GTAH / GTBH / GTCH

SPECIAL SCREW DESIGNED FOR CLAMPING FROM THE FRONT OR THE BACK

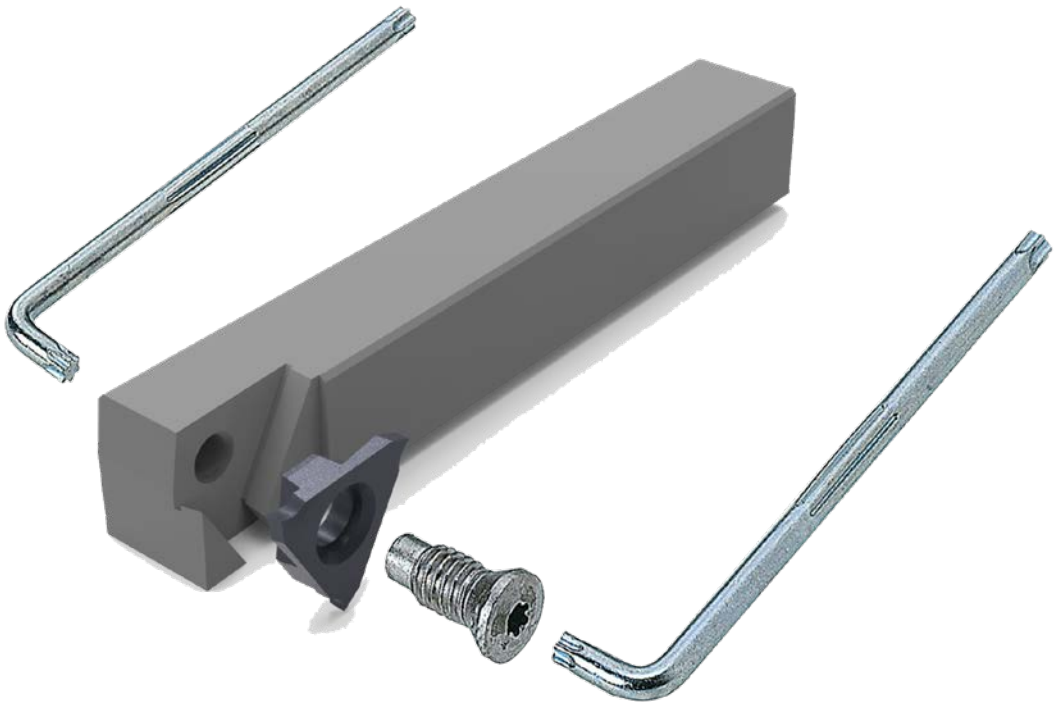
DIA EDGE

MITSUBISHI MATERIALS

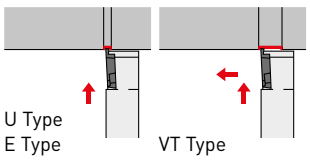
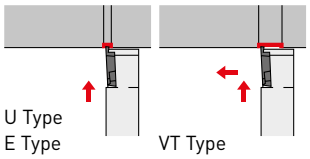
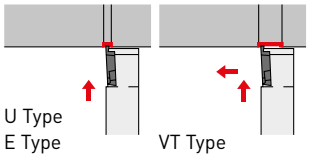
GTAH / GTBH / GTCH

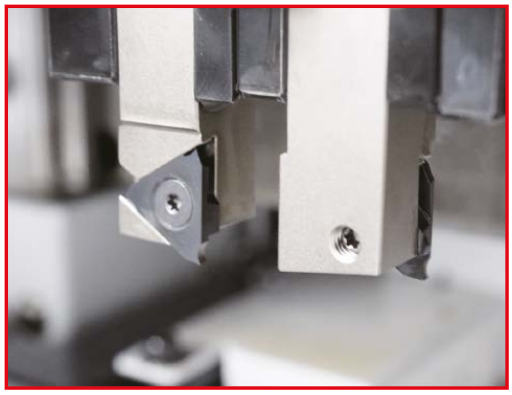
BACK CLAMPING MECHANISM

Even with gang type tool posts on Swiss automatic lathes, inserts can be changed quickly and accurately using the same wrench on both sides, improving machine operating efficiency.



GROOVING

Holder type	Shank size (mm) H x W x L	Geometry
GTAH (Groove width 0.3 – 3.0 mm)	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 – 3.0 mm)	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 – 3.0 mm)	10 x 10 x 80 10 x 10 x 120	 U Type E Type VT Type



NEW MT2015

CARBIDE GRADE (NON COATED)

Has the usual wear resistance of carbide but is also tough and therefore resists sudden fracturing.
Expected to extend the tool life when machining non-ferrous metals such as aluminium alloys.

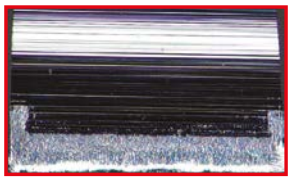
CUTTING PERFORMANCE

COMPARISON OF CUTTING EDGE DAMAGE : A6061

By suppressing damage to the cutting edge caused by chip welding, longer tool life can be expected.

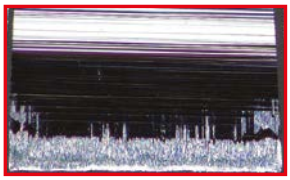
Material	A6061 Ø18 mm
Vc (m/min)	150
f (mm/rev)	0.04
Radial depth of cut (mm)	2.5
Cutting mode	Wet cutting

After 1 machining pass



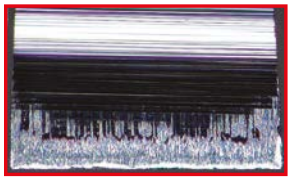
GTBT – MT2015

After 50 machining passes



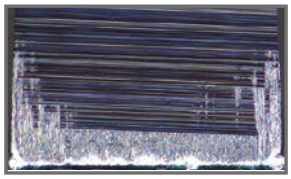
GTBT – MT2015

After 100 machining passes



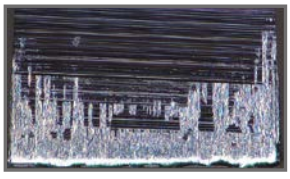
GTBT – MT2015

After 1 machining pass



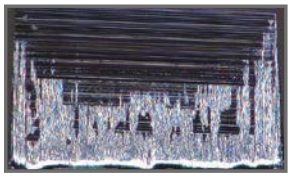
Conventional

After 50 machining passes



Conventional

After 100 machining passes



Conventional

VP15TF / VP15KZ

PVD COATED GRADES

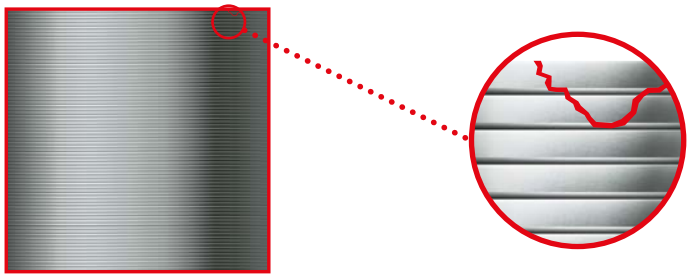
(Al,Ti)N coated grade with excellent heat resistance and adhesion strength.
Highly versatile and can be used in a variety of machining processes.

MS7025

DRAMATICALLY IMPROVED WELDING AND WEAR RESISTANCE IN LOW FEED MACHINING ENABLED BY A MORE PRECISE NANO-MULTILAYER COATING

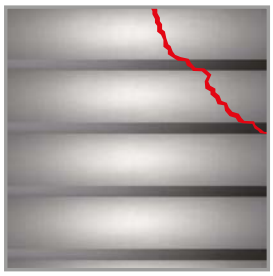
NANO-MULTILAYER COATING

By combining the high lubrication layer with excellent welding resistance, and the high hardness layer with a greater wear resistance that suppresses the progress of wear at the nano-level, the film damage is significantly reduced and the welding and wear resistance are dramatically improved.



Nano-multilayer coating

Enlarged image

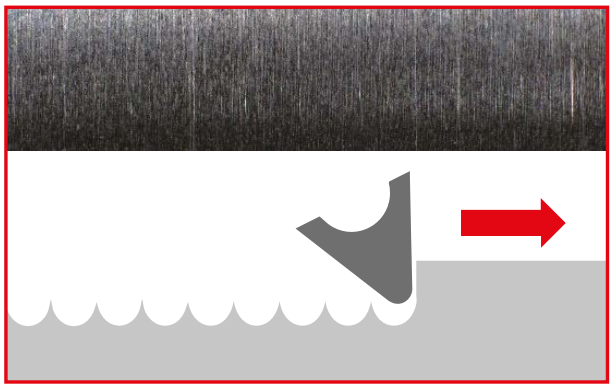


Conventional multilayer coating

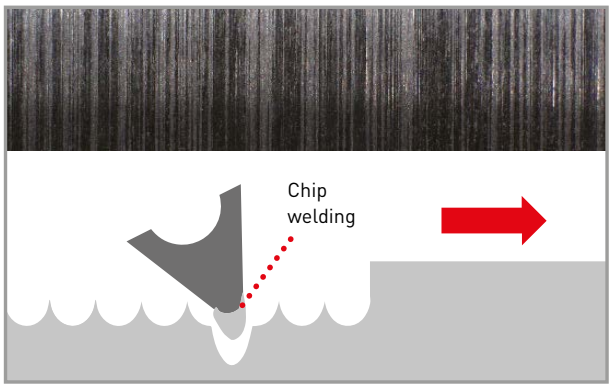
EFFECTS OF THE HIGH LUBRICATION LAYER

The nano-level, high lubrication layer suppresses built-up edge caused by chip welding which tends to occur in low feed machining and in addition reduces blemishes on the machined surface.

Surface Finish



MS7025



Conventional

MS7025 grade for stainless steel added to the series GTAH / GTBH / GTCH.

MS7025

CUTTING PERFORMANCE

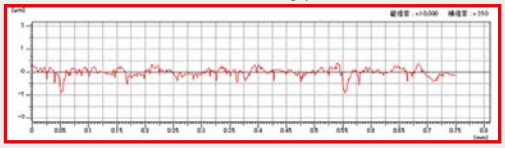
COMPARISON OF SURFACE ROUGHNESS AND CUTTING EDGE DAMAGE :
PURE IRON-BASED SOFT MAGNETIC MATERIALS

The surface roughness is excellent because damage caused by welding is suppressed. It also has excellent wear resistance.

SURFACE ROUGHNESS WITH FINISHING GROOVE BOTTOM DIAMETER 11 MM

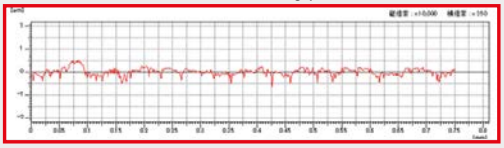
MS7025 achieves a good surface finish from the start of machining and maintains excellent consistency even after 100 passes.

After 50 machining passes



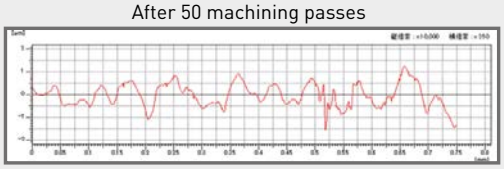
GTBT - MS7025

After 100 machining passes



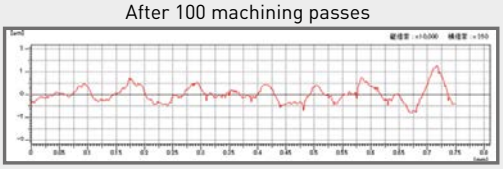
GTBT - MS7025

After 50 machining passes

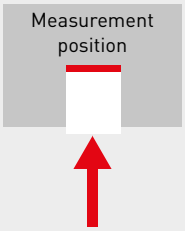


Conventional

After 100 machining passes



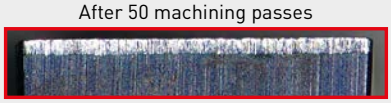
Conventional



CUTTING EDGE DAMAGE

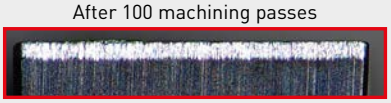
Material	Pure iron-based soft magnetic material Ø16 mm
Vc (m/min)	150
f (mm/rev)	0.04
Radial depth of cut (mm)	2.5
Cutting mode	Wet cutting

After 50 machining passes



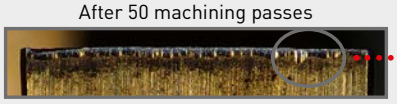
GTBT - MS7025

After 100 machining passes



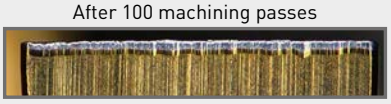
GTBT - MS7025

After 50 machining passes



Conventional
Chipping occurred due to welding.

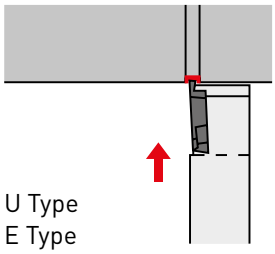
After 100 machining passes



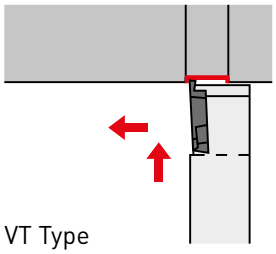
Conventional

GTAH / GTBH / GTCH

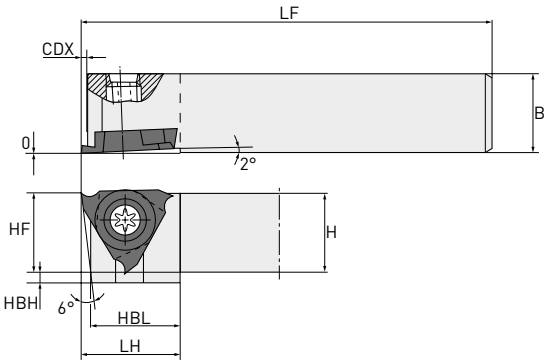
EXTERNAL GROOVING



U Type
E Type



VT Type



Right hand tool holder shown.

Order number	Stock		H	B	HF	LF	CDX*	LH	HBH	HBL	Cutting width		Insert
	R	L									min.	max.	
GTAHR/L0808-20S	●	●	8	8	8	80	2	15	5	12.9	0.3	3.0	GTAT GTBT* GTCT*
GTAHR/L0808-20	●	●	8	8	8	120	2	15	5	12.9	0.3	3.0	
GTAHR/L1010-20S	●	●	10	10	10	80	2	15	3	12.9	0.3	3.0	
GTAHR/L1010-20	●	●	10	10	10	120	2	15	3	12.9	0.3	3.0	
GTAHR/L1212-20S	●	●	12	12	12	80	2	15	1	12.9	0.3	3.0	
GTAHR/L1212-20	●	●	12	12	12	120	2	15	1	12.9	0.3	3.0	
GTAHR/L1616-20	●	●	16	16	16	120	2	15	—	12.9	0.3	3.0	
GTBHR/L1010-30S	●	●	10	10	10	80	3	15	3	13.4	1.45	3.0	GTBT GTCT
GTBHR/L1010-30	●	●	10	10	10	120	3	15	3	13.4	1.45	3.0	
GTBHR/L1212-30	●	●	12	12	12	120	3	15	1	13.4	1.45	3.0	
GTBHR/L1616-30	●	●	16	16	16	120	3	15	—	13.4	1.45	3.0	
GTCHR/L1010-30S	●	●	10	10	10	80	3	15	3	13.4	2.5	3.0	GTCT
GTCHR/L1010-30	●	●	10	10	10	120	3	15	3	13.4	2.5	3.0	

1/1

(Each case contains 5 inserts. Blank inserts are packed in 10 per case.)

10 Vc

* It is not possible to machine depths over CDX dimensions (Max. Groove depth).
For the actual maximum depth that can be machined, only check the CDX of the insert.

1. Please use right hand inserts for right hand holders and left hand inserts for left hand holders.

SPARE PARTS

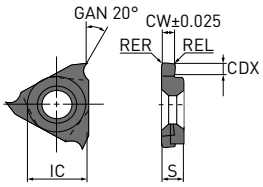
		
Clamp screw	**Clamp torque (Nm)**	**Wrench**
NS404W	1.0	NKY15S

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

GTAH / GTBH / GTCH

INSERTS

Order number	Hand	NEW MS7025	VP15TF	VP15KZ	NEW MT2015	TF15	CW	CDX*	RER/L	IC	S	Geometry *Right hand insert shown.*
GTAT03306V3R-E	R		●				0.33	0.27	0.03	9.525	3.18	
GTAT03306V3L-E	L		★				0.33	0.27	0.03	9.525	3.18	E Type (Ring processing grooving)
GTAT04312V3R-E	R		●				0.43	0.9	0.03	9.525	3.18	
GTAT04312V3L-E	L		★				0.43	0.9	0.03	9.525	3.18	
GTAT05312V5R-E	R		●				0.53	0.9	0.05	9.525	3.18	
GTAT05312V5L-E	L		★				0.53	0.9	0.05	9.525	3.18	
GTAT07520V5R-E	R		●				0.75	1.8	0.05	9.525	3.18	
GTAT07520V5L-E	L		★				0.75	1.8	0.05	9.525	3.18	
GTAT09520V5R-E	R		●				0.95	1.8	0.05	9.525	3.18	
GTAT09520V5L-E	L		★				0.95	1.8	0.05	9.525	3.18	
GTAT10020V5R-E	R		●				1.00	1.8	0.05	9.525	3.18	
GTAT10020V5L-E	L		★				1.00	1.8	0.05	9.525	3.18	
GTAT1002001R-E	R		●				1.00	1.8	0.1	9.525	3.18	
GTAT1002001L-E	L		★				1.00	1.8	0.1	9.525	3.18	
GTAT12020V5R-E	R		●				1.20	1.8	0.05	9.525	3.18	
GTAT12020V5L-E	L		★				1.20	1.8	0.05	9.525	3.18	
GTAT1202001R-E	R		●				1.20	1.8	0.1	9.525	3.18	
GTAT1202001L-E	L		★				1.20	1.8	0.1	9.525	3.18	
GTAT14020V5R-E	R		●				1.40	1.8	0.05	9.525	3.18	
GTAT14020V5L-E	L		★				1.40	1.8	0.05	9.525	3.18	
NEW GTBT14530V5R-E	R	●			●		1.45	2.8	0.05	9.525	3.18	
NEW GTBT14530V5L-E	L	●			●		1.45	2.8	0.05	9.525	3.18	
GTBT15030V5R-E	R	●	●		●		1.50	2.8	0.05	9.525	3.18	
GTBT15030V5L-E	L	●	★		●		1.50	2.8	0.05	9.525	3.18	
GTBT1503001R-E	R		●				1.50	2.8	0.1	9.525	3.18	
GTBT1503001L-E	L		★				1.50	2.8	0.1	9.525	3.18	
NEW GTBT17030V5R-E	R	●			●		1.70	2.8	0.05	9.525	3.18	
NEW GTBT17030V5L-E	L	●			●		1.70	2.8	0.05	9.525	3.18	
NEW GTBT17530V5R-E	R	●			●		1.75	2.8	0.05	9.525	3.18	
NEW GTBT17530V5L-E	L	●			●		1.75	2.8	0.05	9.525	3.18	
GTBT18030V5R-E	R	●	●		●		1.80	2.8	0.05	9.525	3.18	
GTBT18030V5L-E	L	●	★		●		1.80	2.8	0.05	9.525	3.18	
GTBT20030V5R-E	R	●	●		●		2.00	2.8	0.05	9.525	3.18	
GTBT20030V5L-E	L	●	★		●		2.00	2.8	0.05	9.525	3.18	
GTBT2003001R-E	R	●	●				2.00	2.8	0.1	9.525	3.18	
GTBT2003001L-E	L	●	★				2.00	2.8	0.1	9.525	3.18	
GTBT22530V5R-E	R	●	●		●		2.25	2.8	0.05	9.525	3.18	
GTBT22530V5L-E	L	●	★		●		2.25	2.8	0.05	9.525	3.18	



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* CDX is a value that assumes the machining diameter of Ø 42 or less.
Please note that the maximum machining depth is limited by the holder used.

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

GTAH / GTBH / GTCH – INSERTS

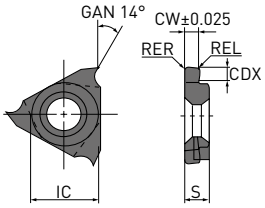
	Order number	Hand	NEW MS7025	VP15TF	VP15KZ	NEW MT2015	TF15	CW	CDX*	RER/L	IC	S	Geometry *Right hand insert shown.*
NEW	GTBT2253001R-E	R	●					2.25	2.8	0.1	9.525	3.18	
NEW	GTBT2253001L-E	L	●					2.25	2.8	0.1	9.525	3.18	E Type (Ring processing grooving)
	GTCT25030V5R-E	R	●	★		●		2.50	2.8	0.05	9.525	3.18	
	GTCT25030V5L-E	L	●	★		●		2.50	2.8	0.05	9.525	3.18	
NEW	GTCT2503001R-E	R	●					2.50	2.8	0.1	9.525	3.18	
NEW	GTCT2503001L-E	L	●					2.50	2.8	0.1	9.525	3.18	
	GTCT27530V5R-E	R	●	★		●		2.75	2.8	0.05	9.525	3.18	
	GTCT27530V5L-E	L	●	★		●		2.75	2.8	0.05	9.525	3.18	
	GTCT30030V5R-E	R	●	★		●		3.00	2.8	0.05	9.525	3.18	
	GTCT30030V5L-E	L	●	★		●		3.00	2.8	0.05	9.525	3.18	
NEW	GTCT3003001R-E	R	●					3.00	2.8	0.1	9.525	3.18	
NEW	GTCT3003001L-E	L	●					3.00	2.8	0.1	9.525	3.18	
	GTAT03006V3R-U	R		●				0.30	0.27	0.03	9.525	3.18	
	GTAT03006V3L-U	L		★				0.30	0.27	0.03	9.525	3.18	U Type (General purpose grooving)
	GTAT05012V5R-U	R		●				0.50	0.9	0.05	9.525	3.18	
	GTAT05012V5L-U	L		★				0.50	0.9	0.05	9.525	3.18	
	GTAT07520V5R-U	R		●				0.75	1.8	0.05	9.525	3.18	
	GTAT07520V5L-U	L		★				0.75	1.8	0.05	9.525	3.18	
	GTAT09520V5R-U	R		●				0.95	1.8	0.05	9.525	3.18	
	GTAT09520V5L-U	L		★				0.95	1.8	0.05	9.525	3.18	
	GTAT10020V5R-U	R		●				1.00	1.8	0.05	9.525	3.18	
	GTAT10020V5L-U	L		★				1.00	1.8	0.05	9.525	3.18	
	GTAT10320V5R-U	R		●				1.03	1.8	0.05	9.525	3.18	
	GTAT12520V5R-U	R		●				1.25	1.8	0.05	9.525	3.18	
	GTAT12520V5L-U	L		★				1.25	1.8	0.05	9.525	3.18	
	GTBT14530V5R-U	R	●	●		●		1.45	2.8	0.05	9.525	3.18	
	GTBT14530V5L-U	L	●	★		●		1.45	2.8	0.05	9.525	3.18	
	GTBT15030V5R-U	R	●	●		●		1.50	2.8	0.05	9.525	3.18	
	GTBT15030V5L-U	L	●	★		●		1.50	2.8	0.05	9.525	3.18	
	GTBT17530V5R-U	R	●	●		●		1.75	2.8	0.05	9.525	3.18	
	GTBT17530V5L-U	L	●	★		●		1.75	2.8	0.05	9.525	3.18	
	GTBT20030V5R-U	R	●	●		●		2.00	2.8	0.05	9.525	3.18	
	GTBT20030V5L-U	L	●	★		●		2.00	2.8	0.05	9.525	3.18	
	GTCT25030V5R-U	R	●	★		●		2.50	2.8	0.05	9.525	3.18	
	GTCT25030V5L-U	L	●	★		●		2.50	2.8	0.05	9.525	3.18	

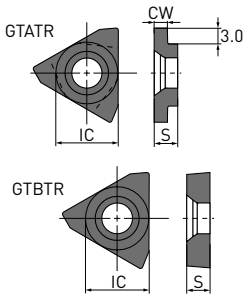
* CDX is a value that assumes the machining diameter of Ø42 or less.
Please note that the maximum machining depth is limited by the holder used.

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

GTAH / GTBH / GTCH – INSERTS

Order number	Hand	NEW MS7025	VP15TF	VP15KZ	NEW MT2015	TF15	CW	CDX*	RER/L	IC	S	Geometry
GTAT0330600R-VT	R			●			0.33	0.25	0	9.525	3.18	
GTAT0431200R-VT	R			●			0.43	0.9	0	9.525	3.18	VT Type (Grooving, Side turning)
GTAT0532000R-VT	R			●			0.53	1.6	0	9.525	3.18	
GTAT0652000R-VT	R			●			0.65	1.6	0	9.525	3.18	
GTAT0752000R-VT	R			●			0.75	1.6	0	9.525	3.18	
GTAT0802000R-VT	R			●			0.80	1.6	0	9.525	3.18	
GTAT0852000R-VT	R			●			0.85	1.6	0	9.525	3.18	
GTAT0952000R-VT	R			●			0.95	1.6	0	9.525	3.18	
GTAT1002000R-VT	R			●			1.00	1.6	0	9.525	3.18	
GTAT1102000R-VT	R			●			1.10	1.6	0	9.525	3.18	
GTAT1202000R-VT	R			●			1.20	1.6	0	9.525	3.18	
GTAT1302000R-VT	R			●			1.30	1.6	0	9.525	3.18	
GTAT1402000R-VT	R			●			1.40	1.6	0	9.525	3.18	
GTBT1503000R-VT	R			●			1.50	2.7	0	9.525	3.18	
GTBT2003000R-VT	R			●			2.00	2.7	0	9.525	3.18	
GTATR	R					★	1.76	—	—	9.525	3.18	Blank
GTATL	L					★	1.76	—	—	9.525	3.18	
GTBTR	R					★	—	—	—	9.525	3.18	
GTBTL	L					★	—	—	—	9.525	3.18	





Right hand insert shown.

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* CDX is a value that assumes the machining diameter of Ø 42 or less.
Please note that the maximum machining depth is limited by the holder used.

10 Vc

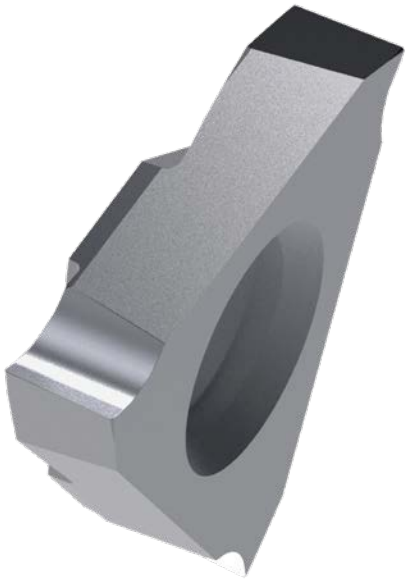
● : Inventory maintained. ★ : Inventory maintained in Japan.

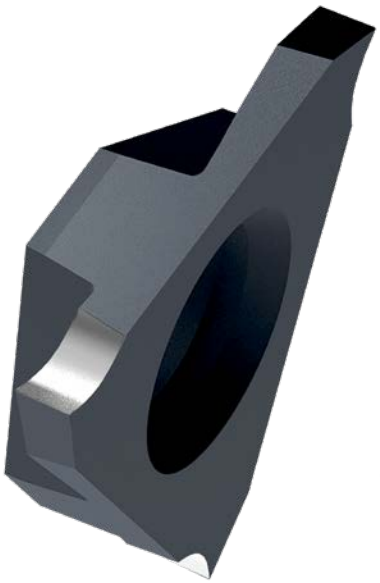
GTAH / GTBH / GTCH

RECOMMENDED CUTTING CONDITIONS

	Material	Hardness	Grade	Vc	f
P	Pure iron, Free cutting steel	—	MS7025, VP15TF	110 (30 – 180)	0.05 (0.01 – 0.09)
P	Carbon steel , Alloy steel	180HB – 280HB	MS7025, VP15TF	100 (50 – 150)	0.05 (0.02 – 0.09)
M	Stainless steel	≤200HB	MS7025	80 (50 – 120)	0.03 (0.02 – 0.05)
N	Non-Ferrous metal	—	MT2015	150 (70 – 230)	0.07 (0.03 – 0.11)

1/1





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