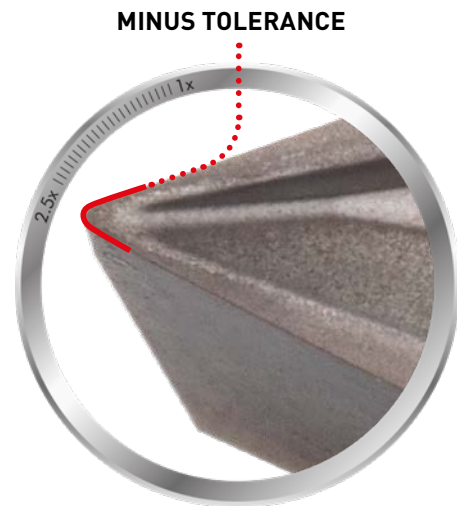


MS6015

PVD COATED CARBIDE GRADE
FOR SMALL PART MACHINING

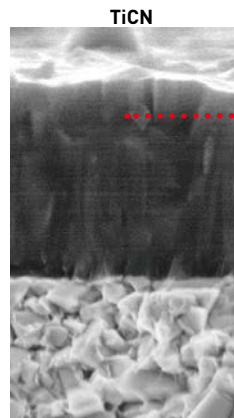


MS6015

PVD COATED CARBIDE GRADE FOR CARBON STEEL

The combination of a special carbide substrate and a new PVD coating greatly improves wear resistance.

	MS6015	Conventional
Coating	TiCN Multi-layer	TiAlN
Hardness (HV)	3000	2800
Friction Coefficient	Low	High
Base Material Hardness (HRA)	92.0	92.0
T.R.S (GPa)	2.0	2.0



Superior wear and welding resistance for efficient machining of carbon steel.

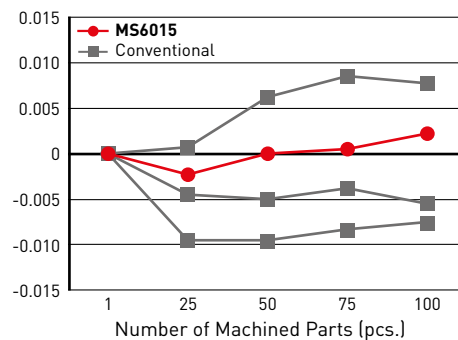
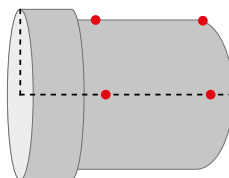
Enabling excellent dimensional accuracy and surface finish.

CUTTING PERFORMANCE

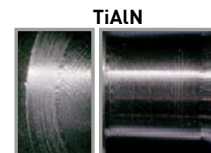
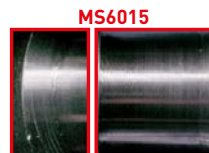
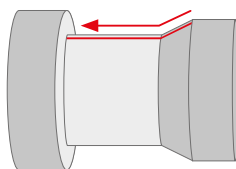
MS6015 has superior chip discharge properties compared to conventional products. This helps to prevent chip welding and maintain dimensional accuracy of the components being machined.

Insert	DCGT11T302
Work Material	DIN C22
Cutting Speed Vc (m/min)	100
Feed f (mm/rev)	0.05
Depth of Cut ap (mm)	1
Coolant	Wet Cutting

Average measurement over 4 points.



Insert	DCGT11T302
Work Material	Low carbon steel (JIS S20C)
Cutting Speed Vc (m/min)	100
Feed f (mm/rev)	0.04
Depth of Cut ap (mm)	2.5



CORNER RADIUS INSERT WITH MINUS TOLERANCE

Order Number:


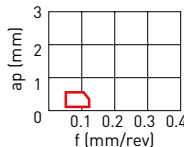
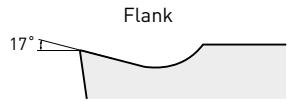

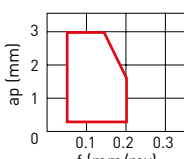
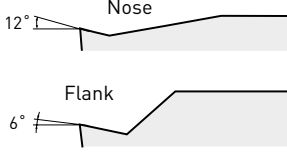

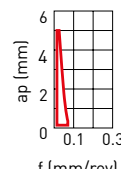


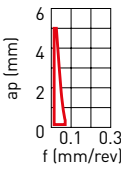


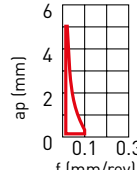
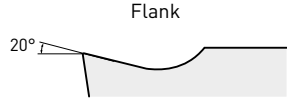

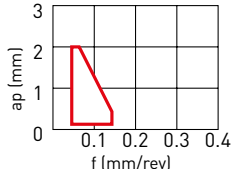
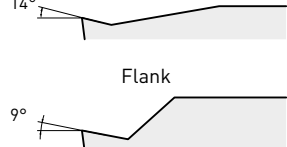
DCGT11T301	M R-SN	→ 01M ⌀ R0.08mm (R0.05 — R0.10mm)
DCGT11T302	M R-SN	→ 02M ⌀ R0.18mm (R0.15 — R0.20mm)
DCGT11T304	M -SMG	→ 04M ⌀ R0.38mm (R0.35 — R0.40mm)

Printing example:

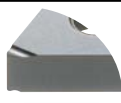
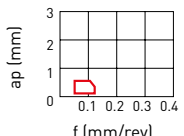

DCGT11T301MR-SN
DCGT32.50.2MRSN
MS6015 R0.08



BREAKER SYSTEM - POSITIVE INSERTS

Tolerance		Features	Carbon Steel / Alloy Steel	Cross Section Geometry
FINISH CUTTING				
G		Finish Machining on Automatic Lathes Lead chip breaker controls chip flow. Sharp cutting edge gives a good surface finish.		
	R/L-F			
LIGHT CUTTING				
		Light Machining on Automatic Lathes Designed with parallel cutting edges. Achieves stable chip control over a wide range, from low to medium depths of cut. Polished (mirror-surface) finish of insert surface drastically improves welding resistance and extends tool life.		
	LS-P			
G		Light Machining on Automatic Lathes Parallel chip breaker geometry. Excellent chip control at low feed rates.		
	R/L-SS			
		Light cutting Parallel chipbreaker geometry. Excellent chip control at low feed rates.		
	R-SS			
MEDIUM CUTTING				
G		Medium cutting Parallel chipbreaker geometry. Excellent chip control at low to medium feed rates.		
	R-SN			
		Medium cutting 3D moulded chipbreaker provides good chip control. G class insert provides a sharp cutting action, allowing high precision machining. Breaker geometry is suitable for copying and back turning.		
	SMG			

BREAKER SYSTEM - NEGATIVE INSERTS

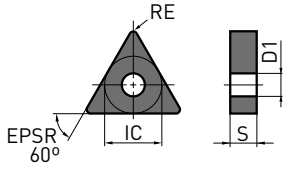
Tolerance		Features	Carbon Steel / Alloy Steel	Cross Section Geometry
FINISH CUTTING				
G		Precision Finishing Double-sided chip breaker. A narrow lead chip breaker for good chip control. Sharp cutting edge gives a good surface finish.		
	R/L-FS			

MS6015

NEGATIVE INSERTS (WITH HOLE)

P

G Class
TNGG



CHIP BREAKER
IDENTIFICATION

APPLICATION



R-FS / L-FS

Order Number	Application	MS6015	IC	S	RE	D1
NEW ★ TNGG160402L-FS	F	●	9.525	4.76	0.2	3.81
NEW ★ TNGG160404L-FS	F	●	9.525	4.76	0.4	3.81
NEW ★ TNGG160408L-FS	F	●	9.525	4.76	0.8	3.81
NEW ★ TNGG160408R-FS	F	●	9.525	4.76	0.8	3.81
NEW ★ TNGG160402R-FS	F	●	9.525	4.76	0.2	3.81
NEW ★ TNGG160404R-FS	F	●	9.525	4.76	0.4	3.81

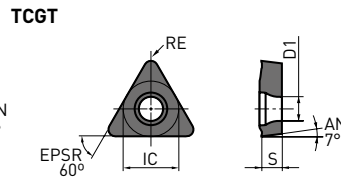
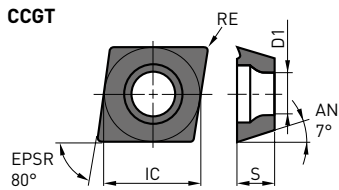
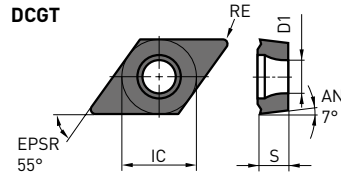


MS6015

7° POSITIVE INSERTS (WITH HOLE)

P

G Class



CHIP BREAKER IDENTIFICATION

APPLICATION



R-SS

R-SN,
SMG

L-F,
R-F

Order Number	Application	MS6015	IC	S	RE*	D1
CCGT060201MR-SS	L	●	6.35	2.38	0.08	2.8
CCGT060202MR-SS	L	●	6.35	2.38	0.18	2.8
CCGT09T301MR-SS	L	●	9.525	3.97	0.08	4.4
CCGT09T302MR-SS	L	●	9.525	3.97	0.18	4.4
CCGT09T304MR-SS	L	●	9.525	3.97	0.38	4.4
NEW ★ CCGT060201ML-SS	L	●	6.35	2.38	0.08	2.8
NEW ★ CCGT060202ML-SS	L	●	6.35	2.38	0.18	2.8
NEW ★ CCGT09T301ML-SS	L	●	9.525	3.97	0.08	4.4
NEW ★ CCGT09T302ML-SS	L	●	9.525	3.97	0.18	4.4
NEW ★ CCGT09T304ML-SS	L	●	9.525	3.97	0.38	4.4
CCGT060201MR-SN	M	●	6.35	2.38	0.08	2.8
CCGT060202MR-SN	M	●	6.35	2.38	0.18	2.8
CCGT09T301MR-SN	M	●	9.525	3.97	0.08	4.4
CCGT09T302MR-SN	M	●	9.525	3.97	0.18	4.4
CCGT09T304MR-SN	M	●	9.525	3.97	0.38	4.4
NEW ★ CCGT060201ML-SN	M	●	6.35	2.38	0.08	2.8
NEW ★ CCGT060202ML-SN	M	●	6.35	2.38	0.18	2.8
NEW ★ CCGT09T301ML-SN	M	●	9.525	3.97	0.08	4.4
NEW ★ CCGT09T302ML-SN	M	●	9.525	3.97	0.18	4.4
NEW ★ CCGT09T304ML-SN	M	●	9.525	3.97	0.38	4.4
CCGT060201M-SMG	M	●	6.35	2.38	0.08	2.8
CCGT060202M-SMG	M	●	6.35	2.38	0.18	2.8
CCGT060204M-SMG	M	●	6.35	2.38	0.38	2.8
CCGT09T301M-SMG	M	●	9.525	3.97	0.08	4.4
CCGT09T302M-SMG	M	●	9.525	3.97	0.18	4.4
CCGT09T304M-SMG	M	●	9.525	3.97	0.38	4.4
DCGT070201MR-SS	L	●	6.35	2.38	0.08	2.8
DCGT070202MR-SS	L	●	6.35	2.38	0.18	2.8
DCGT11T301MR-SS	L	●	9.525	3.97	0.08	4.4
DCGT11T302MR-SS	L	●	9.525	3.97	0.18	4.4
DCGT11T304MR-SS	L	●	9.525	3.97	0.38	4.4

* RE – Corner radius size is smaller than standard



Order Number	Cutting Area	MSG015	IC	S	RE*	D1
NEW★ DCGT070201ML-SS	L	●	6.35	2.38	0.08	2.8
NEW★ DCGT070202ML-SS	L	●	6.35	2.38	0.18	2.8
NEW★ DCGT11T301ML-SS	L	●	9.525	3.97	0.08	4.4
NEW★ DCGT11T302ML-SS	L	●	9.525	3.97	0.18	4.4
NEW★ DCGT11T304ML-SS	L	●	9.525	3.97	0.38	4.4
DCGT070201MR-SN	M	●	6.35	2.38	0.08	2.8
DCGT070202MR-SN	M	●	6.35	2.38	0.18	2.8
DCGT11T301MR-SN	M	●	9.525	3.97	0.08	4.4
DCGT11T302MR-SN	M	●	9.525	3.97	0.18	4.4
DCGT11T304MR-SN	M	●	9.525	3.97	0.38	4.4
NEW★ DCGT070201ML-SN	M	●	6.35	2.38	0.08	2.8
NEW★ DCGT070202ML-SN	M	●	6.35	2.38	0.18	2.8
NEW★ DCGT11T301ML-SN	M	●	9.525	3.97	0.08	4.4
NEW★ DCGT11T302ML-SN	M	●	9.525	3.97	0.18	4.4
NEW★ DCGT11T304ML-SN	M	●	9.525	3.97	0.38	4.4
DCGT070201M-SMG	M	●	6.35	2.38	0.08	2.8
DCGT070202M-SMG	M	●	6.35	2.38	0.18	2.8
DCGT070204M-SMG	M	●	6.35	2.38	0.38	2.8
DCGT11T301M-SMG	M	●	9.525	3.97	0.08	4.4
DCGT11T302M-SMG	M	●	9.525	3.97	0.18	4.4
DCGT11T304M-SMG	M	●	9.525	3.97	0.38	4.4
NEW★ CCGT03S101ML-F	F	●	3.57	1.39	0.08	2
NEW★ CCGT03S102ML-F	F	●	3.57	1.39	0.18	2
NEW★ CCGT03S104ML-F	F	●	3.57	1.39	0.38	2
NEW★ CCGT04T001ML-F	F	●	4.37	1.79	0.08	2.4
NEW★ CCGT04T002ML-F	F	●	4.37	1.79	0.18	2.4
NEW★ CCGT04T004ML-F	F	●	4.37	1.79	0.38	2.4
NEW★ CCGH060202ML-F	F	●	6.35	2.38	0.18	2.8
NEW★ CCGH060204ML-F	F	●	6.35	2.38	0.38	2.8
NEW★ TCGT060101ML-F	F	●	3.97	1.59	0.08	2.3
NEW★ TCGT060102ML-F	F	●	3.97	1.59	0.18	2.3
NEW★ TCGT060104ML-F	F	●	3.97	1.59	0.38	2.3
NEW★ CCGT03S101MR-F	F	●	3.57	1.39	0.08	2
NEW★ CCGT03S102MR-F	F	●	3.57	1.39	0.18	2
NEW★ CCGT03S104MR-F	F	●	3.57	1.39	0.38	2
NEW★ CCGT04T001MR-F	F	●	4.37	1.79	0.08	2.4
NEW★ CCGT04T002MR-F	F	●	4.37	1.79	0.18	2.4
NEW★ CCGT04T004MR-F	F	●	4.37	1.79	0.38	2.4
NEW★ CCGH060202MR-F	F	●	6.35	2.38	0.18	2.8
NEW★ CCGH060204MR-F	F	●	6.35	2.38	0.38	2.8
NEW★ TCGT060101MR-F	F	●	3.97	1.59	0.08	2.3
NEW★ TCGT060102MR-F	F	●	3.97	1.59	0.18	2.3
NEW★ TCGT060104MR-F	F	●	3.97	1.59	0.38	2.3
NEW★ CCGT060201M-LS-P	L	●	6.35	2.38	0.08	2.8
NEW★ CCGT060202M-LS-P	L	●	6.35	2.38	0.18	2.8
NEW★ CCGT09T301M-LS-P	L	●	9.525	3.97	0.08	4.4
NEW★ CCGT09T302M-LS-P	L	●	9.525	3.97	0.18	4.4
NEW★ CCGT09T304M-LS-P	L	●	9.525	3.97	0.38	4.4
NEW★ DCGT070201M-LS-P	L	●	6.35	2.38	0.08	2.8
NEW★ DCGT070202M-LS-P	L	●	6.35	2.38	0.18	2.8
NEW★ DCGT070204M-LS-P	L	●	6.35	2.38	0.38	2.8
NEW★ DCGT11T301M-LS-P	L	●	9.525	3.97	0.08	4.4
NEW★ DCGT11T302M-LS-P	L	●	9.525	3.97	0.18	4.4
NEW★ DCGT11T304M-LS-P	L	●	9.525	3.97	0.38	4.4

* RE – Corner radius size is smaller than standard

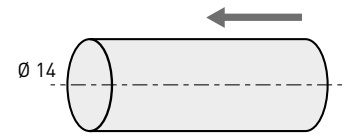
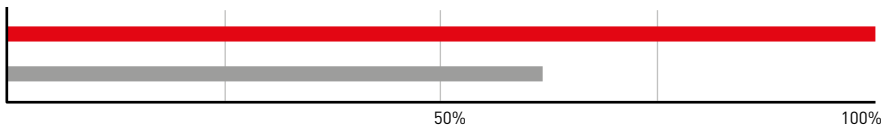
● : Inventory maintained. ★ : Inventory maintained in Japan.

RECOMMENDED CUTTING CONDITIONS

Material	Grade	Vc	f
P Carbon Steel - Alloy Steel Pure Iron - Free Cutting Steel	MS6015	100 (50—150)	0.08 (0.01—0.15)
		150 (50—250)	0.08 (0.01—0.15)
M Stainless Steels	MS6015	80 (50—120)	0.06 (0.02—0.1)

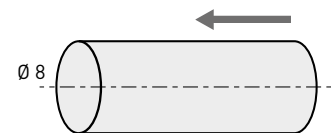
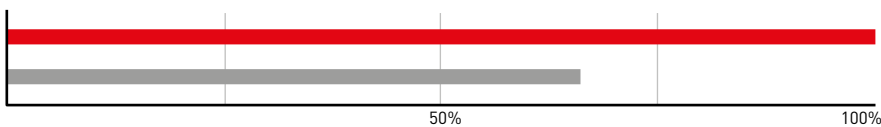
APPLICATION EXAMPLES

Insert	DCGT11T302M-SMG (MS6015)
Workpiece Material	Pure Iron (JIS SUr)
Cutting mode	External, Continuous
Cutting Speed Vc (m/min)	197 (4500min ⁻¹)
Feed f (mm/rev)	0.1
Depth of Cut ap (mm)	0.1
Coolant	Wet cutting (oil)
Result	Number of work pieces: 500



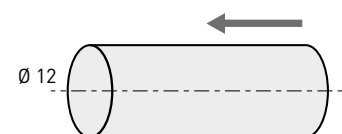
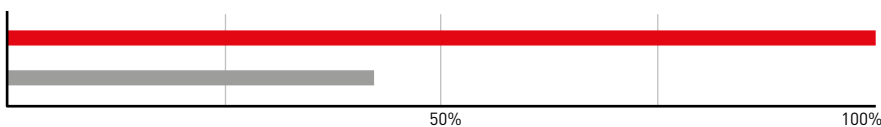
An excellent finished surface and 1.4x longer tool life compared with conventional products. Stability and good chip discharge management with the SMG breaker.

Insert	DCGT11T301MR-SN (MS6015)
Workpiece Material	Free Cutting Steels (JIS SUM24L)
Cutting mode	External, Continuous
Cutting Speed Vc (m/min)	125 (5000min ⁻¹)
Feed f (mm/rev)	0.05
Depth of Cut ap (mm)	0.3
Coolant	Wet cutting (oil)
Result	Number of work pieces: 3000



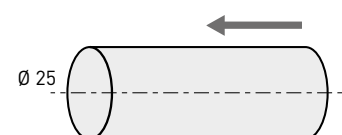
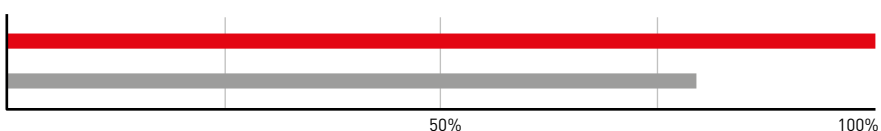
MS6015 shows minimal chip welding and maintains dimensional accuracy.

Insert	DCGT11T302MR-SN (MS6015)
Workpiece Material	Carbon Steel (DIN Ck45)
Cutting mode	External, Continuous
Cutting Speed Vc (m/min)	113 (3000min ⁻¹)
Feed f (mm/rev)	0.03
Depth of Cut ap (mm)	1.0
Coolant	Wet cutting (oil)
Result	Number of work pieces: 1100



MS6015 has superior wear resistance and achieves 2x longer life compared to conventional products.

Insert	DCGT11T302M-SMG (MS6015)
Workpiece Material	Mild Steel (DIN Ck15)
Cutting mode	External, Continuous
Cutting Speed Vc (m/min)	100 (1300min ⁻¹)
Feed f (mm/rev)	0.12
Depth of Cut ap (mm)	1.3
Coolant	Wet cutting (oil)
Result	Number of work pieces: 500



MS6015 has superior welding resistance and achieves 1.3x longer life compared to conventional products.

■ : Mitsubishi Materials Tool ■ : Conventional Tool

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