

Tools for Small Part Machining

Series
Expansion



PVD Coated Cemented Carbide Grade for Carbon Steels

MS6015

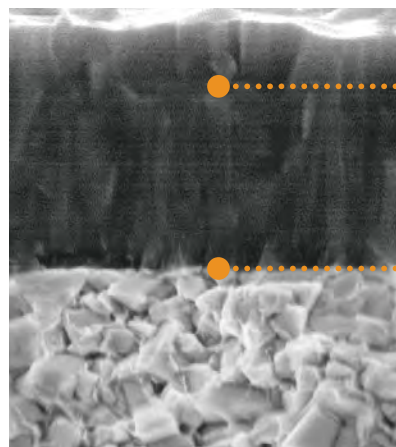
Designed for performance in irons, carbon steels, and free cutting steels.

Features 1

A fine grain carbide substrate and a new PVD coating that greatly improves wear resistance.

	MS6015	Conventional
Coating	TiCN Multilayer	TiAlN
Hardness (HV)	3000	2800
Wear Coefficient (Carbon Steels)	Low	High
Base Material Hardness (HRA)	92.0	92.0
T.R.S (GPa)	2.0	2.0

Ti-C-N Multilayer Coating



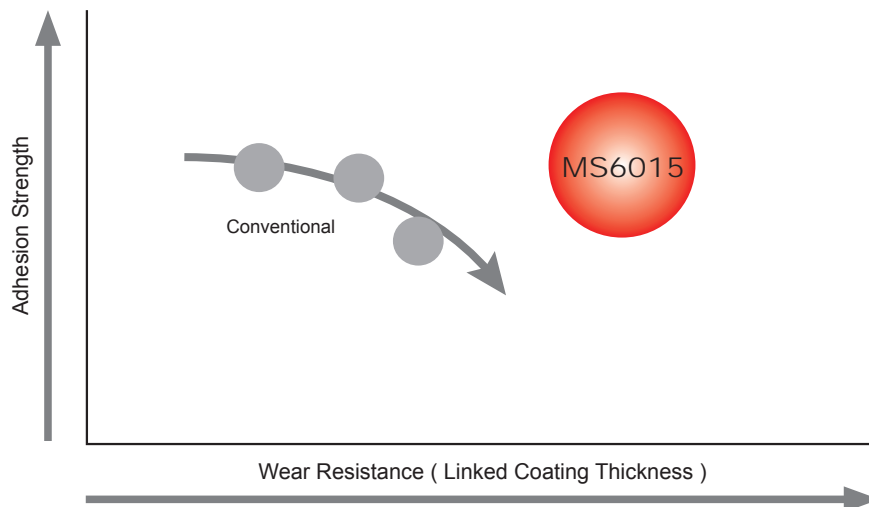
Superior wear and welding resistance and demonstrating the best possible results for carbon steels.

Minute multilayers remarkably improve welding.

Extremely smooth PVD coating means excellent chip evacuation resulting in good wall surface finish and long tool life.

Optimizing the Laminated Structure

Optimizing the laminated structure enables the thickening of coating which leads to significant wear resistance.

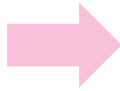


Features 2

Set the corner radius to a minus tolerance.

Order Number

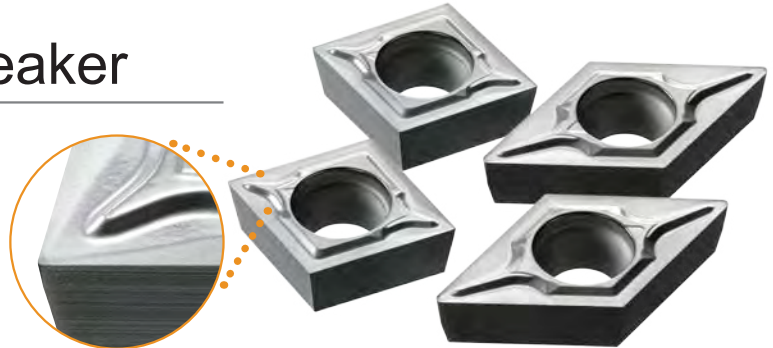
DCGT32.5 0.5 M RSN
DCGT32.5 1 M SMG



0.5M R.007 inch (R.006 – R.008 inch)
1M R.015 inch (R.014 – R.016 inch)

Light Cutting LS-P Breaker

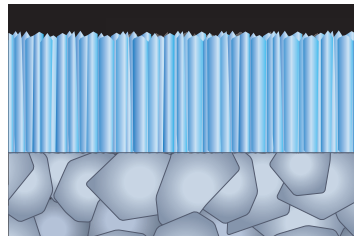
Surface treatment before coating drastically improves welding resistance extending tool life.



By flattening the substrate surface, the coating particles crystals form straightly, leading to stable cutting and welding prevention.

*Graphical Representation.

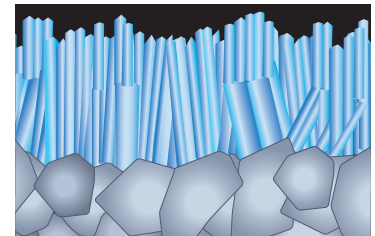
LS-P Breaker



Flat Substrate Surface

Coating layer forms straightly.
Coating surface is smooth and prevents welding.

Conventional



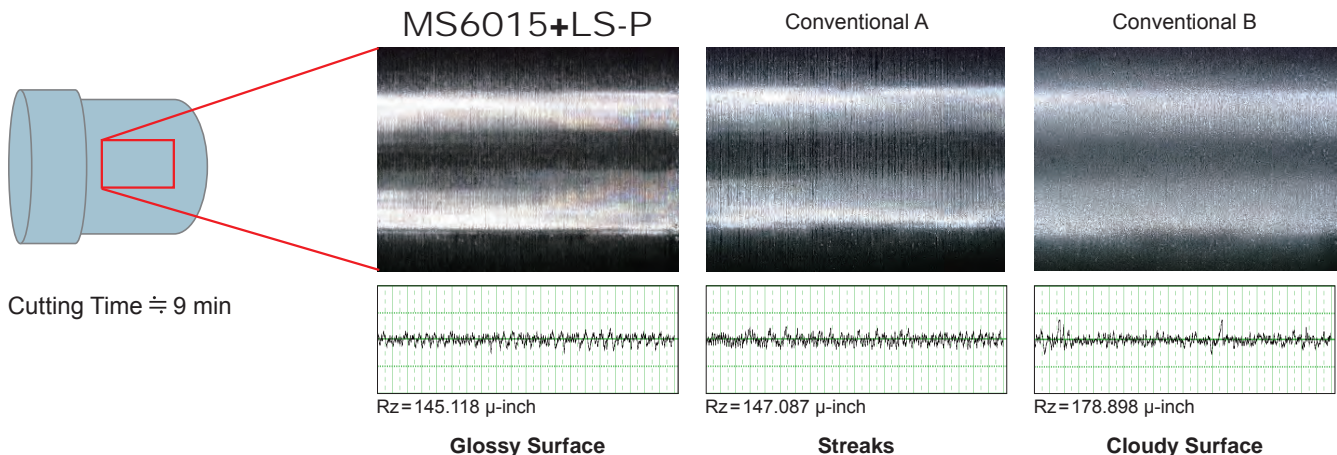
Uneven Substrate Surface

Coating layer forms irregularly.
Low cutting performance due to voids and defects.

Cutting Performance

Surface Roughness in Soft Magnetic Iron Cutting

High quality worked surface preventing cloudiness.



Cutting Time ≐ 9 min

<Cutting Conditions>

Workpiece Material : ELCH2
Insert : DCGT32.50.5MLS-P
Grade : MS6015
Cutting Speed : vc=330 SFM

Feed per Rev. : f=.001 IPR
Depth of Cut : ap=.020 inch
Cutting Mode : Wet Cutting (Water-insoluble)
Machine : Swiss Style Lathes

Pressed Insert for Back Turning

SMB Breaker

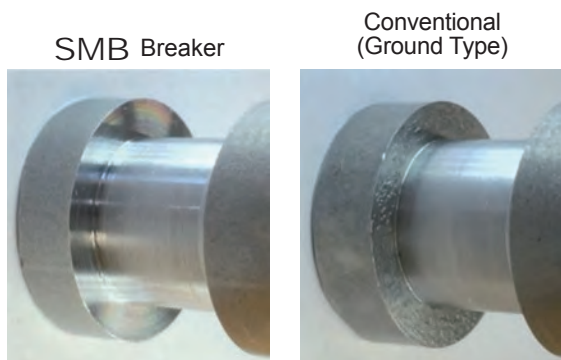
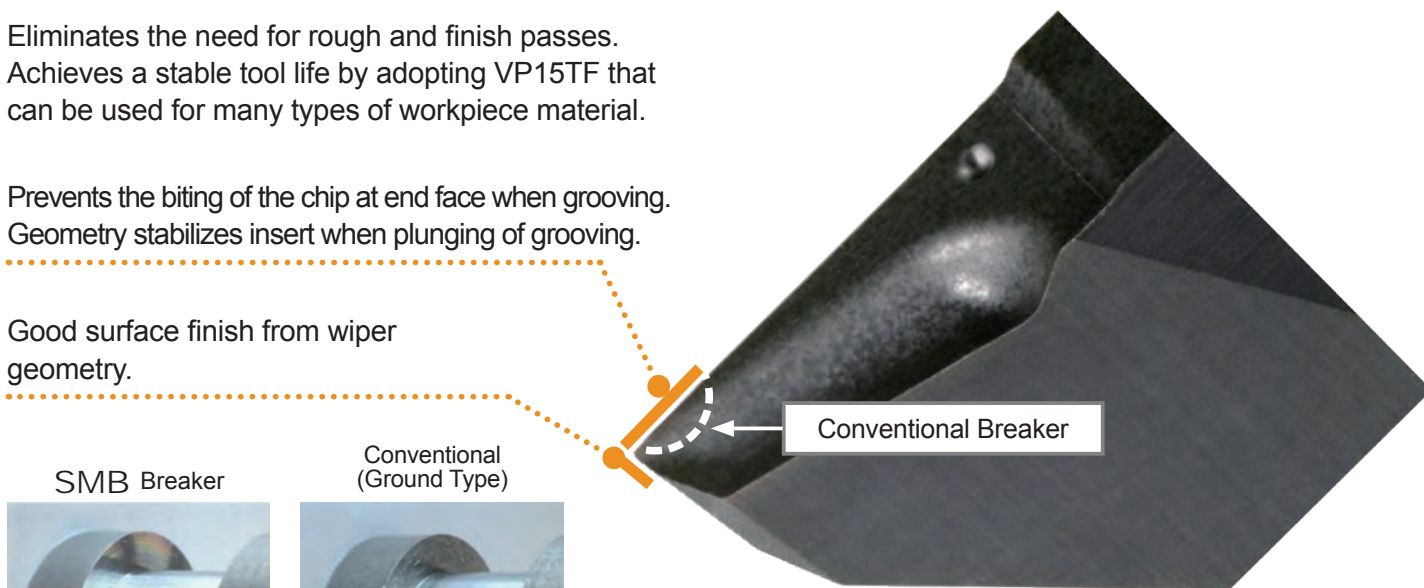
Outstanding surface finish in back turning applications from a pressed geometry.

Features

Eliminates the need for rough and finish passes.
Achieves a stable tool life by adopting VP15TF that can be used for many types of workpiece material.

Prevents the biting of the chip at end face when grooving.
Geometry stabilizes insert when plunging of grooving.

Good surface finish from wiper geometry.

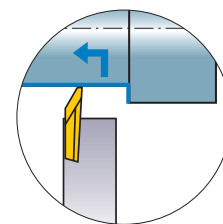
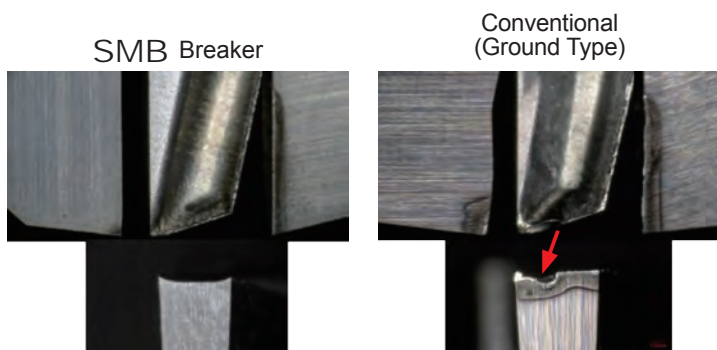


Set the Corner Radius to a Minus Tolerance
01M : R.0031" 02M : .0071"

<Cutting Conditions>
Workpiece Material : Low Carbon Steels
Inserts : BTAT723501MR-SMB
Grade : VP15TF
Cutting Speed : vc=330 SFM
Depth of Cut : ap=.098 inch
Feed (Grooving) : f=.0012 IPR
Feed (External) : f=.0016 IPR
Cutting Mode : Wet Cutting (Water-soluble)
Machine : Swiss Style Lathes

Cutting Performance

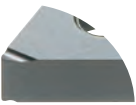
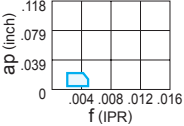
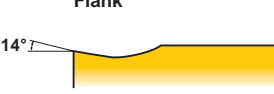
Superior wear resistance compared to ground inserts - even in difficult workpiece materials such as AISI 304SS.




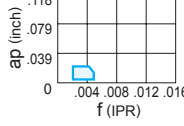
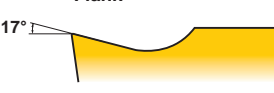

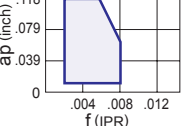


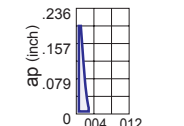


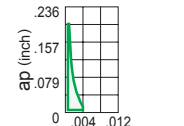


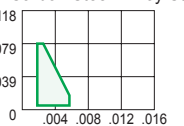
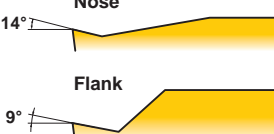
<Cutting Conditions>
Workpiece Material : AISI 304
Inserts : BTAT723501MR-SMB
Grade : VP15TF
Cutting Speed : vc=195 SFM
Depth of Cut : ap=.098 inch
Feed (Grooving) : f=.0008 IPR
Feed (External) : f=.0016 IPR
Number of Workpieces : 100 pieces
Cutting Mode : Wet Cutting (Water-insoluble)
Machine : Swiss Style Lathes

Breaker System

Negative Inserts

Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Finish Cutting	G	R/L-FS 	Precise Finishing Double-sided chip breaker. A narrow lead chip breaker for good chip control. Sharp cutting edge gives a good surface finish.	Carbon Steel • Alloy Steel  

Positive Inserts

Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Finish Cutting	G	R/L-F 	Finish Cutting of Swiss Style Lathes Lead chip breaker controls chip flow. Sharp cutting edge gives a good surface finish.	Carbon Steel • Alloy Steel  
		LS-P 	Light Cutting of Swiss Style Lathes Designed with parallel cutting edges. Achieves stable chip control over a wide range from low to medium depths of cut. Surface treatment before coating drastically improves welding resistance extending tool life.	Carbon Steel • Alloy Steel  
Light Cutting	G	R/L-SS 	Light Cutting of Swiss Style Lathes The parallel chip breaker. Excellent chip control at low feed rates.	Carbon Steel • Alloy Steel  
		R/L-SN 	Medium Cutting of Swiss Style Lathes The parallel chip breaker. Excellent chip control at low to medium feed rates.	Carbon Steel • Alloy Steel  
Medium Cutting	G	SMG 	Medium Cutting of Swiss Style Lathes 3D molded chip breaker provides good chip control. G class insert gives sharp cutting action, allowing high precision machining. Breaker geometry appropriate for copying and back turning.	Carbon Steel • Alloy Steel  

Recommended Cutting Conditions

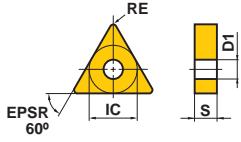
	Workpiece Material	Grade	Cutting Speed v_c (SFM)	Feed f (IPR)
P	Carbon Steels • Alloy Steels	MS6015	330 (165–490)	.0031 (.0004–.0059)
	Pure Irons • Free Cutting Steels		490 (165–820)	.0031 (.0004–.0059)
M	Stainless Steels	MS6015	260 (165–395)	.0024 (.0008–.0039)

MS6015

Negative Inserts (With Hole)


G Class

TNGG



RE : Set the corner radius to a minus tolerance. (inch)

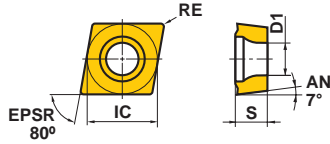
Order Number	Cutting Area	Stock		IC	S	RE	D1
		MS6015					
NEW TNGG330.5RFS	F	●		.375	.187	.008	.150
NEW TNGG330.5LFS	F	●		.375	.187	.008	.150
NEW TNGG331RFS	F	●		.375	.187	.016	.150
NEW TNGG331LFS	F	●		.375	.187	.016	.150
NEW TNGG332RFS	F	●		.375	.187	.031	.150
NEW TNGG332LFS	F	●		.375	.187	.031	.150

Finish		
R/L-FS		
		

7° Positive Inserts (With Hole)

G Class

CCGH
CCGT



Finish	Light	Light
R/L-F	LS-P	R/L-SS
Medium	Medium	
R/L-SN	SMG	

RE : Set the corner radius to a minus tolerance.

Order Number	Cutting Area	Stock		IC	S	RE	D1
		MS6015					
NEW CCGH21.50.5MRF	F	●		.250	.094	.008	.110
NEW CCGH21.50.5MLF	F	●		.250	.094	.008	.110
NEW CCGH21.51MRF	F	●		.250	.094	.016	.110
NEW CCGH21.51MLF	F	●		.250	.094	.016	.110
NEW CCGT03S101MR-F	F	●		.141*	.055	.004	.079
NEW CCGT03S101ML-F	F	●		.141*	.055	.004	.079
NEW CCGT03S102MR-F	F	●		.141*	.055	.008	.079
NEW CCGT03S102ML-F	F	●		.141*	.055	.008	.079
NEW CCGT03S104MR-F	F	●		.141*	.055	.016	.079
NEW CCGT03S104ML-F	F	●		.141*	.055	.016	.079
NEW CCGT04T001MR-F	F	●		.172*	.070	.004	.094
NEW CCGT04T001ML-F	F	●		.172*	.070	.004	.094
NEW CCGT04T002MR-F	F	●		.172*	.070	.008	.094
NEW CCGT04T002ML-F	F	●		.172*	.070	.008	.094
NEW CCGT04T004MR-F	F	●		.172*	.070	.016	.094
NEW CCGT04T004ML-F	F	●		.172*	.070	.016	.094
NEW CCGT21.50.2MLS-P	L	●		.250	.094	.004	.110
NEW CCGT21.50.5MLS-P	L	●		.250	.094	.008	.110
NEW CCGT32.50.2MLS-P	L	●		.375	.156	.004	.173
NEW CCGT32.50.5MLS-P	L	●		.375	.156	.008	.173
NEW CCGT32.51MLS-P	L	●		.375	.156	.016	.173
CCGT21.50.2MRSS	L	●		.250	.094	.004	.110
NEW CCGT21.50.2MLSS	L	●		.250	.094	.004	.110
CCGT21.50.5MRSS	L	●		.250	.094	.008	.110
NEW CCGT21.50.5MLSS	L	●		.250	.094	.008	.110
CCGT32.50.2MRSS	L	●		.375	.156	.004	.173
NEW CCGT32.50.2MLSS	L	●		.375	.156	.004	.173
CCGT32.50.5MRSS	L	●		.375	.156	.008	.173
NEW CCGT32.50.5MLSS	L	●		.375	.156	.008	.173
CCGT32.51MRSS	L	●		.375	.156	.016	.173
NEW CCGT32.51MLSS	L	●		.375	.156	.016	.173

* Diameter of inscribed circle is non-ISO standard. (For SCLC type)

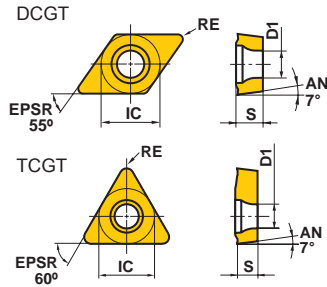
Order Number	Cutting Area	Stock		IC	S	RE	D1
		MS6015					
CCGT21.50.2MRSN	M	●		.250	.094	.004	.110
NEW CCGT21.50.2MLSN	M	●		.250	.094	.004	.110
CCGT21.50.5MRSN	M	●		.250	.094	.008	.110
NEW CCGT21.50.5MLSN	M	●		.250	.094	.008	.110
CCGT32.50.2MRSN	M	●		.375	.156	.004	.173
NEW CCGT32.50.2MLSN	M	●		.375	.156	.004	.173
CCGT32.50.5MRSN	M	●		.375	.156	.008	.173
NEW CCGT32.50.5MLSN	M	●		.375	.156	.008	.173
CCGT32.51MRSN	M	●		.375	.156	.016	.173
NEW CCGT32.51MLSN	M	●		.375	.156	.016	.173
CCGT21.50.2MSMG	M	●		.250	.094	.004	.110
CCGT21.50.5MSMG	M	●		.250	.094	.008	.110
CCGT21.51MSMG	M	●		.250	.094	.016	.110
CCGT32.50.2MSMG	M	●		.375	.156	.004	.173
CCGT32.50.5MSMG	M	●		.375	.156	.008	.173
CCGT32.51MSMG	M	●		.375	.156	.016	.173

(inch)

MS6015

7° Positive Inserts (With Hole)

G Class



RE : Set the corner radius to a minus tolerance.

Light	Light	Medium	Medium
LS-P	R/L-SS	R/L-SN	SMG
Finish			
R/L-F			

(inch)

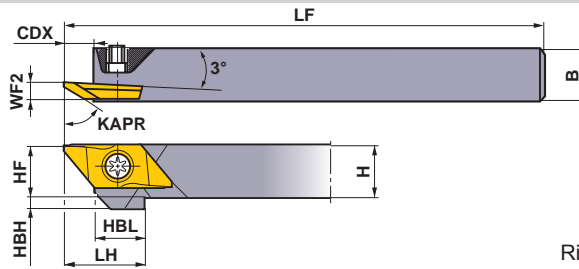
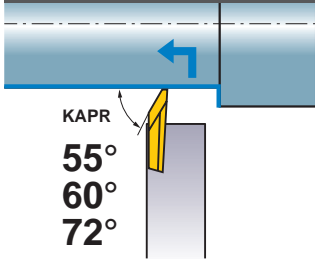
Order Number	Cutting Area	Stock		IC	S	RE	D1
		MS6015					
NEW DCGT21.50.2MLS-P	L	●		.250	.094	.004	.110
NEW DCGT21.50.5MLS-P	L	●		.250	.094	.008	.110
NEW DCGT21.51MLS-P	L	●		.250	.094	.016	.110
NEW DCGT32.50.2MLS-P	L	●		.375	.156	.004	.173
NEW DCGT32.50.5MLS-P	L	●		.375	.156	.008	.173
NEW DCGT32.51MLS-P	L	●		.375	.156	.016	.173
DCGT21.50.2MRSS	L	●		.250	.094	.004	.110
NEW DCGT21.50.2MLSS	L	●		.250	.094	.004	.110
DCGT21.50.5MRSS	L	●		.250	.094	.008	.110
NEW DCGT21.50.5MLSS	L	●		.250	.094	.008	.110
DCGT32.50.2MRSS	L	●		.375	.156	.004	.173
NEW DCGT32.50.2MLSS	L	●		.375	.156	.004	.173
DCGT32.50.5MRSS	L	●		.375	.156	.008	.173
NEW DCGT32.50.5MLSS	L	●		.375	.156	.008	.173
DCGT32.51MRSS	L	●		.375	.156	.016	.173
NEW DCGT32.51MLSS	L	●		.375	.156	.016	.173
DCGT21.50.2MRSN	M	●		.250	.094	.004	.110
NEW DCGT21.50.2MLSN	M	●		.250	.094	.004	.110
DCGT21.50.5MRSN	M	●		.250	.094	.008	.110
NEW DCGT21.50.5MLSN	M	●		.250	.094	.008	.110
DCGT32.50.2MRSN	M	●		.375	.156	.004	.173
NEW DCGT32.50.2MLSN	M	●		.375	.156	.004	.173
DCGT32.50.5MRSN	M	●		.375	.156	.008	.173
NEW DCGT32.50.5MLSN	M	●		.375	.156	.008	.173
DCGT32.51MRSN	M	●		.375	.156	.016	.173
NEW DCGT32.51MLSN	M	●		.375	.156	.016	.173
DCGT21.50.2MSMG	M	●		.250	.094	.004	.110
DCGT21.50.5MSMG	M	●		.250	.094	.008	.110
DCGT21.51MSMG	M	●		.250	.094	.016	.110
DCGT32.50.2MSMG	M	●		.375	.156	.004	.173
DCGT32.50.5MSMG	M	●		.375	.156	.008	.173
DCGT32.51MSMG	M	●		.375	.156	.016	.173

Order Number	Cutting Area	Stock		IC	S	RE	D1
		MS6015					
NEW TCGT1.210.2MRF	F	●		.156	.063	.004	.091
NEW TCGT1.210.2MLF	F	●		.156	.063	.004	.091
NEW TCGT1.210.5MRF	F	●		.156	.063	.008	.091
NEW TCGT1.210.5MLF	F	●		.156	.063	.008	.091
NEW TCGT1.211MRF	F	●		.156	.063	.016	.091
NEW TCGT1.211MLF	F	●		.156	.063	.016	.091

External Back Turning

Inch Standard

BTAH



Right hand tool holder shown.

Order Number	Stock		Insert Type	Dimensions (inch)								* Clamp Screw	Wrench		
	R	L		H	B	LF	LH	HF	WF2	HBH	HBL			CDX	
BTAHR/L-062	●	●	BTAT	5528○R/L-B	.375	.375	4.724	.591	.375	.138	.125	.374	.217	NS402W	NKY15S
BTAHR/L-082	●	●		6035○R/L-B	.500	.500	4.724	.591	.500	.138	—	.374	.217	NS403W	NKY15S
BTAHR/L-102	●	●		605000RX	.625	.625	4.724	.591	.625	.138	—	.374	.217	NS403W	NKY15S
				7235○R-SMB	.625	.625	4.724	.591	.625	.138	—	.374	.217	NS403W	NKY15S

Note 1) Please use right hand insert for right hand holder and left hand insert for left hand holder.

Note 2) Set the maximum depth of cut at under 60% of the effective cutting edge length (LE).

* Clamp Torque (lbf-in) : NS402W=6.2, NS403W=6.2

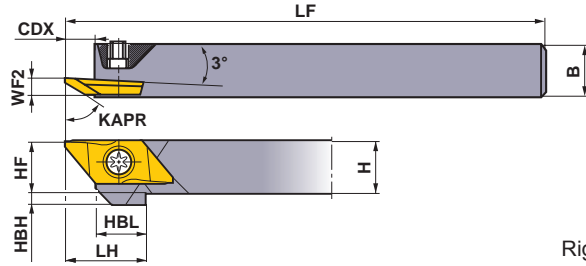
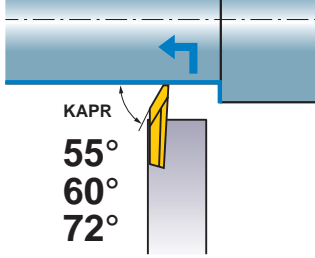
Inserts

(inch)

Order Number	Hand	Coated				Dimensions						LE*	Geometry
		VP15TF	MS6015	PSIRRL*	REL	CF	L	W1	CW	S			
NEW BTAT7235V5R-SMB	R	●		72°	.002	.012	.787	.315	.055	.098	.138	With Breaker	
NEW BTAT723501MR-SMB	R	●		72°	.003	.012	.787	.315	.055	.098	.138		
NEW BTAT723502MR-SMB	R	●		72°	.007	.012	.787	.315	.055	.098	.138		
BTAT552800R-B	R	●	●	55°	.000	.000	.787	.315	.020	.098	.110		
BTAT552800L-B	L	●		55°	.000	.000	.787	.315	.020	.098	.110		
BTAT552801R-B	R	●	●	55°	.004	.000	.787	.315	.020	.098	.110		
BTAT552801L-B	L	●		55°	.004	.000	.787	.315	.020	.098	.110		
BTAT603500R-B	R	●	●	60°	.000	.000	.787	.315	.020	.098	.138		
BTAT603500L-B	L	●		60°	.000	.000	.787	.315	.020	.098	.138		
NEW BTAT603501MR-B	R		●	60°	.003	.000	.787	.315	.020	.098	.138		
BTAT603501R-B	R	●	●	60°	.004	.000	.787	.315	.020	.098	.138		
BTAT603501L-B	L	●		60°	.004	.000	.787	.315	.020	.098	.138		
BTAT605000RX	R	●		60°	.000	.000	.787	.315	.049	.098	.197	Without Breaker	

* Numeric value set insert on holder.

BTAH



Right hand tool holder shown.

Order Number	Stock		Insert Type	Dimensions (mm)									* Clamp Screw	Wrench				
	R	L		H	B	LF	LH	HF	WF2	HBH	HBL	CDX						
BTahr/L0810-50	●	●	BTAT	5528	○	○	R/L-B	8	10	120	15	8	3.5	4	9.5	5.5	NS402W	NKY15S
BTahr/L1010-50	●	●		6035	○	○	R/L-B	10	10	120	15	10	3.5	2	9.5	5.5	NS402W	NKY15S
BTahr/L1212-50	●	●		605000RX				12	12	120	15	12	3.5	—	9.5	5.5	NS403W	NKY15S
BTahr/L1616-50	●	●		7235	○	○	R-SMB	16	16	120	15	16	3.5	—	9.5	5.5	NS403W	NKY15S

Note 1) Please use right hand insert for right hand holder and left hand insert for left hand holder.

Note 2) Set the maximum depth of cut at under 60% of the effective cutting edge length (LE).

* Clamp Torque (N · m) : NS402W=1.0, NS403W=1.0

Inserts

(mm)

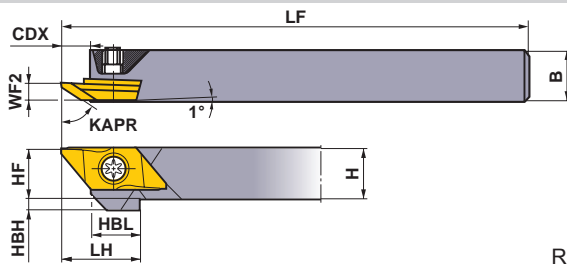
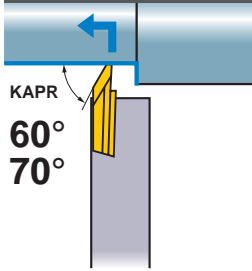
Order Number	Hand	Coated			Dimensions							LE*	Geometry
		VP15TF	MS6015	PSIRR/L*	REL	CF	L	W1	CW	S			
NEW BTAT7235V5R-SMB	R	●		72°	0.05	0.3	20	8	1.4	2.5	3.5	With Breaker 	
NEW BTAT723501MR-SMB	R	●		72°	0.08	0.3	20	8	1.4	2.5	3.5		
NEW BTAT723502MR-SMB	R	●		72°	0.18	0.3	20	8	1.4	2.5	3.5		
BTAT552800R-B	R	●	●	55°	0	0	20	8	0.5	2.5	2.8		
BTAT552800L-B	L	●		55°	0	0	20	8	0.5	2.5	2.8		
BTAT552801R-B	R	●	●	55°	0.1	0	20	8	0.5	2.5	2.8		
BTAT552801L-B	L	●		55°	0.1	0	20	8	0.5	2.5	2.8	SMB Type (Pressed Type) 	
BTAT603500R-B	R	●	●	60°	0	0	20	8	0.5	2.5	3.5		
BTAT603500L-B	L	●		60°	0	0	20	8	0.5	2.5	3.5		
NEW BTAT603501MR-B	R		●	60°	0.08	0	20	8	0.5	2.5	3.5	B Type (Ground Type) 	
BTAT603501R-B	R	●	●	60°	0.1	0	20	8	0.5	2.5	3.5		
BTAT603501L-B	L	●		60°	0.1	0	20	8	0.5	2.5	3.5		
BTAT605000RX	R	●		60°	0	0	20	8	1.25	2.5	5.0	Without Breaker 	

* Numeric value set insert on holder.

External Back Turning

Inch Standard

CTBH



Right hand tool holder shown.

Order Number	Stock		Insert Type	Dimensions (inch)								*				
	R	L		H	B	LF	LH	HF	WF2	HBH	HBL			CDX		
CTBHR/L-062	●	●	BTBT	60450	○R/L-B	.375	.375	4.724	.768	.375	.133	.125	.472	.295	NS402W	NKY15S
CTBHR/L-082	●	●		606000R/L	.500	.500	4.724	.768	.500	.133	—	.472	.295	NS403W	NKY15S	
CTBHR/L-102	●	●		7055	○R-SMB	.625	.625	4.724	.768	.625	.133	—	.472	.295	NS403W	NKY15S

Note 1) Please use right hand insert for right hand holder and left hand insert for left hand holder.

Note 2) Set the maximum depth of cut at under 60% of the effective cutting edge length (LE).

* Clamp Torque (lbf-in) : NS402W=6.2, NS403W=6.2

Inserts

(inch)

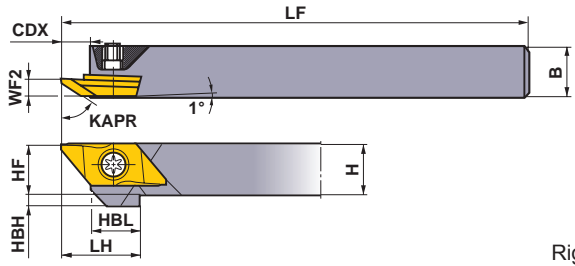
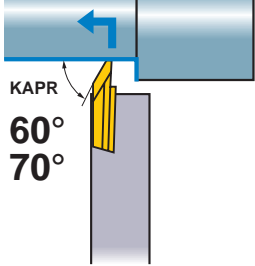
Order Number	Hand	Coated		Dimensions								LE*	Geometry
		VP15TF	MS6015	PSIRR/L*	REL	CF	L	W1	CW	S	CDX		
NEW BTBT7055V5R-SMB	R	●		70°	.002	.012	.984	.370	.053	.138	.256	.217	
NEW BTBT705501MR-SMB	R	●		70°	.003	.012	.984	.370	.053	.138	.256	.217	
NEW BTBT705502MR-SMB	R	●		70°	.007	.012	.984	.370	.053	.138	.256	.217	
BTBT604500R-B	R	●	●	60°	.000	.008	.984	.370	.028	.138	.217	.177	
BTBT604500L-B	L	●		60°	.000	.008	.984	.370	.028	.138	.217	.177	
NEW BTBT604501MR-B	R		●	60°	.003	.012	.984	.370	.028	.138	.217	.177	
BTBT604501R-B	R	●	●	60°	.004	.012	.984	.370	.028	.138	.217	.177	
BTBT604501L-B	L	●		60°	.004	.012	.984	.370	.028	.138	.217	.177	
BTBT606000R	R	●		60°	.000	.008	.984	.370	.028	.138	.276	.236	
BTBT606000L	L	●		60°	.000	.008	.984	.370	.028	.138	.276	.236	

* Numeric value set insert on holder.



Recommended Cutting Conditions

	Workpiece Material	Grade	Cutting Speed vc (SFM)	Feed f (IPR)
P	Carbon Steels · Alloy Steels	VP15TF	165—490	.0004— .006
	Free Cutting Steels	MS6015	100—590	.0004— .006
M	Stainless Steels	VP15TF	165—395	.0008— .004
N	Non-Ferrous Metals	MS6015	230—755	.0012— .006

CTBH



Right hand tool holder shown.



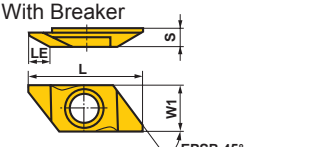


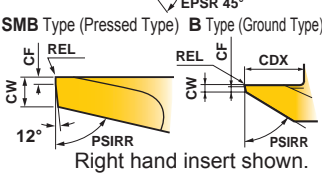

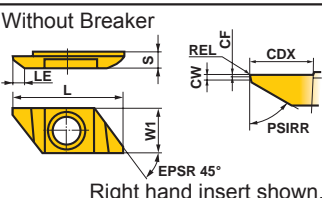
Order Number	Stock		Insert Type	Dimensions (mm)								*  					
	R	L		H	B	LF	LH	HF	WF2	HBH	HBL	CDX	Clamp Screw	Wrench			
CTBHR/L1010-160	●	●	BTBT	60450	○	R/L-B	10	10	120	19.5	10	3.4	2	12	7.5	NS402W	NKY15S
CTBHR/L1212-160	●	●		606000	R/L	12	12	120	19.5	12	3.4	—	12	7.5	NS403W	NKY15S	
CTBHR/L1616-160	●	●		7055	○	R-SMB	16	16	120	19.5	16	3.4	—	12	7.5	NS403W	NKY15S

Note 1) Please use right hand insert for right hand holder and left hand insert for left hand holder.

Note 2) Set the maximum depth of cut at under 60% of the effective cutting edge length (LE).

* Clamp Torque (N · m) : NS402W=1.0, NS403W=1.0

Inserts

Order Number	Hand	Coated 				Dimensions						LE*	Geometry
		VP15TF	MS6015	PSIRRL*	REL	CF	L	W1	CW	S	CDX		
 BTBT7055V5R-SMB	R	●		70°	0.05	0.3	25	9.4	1.35	3.5	6.5	5.5	 <p>With Breaker</p>
 BTBT705501MR-SMB	R	●		70°	0.08	0.3	25	9.4	1.35	3.5	6.5	5.5	
 BTBT705502MR-SMB	R	●		70°	0.18	0.3	25	9.4	1.35	3.5	6.5	5.5	
BTBT604500R-B	R	●	●	60°	0	0.2	25	9.4	0.7	3.5	5.5	4.5	 <p>SMB Type (Pressed Type) B Type (Ground Type)</p> <p>Right hand insert shown.</p>
BTBT604500L-B	L	●		60°	0	0.2	25	9.4	0.7	3.5	5.5	4.5	
 BTBT604501MR-B	R		●	60°	0.08	0.3	25	9.4	0.7	3.5	5.5	4.5	
BTBT604501R-B	R	●	●	60°	0.1	0.3	25	9.4	0.7	3.5	5.5	4.5	
BTBT604501L-B	L	●		60°	0.1	0.3	25	9.4	0.7	3.5	5.5	4.5	
BTBT606000R	R	●		60°	0	0.2	25	9.4	0.7	3.5	7	6.0	
BTBT606000L	L	●		60°	0	0.2	25	9.4	0.7	3.5	7	6.0	 <p>Without Breaker</p> <p>Right hand insert shown.</p>

* Numeric value set insert on holder.

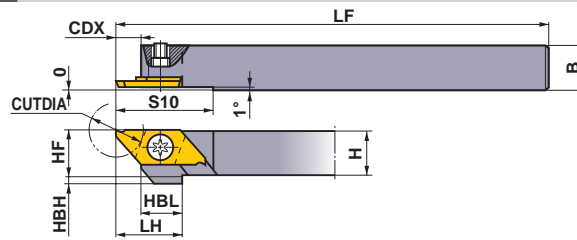
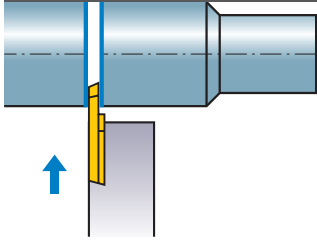
Recommended Cutting Conditions

Workpiece Material	Properties	Grade	Cutting Speed v_c (m/min)	Feed f (mm/rev)
P Carbon Steels · Alloy Steels	180HB—280HB	VP15TF	100 (50—150)	0.08 (0.01—0.15)
	Free Cutting Steels	MS6015	110 (30—180)	0.08 (0.01—0.15)
M Stainless Steels	≤200HB	VP15TF	80 (50—120)	0.06 (0.02—0.1)
N Non-Ferrous Metals	—	MS6015	150 (70—230)	0.09 (0.03—0.15)

External Cutting Off

Inch Standard

CTAH



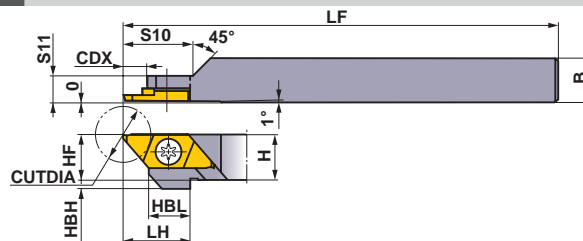
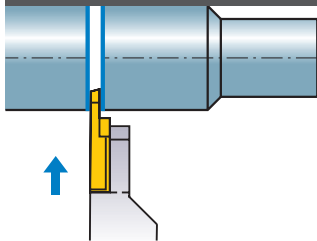
Right hand tool holder shown.

Order Number	Stock		Insert Type	Dimensions (inch)									CUTDIA (inch)	*2		
	R	L		H	B	HF	LF	LH	CDX	HBH	HBL	S10		Clamp Screw	Wrench	
CTAHR/L-062	●	●	CTAT	○○○○	.375	.375	.375	4.724	.591	.217	.125	.374	.866	.472 (.315)*1	NS402W	NKY15S
CTAHR/L-082	●	●		○○○○	.500	.500	.500	4.724	.591	.217	—	.374	.866		NS402W	NKY15S
CTAHR/L-102	●	●		○○○○	.625	.625	.625	4.724	.591	.217	—	.374	.866		NS403W	NKY15S

*1 When the width of cutting off (CW) is .028inch.

*2 Clamp Torque (lbf-in) : NS402W=6.2, NS403W=6.2

CTAH-S



Right hand tool holder only.

Order Number	Stock	Insert Type	Dimensions (inch)										CUTDIA (inch)	*2		
			H	B	HF	LF	LH	CDX	HBH	HBL	S10	S11		Clamp Screw	Wrench	
CTAHR-062S	●	CTAT	○○○○	.375	.375	.375	3.150	.591	.217	.125	.374	.630	.217	.472 (.315)*1	NS401	NKY25R
CTAHR-082S	●		○○○○	.500	.500	.500	3.150	.591	.217	—	.374	.630	.217		NS401	NKY25R

*1 When the width of cutting off (CW) is .028inch.

*2 Clamp Torque (lbf-in) : NS401=31

Recommended Cutting Conditions

	Workpiece Material	Grade	Cutting Speed vc (SFM)	Feed f (IPR)
P	Carbon Steels · Alloy Steels	VP15TF	165—490	.0008— .0035
	Free Cutting Steels	MS6015	100—590	.0004— .0035
M	Stainless Steels	VP15TF	165—395	.0008— .0019
N	Non-Ferrous Metals	MS6015	230—755	.0012— .0043

Inserts

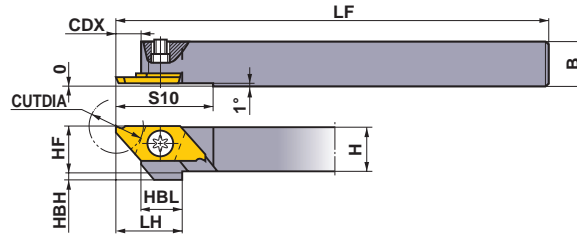
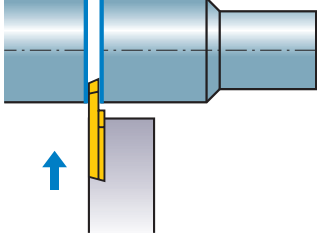
(inch)

Holder	Setting Geometry	Breaker	Geometry	Insert Geometry	Order Number	Hand	Coated		Dimensions						* CUTDIA		
							VP15TF	MS6015	CW	CDX	RER/L	L	W1	S		LBB	
Right Hand (R)	16°	With Breaker			CTAT07080V5RR-B	R	●		.028	.177	.002	.787	.315	.098	.059	.315	
					CTAT10120V5RR-B	R	●	●	.039	.264	.002	.787	.315	.098	.059	.472	
					CTAT15120V5RR-B	R	●	●	.059	.264	.002	.787	.315	.098	.059	.472	
					CTAT20120V5RR-B	R	●	●	.079	.264	.002	.787	.315	.098	.059	.472	
	16°				CTAT15120V5RR-BX	R	●		.059	.264	.002	.787	.315	.098	.059	.472	
					CTAT20120V5RR-BX	R	●		.079	.264	.002	.787	.315	.098	.059	.472	
				0°		CTAT10120V5RN-B	N	●	●	.039	.264	.002	.787	.315	.098	.059	.472
						CTAT15120V5RN-B	N	●	●	.059	.264	.002	.787	.315	.098	.059	.472
	0°				CTAT20120V5RN-B	N	●	●	.079	.264	.002	.787	.315	.098	.059	.472	
				16°		CTAT15120V5RN-BX	N	●		.059	.264	.002	.787	.315	.098	.059	.472
						CTAT20120V5RN-BX	N	●		.079	.264	.002	.787	.315	.098	.059	.472
				20°	Without Breaker		CTAT10110V5RL-B	L	●		.039	.264	.002	.787	.315	.098	.059
	CTAT15110V5RL-B	L	●				.059	.264	.002	.787	.315	.098	.059	.433			
	CTAT20110V5RL-B	L	●				.079	.264	.002	.787	.315	.098	.059	.433			
	CTAT1012000RR	R	●			●	.039	.264	.000	.787	.315	.098	.138	.472			
Left Hand (L)	16°	With Breaker			CTAT07080V5LL-B	L	●		.028	.177	.002	.787	.315	.098	.059	.315	
					CTAT10120V5LL-B	L	●	●	.039	.264	.002	.787	.315	.098	.059	.472	
					CTAT15120V5LL-B	L	●	●	.059	.264	.002	.787	.315	.098	.059	.472	
					CTAT20120V5LL-B	L	●	●	.079	.264	.002	.787	.315	.098	.059	.472	
	0°				CTAT10120V5LN-B	N	●	●	.039	.264	.002	.787	.315	.098	.059	.472	
					CTAT15120V5LN-B	N	●	●	.059	.264	.002	.787	.315	.098	.059	.472	
					CTAT20120V5LN-B	N	●	●	.079	.264	.002	.787	.315	.098	.059	.472	
				16°		CTAT10110V5LR-B	R	●	●	.039	.264	.002	.787	.315	.098	.059	.433
					CTAT15110V5LR-B	R	●	●	.059	.264	.002	.787	.315	.098	.059	.433	
	20°			Without Breaker		CTAT20110V5LR-B	R	●	●	.079	.264	.002	.787	.315	.098	.059	.433
						CTAT1012000LL	L	●		.039	.264	.000	.787	.315	.098	.138	.472
						CTAT1512000LL	L	●		.059	.264	.000	.787	.315	.098	.138	.472
		CTAT2012000LL	L		●		.079	.264	.000	.787	.315	.098	.138	.472			

* CUTDIA : Max. Cut Off Diameter

External Cutting Off

CTAH



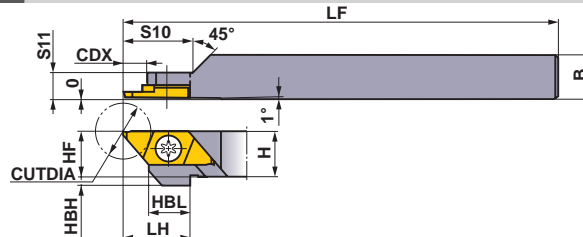
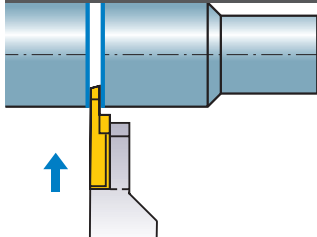
Right hand tool holder shown.

Order Number	Stock		Insert Type	Dimensions (mm)									CUTDIA (mm)	*2		
	R	L		H	B	HF	LF	LH	CDX	HBH	HBL	S10		Clamp Screw	Wrench	
CTAHR/L0810-120	●	●	CTAT	○○○○	8	10	8	120	15	5.5	4	9.5	22	12 (8)*1	NS402W	NKY15S
CTAHR/L1010-120	●	●		○○○○	10	10	10	120	15	5.5	2	9.5	22		NS402W	NKY15S
CTAHR/L1212-120	●	●		○○○○	12	12	12	120	15	5.5	—	9.5	22		NS403W	NKY15S
CTAHR/L1616-120	●	●		○○○○	16	16	16	120	15	5.5	—	9.5	22		NS403W	NKY15S

*1 When the width of cutting off (CW) is 0.7mm.

*2 Clamp Torque (N · m) : NS402W=1.0, NS403W=1.0

CTAH-S



Right hand tool holder only.

Order Number	Stock		Insert Type	Dimensions (mm)										CUTDIA (mm)	*2		
	R	L		H	B	HF	LF	LH	CDX	HBH	HBL	S10	S11		Clamp Screw	Wrench	
CTAHR1010-120S	●		CTAT	○○○○	10	10	10	80	15	16	2	9.5	16	5.5	12 (8)*1	NS401	NKY25R

*1 When the width of cutting off (CW) is 0.7mm.

*2 Clamp Torque (N · m) : NS401=3.5

Recommended Cutting Conditions

Workpiece Material	Properties	Grade	Cutting Speed v_c (m/min)	Feed f (mm/rev)
P Carbon Steels · Alloy Steels	180HB—280HB	VP15TF	100 (50—150)	0.05 (0.02—0.09)
	Free Cutting Steels	MS6015	110 (30—180)	0.05 (0.01—0.09)
M Stainless Steels	≤200HB	VP15TF	80 (50—120)	0.03 (0.02—0.05)
N Non-Ferrous Metals	—	MS6015	150 (70—230)	0.07 (0.03—0.11)

Inserts

(mm)

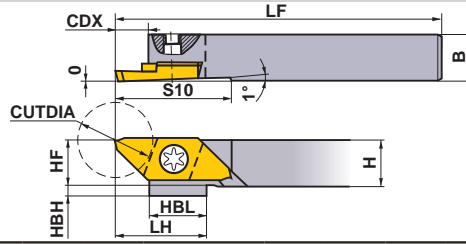
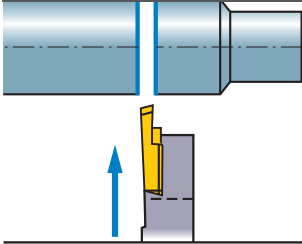
Holder	Setting Geometry	Breaker	Geometry	Insert Geometry	Order Number	Hand	Coated		Dimensions						* CUTDIA		
							VP15TF	MS6015	CW	CDX	RER/L	L	W1	S		LBB	
Right Hand (R)	16°	With Breaker			CTAT07080V5RR-B	R	●		0.7	4.5	0.05	20	8	2.5	1.5	8	
					CTAT10120V5RR-B	R	●	●	1.0	6.7	0.05	20	8	2.5	1.5	12	
					CTAT15120V5RR-B	R	●	●	1.5	6.7	0.05	20	8	2.5	1.5	12	
					CTAT20120V5RR-B	R	●	●	2.0	6.7	0.05	20	8	2.5	1.5	12	
	16°				CTAT15120V5RR-BX	R	●		1.5	6.7	0.05	20	8	2.5	1.5	12	
					CTAT20120V5RR-BX	R	●		2.0	6.7	0.05	20	8	2.5	1.5	12	
	0°				CTAT10120V5RN-B	N	●	●	1.0	6.7	0.05	20	8	2.5	1.5	12	
					CTAT15120V5RN-B	N	●	●	1.5	6.7	0.05	20	8	2.5	1.5	12	
	0°				CTAT20120V5RN-B	N	●	●	2.0	6.7	0.05	20	8	2.5	1.5	12	
					CTAT15120V5RN-BX	N	●		1.5	6.7	0.05	20	8	2.5	1.5	12	
	16°				CTAT20120V5RN-BX	N	●		2.0	6.7	0.05	20	8	2.5	1.5	12	
					CTAT10110V5RL-B	L	●		1.0	6.7	0.05	20	8	2.5	1.5	11	
CTAT15110V5RL-B	L	●			1.5	6.7	0.05	20	8	2.5	1.5	11					
CTAT20110V5RL-B	L	●			2.0	6.7	0.05	20	8	2.5	1.5	11					
20°	Without Breaker		CTAT1012000RR	R	●	●	1.0	6.7	0	20	8	2.5	3.5	12			
			CTAT1512000RR	R	●	●	1.5	6.7	0	20	8	2.5	3.5	12			
			CTAT2012000RR	R	●	●	2.0	6.7	0	20	8	2.5	3.5	12			
Left Hand (L)	16°	With Breaker			CTAT07080V5LL-B	L	●		0.7	4.5	0.05	20	8	2.5	1.5	8	
					CTAT10120V5LL-B	L	●		1.0	6.7	0	20	8	2.5	1.5	12	
					CTAT15120V5LL-B	L	●		1.5	6.7	0	20	8	2.5	1.5	12	
					CTAT20120V5LL-B	L	●		2.0	6.7	0	20	8	2.5	1.5	12	
	0°				CTAT10120V5LN-B	N	●	●	1.0	6.7	0.05	20	8	2.5	1.5	12	
					CTAT15120V5LN-B	N	●	●	1.5	6.7	0.05	20	8	2.5	1.5	12	
					CTAT20120V5LN-B	N	●	●	2.0	6.7	0.05	20	8	2.5	1.5	12	
	16°				CTAT10110V5LR-B	R	●	●	1.0	6.7	0.05	20	8	2.5	1.5	11	
					CTAT15110V5LR-B	R	●	●	1.5	6.7	0.05	20	8	2.5	1.5	11	
					CTAT20110V5LR-B	R	●	●	2.0	6.7	0.05	20	8	2.5	1.5	11	
	20°			Without Breaker		CTAT1012000LL	L	●		1.0	6.7	0	20	8	2.5	3.5	12
						CTAT1512000LL	L	●		1.5	6.7	0	20	8	2.5	3.5	12
		CTAT2012000LL	L		●		2.0	6.7	0	20	8	2.5	3.5	12			

* CUTDIA : Max. Cut Off Diameter

External Cutting Off

Inch Standard

CTBH



Right hand tool holder shown.

Order Number	Stock		Insert Type	Dimensions (inch)										CUTDIA (inch)	* Clamp Screw	Wrench
	R	L		H	B	HF	LF	LH	CDX	HBH	HBL	S10				
CTBHR/L-062	●	●	CTBT	○○○○	.375	.375	.375	4.724	.768	.295	.125	.374	.984	.630	NS402W	NKY15S
CTBHR/L-082	●	●		○○○○	.500	.500	.500	4.724	.768	.295	—	.374	.984	.630	NS403W	NKY15S
CTBHR/L-102	●	●		○○○○	.625	.625	.625	4.724	.768	.295	—	.374	.984	.630	NS403W	NKY15S

* Clamp Torque (lbf-in) : NS402W=6.2, NS403W=6.2

Inserts

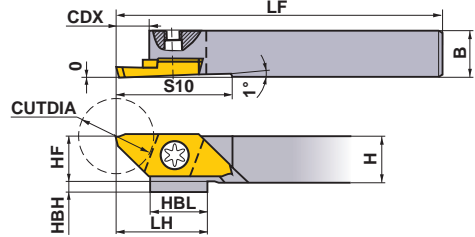
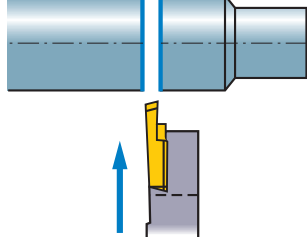
(inch)

Holder	Setting Geometry	Breaker	Geometry	Insert Geometry	Order Number	Hand	Coated		Dimensions						CUTDIA
							VP15TF	MS6015	CW	CDX	RER/L	L	W1	S	
Right Hand (R)	16°	With Breaker	EPSR 45°	REL, CDX, CW, RER	CTBT15160V5RR-B	R	●	●	.059	.362	.002	.984	.370	.138	.630
				REL, CDX, CW, RER	CTBT20160V5RR-B	R	●	●	.079	.362	.002	.984	.370	.138	.630
	0°			REL, CDX, CW, RER	CTBT20160V5RN-B	N	●	●	.079	.362	.002	.984	.370	.138	.630
Left Hand (L)	16°			REL, CDX, CW, RER	CTBT20160V5LL-B	L	●		.079	.362	.002	.984	.370	.138	.630
				0°	REL, CDX, CW, RER	CTBT20160V5LN-B	N	●		.079	.362	.002	.984	.370	.138
	16°			REL, CDX, CW, RER	CTBT20145V5LR-B	R	●	●	.079	.362	.002	.984	.370	.138	.571

Right hand insert shown.

CUTTING CONDITIONS > P13

CTBH



Right hand tool holder shown.

Order Number	Stock		Insert Type	Dimensions (mm)									CUTDIA (mm)	*		
	R	L		H	B	HF	LF	LH	CDX	HBH	HBL	S10		Clamp Screw	Wrench	
CTBHR/L1010-160	●	●	CTBT		10	10	10	120	19.5	7.5	2	9.5	25	16	NS402W	NKY15S
CTBHR/L1212-160	●	●			12	12	12	120	19.5	7.5	—	9.5	25	16	NS403W	NKY15S
CTBHR/L1616-160	●	●			16	16	16	120	19.5	7.5	—	9.5	25	16	NS403W	NKY15S

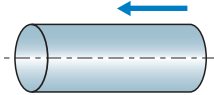
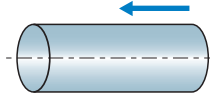
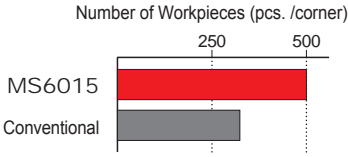
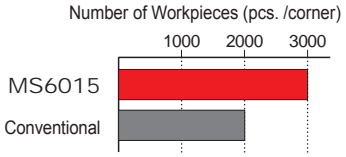
* Clamp Torque (N • m) : NS402W=1.0, NS403W=1.0

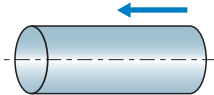
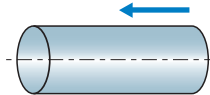
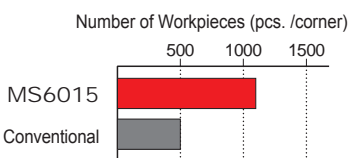
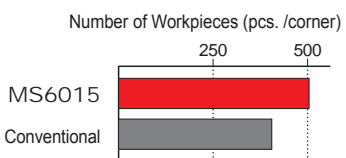
Inserts

Holder	Setting Geometry	Breaker	Geometry	Insert Geometry	Order Number	Hand	Coated		Dimensions							CUTDIA
							VP15TF	MS6015	CW	CDX	RER/L	L	W1	S		
Right Hand (R)		With Breaker			CTBT15160V5RR-B	R	●	●	1.5	9.2	0.05	25	9.4	3.5	16	
					CTBT20160V5RR-B	R	●	●	2.0	9.2	0.05	25	9.4	3.5	16	
				CTBT20160V5RN-B	N	●	●	2.0	9.2	0.05	25	9.4	3.5	16		
				CTBT20160V5LL-B	L	●	●	2.0	9.2	0.05	25	9.4	3.5	16		
				CTBT20160V5LN-B	N	●	●	2.0	9.2	0.05	25	9.4	3.5	16		
Left Hand (L)					CTBT20145V5LR-B	R	●	●	2.0	9.2	0.05	25	9.4	3.5	14.5	

Right hand insert shown.

Application Example

Insert (Grade)		DCGT32.50.5MSG (MS6015)	DCGT32.50.2MRSN (MS6015)
Workpiece		Iron-based Soft Magnetic Material (ELCH2) 	Free Cutting Steel (AISI 12L14) 
Cutting Conditions	Cutting Speed vc (SFM)	645 (4500min ⁻¹)	410 (5000min ⁻¹)
	Feed per Rev. f (IPR)	.004	.002
	Depth of Cut ap (inch)	.004	.012
Cutting Mode		Wet Cutting (Water-insoluble)	Wet Cutting (Water-insoluble)
Machine		Swiss Style Lathes	Swiss Style Lathes
Results		<p>Number of Workpieces (pcs. /corner)</p>  <p>MS6015 Conventional</p> <p>An excellent finished surface and 1.4X longer life compared with conventional product. Stable SMG breaker and chip discharge management.</p>	<p>Number of Workpieces (pcs. /corner)</p>  <p>MS6015 Conventional</p> <p>MS6015 has minimal welding and maintains secure dimensional accuracy.</p>

Insert (Grade)		DCGT32.50.5MRSN (MS6015)	DCGT32.50.5MSG (MS6015)
Workpiece		Carbon Steel (AISI 1045) 	Mild Steel (AISI 1015) 
Cutting Conditions	Cutting Speed vc (SFM)	370 (3000min ⁻¹)	330 (1300min ⁻¹)
	Feed per Rev. f (IPR)	.001	.005
	Depth of Cut ap (inch)	.039	.051
Cutting Mode		Wet Cutting (Water-insoluble)	Wet Cutting (Water-insoluble)
Machine		Swiss Style Lathes	Swiss Style Lathes
Results		<p>Number of Workpieces (pcs. /corner)</p>  <p>MS6015 Conventional</p> <p>MS6015 has superior wear resistance and achieves 2X longer life compared with conventional product.</p>	<p>Number of Workpieces (pcs. /corner)</p>  <p>MS6015 Conventional</p> <p>MS6015 has superior welding resistance and achieves 1.3X longer life compared with conventional product.</p>

For your safety

●Don't touch breakers and chips without gloves. ●Please machine within recommended application range, and exchange expired tools with new parts in advance. ●Please use safety cover and wear safety glasses. ●When using compounded cutting oils, please take fire prevention. ●When attaching inserts or spare parts, please use the attached wrench or driver. ●When using tools in revolution machining, please make a trial run to check run-out, vibration, abnormal sounds etc.

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