KYOCERA

TW Series

Thread Whirling Tools

High-Efficiency Thread Whirling for Precision Part Machining

Comprehensive lineups available for multiple machines and thread forms
Solutions for various industries including medical and aerospace
High-efficiency and economical options available

TW Series

Thread Whirling Tools

Product Video

View Online

Wide lineup for multiple thread-cutting operations
Lineup includes a high efficiency and economical style

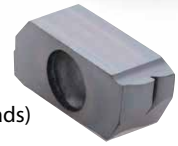
1 Comprehensive lineup compatible with a variety of machine models

Two series with different insert styles available

L Series – High Efficiency

9-Flute Design
L-Series Insert (2-Edge)

Insert Thickness : 4.0mm

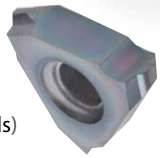


L-Series insert
(Ex. : for double start threads)

T Series – Economical

6-Flute Design
T-Series Insert (3-edge)

Insert Thickness : 4.0mm



T-Series insert
(Ex. : for single start threads)

Compatible with a wide range of machines (see the table on page 6)

Citizen Machinery Co., Ltd. | Star Micronics Co., Ltd. | TSUGAMI Corporation

For thread diameters up to ø 10mm

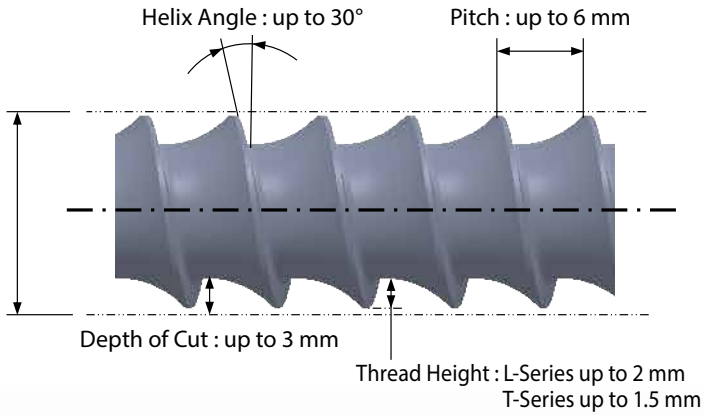
2 Available for multiple thread forms

Custom inserts can be manufactured for specific thread forms. Please contact our sales representative for details.

Typical range of compatible thread forms

Helix Angle	: up to 30°
Depth of Cut	: up to 3 mm
Thread Height	: L-Series up to 2 mm T-Series up to 1.5 mm
Pitch	: up to 6 mm
Material Outer Diameter	: up to ø10 mm
Number of Starts	: up to 4-start threads
Maximum Insert Thickness	: L-Series 6.5 mm T-Series 6.0 mm

Values are for reference only and may vary depending on workpiece geometry.

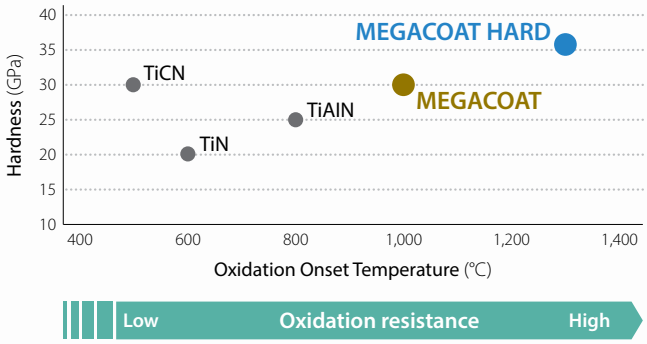


PR1535

Stable machining through a combination of a tough substrate that suppresses chipping and a special heat-resistant coating.

1. **Increased toughness due to an optimized cobalt content ratio**
   *Compared to our conventional grade
2. **Suitable for a wide range of cutting conditions, from continuous to heavy interrupted cuts**
3. **MEGACOAT NANO provides long tool life and stable cutting performance**

Coating Properties (Comparison with our conventional grade)



TW12***-**-CA/CB (for Citizen Machinery Co., Ltd.)

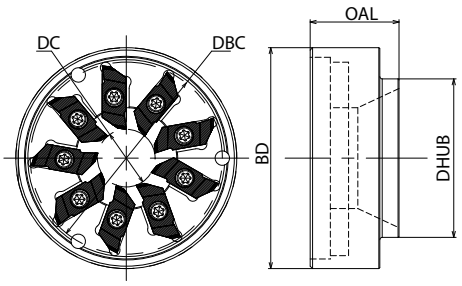


Fig.1

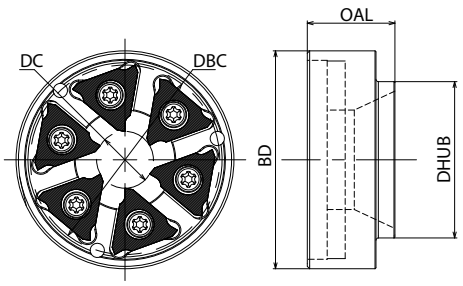


Fig.2

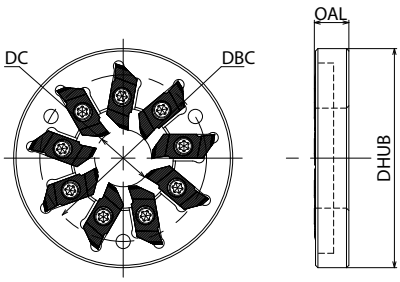


Fig.3

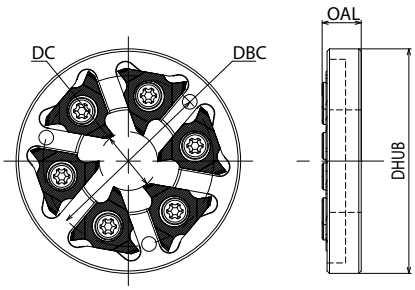


Fig.4

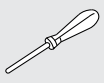
Toolholder Dimensions

Part Number		Std. Item	Number of Flutes	Dimensions (mm)					Shape
				BD	DC	DHUB	OAL	DBC	
TW	1219L-09-CA	●	9	46	12	33	18.5	40	Fig.1
	1219T-06-CA	●	6						Fig.2
TW	1207L-09-CB	●	9	–	12	46	7.2	35	Fig.3
	1207T-06-CB	●	6						Fig.4

Custom inserts can be manufactured for specific thread forms. Please contact our sales representative for details.

● : Standard Item

Spare Parts

Part Number		Parts		
		Clamp Screw	Wrench	Anti-Seize Compound
				
TW	1219L-09-CA	SB-2570TR	DTM-8	P-37
	1219T-06-CA	SB-4085TRP*	DTPM-15	
TW	1207L-09-CB	SB-2570TR	DTM-8	P-37
	1207T-06-CB	SB-4075TRP*	DTPM-15	

* Holders for T-Series inserts are supplied with clamp screws for 4.0 mm-thick inserts.
When using 6 mm-thick inserts, replace the clamp screw with SB-40104TRP (for TW1207T-06-CB, use SB-4090TRP).

TW12***-**-S (for Star Micronics Co., Ltd.)

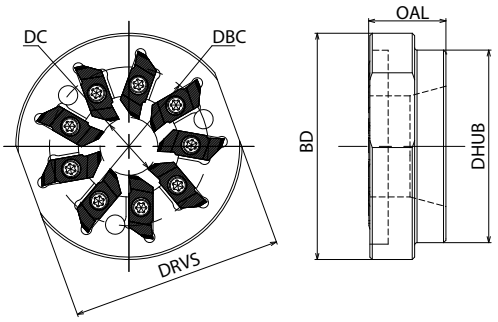


Fig.1

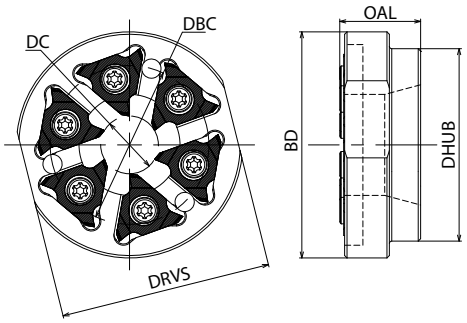


Fig.2

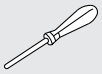
Toolholder Dimensions

Part Number		Std. Item	Number of Flutes	Dimensions (mm)						Shape
				BD	DC	DHUB	OAL	DRVS	DBC	
TW	1216L-09-S	●	9	47	12	40	16	44	33	Fig.1
	1216T-06-S	●	6							Fig.2

Custom inserts can be manufactured for specific thread forms. Please contact our sales representative for details.

● : Standard Item

Spare Parts

Part Number		Parts				
		Clamp Screw	Wrench	Clamp Bolt	Wrench	Anti-Seize Compound
						
TW	1216L-09-S	SB-2570TR	DTM-8	HH4X12A	LW-3	P-37
	1216T-06-S	SB-4085TRP*	DTPM-15			

* Holders for T-Series inserts are supplied with clamp screws for 4.0 mm-thick inserts.
When using 6mm thick inserts, the clamp screw must be changed to SB-40104TRP.

Machine Mounting Procedure for TW1216L-09-S / TW1216T-06-S

Step 1

Temporarily fasten clamp bolt HH4×12A to the whirling head.

Step 2

Set the clamp bolt in the groove on the rear of the holder.

Step 3

Rotate the holder body counter-clockwise and confirm that the clamp-bolt head is visible from the front.

Step 4

Tighten the clamp bolt using the supplied LW-3 wrench.

TW12***-**-T (for TSUGAMI Corporation)

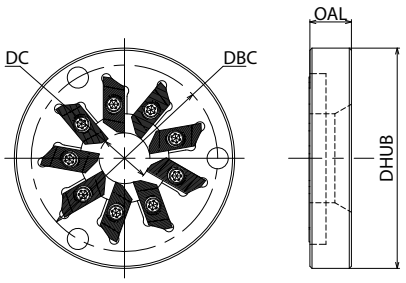


Fig.1

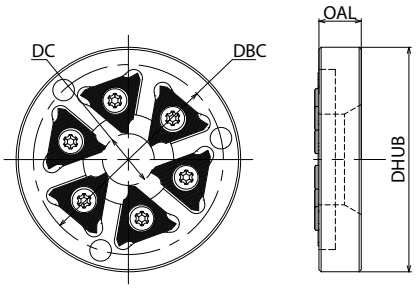


Fig.2

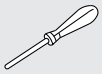
Toolholder Dimensions

Part Number	Std. Item	Number of Flutes	Dimensions (mm)				Shape
			DC	DHUB	OAL	DBC	
TW 1210L-09-T	●	9	12	52	10	44	Fig.1
1210T-06-T	●	6					Fig.2
TW 1216L-09-T	●	9	12	52	16	44	Fig.1
1216T-06-T	●	6					Fig.2
TW 1219L-09-T	●	9	12	52	19	44	Fig.1
1219T-06-T	●	6					Fig.2
TW 1222L-09-T	●	9	12	52	22	44	Fig.1
1222T-06-T	●	6					Fig.2

Custom inserts can be manufactured for specific thread forms. Please contact our sales representative for details.

● : Standard Item

Spare Parts

Part Number	Parts				
	Clamp Screw	Wrench	Clamp Bolt	Wrench	Anti-Seize Compound
					
TW 1210L-09-T	SB-2570TR	DTM-8	HH5X15	LW-4	P-37
1210T-06-T	SB-4085TRP*	DTPM-15			
TW 1216L-09-T	SB-2570TR	DTM-8	HH5X15	LW-4	P-37
1216T-06-T	SB-4085TRP*	DTPM-15			
TW 1219L-09-T	SB-2570TR	DTM-8	HH5X20	LW-4	P-37
1219T-06-T	SB-4085TRP*	DTPM-15			
TW 1222L-09-T	SB-2570TR	DTM-8	HH5X20	LW-4	P-37
1222T-06-T	SB-4085TRP*	DTPM-15			

* Holders for T-Series inserts are supplied with clamp screws for 4mm thick inserts.
When using 6mm thick inserts, the clamp screw must be changed to SB-40104TRP.

Machine Compatibility List

Based on Kyocera research. Company names are listed in no particular order and honorifics have been omitted.

Machine Manufacturer	Machine Model	Spindle Model	Angle Range	Holder Part Number
Citizen Machinery Co., Ltd.	A20	BTW-5000	-15°~0°	TW1219L-09-CA TW1219T-06-CA
	A20 (2F) / A20 (3F)	BTW-2000	±25°	
	A32			
	C20 / C32 / C32 (2M)	BTW-1000	±25°	
	D25	BTW-3100	-15°~0°	TW1207L-09-CB TW1207T-06-CB
	D25 (1M)	BTW-6000	±25°	TW1219L-09-CA TW1219T-06-CA
	L20	BTW-1000	±25°	
		BTW-2000	±25°	
		BTW-3000	-15°~0°	TW1207L-09-CB TW1207T-06-CB
		BTW-3100	-15°~0°	
	L20 (7M)	BTW-1000	±25°	TW1219L-09-CA TW1219T-06-CA
	L20E	BTW-3000	-15°~0°	TW1207L-09-CB TW1207T-06-CB
		BTW-3100	-15°~0°	
	L20E (1M)	BTW-1000	±25°	TW1219L-09-CA TW1219T-06-CA
		BTW-3000	-15°~0°	TW1207L-09-CB TW1207T-06-CB
	L20E (2M) / L20E (3M)	BTW-2000	±25°	TW1219L-09-CA TW1219T-06-CA
		BTW-5000	-15°~0°	
		BTW-3100	-15°~0°	TW1207L-09-CB TW1207T-06-CB
	L20X	BTW-2000	±25°	TW1219L-09-CA TW1219T-06-CA
		BTW-6000	±25°	
	L32	BTW-2000	±25°	
		BTW-3000	-15°~0°	TW1207L-09-CB TW1207T-06-CB
		BTW-3100	-15°~0°	
	L32 (1M) / L32 (2M)	BTW-2000	±25°	TW1219L-09-CA TW1219T-06-CA
		BTW-6000	±25°	
		BTW-3100	-15°~0°	TW1207L-09-CB TW1207T-06-CB
	L32 (2M)	BTW-6200	±25°	TW1219L-09-CA TW1219T-06-CA
	L32X	BTW-2000	±25°	
		BTW-6000	±25°	
		BTW-3000	-15°~0°	TW1207L-09-CB TW1207T-06-CB
		BTW-3100	-15°~0°	
	M16	BTW-5000	-15°~0°	TW1219L-09-CA TW1219T-06-CA
	M20	BTW-1000	-25°~20°	
		BTW-2000	±25°	
		BTW-4000	±15°	TW1207L-09-CB TW1207T-06-CB
	M20 (3M) / M32 (3M) $M_3$32	BTW-1000	±25°	TW1219L-09-CA TW1219T-06-CA
	M20 (4M) / M32 (4M)	BTW-2000	±25°	
		BTW-4000	±15°	TW1207L-09-CB TW1207T-06-CB
	M32	BTW-2000	±25°	TW1219L-09-CA TW1219T-06-CA
	M32 (5M)	BTW-2000	±25°	TW1219L-09-CA TW1219T-06-CA
		BTW-6000	±25°	
	$M_3$32-VII	BTW-4000	±15°	TW1207L-09-CB TW1207T-06-CB
Star Micronics Co., Ltd.	ECAS-12 / 20	54178	±10°	TW1216L-09-S TW1216T-06-S
	SB-20 / 20R / 23R II	0M171	-20°~0°	
	SD-26 (all types)			
	SP-20			
	SR-20 J / R III / R IV / 32J II	68172	-20°~0°	
	SX-38 type B			
	SW-20			
	ECAS-20T	59172	-20°~0°	
	ST-20			
	SV-20R			
	ECAS-32T	58171	±20°	
	SR-38	10172	±10°	
	ST-38	43156	±20°	
	SV-38R			
	SX-38 type A			
		12174	±20°	
	SV-12	45172	±10°	
	SV-20	42173	±10°	
	SV-32	43172	±10°	
	SD-26 type S	19121	±20°(Maximum ø8mm) ±25°(Maximum ø6mm)	
		19122		

Machine Compatibility List

Based on Kyocera research. Company names are listed in no particular order and honorifics have been omitted.

Machine Manufacturer	Machine Model	Spindle Model	Angle Range	Holder Part Number
TSUGAMI Corporation	SS20 / SS26 / SS32 B0265 / B0266-II B0325 / B0326-II B0265 / B0266 (V)-III B0325 / B0326 (V)-III BW329Z B0385 / 386 (L)-III S205 / S206	3268-Y451	0°-10°	TW1222L-09-T TW1222T-06-T
			0°-20°	TW1219L-09-T TW1219T-06-T
			0°-25°	TW1216L-09-T TW1216T-06-T
			0°-30°	TW1210L-09-T TW1210T-06-T
	S205 / S206-II	3281-Y2451	0°-10°	TW1222L-09-T TW1222T-06-T
			0°-20°	TW1219L-09-T TW1219T-06-T
			0°-25°	TW1216L-09-T TW1216T-06-T
			0°-30°	TW1210L-09-T TW1210T-06-T
	B0123 / 124 / 126-II / B0-V / B0-VR B0203 / 204 / 205 / 205-III / 206-II	3220-Y6541	0°-10°	TW1222L-09-T TW1222T-06-T
			0°-20°	TW1219L-09-T TW1219T-06-T
			0°-25°	TW1216L-09-T TW1216T-06-T
			0°-30°	TW1210L-09-T TW1210T-06-T
	SS267 / SS327-III	3293-Y3031	0°-15°	TW1219L-09-T TW1219T-06-T

Recommended Cutting Conditions

Description	Spindle Speed n (RPM)	Titanium Alloy	Stainless Steel	Aluminum Alloy
TW12**L-09-**	Workpiece Spindle Speed	10 ~ 40		
	Cutter Spindle Speed	1,500 ~ 4,000		5,000 ~ 6,000
TW12**T-06-**	Workpiece Spindle Speed	10 ~ 25		
	Cutter Spindle Speed	1,500 ~ 4,000		5,000 ~ 6,000

Machining Notes

To improve surface finish: reduce the workpiece spindle speed or increase the cutter spindle speed.
To shorten cycle time: increase the workpiece spindle speed.
To extend tool life: reduce the cutter spindle speed.
To improve chip control and evacuation and prevent chip packing, we recommend supplying coolant from the main spindle side of the cutter.

Coolant Supply Illustration

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Technical Support | 800.823.7284 - Option 2

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