

MINIATURE

MINIATURE Industry



The latest technological and industrial advances in the automotive, medical, electronic and aerospace fields have led to the miniaturization and increased precision of mechanical devices. The components used are smaller and more complex. This requires sophisticated miniature machines and machining processes to ensure manufacturers meet the ever-increasing requirements of the miniature industry.

Increased miniaturization has increased the demand for swiss-type CNC lathes with growth in the region of 20-40% in recent years. This phenomenon has generated an increased demand for TaeguTec cutting tools, as TaeguTec supplies the most suitable tooling solutions for the miniature industry market.





Miniature INDUSTRY

Precision Machining Solution for the Miniature Industry

Machining on Swiss-type CNC turning centres requires the cutting to take place as close as possible to the Guide Bush to maximize rigidity, accuracy and surface finishes.

However, the narrow density of the installed tools makes insert and tool holder changeovers difficult.

It also restricts the number of potential tools that can be installed on the machine.

Whether the material is stainless steel, titanium or other difficult-to-cut alloys, TaeguTec offers the best tooling solutions for any turning centre or small part precision machining situation.

AUTOMOTIVE



MEDICAL



COMPUTER & OA



OTHERS



Automotive Components



Medical Components



Computer & OA Components

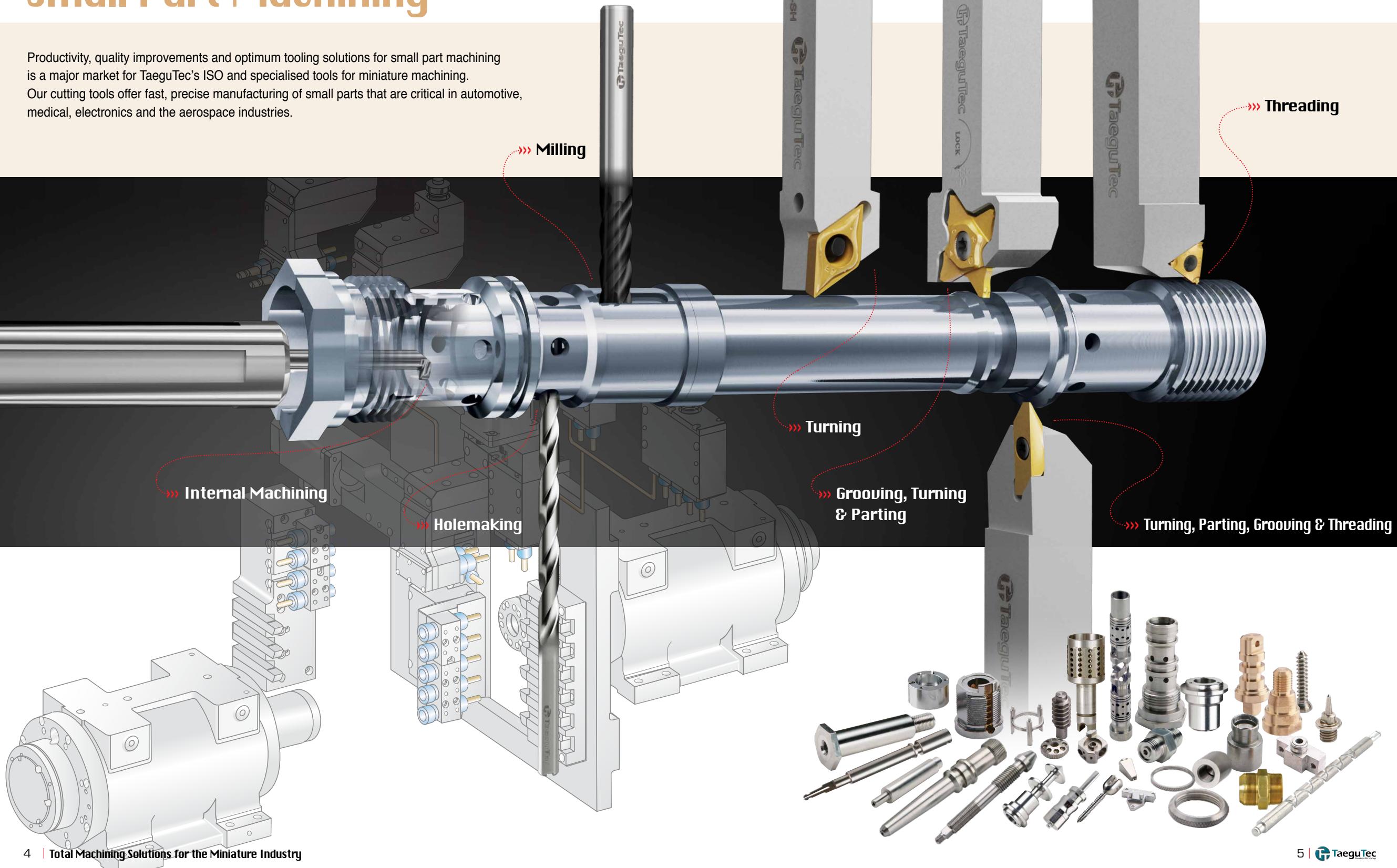


Other Components

Precision Solutions for Small Part Machining

Productivity, quality improvements and optimum tooling solutions for small part machining is a major market for TaeguTec's ISO and specialised tools for miniature machining.

Our cutting tools offer fast, precise manufacturing of small parts that are critical in automotive, medical, electronics and the aerospace industries.





Turning

Our turning line offers optimum solutions by providing precision geometry and the tough grades to meet your machining needs. With multiple grades using the latest coating technology and innovative chip breaker design, TaeguTec turning products show superior performance in miniature precision turning.

► TOP Mini



SA chip breaker

Ground positive ISO inserts for high precision turning

- High precision is guaranteed with the peripherally ground geometry
- Low cutting forces due to the dynamically inclined sharp cutting edge with a wide groove geometry
- Excellent chip control at low feed rates and depths of cut
- Suitable for swiss sliding head turning centers
- Small corner radius size: R0.1, 0.2 and 0.4mm



Back clamping holder

Quick change holders for swiss-type lathes

- Quick insert changeover with simple lever clamp design
- Both front and side clamping is available
- Rigid and stable clamping force guaranteed with unique backward and downward two-directional clamping force

Boring bars and inserts for small component machining

D_{min}
= 6mm

Insert

- Produced in two insert types - ground & pressed-to-size
- Micro size Insert (IC=3.97, 4.76mm)
- Excellent surface finish prevents micro chipping and prolongs tool life
- Available in both right-hand and left-hand operation types

Boring bar

- Stable machining with reduced chatter
- Bore machining as small as 6mm diameter possible
- Shanks available in steel and carbide



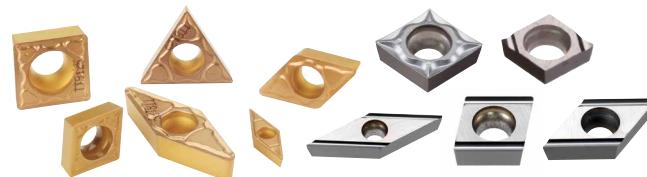
Turning

► T-TURN

Positive inserts

Positive ISO inserts for small parts machining with uncoating, coating & cermet grades

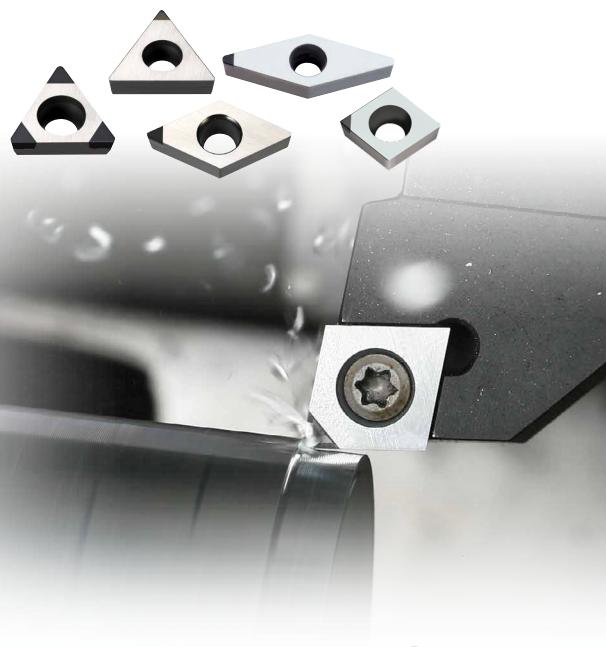
- Low cutting forces credit to its positive rake angle
- Wide application range
- Suitable for a wide variety of materials



CBN inserts

Small positive CBN inserts for high speed machining (less than IC 6.35)

- Excellent cutting performance for hardened steel
- Wide application range
- TB610, TB650, TB670 and TB730 grades available





Turning, Parting, Grooving & Threading

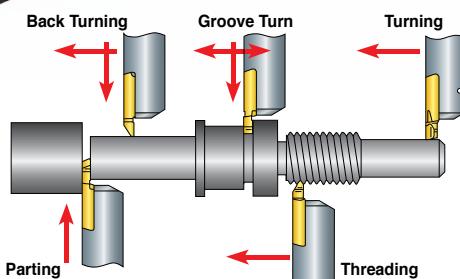
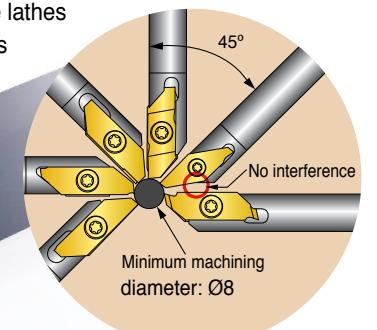
For external machining applications such as turning, back turning, parting, grooving and threading; TaeguTec is proud to introduce the TOPCUT Swiss-type CNC lathe product line for miniature component machining.

TOPCUT

Swiss tool series

Compact turning tools for swiss-type CNC lathes

- Applicable to a variety of operations such as turning, back turning, parting-off, grooving, threading
- Fully ground tool holders provide accurate positioning while machining
- Tools and inserts engineered for compact positioning whilst machining in Swiss-type lathes
- Sharp cutting edges adapted to small component machining in low cutting conditions for a no bur finish



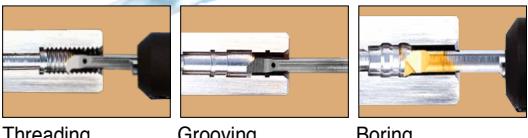
Internal Machining

For convenient, multi-functional internal machining, try our all new TOPMICRO line; designed for multi-tooling using only one sleeve for reduced down time at the tool post. Optimised for swiss-type CNC lathes, TOPMICRO is an all in one tool for threading, grooving and boring.

TOPMICRO

Internal turning, profiling, grooving and face machining of small diameters

- Internal coolant through the body
- Internal machining from Dmin 0.6mm
- Best solution for internal turning, profiling, grooving and face machining especially on small diameters

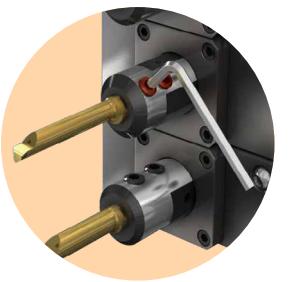


Threading Grooving Boring



Sleeves for TOPMICRO

- The sleeves have a stopper inside the hole, so customers can machine without the resetting process after indexing.
- Convenient for change tool on machine



for **TOPMICRO**
(Ø4mm & Ø7mm)

for **H-DRILL**



Turning, Parting & Grooving

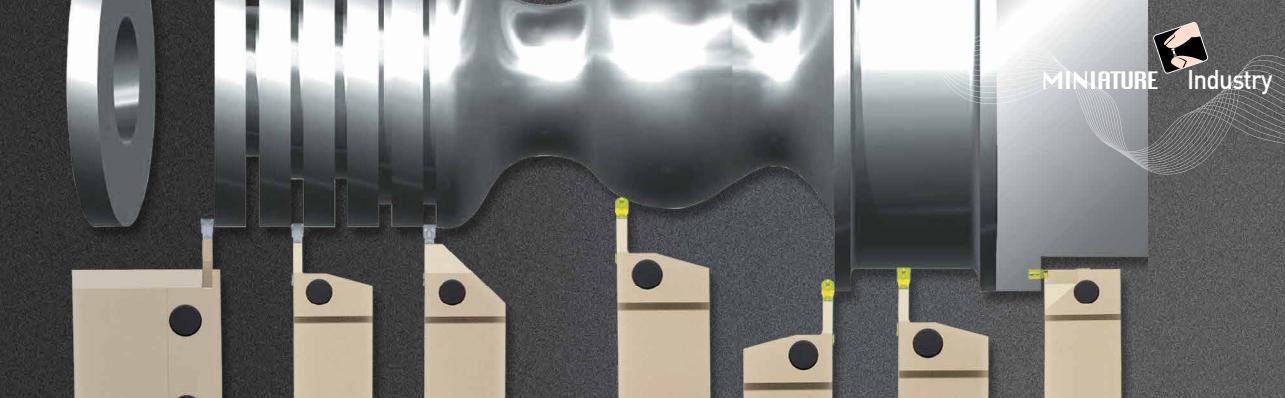
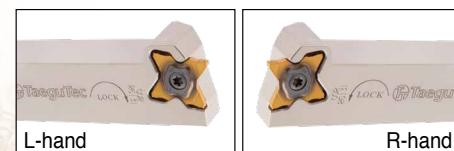
Be it small grooving, turning and parting ; TaeguTec's QUADRUSH, with 4 cutting edges, offers high productivity improvement.



QUADRUSH

4 Cutting-edges with chip breaker for grooving, parting and recessing

- ▶ 4 edges with J, S and C type chip breaker
 - Excellent chip control and high quality surface finish grooving
- ▶ 3 contact points with side torx screw
 - Accurate positioning of insert when indexing
- ▶ Insert indexing from both sides of the holder
 - A major advantage to swiss-type lathes



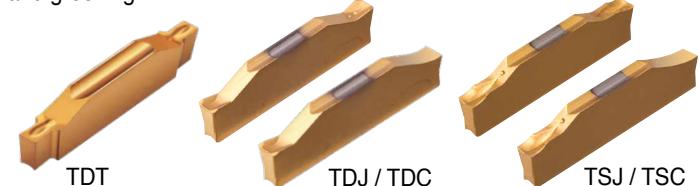
Turning, Parting & Grooving

The innovative T-CLAMP line is a multi-functional optimal line for turning, parting and grooving of small parts. Designed for Swiss-type CNC lathes, the T-CLAMP will reduce the machining process and cycle time.

T-CLAMP ULTRA PLUS

Turning, parting & grooving solutions for small parts machining on swiss-type CNC lathe

- ▶ Accurate inserts with high repeatability
- ▶ Top and bottom prisms hold insert firmly and accurately
 - TDJ/C-unique, double-ended insert for grooving and parting
 - TSJ/C-single ended inserts for parting and grooving
 - TDT-unique, double-ended insert for side turning and grooving

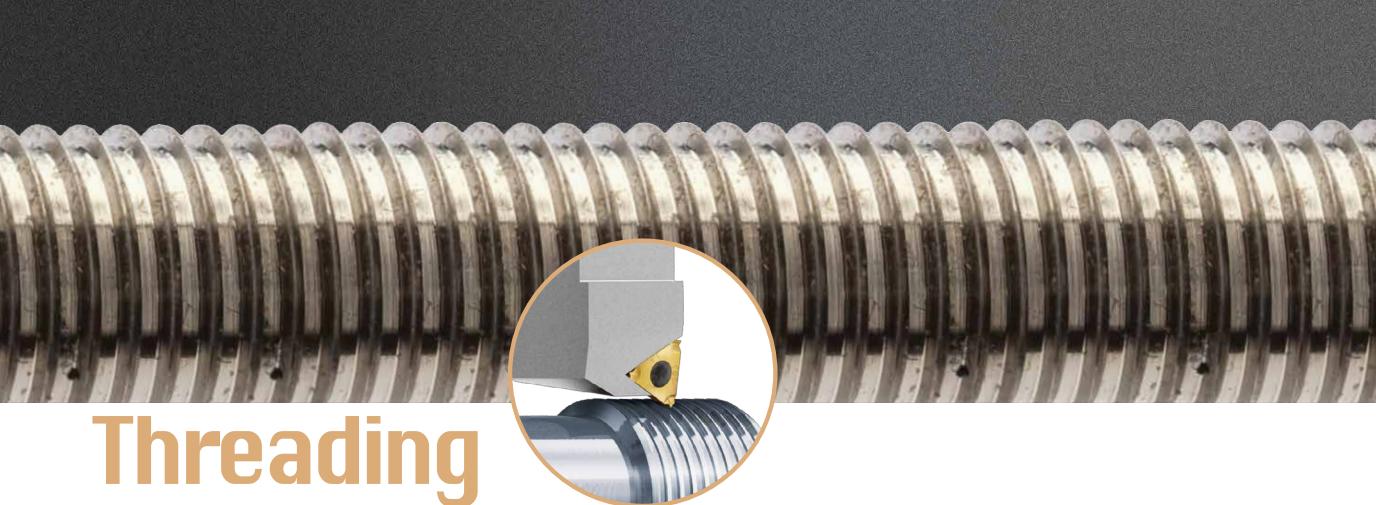


TTER/L-SH
External turning and grooving holder for swiss automatics

For small ID turning and grooving

- ▶ Economical double-ended insert
- ▶ Strong clamping with fully supported seat
- ▶ Multiple applications
 - TDIM: pressed insert with efficient chip breaker for boring and grooving operation
 - TDIP: ground insert for precise machining
 - Internal machining from Dmin 12.5mm



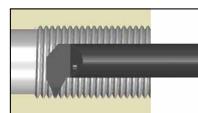


Threading

TaeguTec's ISO standardized and custom-tailored cutting tools are the best possible choice for internal/external threading of small parts.

TOPMICRO

Mini carbide bars for ISO full profile internal thread turning



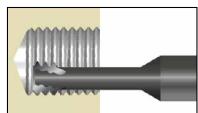
- Internal coolant through the body
- Internal machining from Dmin 4mm
- Best solution for internal threading especially on small diameters



TS-THREAD

Solid carbide end mills for thread milling

- Short solid carbide end mills for Internal Threading
- Thread end mills for miniature industry
- Grade: TT9030



T-THREAD

Standard thread line for internal and external machining

- High profile accuracy
- Improved performance and product consistency
- Excellent chip control
- Standard torx screw and toolholders



M-type
(less than IC6.35)



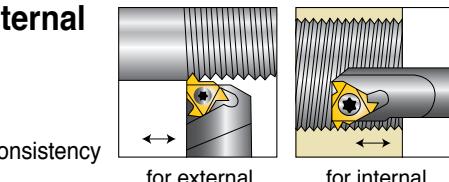
B-type
(less than IC6.35)



U-type
(less than IC6.35)



Regular type
(less than IC6.35)



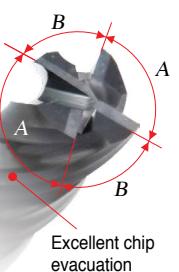
Milling

For precise machining of small parts on Swiss-type CNC lathes, TaeguTec's various end mills and milling cutters offer only the best quality and productivity.

STAR MILL

High feed end mill for general purpose

- Unequal spaced cutting edges with a 45° helix angle means decreased vibration and increased feed rate
- Unique flute geometry provides excellent chip evacuation



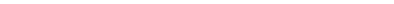
$A \neq B$
Excellent chatter dampening ability due to unequal spacing of cutting edges

SED 4□□□U

ALUMILL

- AES 2□□□: 2 flute square end mill for non-ferrous metals

- AES 3□□□: 3 flute square end mill for non-ferrous metals



APEX MILL

- RIF 2□□□: Square end mill for rib machining
- RIB 2□□□: Ball nose end mill for rib machining
- SMB 2□□□-3: Ball nose end mill for miniature



CHASE MILL

- Small insert size enables high number of teeth
- Low cutting resistance by positive helical cutting edge
- Suitable for small part machining



TE90AX-□□□-06
(Dia range: 08-040mm)





Holemaking

From deep hole drilling to head changeable drills for Swiss-type CNC lathes, TaeguTec's family of holemaking cutting tools meet all drilling, boring and reaming needs.

► H-DRILL

Solid carbide drill

- High hole accuracy & excellent surface finishes
- Excellent chip flow
- Low cutting forces



► M.Q.L DRILL

Solid carbide drill with M.Q.L system

- Smooth chip evacuation with unique flute geometry
- Drilling depth up to $30xD$ without pecking cycle
- High quality of holes with low cutting forces & increased rigidity



► T-REAM

TaeguTec reamer line

- A wide variety of reamers available
- Highly productive reaming for high-speed machining
- Delivers high hole accuracy



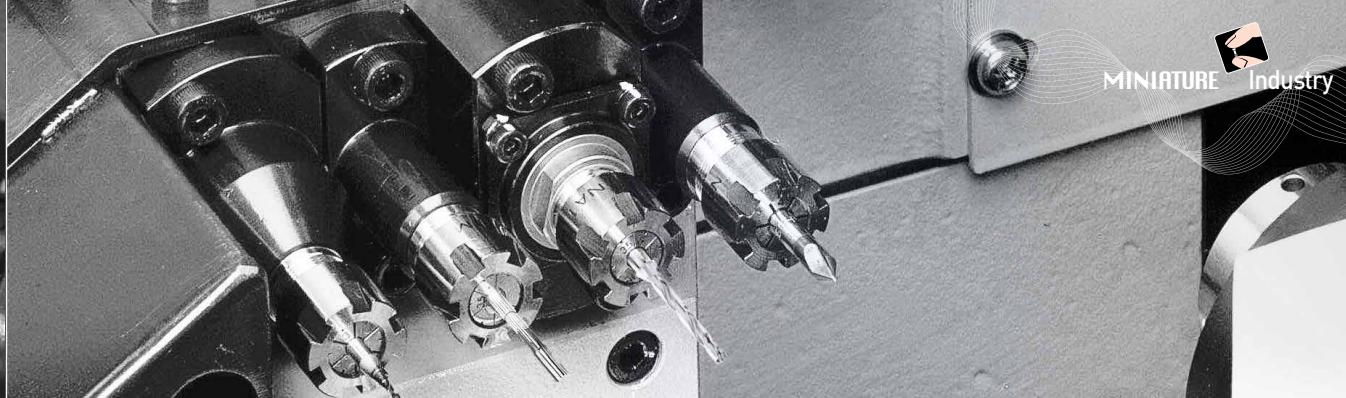
TM-REAM
Head exchangeable type



TB-REAM
Blade type



TS-REAM
Solid type



Holemaking

► DRILL•RUSH

Head changeable drill

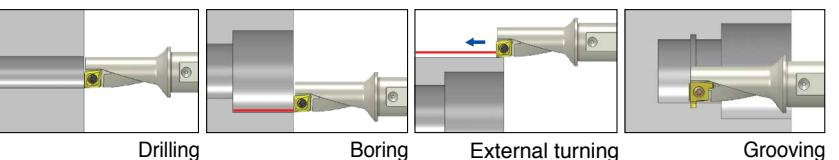
- New head changeable drill - Innovative quick change system
- Optimum flute design with twisted coolant holes
- Polished flute for smooth chip evacuation & coated body for prolonged body life
- One drill body can cover different diameter of drill head



► TOPCAP

Multifunctional tool for small parts machining

- Drilling, boring, face & external turning and even grooving with one tool
- Short set-up and cycle time
- Minimized tool positions and reduced tooling cost





Tooling System

TaeguTec provides optimal tooling solutions for tools and the tool post. Our extensive line of tooling systems, including straight shanks and ER collets, facilitate the best machining for swiss-type lathes.

STRaIGHT SHaNK

Various collet chuck for swiss-type CNC machine



SLEEVE

Sleeve for TOPMICRO and H-DRILL on swiss-type CNC lathe



ER COLLET

Wide range of ER collet



Matrix



CTMS

TaeguTec's Commodity & Tool Management Services (CTMS) will meet any tool crib's needs from minimal tooling to comprehensive tool management services for all end-users.

MATRIX is an efficient, cost-effective system reducing inventory, warehouse procurement and overall tool handling costs.

At the heart of our tool management vision; the MATRIX system; easy to use, fully automated simplifying daily data performance collection and monitoring via a database specifically designed for tooling and process improvement. The MATRIX monitors supply chain, inventory and procurement.

Our CTMS' sole purpose is productivity improvement based on the best-in-class tooling and improvement software available. When it comes to enhanced productivity and efficiency, the CTMS is the optimal choice!



Success Stories

TaeguTec's extensive tooling experience with swiss-type lathe companies means the best machining solutions, tools, tool geometry and machining conditions the market has to offer. Our product line covers all components machining for swiss-type lathes guaranteeing customers' productivity and quality.

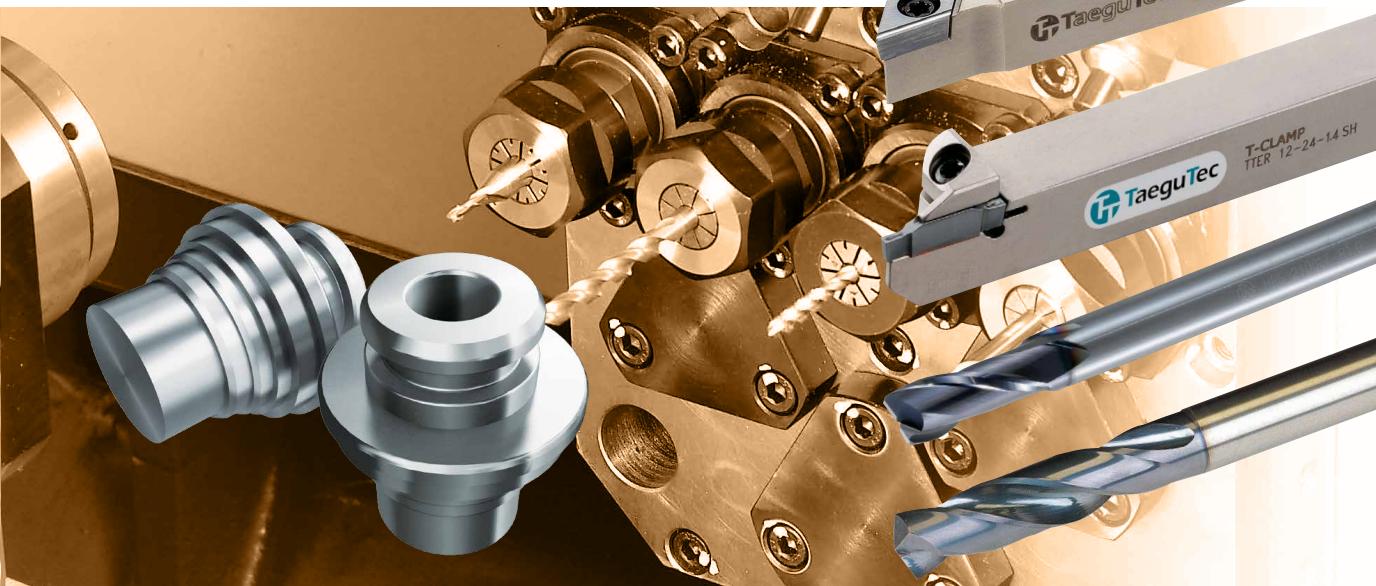
EXAMPLE 1.

- Workpiece : SPOOL
- Material : Alloy Steel (SCM 415)
- Cycle Time : 72 second



EXAMPLE 2.

- Workpiece : BASE
- Material : Stainless Steel (SUS 630)
- Cycle Time : 77 second



Time Sheet

CNC LATHE TIME SHEET									
Customer No.:		Machine Model:		Process No.:		Drawing No.:		Approved by:	
No.	Tool	Process	Tool Specification	Velocity	Cutting Dia.	Speed	Ap. Length	Feed	Time (sec.)
WORKPIECE : SPOOL(SCM415)									
MAIN SPINDLE (OP10)	T01	HOLDER	SDJCR 1212 K11-SH	2	TAEGUTEC				
	T02	INSERT	DCMT 11T304 MT TT8125	20	TAEGUTEC				
	T03	HOLDER	SDJCR 1212 K11-SH	2	TAEGUTEC				
	T04	INSERT	TTER 1212-3T15-040	2	TAEGUTEC				
	T05	HOLDER	TTER 1212-2T15-040	2	TAEGUTEC				
	T06	INSERT	TDJ 1.0-0.00 TT7220	20	TAEGUTEC				
	T07	HOLDER	TTER 1212-1AT15-040	2	TAEGUTEC				
	T08	INSERT	TDJ 1.0-0.00 TT7220	20	TAEGUTEC				
	T09	HOLDER	TTER 12-24-2SH	2	TAEGUTEC				
	T10	INSERT	TDJ 2 TT9030	20	TAEGUTEC				
SUB SPINDLE (OP20)	T01	HOLDER	SDJCR 1212 K11-SH	2	TAEGUTEC				
		INSERT	DCMT 11T304 MT TT8125	20	TAEGUTEC				

Tool List

WORKPIECE : SPOOL(SCM415)				
MACHINE	PROCESS	TOOL No.	PART	SPECIFICATION
CNC LATHE		T01	HOLDER	SDJCR 1212 K11-SH
		T02	INSERT	DCMT 11T304 MT TT8125
		T03	HOLDER	SDJCR 1212 K11-SH
		T04	INSERT	TTER 1212-3T15-040
		T05	HOLDER	TTER 1212-2T15-040
		T06	INSERT	TDJ 1.0-0.00 TT7220
		T07	HOLDER	TTER 1212-1AT15-040
		T08	INSERT	TDJ 1.0-0.00 TT7220
		T09	HOLDER	TTER 12-24-2SH
		T10	INSERT	TDJ 2 TT9030

Time Sheet

CNC LATHE TIME SHEET									
Customer No.:		Machine Model:		Process No.:		Drawing No.:		Approved by:	
No.	Tool	Process	Tool Specification	Velocity	Cutting Dia.	Speed	Ap. Length	Feed	Time (sec.)
WORKPIECE : BASE(SUS630)									
MAIN SPINDLE (OP10)	T01	HOLDER	SCLCR 1212 K09-SH	2	TAEGUTEC				
	T02	INSERT	CCMT 09T308 PC TT9225	20	TAEGUTEC				
	T03	HOLDER	TTER 12-24-1.4SH	2	TAEGUTEC				
	T04	COLLET	ER16 SPR 5-6	2	TAEGUTEC				
	T05	DRILL	SHD 3.5X13.2LX80L-SH6	5	TAEGUTEC				
	T06	COLLET	ER16 SPR 5-6	2	TAEGUTEC				
	T07	ENDMILL	HES 2035XR.027X80L-SH6	5	TAEGUTEC				
	T08	HOLDER	SDJCR 1212 K11-SH	2	TAEGUTEC				
	T09	INSERT	DCET 11T304 R-GF TT9020	20	TAEGUTEC				
	T10	HOLDER	SCLCR 1212 K09-SH	2	TAEGUTEC				
SUB SPINDLE (OP20)	T01	INSERT	CCMT 09T308 PC TT9225	20	TAEGUTEC				
	T02	HOLDER	SDJCR 1212 K11-SH	2	TAEGUTEC				



