

Thread Whirling Tools

TW Series

NEW

High-efficiency thread whirling for parts from medical to aerospace industries

Comprehensive lineups are available to use for multiple machines
and multiple shape of threads

High-efficiency and economical styles available



Thread Whirling Tools

TW Series

Wide range lineup for multiple thread-cutting operations

Lineup includes both a high - efficiency style and a economical style

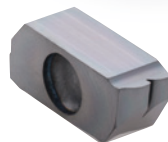
1 Comprehensive lineup compatible with a variety of different machine models

Two types for insert series are available

L Series – high-efficiency

9-flutes design
L-Series insert (2-edge)

Insert thickness : 4.0mm

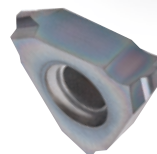


L-Series insert
(Ex. : for double-thread)

T Series – economical

6-flutes design
T-Series insert (3-edge)

Insert thickness : 4.0mm



T-Series insert
(Ex. : for single-thread)

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 $\phi 10\text{mm}$

2

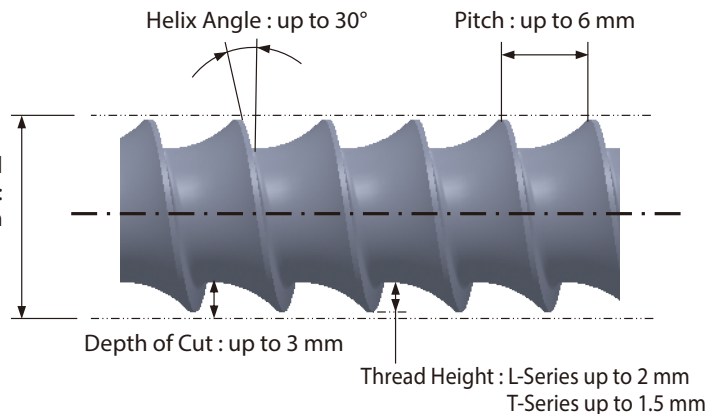
Available for multiple styles of threadings

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 $\varnothing 10$ mm	Material Outer Diameter : up to $\varnothing 10$ 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.

Point 1

Increased toughness due to an optimized cobalt content ratio.

*Compared to our conventional grade.

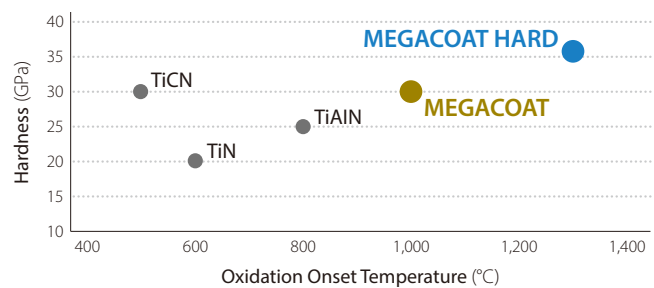
Point 2

Suitable for a wide range of cutting conditions, from continuous to heavy interrupted cuts.

Point 3

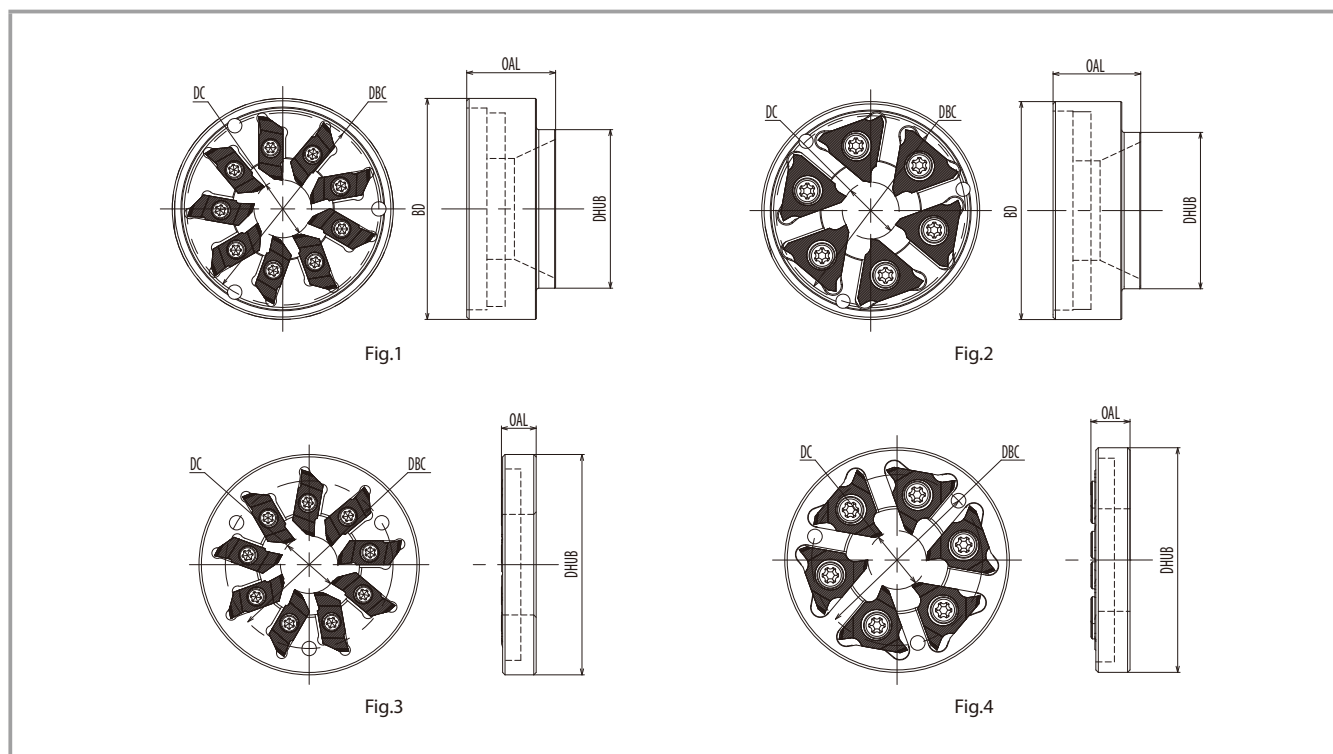
MEGACOAT NANO® provides long tool life and stable cutting performance.

Coating Properties (Comparison with our conventional grade)



Low Oxidation resistance High





Toolholder Dimensions

Description	Stock	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.

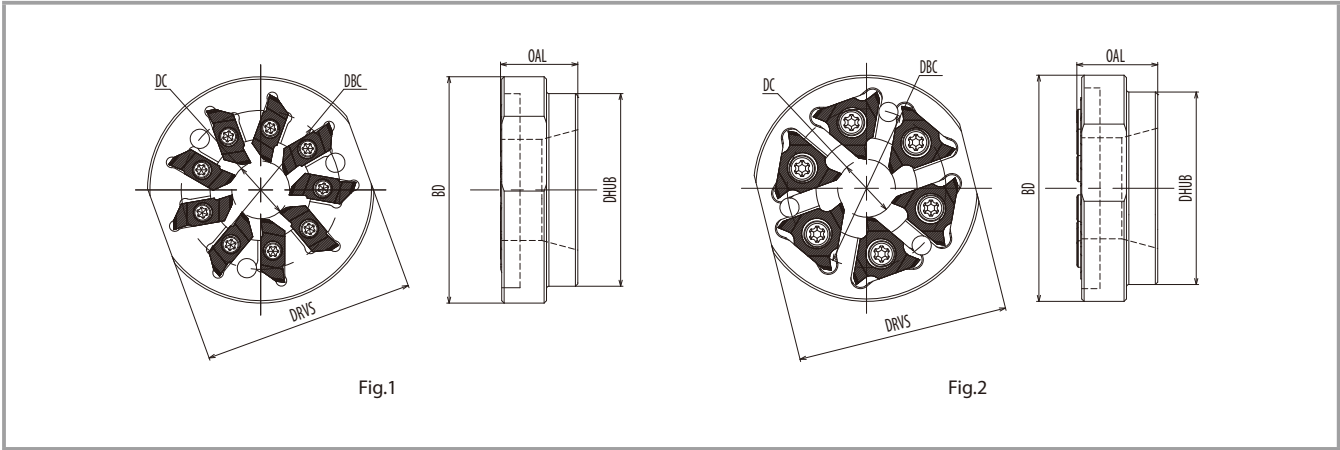
● : Standard item

Spare parts

Description	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).



Toolholder Dimensions

Description	Stock	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

Description	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 6 mm-thick inserts, the clamp screw must be changed to SB-40104TRP.

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

Whirling Head

Temporarily tighten all three clamp bolts.

Step 1

Temporarily fasten clamp bolt HH4x12A to the whirling head.

Step 2

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

Rear side of holder

Front side of holder

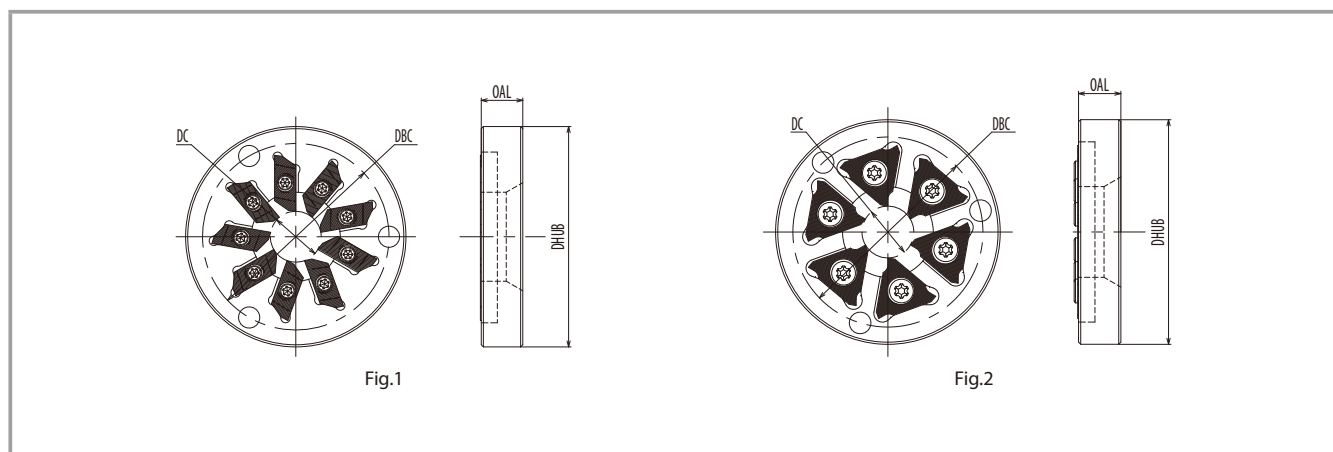
Step 3

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.

Wrench (LW-3)



Toolholder Dimensions

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

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

●: Standard item

Spare parts

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

* Holders for T-Series inserts are supplied with clamp screws for 4.0 mm-thick inserts.
When using 6 mm-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	Description	
Citizen Machinery Co., Ltd.	A20	BTW-5000	-15°~0°	TW1219L-09-CA TW1219T-06-CA	
	A20 (2F) / A20 (3F)	BTW-2000	±25°		
	A32		±25°		
	C20 / C32 / C32 (2M)	BTW-1000	±25°		TW1207L-09-CB TW1207T-06-CB
	D25	BTW-3100	-15°~0°		
	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	
		BTW-3100	-15°~0°	TW1207T-06-CB	
	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	
		BTW-5000	-15°~0°	TW1219T-06-CA	
		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°	TW1207L-09-CB TW1207T-06-CB	
		BTW-3000	-15°~0°		
		BTW-3100	-15°~0°	TW1219L-09-CA TW1219T-06-CA	
	L32 (1M) / L32 (2M)	BTW-2000	±25°		
		BTW-6000	±25°	TW1207L-09-CB	
		BTW-3100	-15°~0°	TW1207T-06-CB	
	L32 (2M)	BTW-6200	±25°	TW1219L-09-CA TW1219T-06-CA	
	L32X	BTW-2000	±25°		
		BTW-6000	±25°	TW1207L-09-CB TW1207T-06-CB	
		BTW-3000	-15°~0°		
		BTW-3100	-15°~0°	TW1219L-09-CA TW1219T-06-CA	
	M16	BTW-5000	-15°~0°		
		BTW-1000	-25°~20°	TW1219L-09-CA TW1219T-06-CA	
	M20	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	
	M20 (4M) / M32 (4M)	BTW-2000	±25°	TW1219T-06-CA	
		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	
		BTW-6000	±25°	TW1219T-06-CA	
	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					
SV-12		12174	±20°		
SV-12		45172	±10°		
SV-20		42173	±10°		
SV-32		43172	±10°		
SD-26 type S		19121	±20°(Maximumø8) ±25°(Maximumø6)		
		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	Description
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 (min ⁻¹)	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