

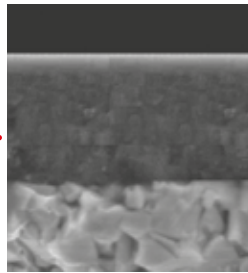
MP/MT9000

ISO TURNING INSERTS
FOR DIFFICULT TO CUT MATERIALS



MP9005/MP9015

PVD COATED GRADE



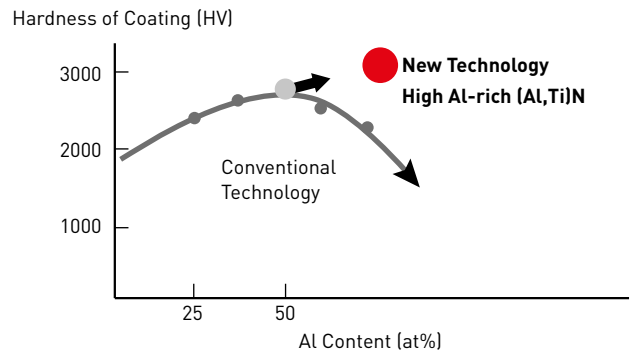
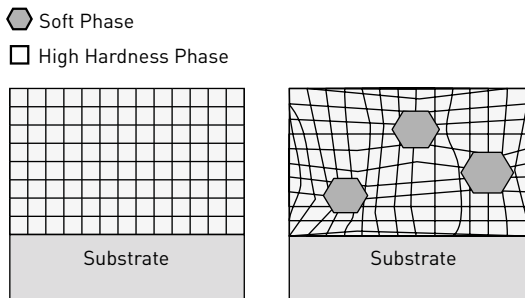
MP9005/MP9015

..... High Al-rich (Al,Ti)N Single Layer Coating Technology

..... Special Cemented Carbide Substrate

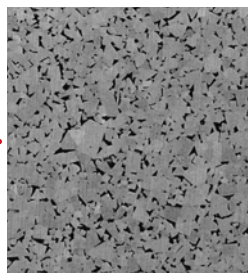
HIGH AL AND CONVENTIONAL COATING COMPARISON

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.

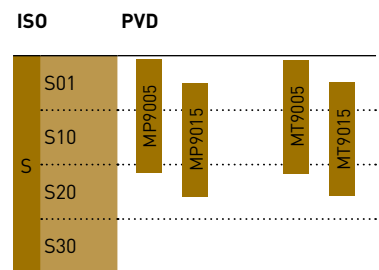


MT9005/MT9015

CARBIDE GRADE (NON COATED)



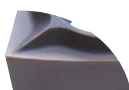




MT9015



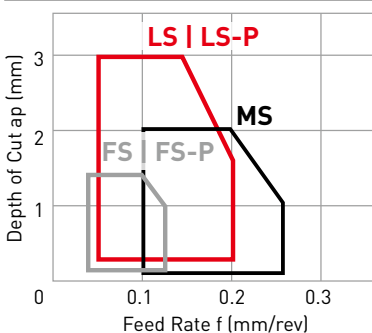
ISO Grade	Grade	Concept	Application
S	S05	MP9005 / MT9005	High quality grade focusing on wear resistance Heat Resistant Alloy Finish-Medium cutting
	S15	MP9015	First recommendation for general applications Heat Resistant Alloy Medium-Rough cutting
	S15	MT9015	New cemented carbide with sharp cutting edge, excellent wear and fracture resistance Titanium Alloy General Cutting

CHIP BREAKER SYSTEM

POSITIVE INSERTS





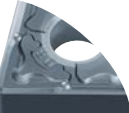
Application Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Finishing G	FS 	FIRST RECOMMENDATION FOR FINISHING DIFFICULT-TO-CUT MATERIALS Ideal for heat-resistant, titanium and cobalt chromium alloys. Sharp cutting edges provide excellent surface finishes and geometric tolerance. Highly efficient chip discharge is possible due to curved cutting edges.	Nose: 14° Flank: 9°
	FS-P 	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 	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: 12° Flank: 6°
	LS-P 	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 	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)

CHIP CONTROL RANGE

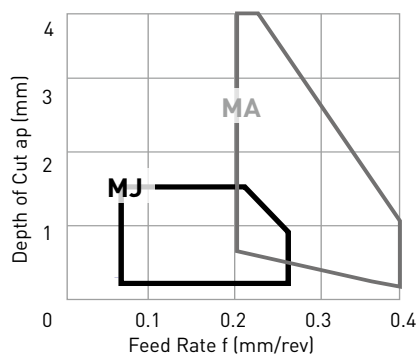
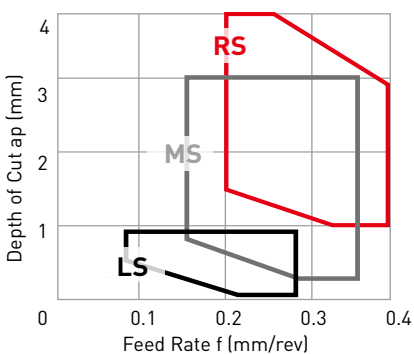


CHIP BREAKER SYSTEM

NEGATIVE INSERTS

Application Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Light cutting M	LS 	FIRST RECOMMENDATION FOR LIGHT CUTTING OF DIFFICULT-TO-CUT MATERIALS Enhanced chip disposal for depths of cut smaller than the corner radius.	Nose: 20°, 0.4 Flank: 20°, 0.6
	MJ 	FIRST RECOMMENDATION FOR LIGHT CUTTING OF DIFFICULT-TO-CUT MATERIALS Double sided chipbreaker, 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.	Nose: 13° Flank: 9°
Medium cutting M	MS 	FIRST RECOMMENDATION FOR MEDIUM CUTTING OF DIFFICULT-TO-CUT MATERIALS Double sided chipbreaker. The sharp edge provides superior performance.	Nose: 25°, 0.5 15° Flank: 25°, 0.5 15°
	MA 	MULTI-ASSIST CHIPBREAKER FOR MEDIUM CUTTING OF DIFFICULT-TO-CUT MATERIALS Double sided chipbreaker. Positive land provides a sharp cutting action.	Nose: 22°, 0.2 6° Flank: 22°, 0.2 6°
Roughing M	RS 	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.	Nose: 20°, 0.2 10° Flank: 20°, 0.2

CHIP CONTROL RANGE



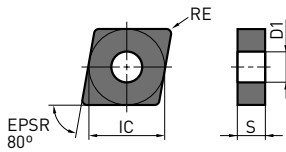
NEGATIVE INSERTS

(WITH HOLE)




S

M Class
CNMG

CNMG



CHIP BREAKER IDENTIFICATION

APPLICATION			
CHIP BREAKER	LS	MA, MJ, MS	RS

Order Number	Cutting Range	MP9005	MP9015	MT9015	IC	S	RE	D1
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
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

 >P14

NEGATIVE INSERTS

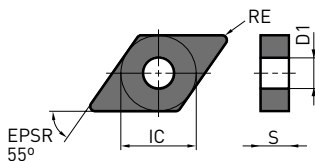
(WITH HOLE)

S

M Class

DNMG

DNMG



CHIP BREAKER IDENTIFICATION

APPLICATION



CHIP BREAKER

LS

MA, MJ, MS

RS

Order Number	Cutting Range	MP9005	MP9015	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



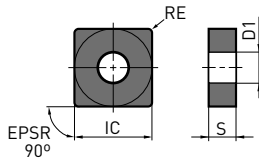
NEGATIVE INSERTS

(WITH HOLE)

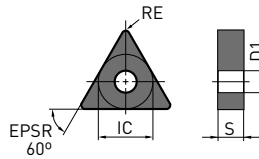
S

M Class
SNMG, TNMG

SNMG



TNMG



CHIP BREAKER IDENTIFICATION

APPLICATION



CHIP BREAKER

LS

MA, MJ, MS

RS

Order Number	Cutting Range	MP9005	MP9015	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
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

NEGATIVE INSERTS

(WITH HOLE)

S

M Class
VNMG, WNMG

CHIP BREAKER IDENTIFICATION

APPLICATION



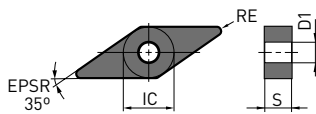
CHIP BREAKER

LS

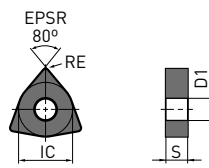
MA, MJ, MS

RS

VNMG



WNMG



Order Number	Cutting Range	MP9005	MP9015	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
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

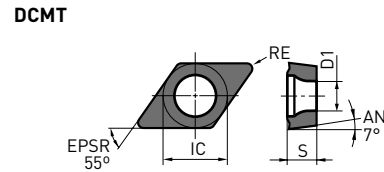
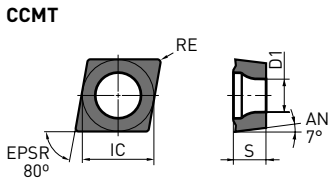
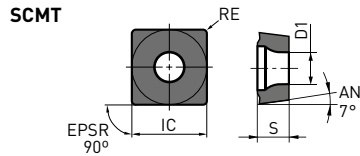


7° POSITIVE INSERTS

(WITH HOLE)

S

M Class
CCMT, DCMT, SCMT



CHIP BREAKER IDENTIFICATION

APPLICATION



CHIP BREAKER

LS

MS

Order Number	Cutting Range	MP9005	MP9015	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
NEW CCMT060202-MS	M	●	●	●	6.35	2.38	0.2	2.8
NEW CCMT060204-MS	M	●	●	●	6.35	2.38	0.4	2.8
NEW 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
NEW 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
NEW CCMT120404-MS	M	●	●	●	12.7	4.76	0.4	5.5
NEW CCMT120408-MS	M	●	●	●	12.7	4.76	0.8	5.5
NEW CCMT120412-MS	M	●	●	●	12.7	4.76	1.2	5.5
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
NEW 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
NEW SCMT09T304-MS	M	●	●	●	9.525	3.97	0.4	4.4
NEW SCMT09T308-MS	M	●	●	●	9.525	3.97	0.8	4.4
NEW SCMT120404-MS	M	●	●	●	12.7	4.76	0.4	5.5
NEW SCMT120408-MS	M	●	●	●	12.7	4.76	0.8	5.5
NEW SCMT120412-MS	M	●	●	●	12.7	4.76	1.2	5.5

>P14

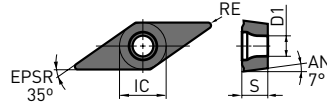
5° / 7° POSITIVE INSERTS

(WITH HOLE)

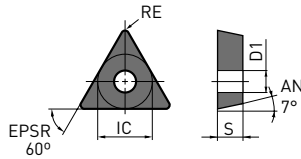
S

M Class
TCMT, VBMT, VCMT

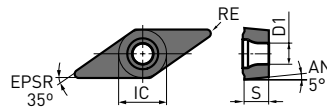
VCMT



TCMT



VBMT



CHIP BREAKER IDENTIFICATION

APPLICATION



CHIP BREAKER

LS

MS

Order Number	Cutting Range	MP9005	MP9015	MT9005	IC	S	RE	D1
NEW TCMT090202-LS	L	●	●	●	5.56	2.38	0.2	2.5
NEW TCMT090204-MS	M	●	●	●	5.56	2.38	0.4	2.5
NEW TCMT090208-MS	M	●	●	●	5.56	2.38	0.8	2.5
NEW TCMT110202-LS	L	●	●	●	6.35	2.38	0.2	2.8
NEW TCMT110204-MS	M	●	●	●	6.35	2.38	0.4	2.8
NEW TCMT110208-MS	M	●	●	●	6.35	2.38	0.8	2.8
NEW TCMT16T304-MS	M	●	●	●	9.525	3.97	0.4	4.4
NEW TCMT16T308-MS	M	●	●	●	9.525	3.97	0.8	4.4
NEW TCMT16T312-MS	M	●	●	●	9.525	3.97	1.2	4.4
NEW VBMT110302-LS	L	●	●	●	6.35	3.18	0.2	2.85
NEW VBMT110304-LS	L	●	●	●	6.35	3.18	0.4	2.85
NEW 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
NEW 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
NEW VBMT160412-MS	M	●	●	●	9.525	4.76	1.2	4.43
VCMT110302-LS	L	●	●	●	6.35	3.18	0.2	2.8
VCMT110304-LS	L	●	●	●	6.35	3.18	0.4	2.8
NEW VCMT110302-MS	M	●	●	●	6.35	3.18	0.2	2.8
NEW VCMT110304-MS	M	●	●	●	6.35	3.18	0.4	2.8
NEW 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

>P14

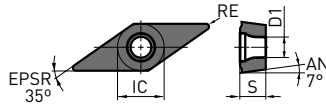
7° POSITIVE INSERTS

MINUS TOLERANCE (WITH HOLE)

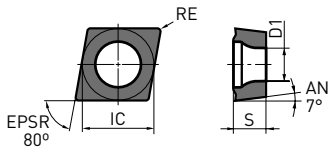
S

G Class
CCGT, DCGT, VCGT

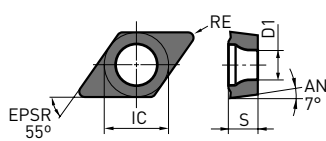
VCGT



CCGT



DCGT



CHIP BREAKER IDENTIFICATION

APPLICATION



CHIP BREAKER

FS

LS

Order Number	Cutting Range	MP9005	MP9015	MT9005	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
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-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-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



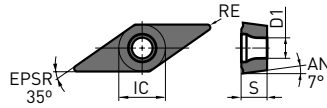
5° / 7° POSITIVE INSERTS

MINUS TOLERANCE / POLISHED (WITH HOLE)

S

G Class
CCGT, DCGT, VCGT

VCGT

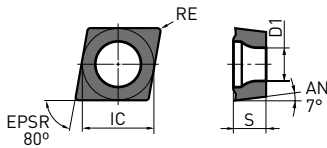


CHIP BREAKER IDENTIFICATION

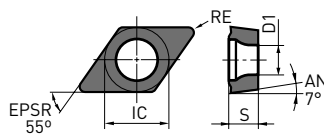
APPLICATION



CCGT



DCGT



CHIP BREAKER

FS-P

LS-P

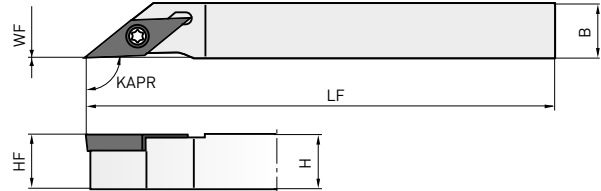
Order Number	Cutting Range	MP9005	MP9015	MT9005	IC	S	RE	D1
CCGT060201M-FS-P	F			●	6.35	2.38	0.08	2.8
CCGT060202M-FS-P	F			●	6.35	2.38	0.18	2.8
CCGT09T301M-FS-P	F			●	9.525	3.97	0.08	4.4
CCGT09T302M-FS-P	F			●	9.525	3.97	0.18	4.4
CCGT09T304M-FS-P	F			●	9.525	3.97	0.38	4.4
DCGT070201M-FS-P	F			●	6.35	2.38	0.08	2.8
DCGT070202M-FS-P	F			●	6.35	2.38	0.18	2.8
DCGT11T301M-FS-P	F			●	9.525	3.97	0.08	4.4
DCGT11T302M-FS-P	F			●	9.525	3.97	0.18	4.4
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

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



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	●	●		12	12	120	12	22	0		
SVJCR/L1616JX11-SM	●	●		16	16	120	16	22	0		
SVJCR/L1010JX13-SM	●	●	1303	10	10	120	10	26	0	TS32	TKY08R
SVJCR/L1212JX13-SM	●	●		12	12	120	12	26	0		
SVJCR/L1616JX13-SM	●	●		16	16	120	16	26	0		

RECOMMENDED CUTTING CONDITIONS

NEGATIVE INSERTS

Material	Conditions	Cutting Range	Chip Beaker	Grade	Vc (m/min)	f (mm/rev)	ap (mm)
Titanium Alloy (Ti-6Al-4V)	Stable Cutting	Light	LS	MT9015	40-85	0.10-0.25	0.2-0.8
		Medium	MS	MT9015	40-80	0.10-0.25	0.5-4.0
		Rough	RS	MT9015	35-75	0.20-0.35	1.0-4.0
	General Cutting	Light	LS	MT9015	40-85	0.10-0.25	0.2-0.8
		Medium	MS	MT9015	40-80	0.10-0.25	0.5-4.0
		Rough	RS	MT9015	35-75	0.20-0.35	1.0-4.0
Ni-Based Heat-resistant Alloy (Inconel®718, Hastelloy®, WASPALOY®)	Stable Cutting	Light	LS	MP9005	30-110	0.10-0.25	0.2-0.8
		Medium	MS	MP9005	30-100	0.10-0.25	0.5-4.0
		Rough	RS	MP9015	20-75	0.20-0.35	1.0-4.0
Cobalt Base Alloy (Tribaloy®, Stellite®)	General Cutting	Light	LS	MP9015	25-85	0.10-0.25	0.2-0.8
		Medium	MS	MP9015	25-80	0.10-0.25	0.5-4.0
		Rough	RS	MP9015	20-75	0.20-0.35	1.0-4.0

POSITIVE INSERTS

Material	Conditions	Cutting Range	Chip Beaker	Grade	Vc (m/min)	f (mm/rev)	ap (mm)
Titanium Alloy (Ti-6Al-4V)	Stable Cutting	Light	LS	MT9005	40-80	0.06-0.20	0.2-1.0
		Medium	MS	MT9005	35-65	0.08-0.25	0.3-2.0
	General Cutting	Light	LS	MT9005	40-80	0.06-0.20	0.2-1.0
		Medium	MS	MT9005	35-65	0.08-0.25	0.3-2.0
	Unstable Cutting	Light	LS	MT9005	40-80	0.06-0.20	0.2-1.0
		Medium	MS	MT9005	35-65	0.08-0.25	0.3-2.0
Ni-Based Heat-resistant Alloy (Inconel®718, Hastelloy®, WASPALOY®)	Stable Cutting	Light	LS	MP9005	25-95	0.06-0.20	0.2-1.0
		Medium	MS	MP9005	20-80	0.08-0.25	0.3-0.2
	General Cutting	Light	LS	MP9015	20-75	0.06-0.20	0.2-1.0
		Medium	MS	MP9015	20-75	0.06-0.20	0.2-1.0
	Unstable Cutting	Light	LS	MP9015	20-75	0.06-0.20	0.2-1.0
		Medium	MS	MP9015	20-60	0.08-0.25	0.3-2.0

1. 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

PRECISION POSITIVE INSERTS

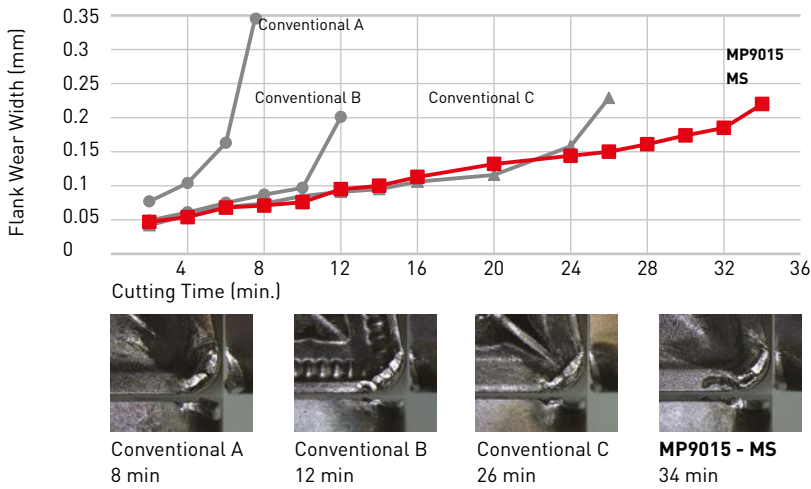
Material	Conditions	Chip Breaker	Grade	Vc (m/min)	f (mm/rev)	ap (mm)
Titanium Alloy (Ti-6Al-4V)	Stable Cutting	FS-P	MT9005	40-80	0.04-0.12	0.2-1.4
		LS-P	MT9005	40-80	0.04-0.20	0.3-3.0
	General Cutting	FS-P	MT9005	40-80	0.04-0.12	0.2-1.4
		LS-P	MT9005	40-80	0.04-0.12	0.3-2.0
	Unstable Cutting	LS-P	MT9005	30-60	0.04-0.10	0.2-1.4
	Cobalt Chromium Alloys (Co-Cr-Mo Alloys)	Stable Cutting	FS	MP9005	40-80	0.04-0.10
LS			MP9005	40-80	0.04-0.15	0.2-2.0
General Cutting		FS	MP9015	40-80	0.04-0.10	0.2-1.4
	LS	MP9015	40-80	0.04-0.15	0.3-2.0	
Precipitation Hardening Stainless Steels (X5CrNiCuNb17-4)	General Cutting	FS	MP9015	40-80	0.04-0.10	0.2-1.4
		LS	MP9015	40-80	0.04-0.15	0.3-2.0
	Unstable Cutting	LS	MP9015	30-60	0.04-0.10	0.3-1.0
Ni-Based Heat-resistant Alloy (Inconel®718, Hastelloy®, Waspaloy®)	Stable Cutting	FS	MP9015	25-95	0.04-0.12	0.2-1.4
		LS	MP9015	25-95	0.04-0.12	0.3-2.0
	General Cutting	FS	MP9015	20-75	0.04-0.12	0.2-1.4
		LS	MP9015	20-75	0.04-0.12	0.3-2.0
	Unstable Cutting	LS	MP9015	20-60	0.04-0.10	0.3-1.0

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



CUTTING PERFORMANCE

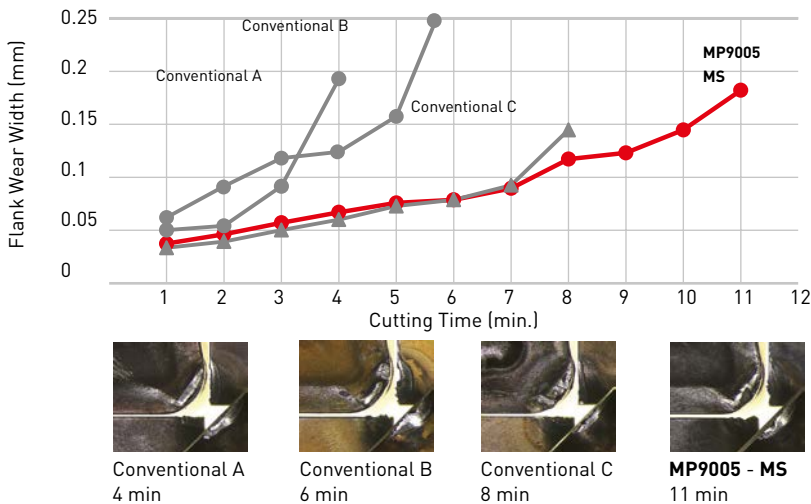
INCONEL®718, Vc=60 m/min CONTINUOUS MACHINING



Material	Inconel®718
Insert	CNMG120408-MS
Cutting Speed	60 m/min
Feed Rate	0.15 mm/rev
Depth of Cut	0.75 mm
Cutting Mode	Wet Cutting

28 % Increased Tool Life

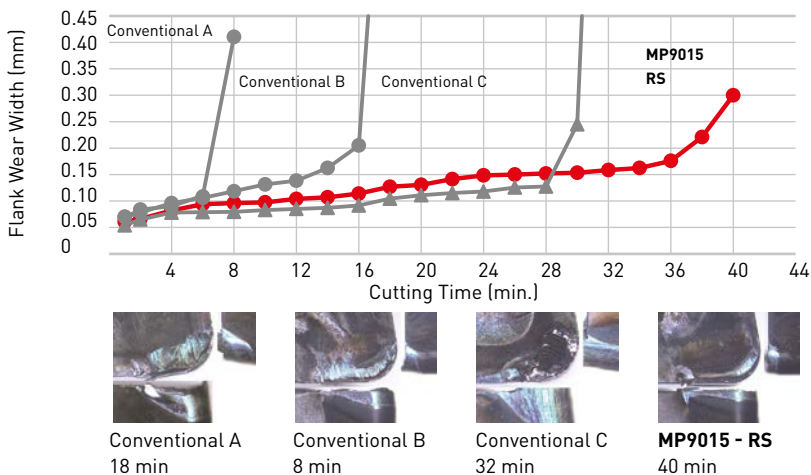
INCONEL®718, Vc=100 m/min CONTINUOUS MACHINING



Material	Inconel®718
Insert	CNMG120408-MS
Cutting Speed	100 m/min
Feed Rate	0.15 mm/rev
Depth of Cut	0.5 mm
Cutting Mode	Wet Cutting

37% Increased Tool Life

INCONEL®718, Ap=2.0 mm CONTINUOUS MACHINING

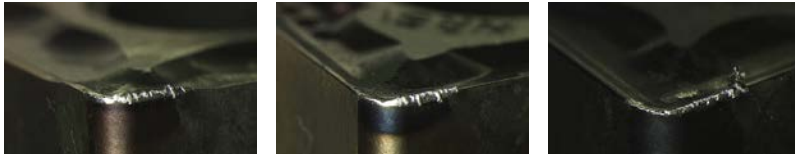


Material	Inconel®718
Insert	CNMG120408-RS
Cutting Speed	40 m/min
Feed Rate	0.2 mm/rev
Depth of Cut	2.0 mm
Cutting Mode	Wet Cutting

33 % Increased Tool Life

WASPALOY® MACHINING

MP9015 WITH RS BREAKER DISPLAYED THE LEAST DAMAGE



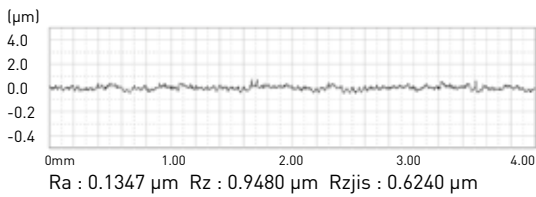
Conventional A

Conventional B

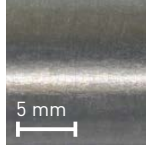
MP9015 - RS

Material	WASPALOY®
Insert	CNMG120408-RS
Cutting Speed	29 m/min
Feed Rate	0.22 mm/rev
Depth of Cut	4.0 mm
Cutting Time	7 min
Cutting Mode	Wet Cutting

TITANIUM ALLOY, COMPARISON OF SURFACE FINISH (DEPTH OF CUT : 0.25 MM)



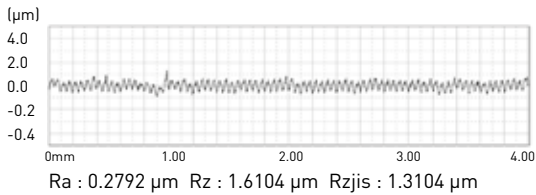
Glossy Surface



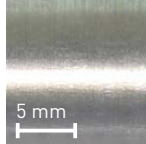
MT9015 - LS



Excellent Surface Finish



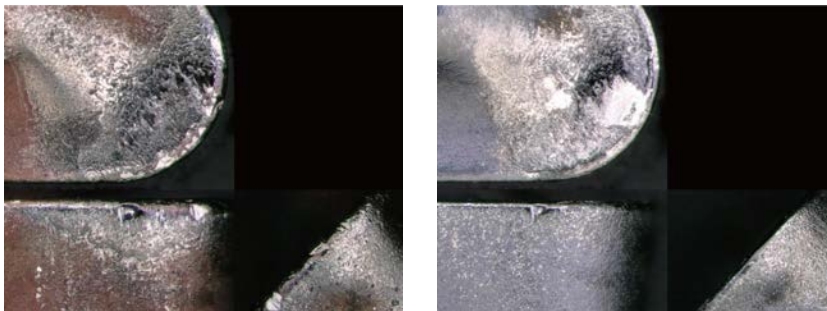
White Turbidity



Conventional

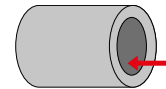
Material	Ti-6Al-6V(325HB)
Insert	CNMG120408-LS
Cutting Speed	70 m/min
Feed Rate	0.05 mm/rev
Depth of Cut	0.25 mm
Cutting Mode	Wet Cutting

MP9015 WITH LS BREAKER DISPLAYED THE LEAST DAMAGE



Conventional

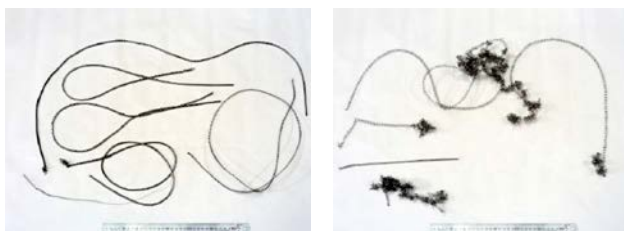
MP9015 - LS



Material	Heat-resistant Cast Steel
Insert	DCMT11T304-LS
Cutting Speed	100 m/min
Feed Rate	0.1 mm/rev
Depth of Cut	0.25 mm
Cutting Mode	Wet Cutting

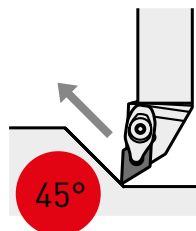
CHIP CONTROL WHEN TAPER TURNING

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



MS Chip Breaker
(New Design)

Conventional

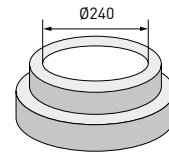


Material	Inconel®718
Insert	DNMG150408-MS
Cutting Speed	40 m/min
Feed Rate	0.2 mm/rev
Depth of Cut	1.0 mm
Cutting Mode	Wet Cutting

APPLICATION EXAMPLES

Insert	DNMG150408-MS (MP9005)
Workpiece Material	Inconel®718 (Ni-based Alloy)
Cutting mode	Wet Cutting
Cutting Speed Vc (m/min)	60
Feed f (mm/rev)	0.15
Depth of Cut (mm)	0.25
Component	Disc - Aerospace Component

Result MP9005 - Stable machining, less wear with long tool life without chip tangling.



45 HRC Ageing Treatment

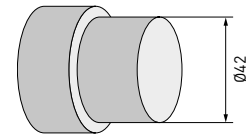
Conventional (S10)

MP9005+MS



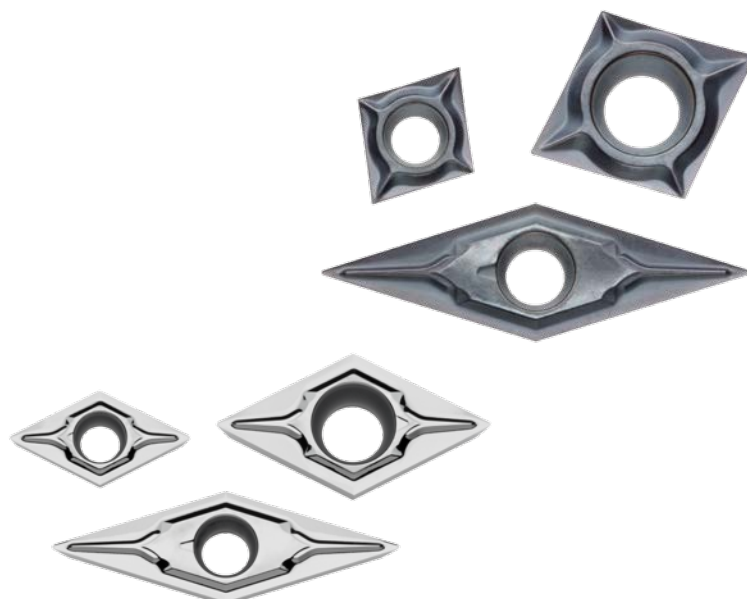
Insert	CNMG120408-RS (MP9015)
Workpiece Material	HAYNES® Alloy 25 (Ni,Co-based Alloy)
Cutting mode	Wet Cutting
Cutting Speed Vc (m/min)	34
Feed f (mm/rev)	0.20
Depth of Cut (mm)	1.5
Component	Cover Plate - Aerospace Component

Result Both conventional and MP9015 display notch wear but the conventional grade displayed greater wear and exposed the substrate.



Conventional (S10)

MP9015+RS



MEMO

A series of horizontal dashed lines for writing.

GERMANY

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