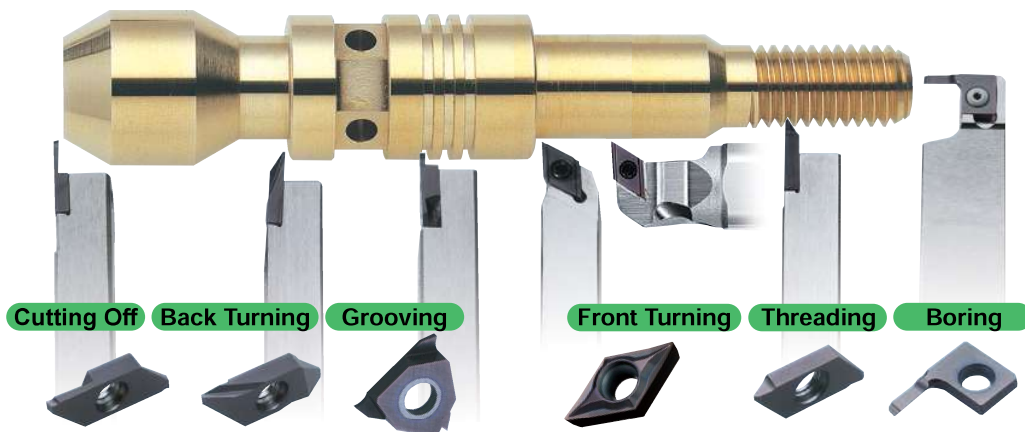


OUTLINE OF SMALL TOOLS

TOOLS FOR GANG TYPE AUTOMATIC LATHES (FOR EXTERNAL TURNING AND BORING)

D

SMALL TOOLS



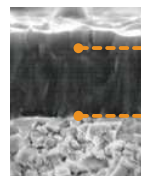
PVD Coated Cemented Carbide Grade for Carbon Steel

MS6015 NEW

Skilled at pure iron, carbon steel and free cutting steel turning and achieving implemented stable finished surfaces and excellent dimensional accuracy.

	MS6015	Conventional
Coating	TiCN multilayer	TiAlN
Hardness (HV)	3,000	2,800
Wear Coefficient (Carbon Steel)	Low	High
Base Material Hardness (HRA)	92.0	92.0
T.R.S (GPa)	2.0	2.0

Ti-C-N Multilayer Coating



Superior wear and welding resistance and demonstrating the best possible results for carbon steel.

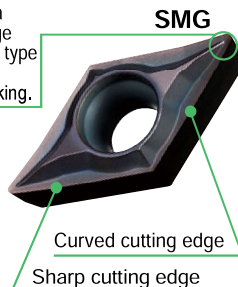
Minute multilayers remarkably improve welding.

● Moulded breaker insert

Nose radii designed with minus tolerance

- Suitable for small parts applications that often require minus tolerance dimensions.
- The order number is shown with the letter "M" that indicates minus tolerance. ex) DCGT11T301M-FS
- The radius value is printed on the side of the insert label for easy recognition.

A combination of a curved cutting edge and the protrusion type breaker promotes efficient chip breaking.



SMG

FS

FS-P

● Tolerance Corner R



E class
RE $0_{-0.02}$ mm

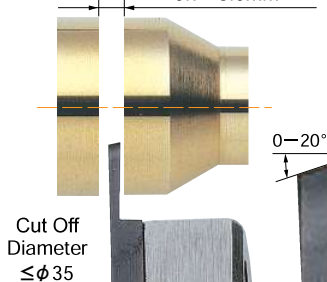


The letter "M" insert
RE $0_{-0.05}$ mm

(Conventional G-class insert)
RE ± 0.10 mm

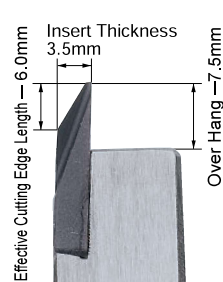
● Cutting Off

Cutting Edge Width
0.7–3.0mm



Cut Off
Diameter
 $\leq \phi 35$

● Back Turning



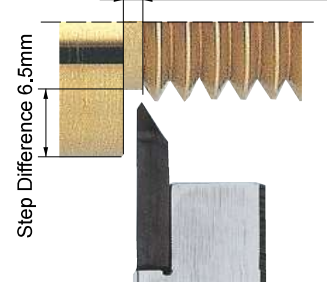
Inserts for
Moulded Back Turning

SMB Breaker
NEW

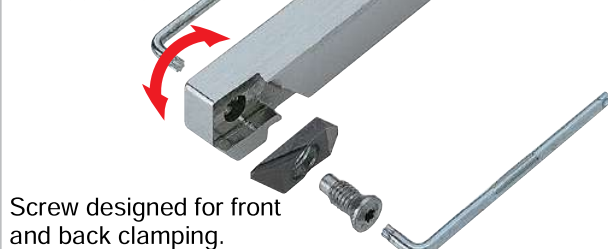


● Threading

Can machine to the
end face



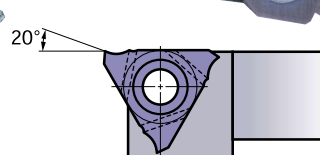
● Back Clamping Mechanism



Screw designed for front
and back clamping.

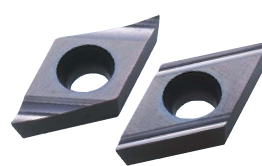
● Grooving

- 3-cornered
- Groove width 0.3–3.0mm
- Traversing possible



● Front Turning

- ISO E class accuracy inserts
- A wide variety of small corner R inserts
- Rake angle 30°



Tools for a very wide range of small parts machining

External Turning	Tools for front turning, back turning, grooving, threading, and cutting off
Internal Turning	Tools for boring, internal grooving and internal threading
Drilling	Drills
End Milling	End Mills

Tools for CNC automatic and small lathes

Types of Tool Posts	Gang type, turret type, cam type (radial pattern type)
Tool Sizes	Square shank: 8–16 mm Round shank : less than $\phi 25.4$

Indexable inserts developed under the concept of "high quality, high efficiency and long tool life."

High Quality	E class tolerance, sharp cutting edge, high accuracy small corner R, smooth surface finish
Long Tool Life	PVD coating MS6015/VP15TF/MP9005/MP9015
High Efficiency	Regrinding not necessary due to the employment of indexable inserts. A wide variety of top cutting edge geometries

INTERNAL TURNING TOOLS

Solid type **MICRO-MINI TWIN Boring Bars**

Boring
Grooving
Threading

Round Shank

Square Shank

Minimum cutting diameter $\phi 2.2$ –

MICRO-DEX Boring Bars

Minimum cutting diameter $\phi 5.0$ –



Minimum cutting diameter $\phi 10.0$ –

DIMPLE BAR

TOOLS FOR CAM TYPE AUTOMATIC LATHES

- The most suitable for the use with cam type automatic lathes (radial pattern tool posts)
- The most suitable for machining of small parts with work diameter 5mm or smaller
- Single holder for front turning, back turning, grooving, threading and cutting off operations



D

SMALL TOOLS

DRILLING TOOLS

Violet Coated Precision Drills

VAPDS/VAPDM (General)
VAPDSSUS/VAPDMSUS (For stainless steel)
VAPDSCB (For counter boring)

Micro Solid Carbide Drills

MSE Drills
MSE/MSP (Centre Drills)

Solid Carbide Drill

MVS/MVE

Solid Carbide Flat Bottom Drills

MFE **NEW**

Solid Carbide Drills for Centreing and Chamfering

DLE **NEW**

Solid Gun Drill

Micro Solid Carbide Gun Drill with through coolant holes
MGS

END MILLING TOOLS

Solid Carbide End Mill

MSTAR End Mill Series

Vibration Control End Mills for Machining Difficult-to-Cut Materials

SMART MIRACLE End Mill Series



CLASSIFICATION OF EXTERNAL TURNING TOOLS

GANG TYPE TOOL POSTS

● FRONT TURNING

Name of Tool Holder	Shank Size (mm) (H x W x L)	Geometry
SCAC-SM ➡ D008	8 x 8 x 125 10 x 10 x 125 12 x 12 x 150 16 x 16 x 150	90° KAPR
SCLC-SM ➡ D008	8 x 8 x 125 10 x 10 x 125 12 x 12 x 150 16 x 16 x 150	95° KAPR
SDJC-SM ➡ D009	8 x 8 x 125 10 x 10 x 125 12 x 12 x 150 16 x 16 x 150	93° KAPR
SDNC-SM ➡ D009	8 x 8 x 125 10 x 10 x 125 12 x 12 x 150 16 x 16 x 150	62.5° KAPR
SVLP-SM ➡ D010	10 x 10 x 125 12 x 12 x 150 16 x 16 x 150	95° KAPR
SVJB-SM ➡ D010	10 x 10 x 125 12 x 12 x 150 16 x 16 x 150	93° KAPR
SVJC-SM NEW ➡ D011	10 x 10 x 120 12 x 12 x 120 16 x 16 x 120	93° KAPR
SVPP-SM ➡ D011	10 x 10 x 125 12 x 12 x 150 16 x 16 x 150	117.5° KAPR
SVVB-SM ➡ D011	10 x 10 x 125 12 x 12 x 150 16 x 16 x 150	72.5° KAPR

● BACK TURNING

Name of Tool Holder	Shank Size (mm) (H x W x L)	Geometry
BTBH (Insert Size 2.8, 3.5, 5.0mm) ➡ D012	8 x 10 x 120 10 x 10 x 120 12 x 12 x 120 16 x 16 x 120	
CTBH (Insert Size 4.5, 6.0mm) ➡ D013	10 x 10 x 120 12 x 12 x 120 16 x 16 x 120	
BTVH (Insert Size 7.5mm) ➡ D014	10 x 10 x 120 12 x 12 x 120 16 x 16 x 120	53° KAPR

● THREADING

Name of Tool Holder	Shank Size (mm) (H x W x L)	Geometry
TTAH ➡ D024	8 x 10 x 120 10 x 10 x 120 12 x 12 x 120 16 x 16 x 120	

● GROOVING

Name of Tool Holder	Shank Size (mm) (H x W x L)	Geometry
GTAH (Groove Width 0.3—3.0mm) ➡ D016	8 x 8 x 80 8 x 8 x 120 10 x 10 x 80 10 x 10 x 120 12 x 12 x 80 12 x 12 x 120 16 x 16 x 120	U Type E Type VT Type
GTBH (Groove Width 1.45—3.0mm) ➡ D016	10 x 10 x 80 10 x 10 x 120 12 x 12 x 120 16 x 16 x 120	U Type E Type VT Type
GTCH (Groove Width 2.5—3.0mm) ➡ D016	10 x 10 x 80 10 x 10 x 120	U Type E Type VT Type

● CUTTING OFF

Name of Tool Holder	Shank Size (mm) (H x W x L)	Geometry
CTAH (Max. Cut Off Diameter 12mm) ➡ D018	8 x 10 x 120 10 x 10 x 120 12 x 12 x 120 16 x 16 x 120	
CTAH-S (Max. Cut Off Diameter 12mm) ➡ D018	10 x 10 x 80	
CTBH (Max. Cut Off Diameter 16mm) ➡ D020	10 x 10 x 120 12 x 12 x 120 16 x 16 x 120	
CTCH (Max. Cut Off Diameter 20mm) ➡ D021	10 x 10 x 120 12 x 12 x 120	
CTDH (Max. Cut Off Diameter 23—35mm) ➡ D022	16 x 16 x 120 16 x 16 x 125	
CTEH (Max. Cut Off Diameter 23—35mm) ➡ D023	16 x 16 x 120 16 x 16 x 125	

OPPOSITE TOOL POSTS

● DIMPLE SLEEVE HOLDER

Name of Tool Holder	Shank Size (mm) (Shank Dia. x L)	Geometry
SH (Front Turning, Copying, Facing) ➡ D026	$\phi 15.875 \times 100$ $\phi 19.05 \times 125$ $\phi 20 \times 125$ $\phi 22 \times 125$ $\phi 25.4 \times 150$	

TURRET TYPE TOOL POSTS

● FRONT TURNING

Name of Tool Holder	Shank Size (mm) (H x W x L)	Geometry
DTGN ➡ C016	$16 \times 16 \times 100$ $20 \times 20 \times 125$ $25 \times 25 \times 150$	
MTJN ➡ C017	$20 \times 20 \times 125$ $25 \times 25 \times 150$	
PTGN ➡ C016	$10 \times 10 \times 70$ $12 \times 12 \times 80$ $16 \times 16 \times 100$ $20 \times 20 \times 125$ $25 \times 25 \times 150$	
SCLC ➡ C022	$8 \times 8 \times 60$ $10 \times 10 \times 70$ $12 \times 12 \times 80$ $16 \times 16 \times 100$	
SDJC ➡ C023	$10 \times 10 \times 70$ $12 \times 12 \times 80$ $16 \times 16 \times 100$	
SDNC ➡ C023	$8 \times 8 \times 60$ $10 \times 10 \times 70$ $12 \times 12 \times 80$ $16 \times 16 \times 100$	
SSSC ➡ C026	$12 \times 12 \times 80$ $16 \times 16 \times 100$	
STGC ➡ C027	$10 \times 10 \times 70$ $12 \times 12 \times 80$ $16 \times 16 \times 100$	
SVJC ➡ C028	$10 \times 10 \times 70$ $16 \times 16 \times 100$	
SVVC ➡ C028	$16 \times 16 \times 100$	

● THREADING

Name of Tool Holder	Shank Size (mm) (H x W x L)	Geometry
MMT ➡ G019	$12 \times 12 \times 100$ $16 \times 16 \times 100$ $20 \times 20 \times 125$ $25 \times 25 \times 150$ $32 \times 32 \times 170$	
SMGH ➡ G026	$10 \times 10 \times 70$ $12 \times 12 \times 80$ $16 \times 16 \times 100$	

● GROOVING

Name of Tool Holder	Shank Size (mm) (H x W x L)	Geometry
SMGH ➡ F118	$10 \times 10 \times 70$ $12 \times 12 \times 80$ $16 \times 16 \times 100$	

CAM TYPE TOOL POSTS

Name of Tool Holder	Shank Size (mm) (H x W x L)	Geometry
CSVH (Front Turning) ➡ D027	$7 \times 7 \times 140$ $8 \times 8 \times 140$ $9.5 \times 9.5 \times 140$ $10 \times 10 \times 140$ $12 \times 12 \times 140$	
CSVH (Front Turning Copying) ➡ D027	$7 \times 7 \times 140$ $8 \times 8 \times 140$ $9.5 \times 9.5 \times 140$ $10 \times 10 \times 140$ $12 \times 12 \times 140$	
CSVH (Back Turning) ➡ D027	$7 \times 7 \times 140$ $8 \times 8 \times 140$ $9.5 \times 9.5 \times 140$ $10 \times 10 \times 140$ $12 \times 12 \times 140$	
CSVH (Back Turning Copying) ➡ D027	$7 \times 7 \times 140$ $8 \times 8 \times 140$ $9.5 \times 9.5 \times 140$ $10 \times 10 \times 140$ $12 \times 12 \times 140$	
CSVH (Cutting Off) ➡ D027	$7 \times 7 \times 140$ $8 \times 8 \times 140$ $9.5 \times 9.5 \times 140$ $10 \times 10 \times 140$ $12 \times 12 \times 140$	
CSVH (Grooving) ➡ D027	$7 \times 7 \times 140$ $8 \times 8 \times 140$ $9.5 \times 9.5 \times 140$ $10 \times 10 \times 140$ $12 \times 12 \times 140$	
CSVH (Threading) ➡ D027	$7 \times 7 \times 140$ $8 \times 8 \times 140$ $9.5 \times 9.5 \times 140$ $10 \times 10 \times 140$ $12 \times 12 \times 140$	

D

SMALL TOOLS

CLASSIFICATION OF INTERNAL TURNING TOOLS (FOR GENERAL USE)

SMALL TOOLS

D

Product Name	Holder
For Gang Type Tool Posts D030	SBAH  Min. Cutting Diameter : 3mm
MICRO-MINI TWIN Boring Bars (Solid Carbide) E019	CB CR  Min. Cutting Diameter : 2.2mm
MICRO-MINI Boring Bars (Solid Carbide) E022	COFR-BLS  Min. Cutting Diameter : 3.2mm
MICRO-DEX Boring Bars (Carbide Shank) E016	SCLC  Min. Cutting Diameter : 5mm
MICRO-DEX Boring Bars (Carbide Shank) E017	STUC  Min. Cutting Diameter : 8mm
MICRO-DEX Boring Bars (Carbide Shank) E016	SWUB  Min. Cutting Diameter : 6mm
F type Bars (Steel Shank) E027	FSWL1  Min. Cutting Diameter : 5.8mm
F type Bars (Carbide Shank) E027	FSWL2  Min. Cutting Diameter : 5.8mm
DIMPLE BAR (Steel Shank) (Carbide Shank) E006	FSCLC/P FSCLC/P-E  Min. Cutting Diameter : 10mm

Product Name	Holder
DIMPLE BAR (Steel Shank) (Carbide Shank) E008	FSDUC FSDUC-E  Min. Cutting Diameter : 14mm
DIMPLE BAR (Steel Shank) (Carbide Shank) E009	FSDQC FSDQC-E  Min. Cutting Diameter : 13mm
DIMPLE BAR (Steel Shank) (Carbide Shank) E007	FSTUP FSTUP-E  Min. Cutting Diameter : 10mm
DIMPLE BAR (Steel Shank) E011	FSVUB/C  Min. Cutting Diameter : 16mm
DIMPLE BAR (Steel Shank) E011	FSVPB/C  Min. Cutting Diameter : 16mm
DIMPLE BAR (Steel Shank) E012	FSVJB/C  Min. Cutting Diameter : 16mm
DIMPLE BAR (Steel Shank) (Carbide Shank) E010	FSWUB/P FSWUB/P-E  Min. Cutting Diameter : 10mm