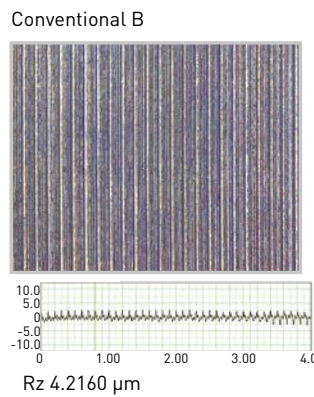
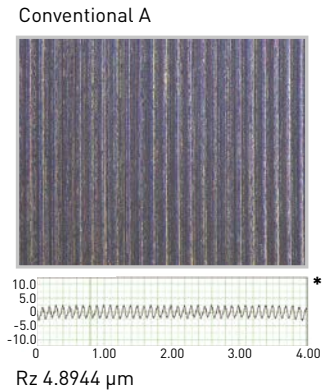
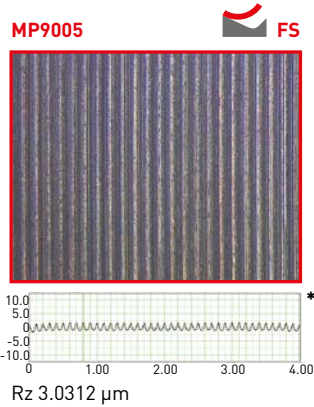
Order number	Stock		Insert	H	B	LF	HF	LH	WF	Insert screw	Wrench	
	R	L										
SVJCR/L1010JX11-SM	●	●	VCGT	10	10	120	10	22	0	TS255	TKY08R	
SVJCR/L1212JX11-SM	●	●		1103	12	12	120	12	22			0
SVJCR/L1616JX11-SM	●	●		1303	16	16	120	16	22			0
SVJCR/L1010JX13-SM	●	●	VCGT	10	10	120	10	26	0	TS32	TKY08R	
SVJCR/L1212JX13-SM	●	●		1303	12	12	120	12	26			0
SVJCR/L1616JX13-SM	●	●		1303	16	16	120	16	26			0

CUTTING PERFORMANCE

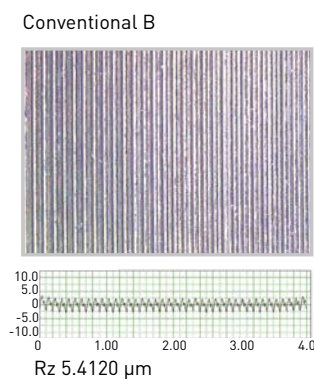
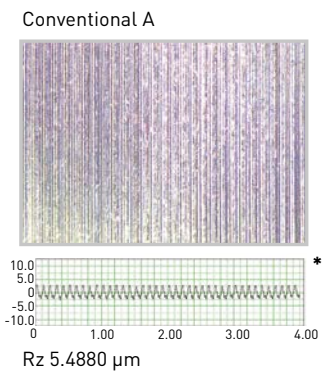
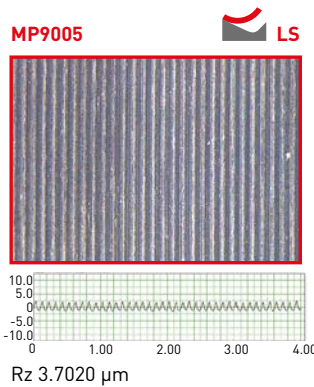
COMPARISON OF FINISHED SURFACE OF INCONEL® 718

Excellent machining and chip breaking abilities provide good surface finishes.

Material	Inconel® 718
Insert	CNGG120404
Vc (m/min)	50
f (mm/rev)	0.1
ap (mm)	0.2
Cutting mode	Wet cutting



Material	Inconel® 718
Insert	CNGG120404
Vc (m/min)	50
f (mm/rev)	0.1
ap (mm)	0.5
Cutting mode	Wet cutting



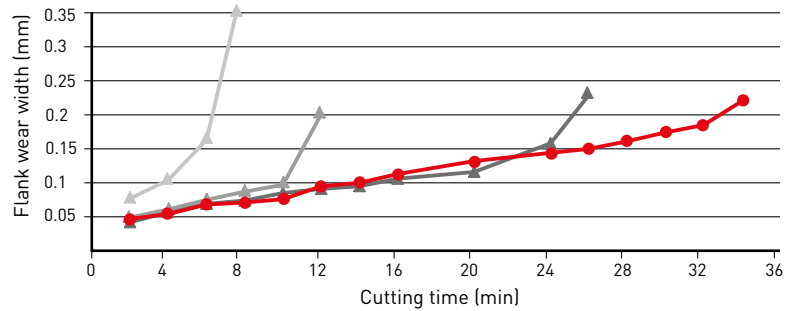
* Roughness curve
Vertical scale: x 2.000.00
Horizontal scale: x 50.00

CUTTING PERFORMANCE

INCONEL®718, CONTINUOUS MACHINING

Material	Inconel®718
Insert	CNMG120408-MS
Vc (m/min)	60
f (mm/rev)	0.15
ap (mm)	0.75
Cutting mode	Wet cutting

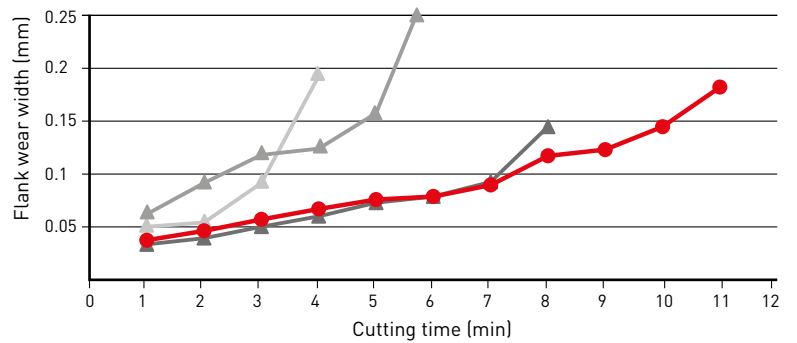
28 % Increased tool life



INCONEL®718, CONTINUOUS MACHINING

Material	Inconel®718
Insert	CNMG120408-MS
Vc (m/min)	100
f (mm/rev)	0.15
ap (mm)	0.5
Cutting mode	Wet cutting

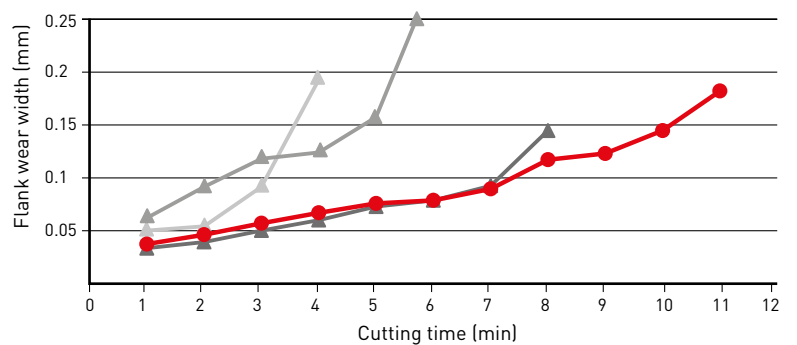
Increased tool life by 37%



INCONEL®718, CONTINUOUS MACHINING

Material	Inconel®718
Insert	CNMG120408-RS
Vc (m/min)	40
f (mm/rev)	0.2
ap (mm)	2.0
Cutting mode	Wet cutting

Increased tool life by 33%

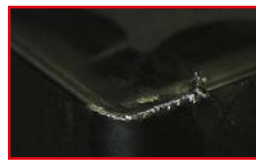


● MP9005/15
 ▲ Conventional A
 ▲ Conventional B
 ▲ Conventional C

WASPALLOY[®] MACHINING

MP9015 WITH RS BREAKER DISPLAYED THE LEAST DAMAGE

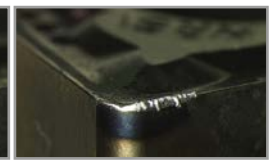
Material	WASPALLOY [®]
Insert	CNMG120408-RS
Vc (m/min)	29
f (mm/rev)	0.22
ap (mm)	4.0
Cutting time (min)	7
Cutting mode	Wet cutting



MP9015 - RS



Conventional A

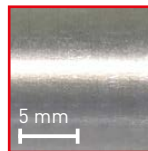


Conventional B

TITANIUM ALLOY, COMPARISON OF SURFACE FINISH

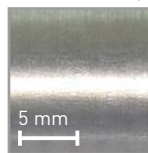
Material	Ti-6Al-6V(325HB)
Insert	CNMG120408-LS
Vc (m/min)	70
f (mm/rev)	0.05
ap (mm)	0.25
Cutting mode	Wet cutting

Glossy surface

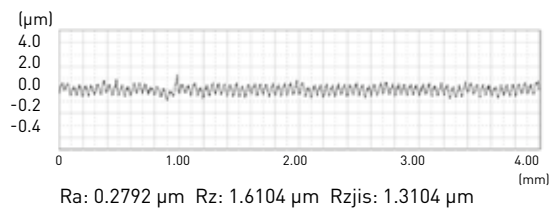
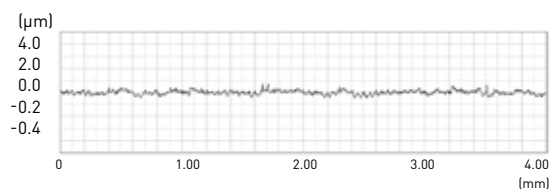


MT9015 - LS

White turbidity



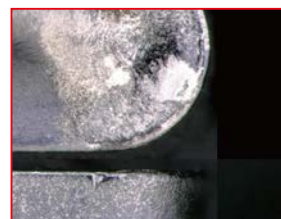
Conventional



Excellent surface finish

MP9015 WITH LS BREAKER DISPLAYED THE LEAST DAMAGE

Material	Heat-resistant cast steel
Insert	DCMT11T304-LS
Vc (m/min)	100
f (mm/rev)	0.1
ap (mm)	0.25
Cutting mode	Wet cutting



MP9015 - LS

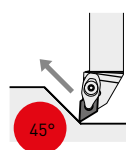


Conventional

CHIP CONTROL WHEN TAPER TURNING

Non-tangling of chips when back turning Inconel[®]718.

Material	Inconel [®] 718
Insert	DNMG150408-MS
Vc (m/min)	40
f (mm/rev)	0.2
ap (mm)	1.0
Cutting mode	Wet cutting



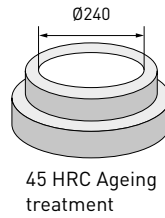
MS Chipbreaker (New design)



Conventional

APPLICATION EXAMPLES

Insert	DNMG150408-MS (MP9005)
Workpiece material	Inconel [®] 718 (Ni-based Alloy)
Cutting mode	Wet cutting
Vc (m/min)	60
f (mm/rev)	0.15
ap (mm)	0.25
Component	Disc-Aerospace component

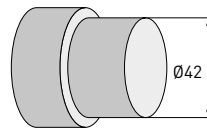


MP9005 + MS

Conventional (S10)

Result MP9005 – Stable machining, less wear plus long tool life without chip tangling.

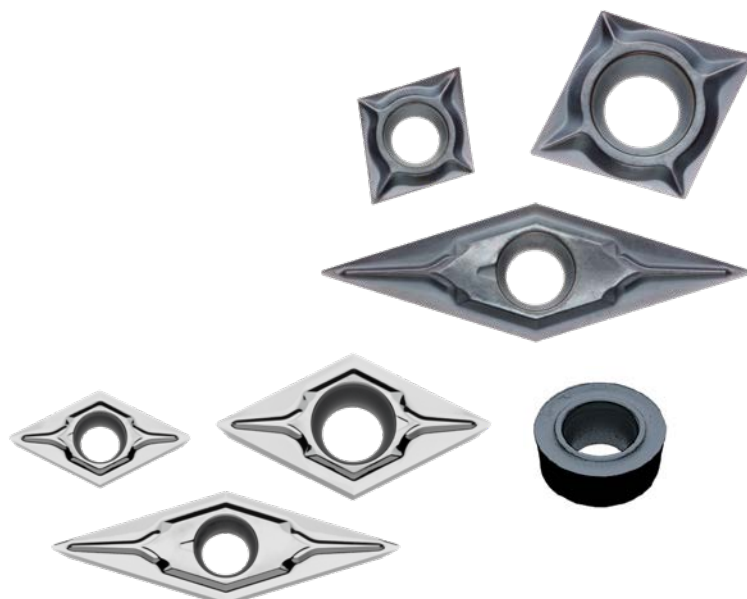
Insert	CNMG120408-RS (MP9015)
Workpiece material	HAYNES [®] alloy 25 (Ni,Co-based alloy)
Cutting mode	Wet cutting
Vc (m/min)	34
f (mm/rev)	0.20
ap (mm)	1.5
Component	Cover plate-Aerospace component



MP9015 + RS

Conventional (S10)

Result Both conventional and MP9015 display some notch wear, but the wear on the conventional grade was much larger and exposed the substrate.



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