# MACHINE ACCESSORIES

Machining Center | Milling Machine | Lathe | Mill-turn Machine

**NO.30-2505A**

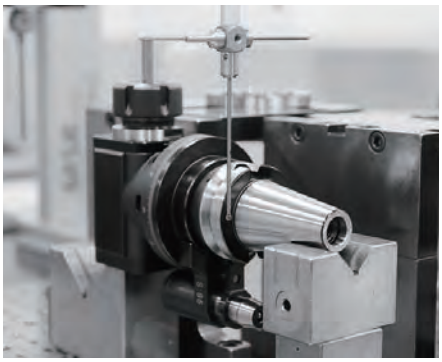
Road to 4.0

AI AR IOT VR


www.syic.com


# COMPANY INTRODUCTION





# 品質創造信譽 信譽保證品質

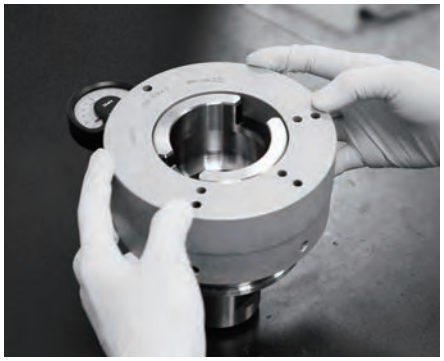
Quality creates reputation; reputation ensures quality.

## About SYIC

Established in 1979, SYIC is a professional manufacturer of precise tool holders, cutting tools, angel heads, boring series and collets with more than 500 employees. The taper types of tool holders we manufacture include BMT, BT (ISO 7388-2 & MAS 403), CAT (ANSI B5.50), DAT (ISO 7388-1 & DIN 69871-A), HSK (ISO 12164), PSC (ISO 26623), VDI (DIN ISO 10889) and straight shank holders.

SYIC is certified to ISO9001 and ISO14001. With contribution to the design, production and sale of high accuracy and inventive products, SYIC has over 300 pieces of patents worldwide. SYIC keeps investing in high-end equipment and measuring instruments from Japan and Europe to implement excellent quality control and manufacturing capability.

SYIC keeps the core value “Quality creates reputation; reputation ensures quality” to impress our customers, possessing professional technical skills to provide comprehensive solutions for customers, improving customers’ machining efficiency, and enhancing the mutual competitiveness with customers. Based on the mission of "Excellent service, supreme quality," SYIC will continue to launch more high precision products to customers.



# Tool Holders

## Your reliable partner!

CNC turning, milling and grinding


www.syic.com

供需平衡　共榮共存

Maintain the balance of suppliers and customers and grow together.

未來之路　無限寬廣

Create a great future with infinite opportunities.

營運獲利　永續經營

Run a profitable company with sustainable development.

合作到底　共創通贏

Keep everlasting cooperation and together create a win-win situation.

成就彼此　榮耀一切

Support each other and accomplish mutual success.

人力提昇
Capability improvement

思維清晰
Clear thinking

觀念正面
Positive mindset

心態健全
A sound mind

能力卓越
Excellent ability

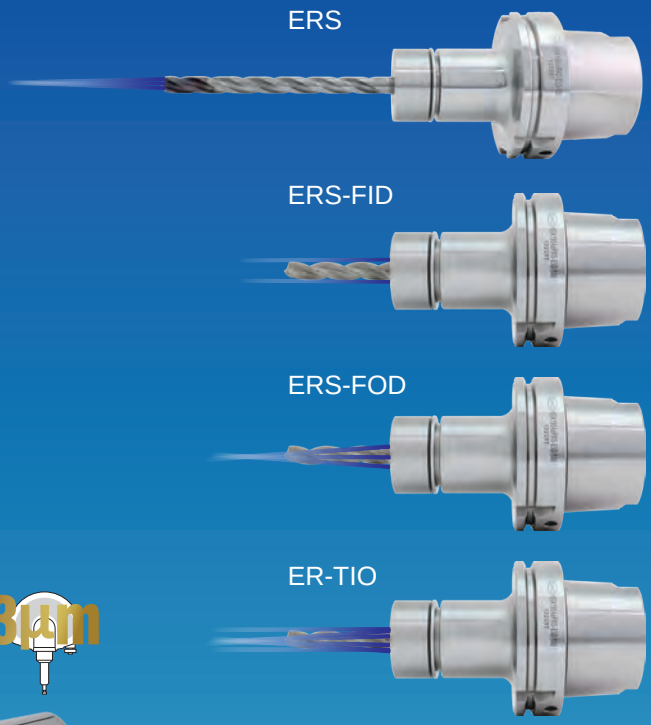

## Innovation is our mission!

SYIC is committed to developing high precision products to optimize the machining process and offering professional technical service. With experienced technical professionals, our products are developed in response to different types of industries. We aim to achieve customers' demands from different industries including machining industry, mold and die industry, aerospace industry, automotive industry, and energy industry. We offer the most professional and technical service, effectively resolve your machining problems to create maximum production efficiency.

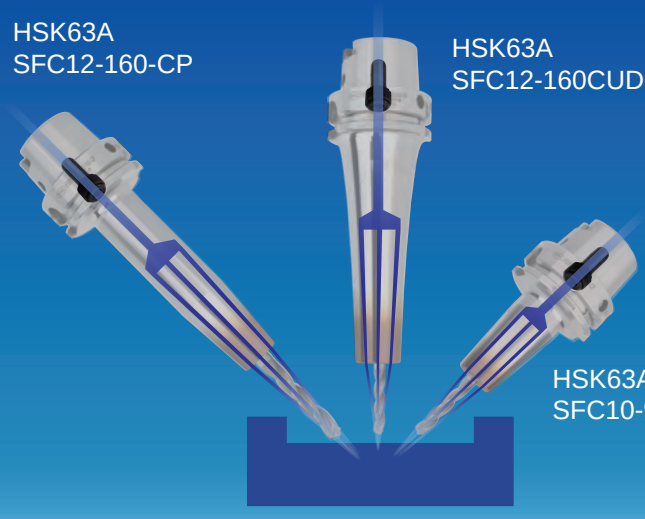
# COOLANT APPLICATION

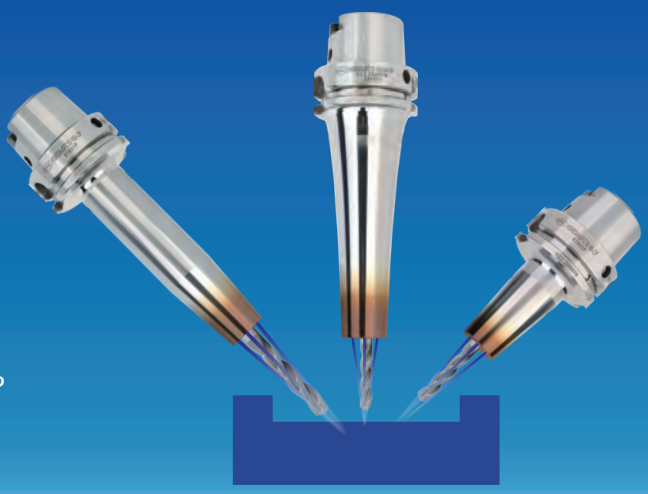
## COLLET SERIES






## SHRINK FIT



# PRODUCT CATEGORY

7:24 SERIES | HSK SERIES | PSC SERIES | PRODUCT ACCESSORIES

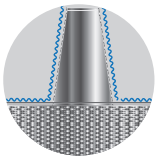
# 7:24 SERIES

**MAS 403**
**ANSI B5.50**
**DIN 69871-A**

| SPINDLE TYPE | FEATURES | TYPES | AVAILABLE TAPER |
|---|---|---|---|
| ▸ 7:24 | ▸ **TAPER** 7:24<br>▸ **TAPER TOLERANCE** < AT3<br>▸ **SURFACE ROUGHNESS** Ra < 0.25μm<br>▸ **ROUNDNESS** < 0.6μm | ▸ REGULAR | ▸ **BT** 15.20.30.40.50<br>▸ **CAT** 40.50<br>▸ **DAT** 30.40.50<br>▸ **ISO** 15.20.25.30.40 |
| | | ▸ DualDRIVE+ | ▸ **SBT** 30.40.50<br>▸ **SCAT** 40.50<br>▸ **SDAT** 40.50 |

## 100% CONTACT

- DualDRIVE+ tool holders can be used for regular spindles and double face contact spindles. With DualDRIVE+ tool holders and spindles, 100% contact can be achieved.

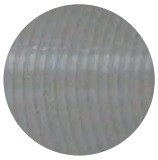


Regular Holders

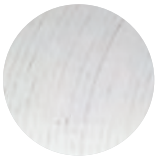
DualDRIVE+ Holders

## INCREASE RIGIDITY, IMPROVE THE MACHINING

- DualDRIVE+ tool holders improve rigidity, decrease vibration, and improve the machining capacity substantially.
- Improve the processing accuracy on workpiece surface and extend tool life.
- The surface roughness of workpiece is improved.



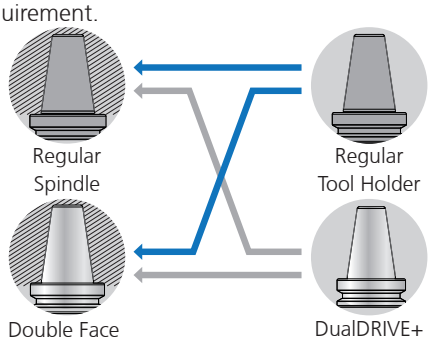
Regular Holders



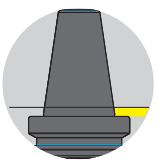
DualDRIVE+ Holders

## ECONOMICAL AND COMPATIBLE

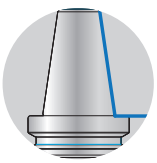
- DualDRIVE+ tool holders and spindles are compatible with regular tool holders and spindles.
- DualDRIVE+ tool holders can be used for regular spindle. However, if your spindle is treated with regrinding, please consult with a professional spindle or machine supplier. Use DualDRIVE+ tool holders for regular spindle only when the spindle after regrinding meets the standard requirement.




- The perfect combination of DualDRIVE+ system between machine spindles and tool holders maximizes the function of double face contact. DualDRIVE+ tool holders can also be used for regular machine spindles, but without double face contact. To achieve double face contact performance, both DualDRIVE+ machine spindles as well as DualDRIVE+ tool holders are required.



Clearance



100% Contact

# HSK SERIES

**ISO 12164**

| SPINDLE TYPE | FEATURES | AVAILABLE TAPER |
|---|---|---|
| ▸ HSK | ▸ **TAPER** 1:9.98<br>▸ **SURFACE ROUGHNESS** Ra < 0.25μm<br>▸ **ROUNDNESS** < 0.6μm<br>▸ **DOUBLE FACE CONTACT** | ▸ **TYPE A** 32.40.50.63.80.100.125<br>▸ **TYPE E** 25.32.40.50.63.80.100<br>▸ **TYPE F** 40.50.63.80<br>▸ **TYPE T** 32.40.50.63.80.100 |

## HOLLOW SHANK FOR HIGH SPEED

- Modern machining process often requires higher revolutions. The design of HSK hollow shank decreases weights by 40% compared with BT holders. With double face contact and high torque transmission in X and Z axis, HSK are ideal for high speed machining.

## HSK–T (ICTM)

- The tolerance requirements for the key sizes on HSK-T machine spindles and tool holders are stricter to ensure the positioning accuracy of insert tips during turning process.

## HIGH PRECISION

- Small-scale machining requires revolutions higher than 40,000rpm, small holders of high precision ensure the balance and concentricity for stable processing.

## BLANK

- Make your own tool! HSK blanks allow users to process the shapes they want. Different diameters can be custom made.

# PSC SERIES

ISO 26623-1

台灣精品 2012
TAIWAN EXCELLENCE

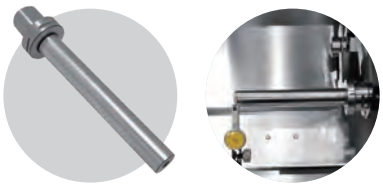
| SPINDLE TYPE | FEATURES | AVAILABLE TAPER |
|---|---|---|
| ▸ PSC | ▸ **TAPER** 1:20<br>▸ **FORM ACCURACY** ±2μm<br>▸ **SURFACE ROUGHNESS** Ra < 0.25μm<br>▸ **DOUBLE FACE CONTACT** | ▸ **PSC** 32.40.50.63.80.80X |

## STRENGTHENED STRUCTURE

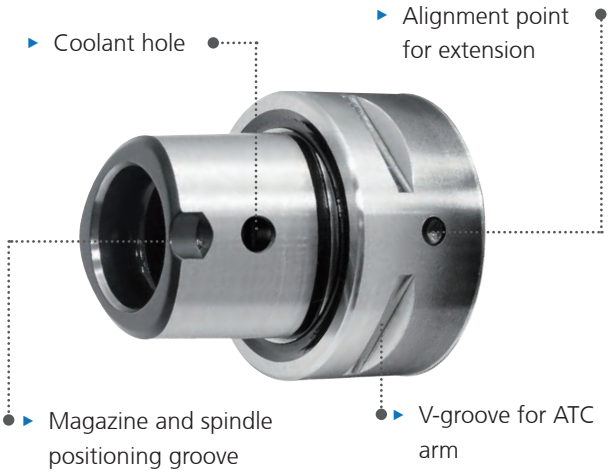
- PSC tooling system is in triangle curve form of polygon, adapting 1/20 tapered coupling structure for two-face positioning and clamping. There is no drive key, tool life can be extended.

## HIGH PRECISION

- The repeat precision of coupling structure in X, Y and Z directions is ±2μm, the total runout is 3μm.

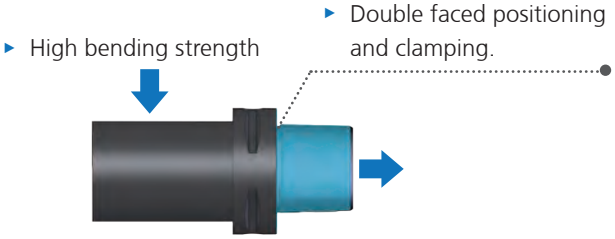


## FEATURES




## HIGH TORQUE TRANSMISSION AND HIGH RIGIDITY

- Ultra-high torque transmission and bending strength of PSC tooling system increase production efficiency.




## PROMOTE EFFICIENCY

- Quick tool change system is applicable for lathes, easy to operate and quick for changing tools. The modular design enhances machine utilization rate and decreases machine downtime.

QUICK TOOL CHANGE <30sec.

# ER-AVX

## ANTI-ROTATION X SYSTEM

- **Hexagonal Locking Structure**
  Effectively prevents rotation and slippage, ensuring stability.
- **Maximum Strength Design**
  Enhances overall rigidity and ensures reliable performance.
- **Precision Tolerance Control**
  Provides more stable cutting tolerances and extends tool life.
- **Efficient Machining Options**
  Optimizes either tool life or cutting parameters for higher productivity.
- **Modular Design**
  Saves purchasing costs and improves tool management efficiency.

## Product Application & Compatibility

Blank

CMAP.CIAP
Indexable End Mill Cutter

PRO-E-M
Collet Chuck

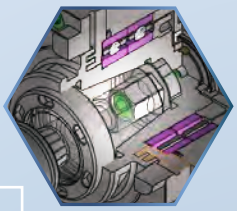
SCA-C
Side Cutter Adapter

SFC
Shrink Fit Chuck

Hex Positioning Tang

OR

Oval-Shaped Tang



### Machining Center


1.PRO-E UM Excellent Collet Chuck
2.ER Tool Holder
3.PRO-E Excellent Collet Chuck
4.ERUS Ultra Short Tool Holder
5.Angle Head Holder for Medium Cutting

### Multi-Tasking Machine

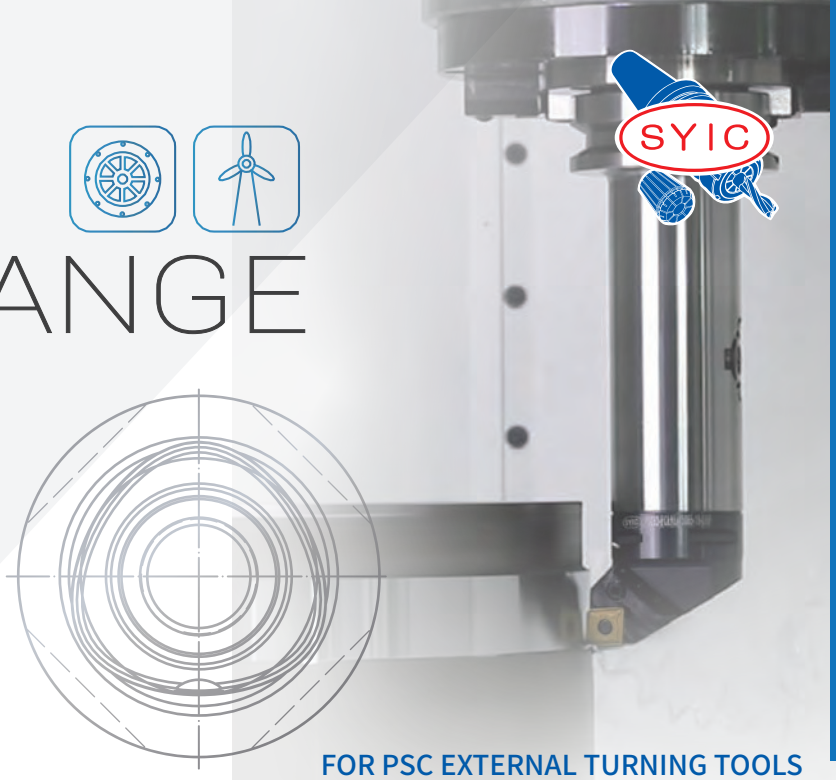
BMT Driven Tool Holder

# ER/SWD Screwfeed Holder

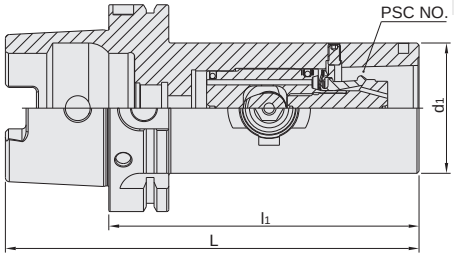
1. Modular design, used with screwed cutting tools, ensures excellent versatility.
2. Compatible with various taper sizes of ER tool holders, providing extensive applicability and better machining rigidity.
3. Suitable for CNC mill-turn machines, shortening machining travel and preventing interference.
4. Three flat surfaces at the front end of the screwed holder facilitate easy installation into eccentric nuts.
5. Compatible with coolant-through screwed cutting tools for center coolant.




# HANDLE QUICK CHANGE ADAPTER

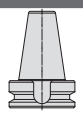







## FOR PSC EXTERNAL TURNING TOOLS

★ These types can be used with PSC turning tools for turning when the machine spindle is equipped with a positioning system or a clutch tooth mechanism.

| SHANK | MODEL NO. | TYPE | NO. | L | $l_1$ | $d_1$ | TORQUE | | WEIGHT (KGS) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Nm | ft.lbs | |
| ★  DaulDRIVE+ | 5027-016-143-150 | SBT50 x PSC63 - 150HQC | PSC63 | 251.8 | 150 | 63 | 90 | 67 | 5.67 |
| | 5027-016-143-200 | SBT50 x PSC63 - 200HQC | PSC63 | 301.8 | 200 | 63 | 90 | 67 | 6.75 |
| ★  DaulDRIVE+ | 5067-016-143-150 | SDAT50 x PSC63 - 150HQC | PSC63 | 251.75 | 150 | 63 | 90 | 67 | 5.15 |
| | 5067-016-143-200 | SDAT50 x PSC63 - 200HQC | PSC63 | 301.75 | 200 | 63 | 90 | 67 | 6.20 |
| ★  ISO 12164-1 | 5075-016-143-150 | HSK100A x PSC63 - 150HQC | PSC63 | 200 | 150 | 63 | 90 | 67 | 4.40 |
| | 5075-016-143-200 | HSK100A x PSC63 - 200HQC | PSC63 | 250 | 200 | 63 | 90 | 67 | 5.45 |
|  ISO 12164-3 | 575T-016-143-150 | HSK-T100 x PSC63 - 150HQC | PSC63 | 200 | 150 | 63 | 90 | 67 | 4.40 |
| | 575T-016-143-200 | HSK-T100 x PSC63 - 200HQC | PSC63 | 250 | 200 | 63 | 90 | 67 | 5.45 |

***Product Information***

- The HQC adapter is designed with jaw-clamping mechanism, which is different from a screw-tightening design. It only requires a 1/2 turn using a hex wrench to quickly hold and release the tool.
- Used for machines using non-rotation tools.
- It can significantly reduce tool change and clamping time when used on a vertical lathe without ATC functionality.
- PSC interface allows tool measurement offline. It saves the downtime and increases production efficiency.
- It' s center coolant available with coolant pressure durability up to 20 bar.

# PSC Data Chip Hole Tool Holder
## NEO for RFID

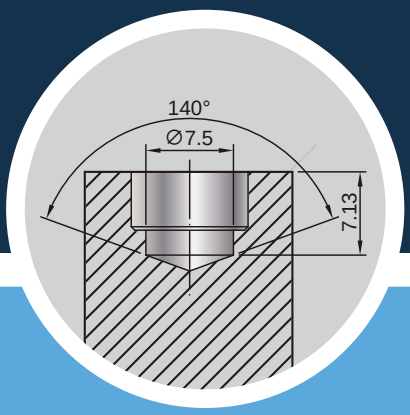
**Smart Tool Management System 2.0**
**Reliable Support for Manufacturing Processes**
**ISO 26623-1:2020**


### Type A

- Pre-balanced.

### Type B

- Install chip from customer.
- Balancing grade upon request.




### Type C

- Pre-balanced.
- Users process the chip hole before installing chip.

## Product Benefits

- Reduce machine setup time.
- Reliable and correct tool data transfer via tool management system.
- Increase production efficiency.
- Increase machine uptime.

# Application of PSC Data Chip Hole Tool Holder NEO for RFID

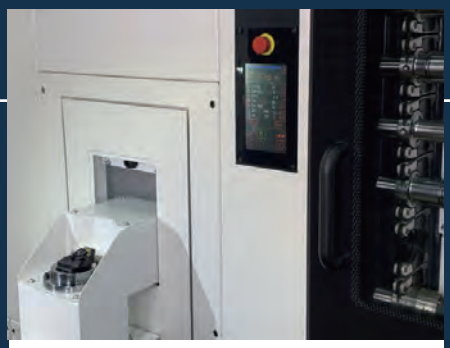
❖ Tools identified by the tool presetter.
Data **written** into the chip.

1. Put the tool on the tool presetter and input initial settings.

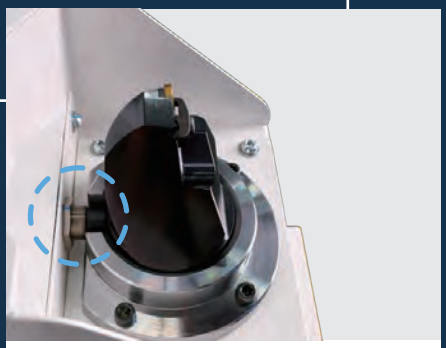
2. Tools identified by the tool presetter.

3. Data written into the chip.

❖ Read the data from the chip and **transfer** to the machine.

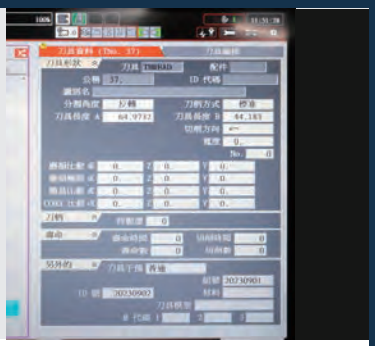


1. Put the tool on the machine.



2. Align the chip with reader of the machine.


3. The machine reads data from the chip.



4. Transferring the data from the chip to machine controller.

# ER COLLET SERIES

ER Collet

ER-E High Precision Collet
(W/sealed, coolant types)

ERS Metallic Collet
(W/sealed, coolant types)

ER-ES Steel Sealed Collet

ER-TC Rigid Tap Collet
(W/sealed, coolant types)

ER-TIO Multi-Coolant Rigid Tap Collet

ER Floating Tap Collet

## Coolant Collet Introduction

### FID Coolant Groove Type:

- The coolant fluid outlet is through the internal grooves of the collet and goes parallel with the tool thus there is no tool effective length limit.
- Precision cooling, eliminates workpiece thermal distortion, and reduces pre-measurement waiting time.

### FOD Coolant Hole Type:

- The coolant fluid outlet is directed through three coolant holes pointing towards the center of the tool, suitable for tools with 2.7DL~3.5DL.
- Precision cooling, eliminates workpiece thermal distortion, and reduces pre-measurement waiting time.

### TIO Multi-Coolant Type:

- Two cutting fluid supply methods are provided simultaneously, ensuring precise spraying of the fluid to the cutting point.
- Increase the cutting fluid flow rate to provide more effective cooling.
- Precision cooling, eliminates workpiece thermal distortion, and reduces pre-measurement waiting time.

## Recommended Tool Holder

**PRO-E Excellent Collet Chuck**

**PRO-E Excellent Collet Chuck UM Type**

**PRO-E Excellent Collet Chuck M Type**

# PRO-E Excellent
## Collet Chuck

Multiply the values of performance!

POWER GOOD

BALANCE G2.5 25,000 RPM

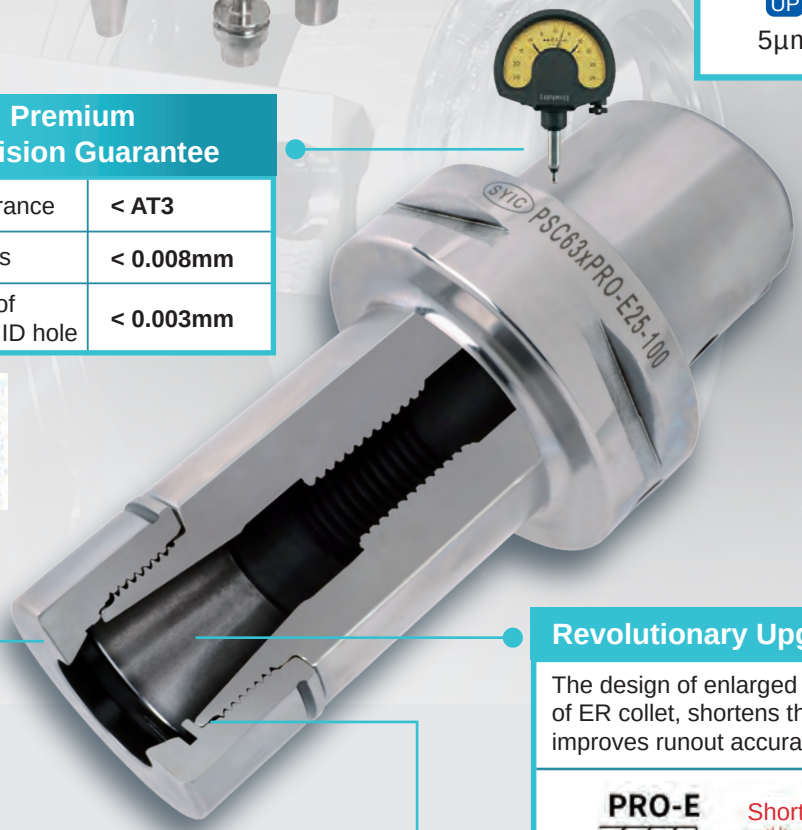
### Used with ER Collet (ISO15488)

SYIC produces a range of designs of ER collets. The collet types recommended using with PRO-E Excellent Collet Chucks are shown below. It can effectively conquer your machining challenges!

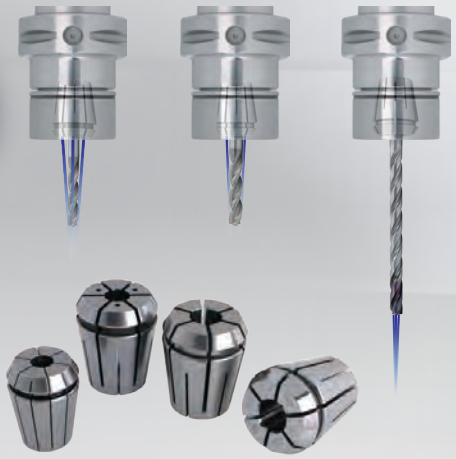
| ER-E High Precision Collet | ERS Collet | | |
|---|---|---|---|
| | Metallic Sealed | FOD | FID |
| | Coolant Pressure: ∞ | | |
| G 8μm<br>UP 5μm | G 8μm<br>P 3μm | | |

### Premium Precision Guarantee

| | |
|---|---|
| Taper tolerance | **< AT3** |
| Roundness | **< 0.008mm** |
| Accuracy of toolholder ID hole | **< 0.003mm** |

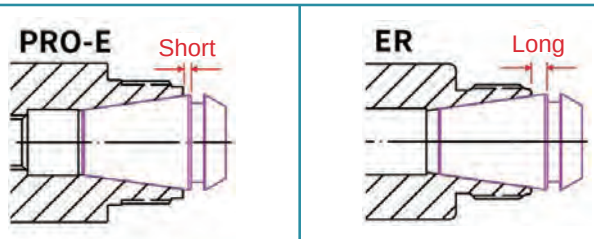



Clamping range: h7



### Revolutionary Upgrade Beyond ER Tool Holders

The design of enlarged holder ID hole optimizes the coverage of ER collet, shortens the tool overhanging length and improves runout accuracy and machining stability.




### Two Designs of PRO-E Clamping Nut

| Wind Resistance Type | UM Type |
|---|---|
|  |  |

### Outstanding Product Design Creates Maximum Machining Efficiency

The PRO-E collet chunk and the clamping nut achieve great contact when fastened together due to **the design of upper and lower straight sections**, maximizing the strength, rigidity, and precision stability.

# ER SHORT LENGTH
## TOOL HOLDER

BT CAT PSC

POWER GOOD

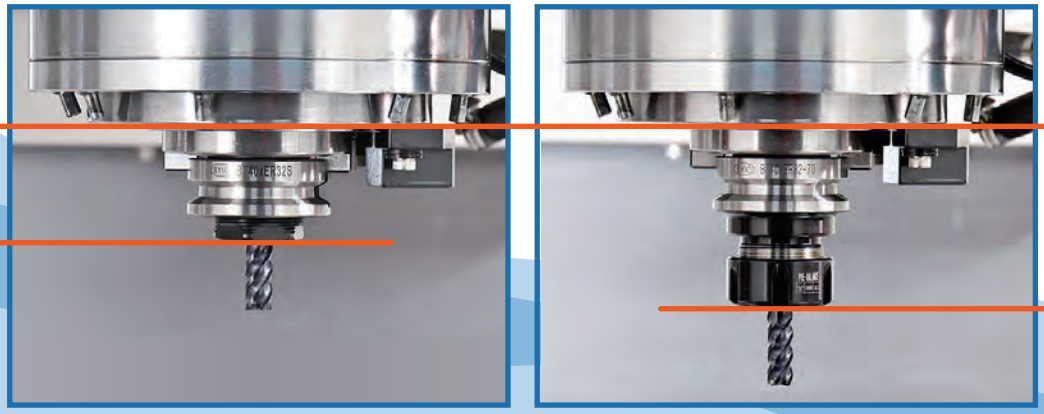
BALANCE G2.5 25,000 RPM


### Features:

1. Used with all ER collets.
2. The front short design improves machining rigidity, reduces the vibration and prolongs tool life!
3. With special surface treatment, the clamping power of nuts is increased by 75%.
4. Suitable for high-speed and high-torque processing, or machining with tall workpieces and limited Z-axis space.

**ER Short Length** Tool Holder:

**Standard ER** Tool Holder:



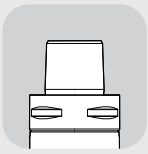


## PSC / ERUS ULTRA SHORT
TOOL HOLDER

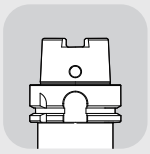
PSC short length tool holder with
ERUS Ultra Short Clamping Nut shortens projection even more with even better rigidity!

# AWC JIG TOOL HOLDER

Taper: **PSC & HSK**,
with the best bending strength
and positioning accuracy.

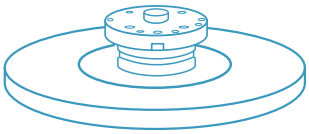


PSC

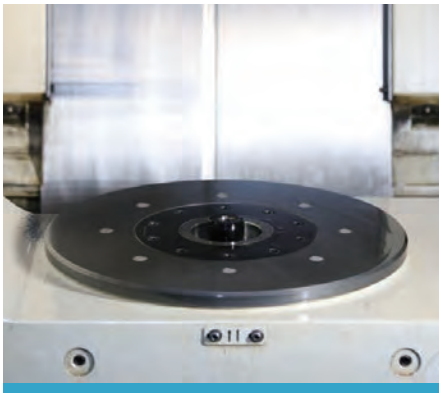


HSK

## 1 Quick Positioning and Clamping System



- Used for machine tables with quick positioning and clamping system.
- If a machine doesn' t have a built-in quick positioning and clamping system, customers can install manual or hydraulic clamping system on the machine table.



**Built-in Type**

**Hydraulic Type**

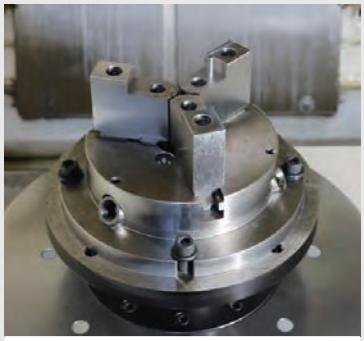
**Manual Type**

# AWC JIG TOOL HOLDER

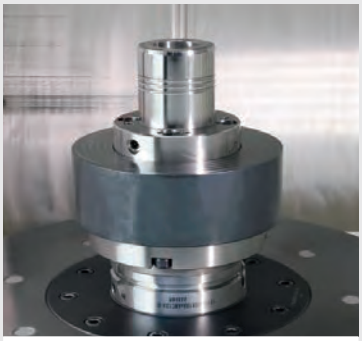
## 2 Product Clamping Application

Workpiece clamped by self-centering vise

- Suitable for clamping round and square workpieces.

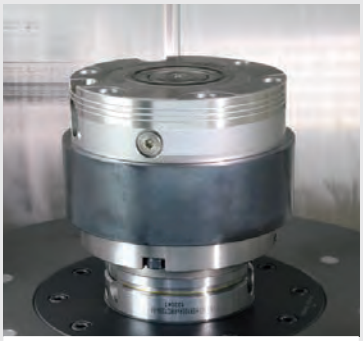


Workpiece clamped by three-jaw chuck



Workpiece clamped by hydraulic expansion toolholder

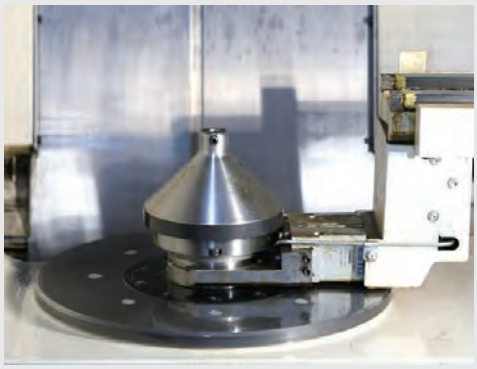
- Suitable for clamping round workpieces.



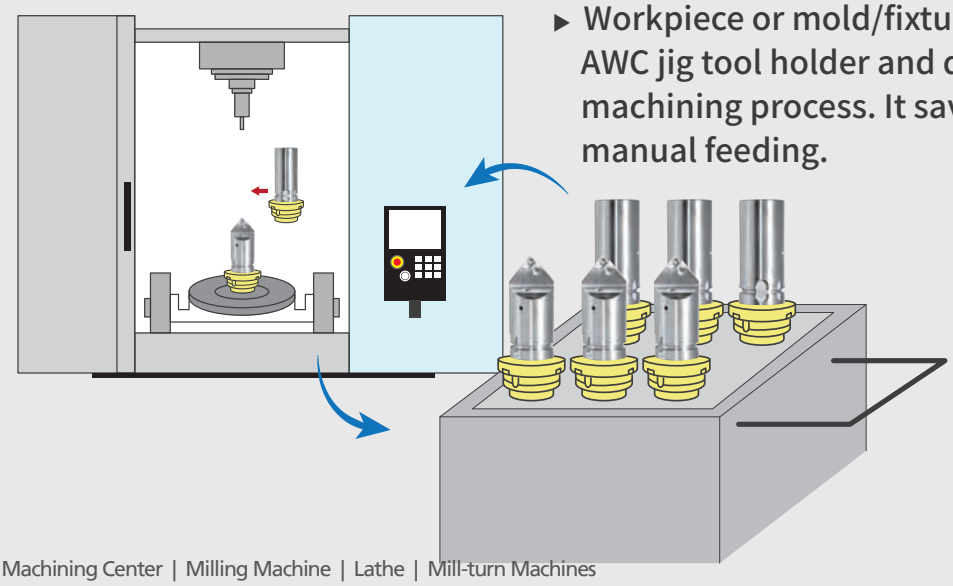
Workpiece clamped by quick change module

- Suitable for clamping all shapes of workpieces.

## 3 Improve Production Efficiency



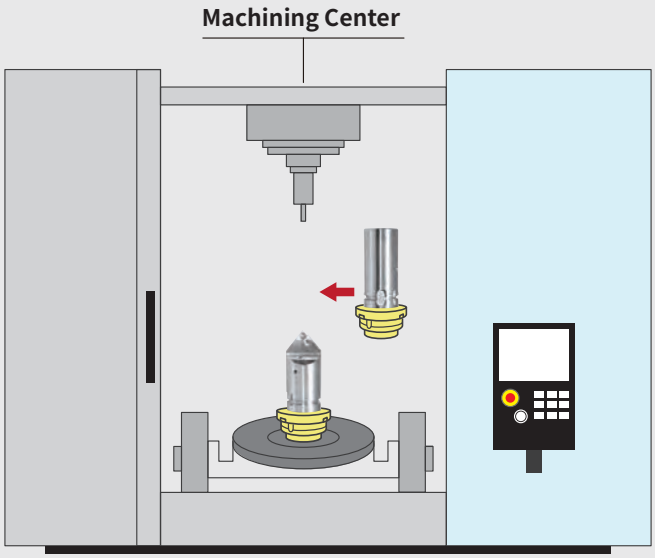
- The tool clamping system of machine table can quickly clamp or change AWC jig tool holders to increase production efficiency.
- Scan the QR-CODE to watch a demonstration video.



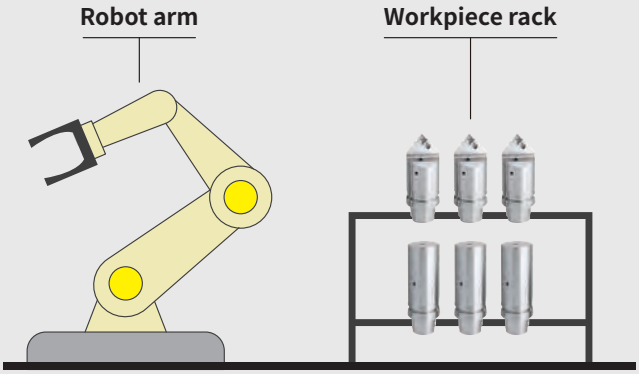
- Workpiece or mold/fixture can be pre-loaded in AWC jig tool holder and quickly changed during machining process. It saves the downtime for manual feeding.

# AWC JIG TOOL HOLDER

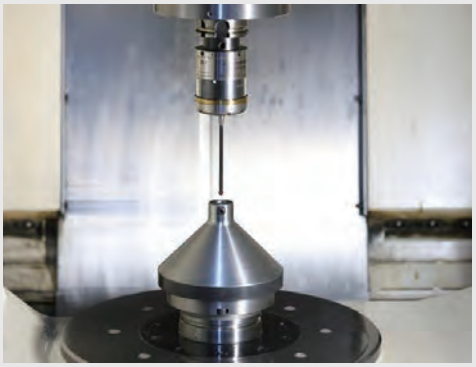
## 4 Support Automation System




▸ It' s an indispensable choice to build automation system!




## 5 Use Touch Probe Holder for Accuracy Compensation

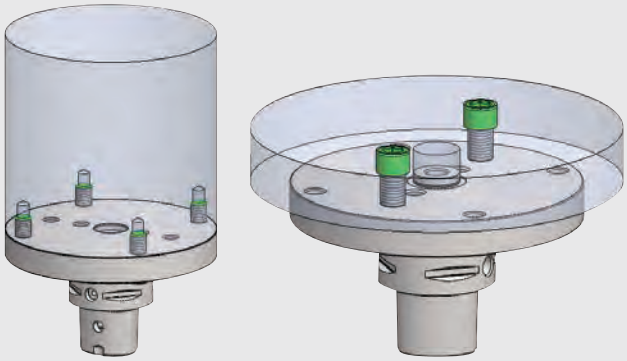


▸ It's recommended to use high-precision touch probe holder for workpiece positioning and size compensation to reduce manual operation errors, shorten the time for calibrating molds/fixtures, and ensure machining accuracy.

## 6 Various Clamping Methods

▸ There are different sizes of screw holes on the face of AWC jig tool holder, which provides customers with various methods of clamping workpieces and molds/fixtures.

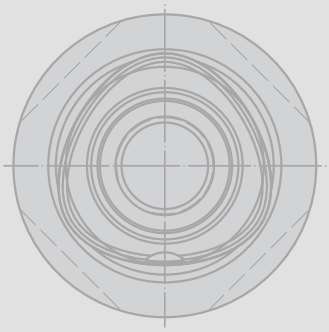
▸ AWC jig tool holder can be customized.



# PSC WORKPIECE QUICK CHANGE SYSTEM

## Hydraulic Type & Manual Type

- Quick positioning and workpiece clamping save the downtime for manual feeding.
- Workpiece can be clamped offline to decrease setting time in the machine and increase production efficiency.
- PSC triple-face contact structure has the best bending strength and superior repeat positioning accuracy(±2μm).
- Clamping force is inspected individually before delivery.

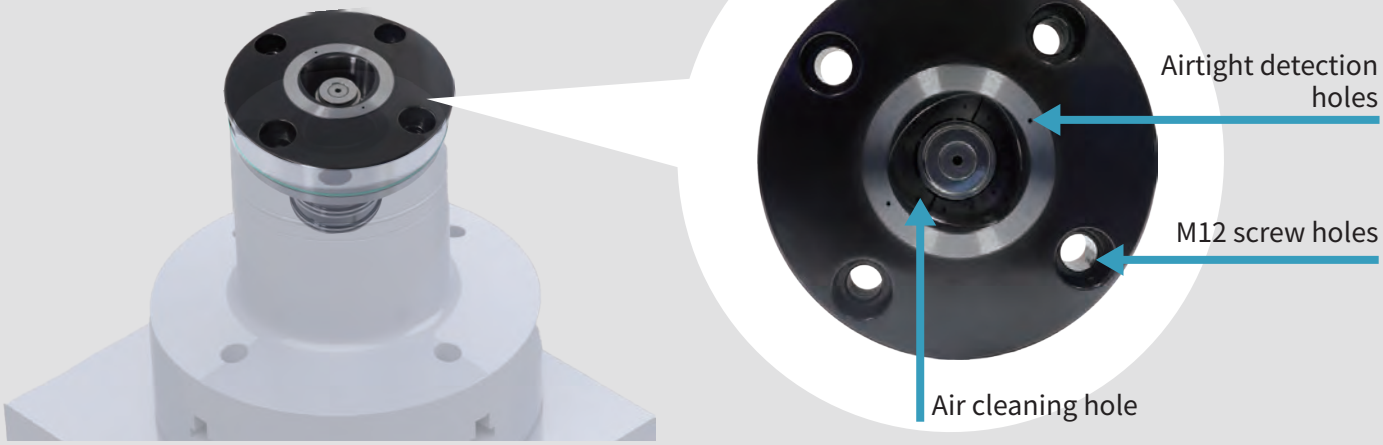


## 1 Available Type

## Hydraulic Type:

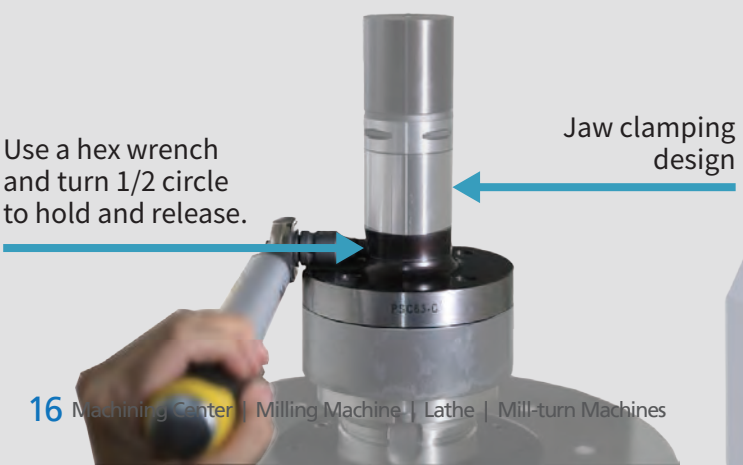
used for 4-axis and 5-axis rotary table.

**Optimum for Automation**




## Manual Type:

used for CNC 3-axis machining center table and 4-axis and 5-axis rotary table.

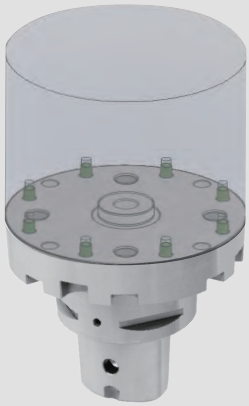



## 2 Application of PSC Workpiece Quick Change System

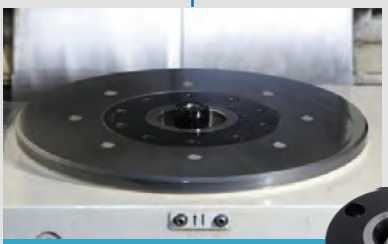
PSC Blank

PSC/MLD Milling Chuck

PSC Adapter



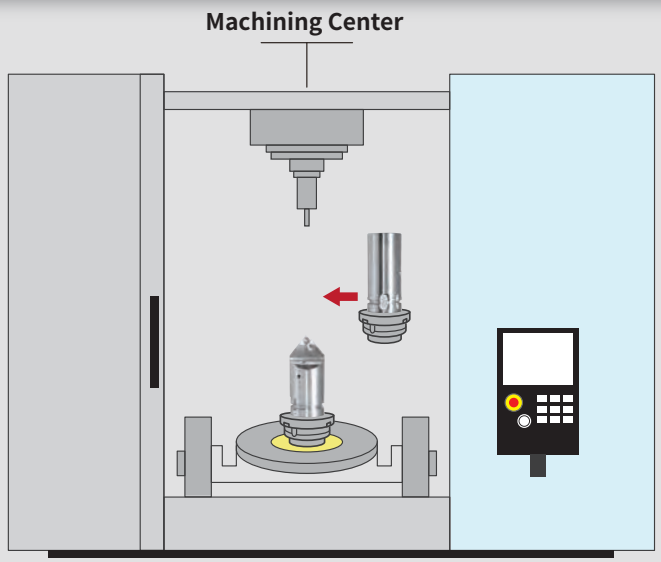
AWC Jig Tool Holder



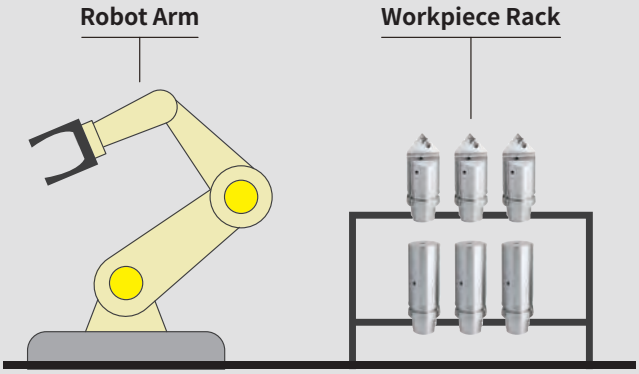
Hydraulic Type

Manual Type

## 3 Support Automation System

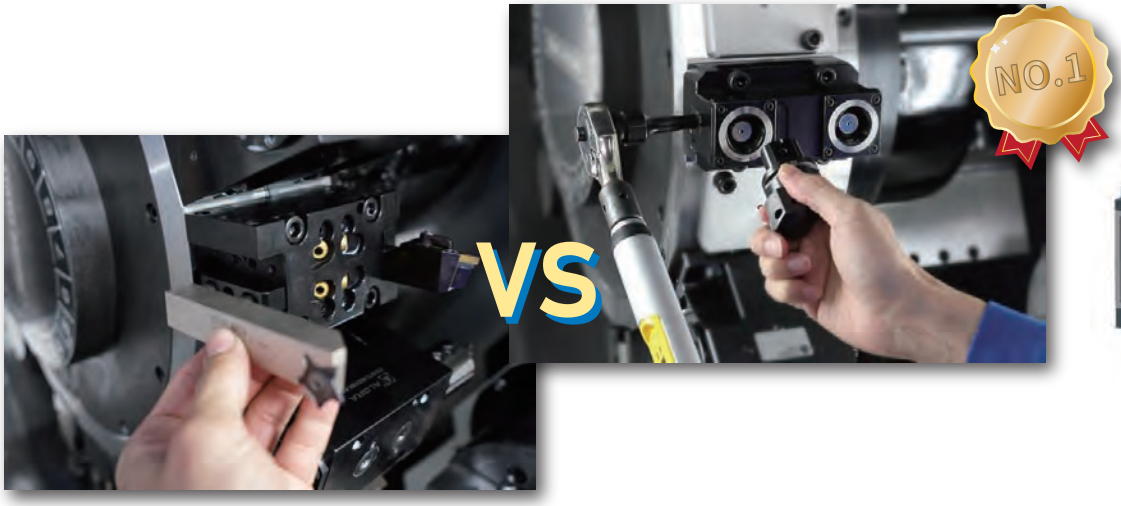



▶ It' s an indispensable choice to build automation system!



# BMT STATIC TOOL HOLDER

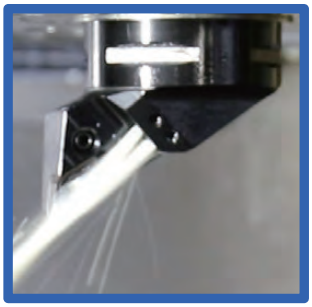
▶ The jaw clamping design allows quick tool change and tool can be measured offline in advance, reducing downtime and improving processing efficiency.





▶ Applicable machine type: Turn-mill multitasking machine.
Applicable industry: Automation, electronics and spare parts industries.

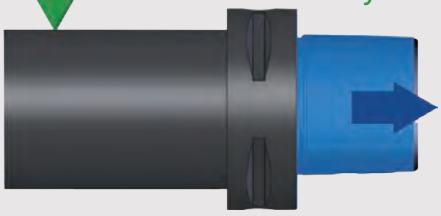
▶ Built-in with center coolant mechanism, and coolant pressure can be up to 70BAR.



▶ Clamping force is inspected individually before delivery.

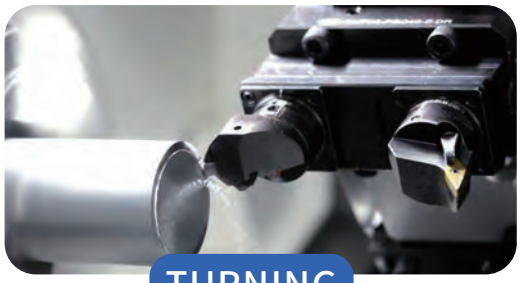
▸ Used with the PSC taper tools, which have the features of bending strength, and superior repeat positioning accuracy.

High bending strength ensures dimensional stability during processing.



# PSC SERIES ISO 26623-1

▸ Suitable for turning and center hole drilling and tapping.



## TURNING

PSC/DCLN

PSC/DTJN

PSC/DDJN

PSC/DWLN

PSC/PCLN

PSC/PDJN

PSC/SCLC

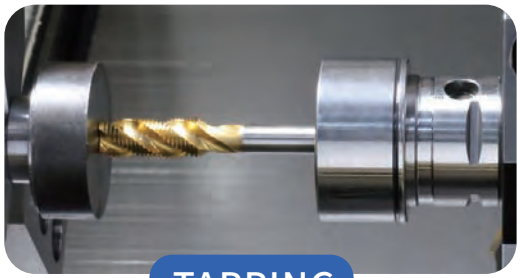
PSC/SDJC

PSC/SVJB

## DRILLING

PSC/SPD
High Speed Drill

PSC/SFC
Shrink Fit Chuck



## TAPPING

PSC/PRO-E
Collet Chuck

ERS

ERS-FID

ERS-FOD

PRO-E
Power Good Nut

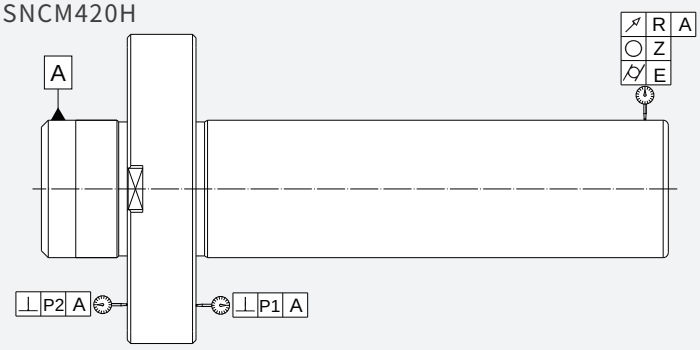

3µm

# BMT TURRET MASTER BAR

## PRECISION TYPE

**Regular inspection of machine turret is an extremely important step to realize high precision machining!**

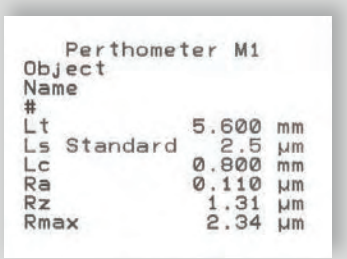
Material : SNCM420H

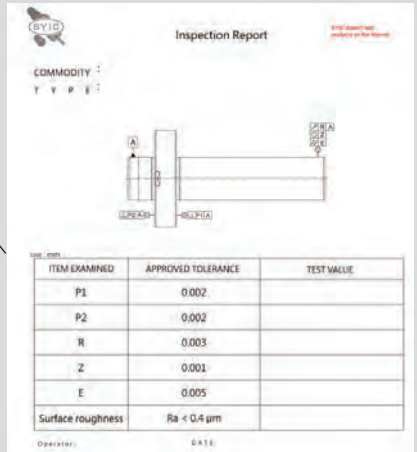



| | |
|---|---|
| ROUNDNESS | 1µm |
| SURFACE ROUGHNESS | Ra < 0.15µm |
| RUNOUT ACCURACY | 3µm |
| CYLINDRICITY | 5µm |

## 100% GUARANTEED PRECISION:

Every BMT turret master bar is inspected with high precision instrument and delivered with an inspection report. 100% quality guaranteed !





Inspection Report

COMMODITY

| ITEM EXAMINED | APPROVED TOLERANCE | TEST VALUE |
|---|---|---|
| P1 | 0.002 | |
| P2 | 0.002 | |
| R | 0.003 | |
| Z | 0.001 | |
| E | 0.005 | |
| Surface roughness | Ra < 0.4 µm | |

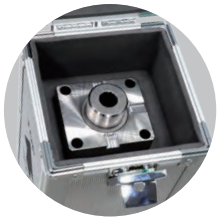
## What are the benefits of using BMT Turret Master Bar?

1. Optimal for checking machine turret accuracy.
2. Checking turret accuracy maximizes machining performance and increases productivity.
3. Ensures the machining precision and prolongs the tool life.
4. Helps detect potential problems of turret/ equipment and saves downtime and costly repair cost.

Machining Performance ↑ | Tool Life ↑ | Machining Productivity ↑

## Recommendation of storage:

It's recommended to store in stock vertically to prevent deformation.
Every BMT turret master bar is delivered with an aluminum box for vertical storage.



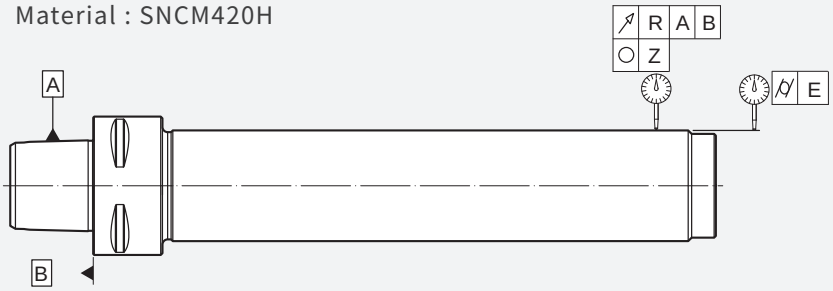
# SPINDLE MASTER BAR

## PRECISION TYPE

3µm

**Regular inspection of machine spindles is an extremely important step to realize high precision machining!**

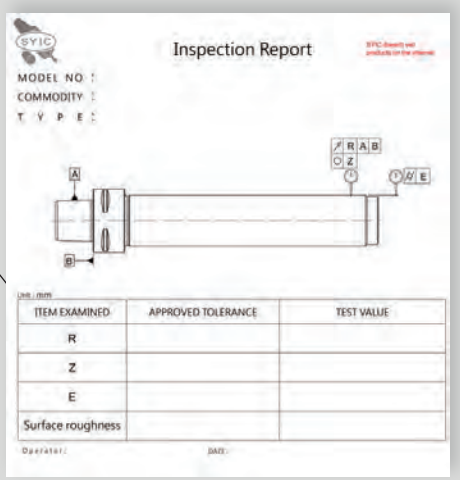
Material : SNCM420H




| | |
|---|---|
| TAPER SHANK PRECISION | AT2 |
| ROUNDNESS | 1µm |
| SURFACE ROUGHNESS | Ra < 0.15µm |
| RUNOUT ACCURACY | 3µm |
| CYLINDRICITY | 5µm |

## 100% GUARANTEED PRECISION:

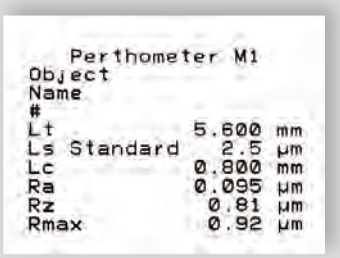
Every spindle master bar is inspected with high precision instrument and delivered with an inspection report. 100% quality guaranteed !


Inspection Report

MODEL NO :
COMMODITY :
T Y P E :

| ITEM EXAMINED | APPROVED TOLERANCE | TEST VALUE |
|---|---|---|
| R | | |
| Z | | |
| E | | |
| Surface roughness | | |

Operator: DATE:



## What are the benefits of using Spindle Master Bar?

1. Optimal for checking machine spindle runout accuracy.
2. Checking spindle accuracy maximizes tool holder performance and increases productivity.
3. Ensures the machining precision and prolong the tool life.
4. Helps detect potential problems of spindle and saves downtime and costly repair cost.

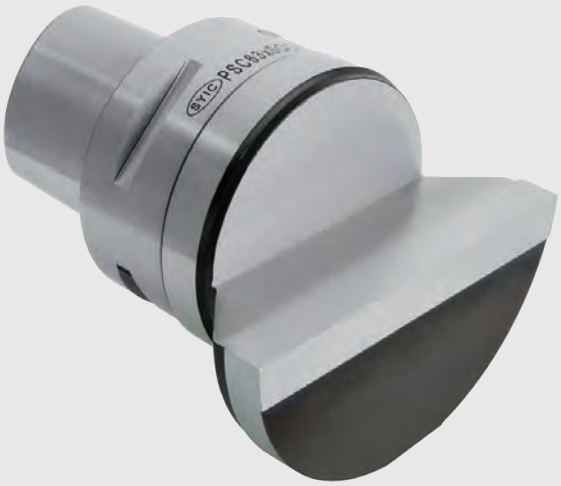
**Tool Holder Performance** ↑ **Tool Life** ↑ **Machining Productivity** ↑

## Recommendation of storage:

It's recommended to store in stock vertically to prevent deformation.
Every spindle master bar is delivered with an aluminum box for vertical storage.

# SOG ORIGIN GAUGE

- Regular inspection and calibration of spindle origin achieves premium machining quality.
- SOG is an important gauge to calibrate axial and radial accuracy of CNC machines.

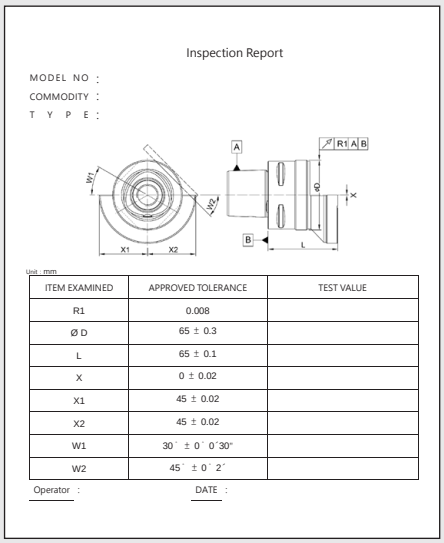


## AVAILABLE TAPER

HSK-T | PSC | SBT | SCAT | SDAT

## 100% GUARANTEED PRECISION:

Every SOG origin gauge is inspected with high precision instrument and delivered with an inspection report. 100% quality guaranteed!



Inspection Report

MODEL NO :
COMMODITY :
T Y P E :



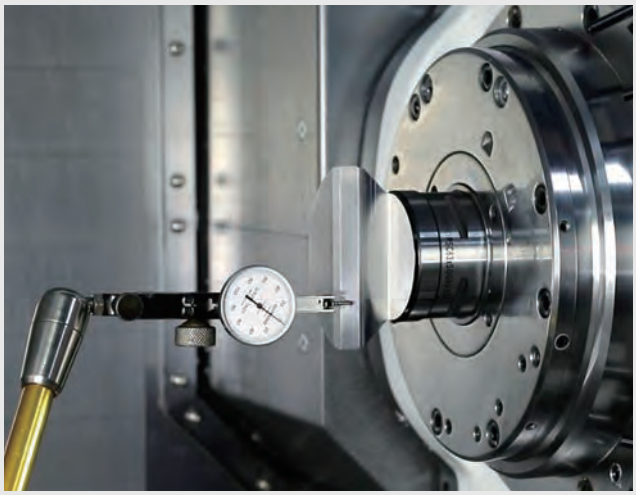
Unit : mm

| ITEM EXAMINED | APPROVED TOLERANCE | TEST VALUE |
|---|---|---|
| R1 | 0.008 | |
| Ø D | 65 ± 0.3 | |
| L | 65 ± 0.1 | |
| X | 0 ± 0.02 | |
| X1 | 45 ± 0.02 | |
| X2 | 45 ± 0.02 | |
| W1 | 30° ± 0° 0'30" | |
| W2 | 45° ± 0° 2' | |

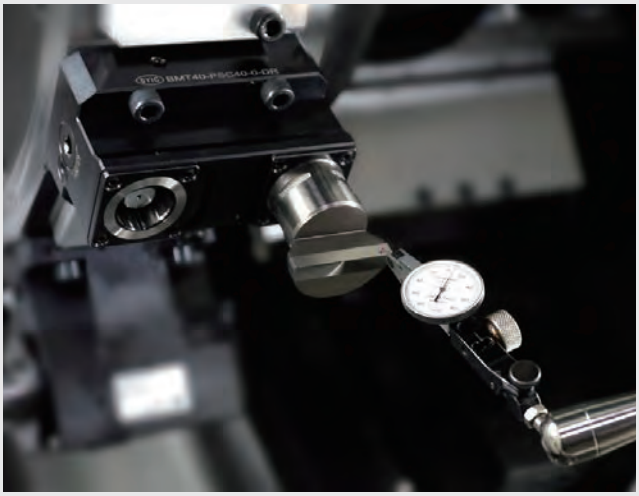
Operator :  DATE :

# Application of SOG Origin Gauge

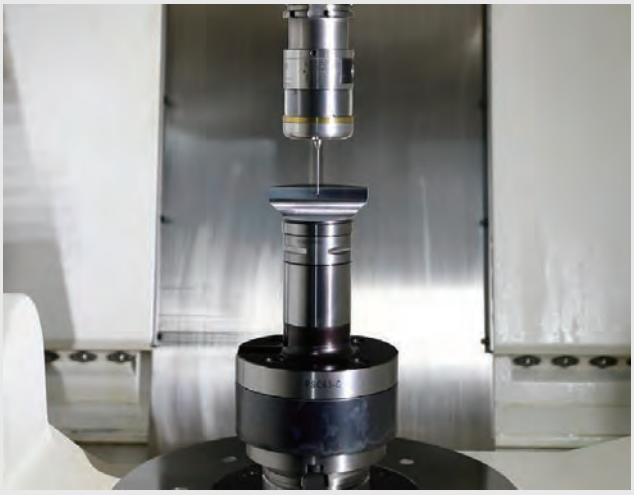
Calibrating spindle accuracy
of mill-turn machines



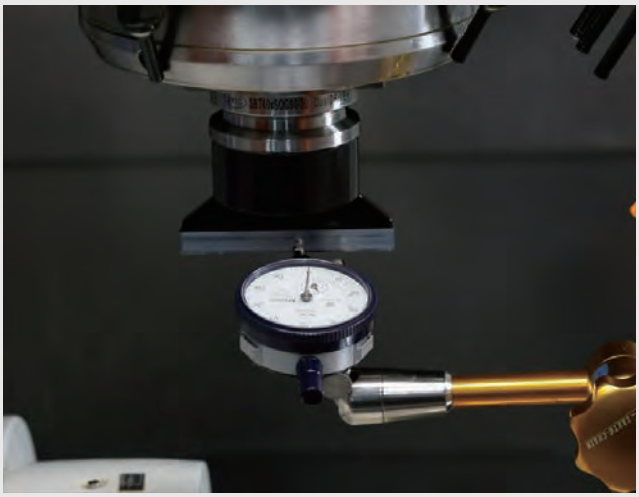
Calibrating tool post accuracy
of CNC lathes



Setting rotary table machining
origin of 5 axis machining centers



Setting spindle orientation (M19)



Please keep attached inspection report properly as the basis while calibrating machines.

# ATC ALIGNMENT TOOL SET

## Guardian of Machine Accuracy

**Used for checking ATC positioning accuracy between ATC arm and machine spindle, and between ATC arm and tool magazine.**

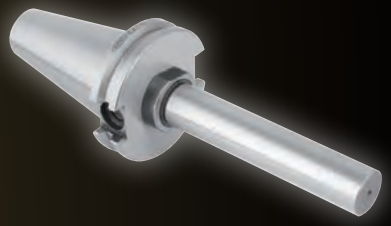
- ▶ **Prevent tool holder tapers from abnormal wear.**
- ▶ **Detect the potential problems of machines and decrease the probability of machine breakdown.**
- ▶ **Prolong the use life of machine spindle.**


### SBT

MAS 403
DualDRIVE+

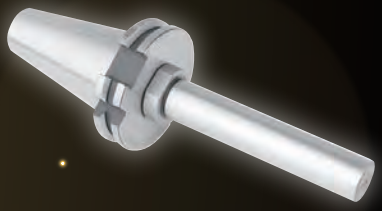
### SCAT

ANSI B5.50
DualDRIVE+



### SDAT

DIN 69871-A
DualDRIVE+



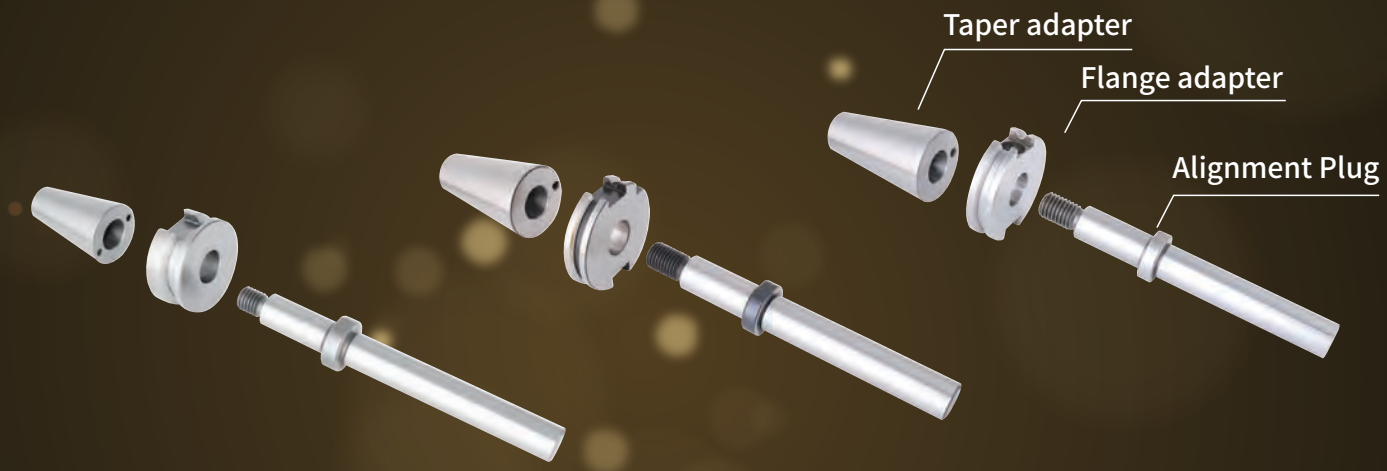
### HSK

DIN 69893
A, E, F Type

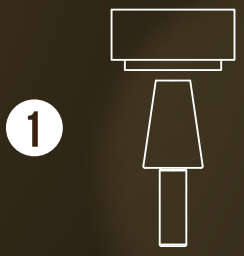
### PSC

ISO 26623-1

# INSTRUCTIONS FOR USE
## (SBT/SCAT/SDAT SERIES)

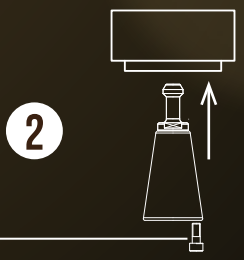



**01** Clean machine spindle by spindle wiper.

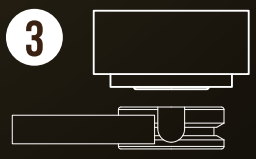



**02** Assemble the taper adapter with pull stud and screw, insert taper adapter into spindle manually with screw and push machine controller button to clamp taper adapter, then loosen the screw.

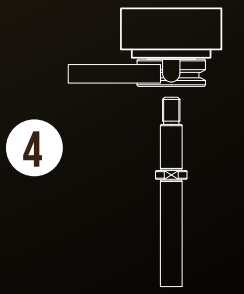
M4x0.7P (#30)
M6x1.0P (#40 & #50)



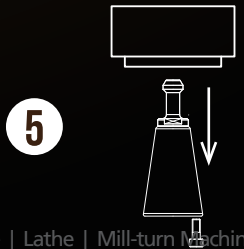

**03** Install the flange adapter into gripper of ATC arm and press machine controller button to move ATC arm to align with machine spindle.



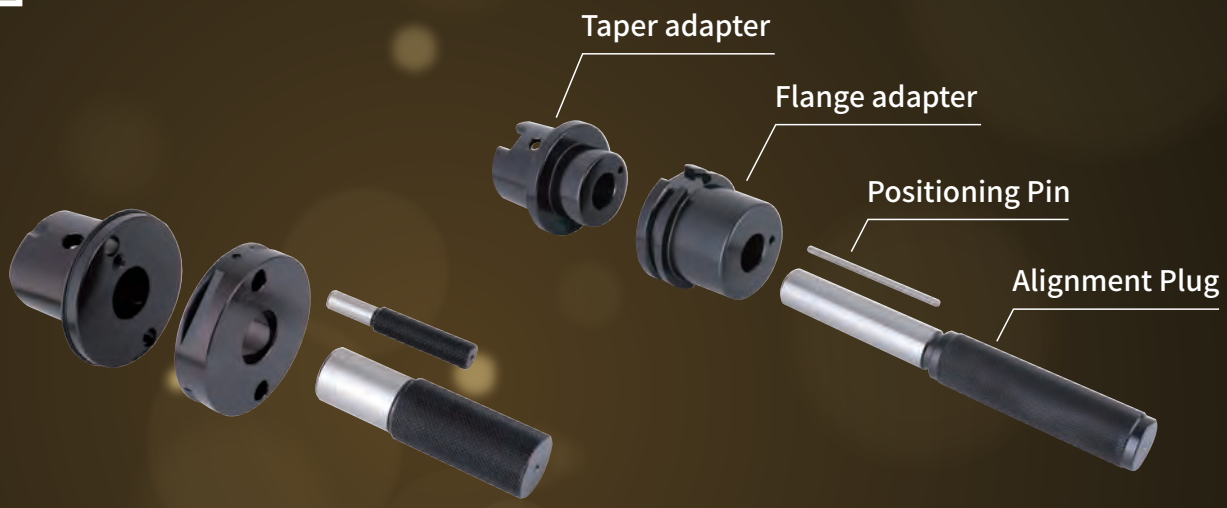

**04** Insert alignment plug into the holes of flange adapter and taper adapter for alignment.
If alignment plug can be inserted with ease and the movement is smooth, the alignment is done.
If alignment plug can' t be inserted into the holes of flange adapter and taper adapter, or it is hard to be inserted, please contact your machine supplier to inspect and adjust the positioning accuracy of ATC arm.



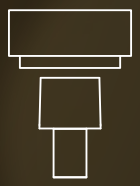

**05** After completing alignment, unload alignment plug and flange adapter. Hold the taper adapter manually with screw and release it from spindle by pressing release button.



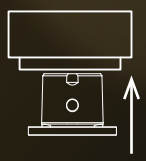
# INSTRUCTIONS FOR USE
## ( PSC & HSK SERIES)



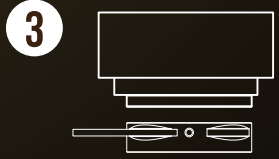

**01** Clean machine spindle by spindle wiper.



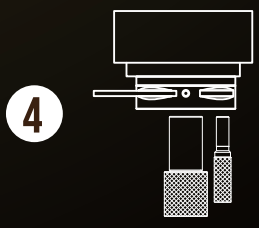

**02** Insert the taper adapter into spindle manually and push machine controller button to clamp the taper adapter.



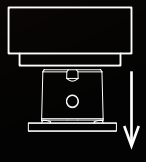

**03** Install the flange adapter into gripper of ATC arm and press machine controller button to move ATC closer to machine spindle. Use positioning pin to adjust flange adapter to align position hole with taper adapter and spindle.




**04** Insert alignment plug and positioning pin into the holes of flange adapter and taper adapter for alignment.
If alignment plug and positioning pin can be inserted with ease and the movement is smooth, the alignment is done.
If alignment plug and positioning pin can't be inserted into the holes of flange adapter and taper adapter, or it is hard to be inserted, please contact your machine supplier to inspect and adjust the positioning accuracy of ATC arm.

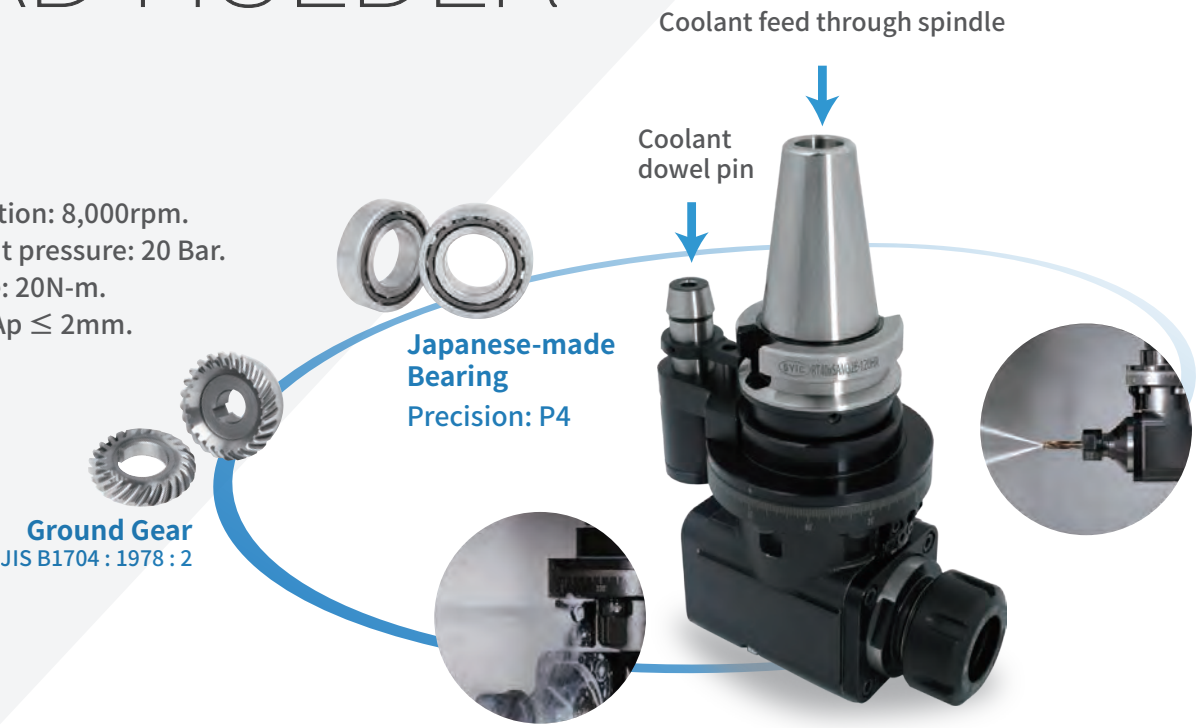



**05** After completing alignment, unload alignment plug, positioning pin and flange adapter. Hold the taper adapter by hand and remove it from spindle by pressing releasing button.



# SAM-HSC ANGLE HEAD HOLDER

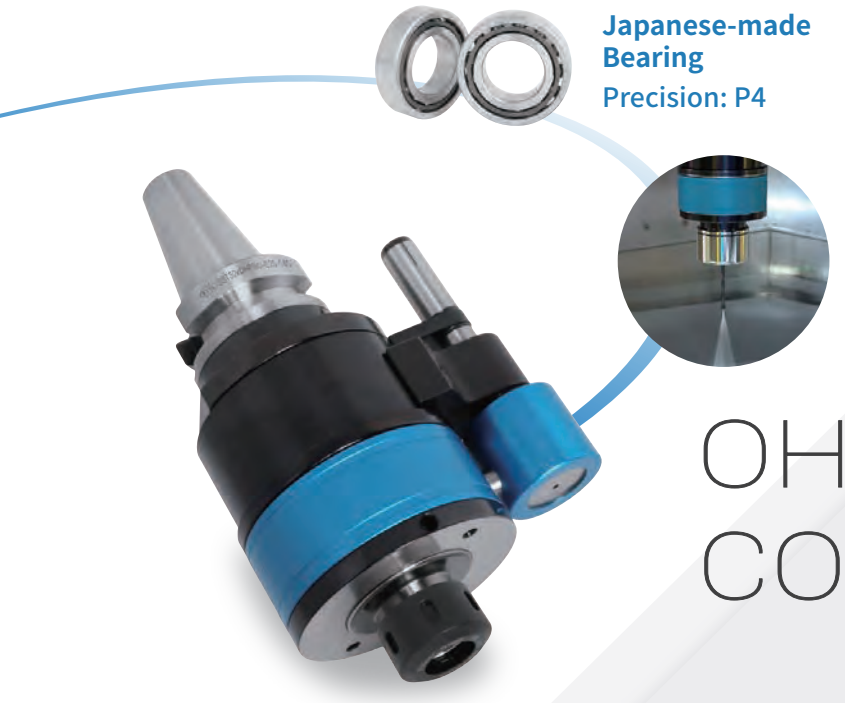
- Max. revolution: 8,000rpm.
- Max. coolant pressure: 20 Bar.
- Max. torque: 20N-m.
- Suggested Ap ≤ 2mm.




*Are you struggling with the challenges of deep hole machining and short tool life?*

***"HSC High Revolution & High Coolant Pressure Type" Angle Head and OHER Oil Hole Collet Chuck***

*are your best solutions for overcoming deep hole machining problems!*




- Max. revolution: 8,000rpm.
- Max. coolant pressure: 20 Bar.
- Center distance (S): 55mm & 65mm.
- Separated design of the bearing and coolant system helps prevent metal chips and dust from entering the bearing area, extending the use life.

# OHER OIL HOLE COLLET CHUCK

# SAU ANGLE HEAD HOLDER

## [ UNIVERSAL TYPE ]


**Japanese-made Bearing**

Precision: P4

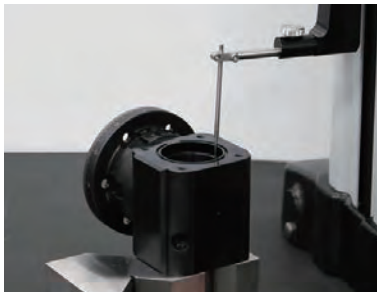
**Ground Gear**

JIS B1704 : 1978 : 2

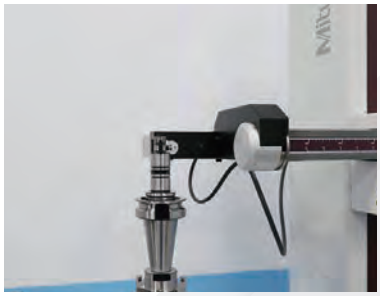
- Max. revolution: 4,000rpm.
- Max. torque: 40N-m.
- Max. coolant pressure: 20 kgf/cm² (20bar).
- ATC is available for all angle head series.

**Measuring precision of angle**

**Circular sunout: ≦20μm**
**Angularity: ±8μm**

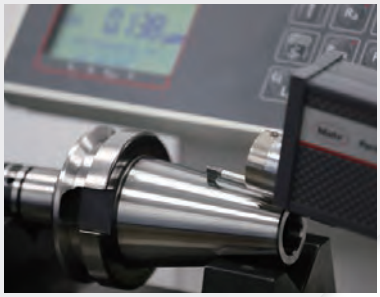


**Measuring precision**



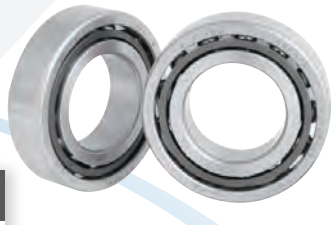
**Roundness: 2μm**


**Taper tolerance: <AT3**



**Surface roughness: Ra<0.25μm**

# SAR ANGLE HEAD HOLDER



## Japanese-made Bearing

Precision: P4

## Ground Gear

JIS B1704 : 1978 : 2

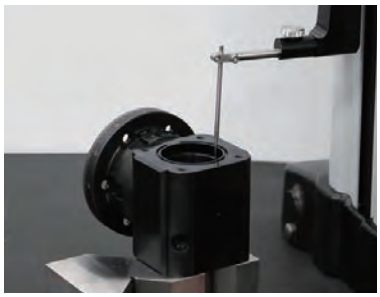

| Machine spindle |
|---|
| BT/SBT |
| CAT/SCAT |
| DAT/SDAT |

Coolant through coolant nozzle

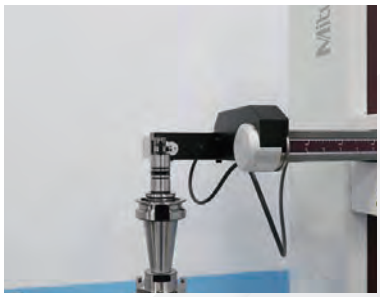
| Output |
|---|
| SBT30 |
| PSC50 |
| ER40 |
| MLD32 |
| FMA25.4 |

- Max. revolution: 3,000rpm.
- Max. torque: 50N-m.
- Max. coolant pressure: 7kgf/cm2(100PSI).
- ATC is available for all angle head series.

Circular runout: ≦20μm
Angularity: ±8μm

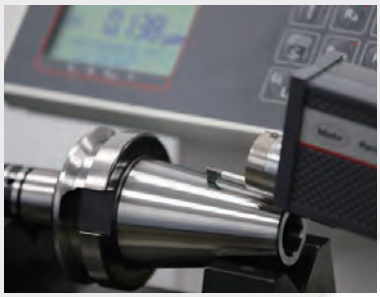


Measuring precision



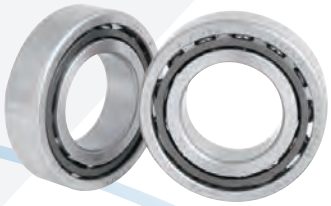
Roundness: 2μm


Taper tolerance: <AT3



Surface roughness: Ra<0.25μm

# SAC ANGLE HEAD HOLDER



## Japanese-made Bearing

Precision: P4

| Machine spindle |
|---|
| BT/SBT |
| CAT/SCAT |
| DAT/SDAT |
| HSK/PSC |

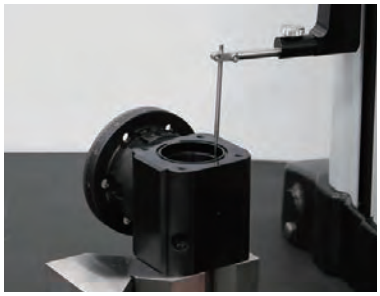
## Ground Gear

JIS B1704 : 1978 : 2

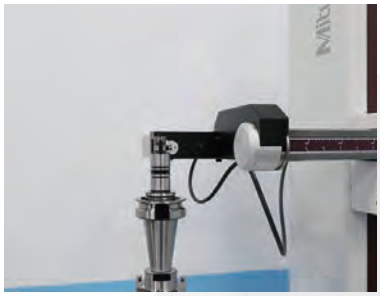
| Output |
|---|
| ER16/20/25/32 |
| SK310/16 |
| FMB22/FMA25.4 |
| SCA22/25.4 |

- Max. revolution: 3,000rpm.
- Max. torque: 25N-m.
- Internal coolant not available.
- ATC is available for all angle head series.

**Circular runout: ≦20μm**
**Angularity: ±8μm**

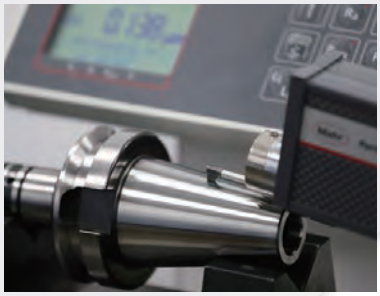


**Measuring precision**



**Roundness: 2μm**


**Taper tolerance: <AT3**



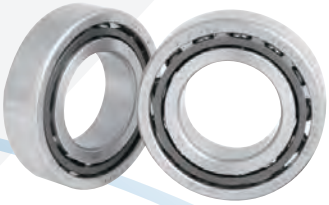
**Surface roughness: Ra<0.25μm**

# SAM ANGLE HEAD HOLDER

CN PAT NO. ZL202222671204.0
J P PAT NO. 3240336
D E PAT NO. 202022106588

Coolant feed through spindle

Coolant dowel pin



## Japanese-made Bearing

Precision: P4


| Machine spindle |
|---|
| BT/SBT |
| CAT/SCAT |
| DAT/SDAT |
| HSK |

## Ground Gear

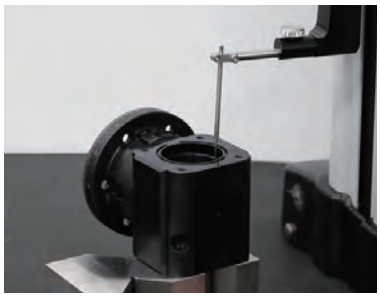
JIS B1704 : 1978 : 2

Coolant through cutting tools or through coolant holes

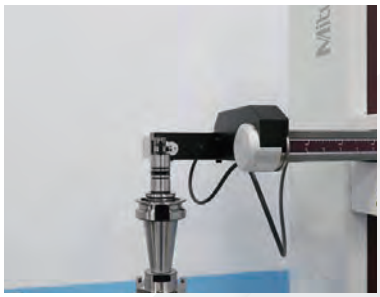
| Output |
|---|
| ER16/20/25/32 |
| SK310/13/16 |
| PRO-E16/20/25/32 |

- Max. revolution: 4,000rpm.
- Max. torque: 20N-m.
- Max. coolant pressure: 7 kgf/cm² (100PSI).
- ATC is available for all angle head series.

Circular runout: ≦20μm
Angularity: ±8μm

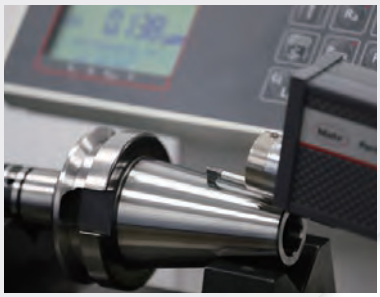


Measuring precision



Roundness: 2μm


Taper tolerance: <AT3

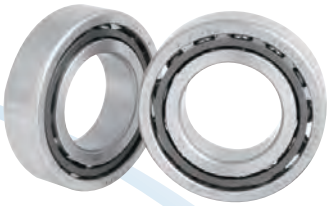


Surface roughness: Ra<0.25μm

# SAG-D ANGLE HEAD HOLDER

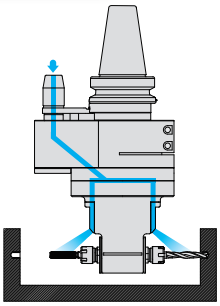
## [ FOR DUAL SIDE MACHINING ]


| Machine spindle |
|---|
| BT/SBT |
| CAT/SCAT |
| DAT/SDAT |
| HSK/PSC |



**Japanese-made Bearing**

Precision: P4



**Ground Gear**

JIS B1704 : 1978 : 2

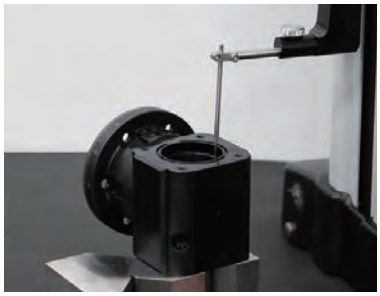
Coolant through two coolant holes

| Output |
|---|
| ER11/16/20 |
| SK306/10/13 |

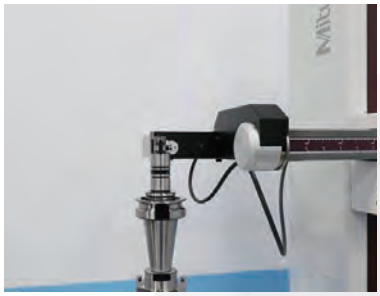
Direction of rotation:
S1- opposite to machine spindle
S2-same as spindle

- Max. revolution: 6,000rpm.
- Max. torque: 15N-m.
- Max. coolant pressure: 7 kgf/cm² (100PSI).
- ATC is available for all angle head series.

**Circular runout: ≦20μm**
**Angularity: ±8μm**

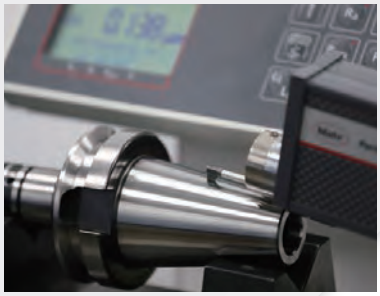


**Measuring precision**



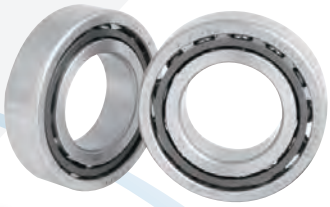
**Roundness: 2μm**


**Taper tolerance: <AT3**



**Surface roughness: Ra<0.25μm**

# SHG ANGLE HEAD HOLDER



## Japanese-made Bearing

Precision: P4

## Ground Gear

JIS B1704 : 1978 : 2

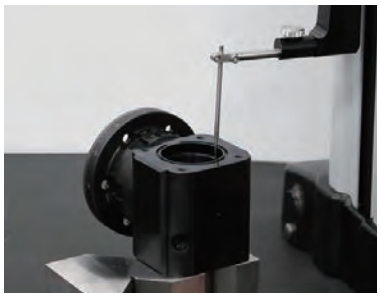
| Machine spindle |
| --- |
| BT/SBT |

| Output |
| --- |
| ER8 |
| SK306 |

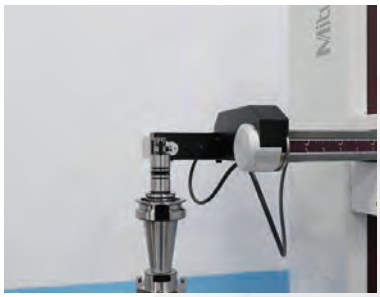
DE PAT NO. 202021100353
CN PAT NO. ZL202022589176.9
TW PAT NO. M617869
DE PAT NO. 202022101763
JP PAT NO. 3237391
US PAT NO. US11548110

- Suitable for drilling, tapping, light milling, and machining stepped workpiece or workpiece with ID size more than Ø60.
- Max. revolution: 3,000rpm.
- Recommended cutting depth (Ap) ≤ 2mm.
- Max. torque: 15N·m.
- Internal coolant not available.
- Rotating direction opposite to machine spindle.
- Workable for ATC system.

Circular runout: ≦20μm
Angularity: ±8μm

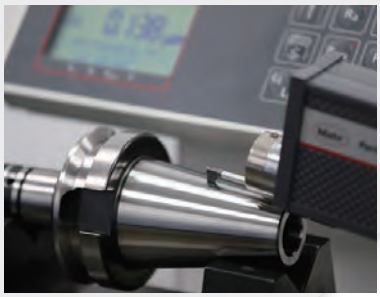


Measuring precision



Roundness: 2μm


Taper tolerance: <AT3



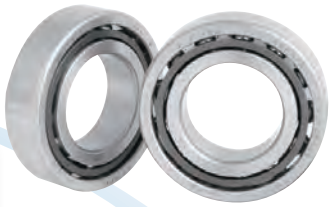
Surface roughness: Ra<0.25μm

# SAG ANGLE HEAD HOLDER

## [ SLIM TYPE ]

Coolant dowel pin

| Machine spindle |
|---|
| BT/SBT |
| CAT/SCAT |
| DAT/SDAT |
| HSK/PSC |



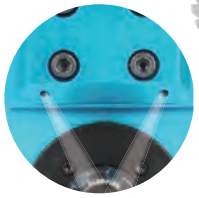
**Japanese-made Bearing**

Precision: P4

**Ground Gear**

JIS B1704 : 1978 : 2

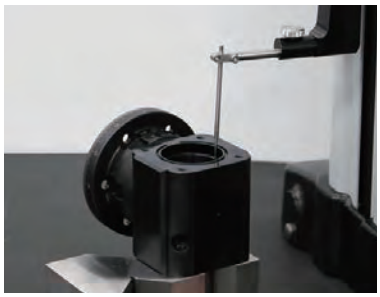
Coolant through two coolant holes



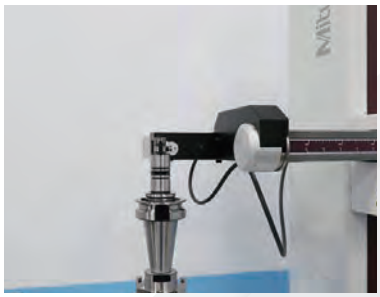
| Output |
|---|
| ER11/16/20 |
| ER11M |
| SK310/13/16 |

**Circular runout: ≦20μm**
**Angularity: ±8μm**

- Max. revolution: 6,000rpm.
- Max. torque: 10N-m.
- Max. coolant pressure: 7 kgf/cm² (100PSI).
- ATC is available for all angle head series.

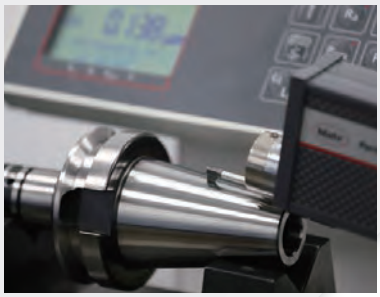


**Measuring precision**



**Roundness: 2μm**


**Taper tolerance: <AT3**



**Surface roughness: Ra<0.25μm**

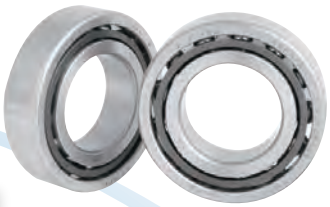
# SAD ANGLE HEAD HOLDER

*[ SLIM TYPE ]*

| Machine spindle |
| --- |
| BT/SBT |
| HSK-A |

Slim design, for deep hole machining.

| Output |
| --- |
| EBL8 |
| SK310 |



## Japanese-made Bearing

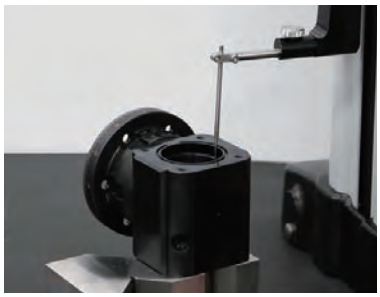
Precision: P4

## Ground Gear

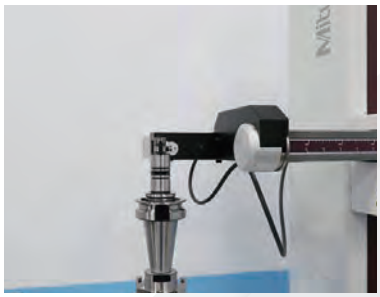
JIS B1704 : 1978 : 2

- Max. revolution: 6,000rpm.
- Max. torque: 10N-m.
- Internal coolant not available.
- For drilling, tapping and light milling.
- ATC is available for all angle head series.

**Circular runout: ≦20μm**
**Angularity: ±8μm**

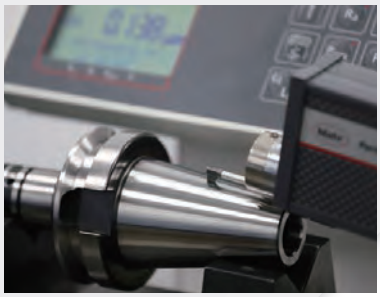


**Measuring precision**



**Roundness: 2μm**


**Taper tolerance: <AT3**



**Surface roughness: Ra<0.25μm**

# ASSEMBLY DEVICE
# TWO-WAY TYPE HSK-A

**STABLE**

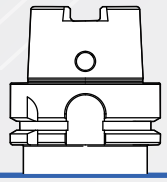
- The body and tool pot are precisely machined, so it allows stable and firm mounting.
- The horizontal tool pot has a patented heightened design, making tool assembling and dismounting more stable.
- The quick positioning design helps users to quickly place HSK-A tool holders on HSK-A assembly device in a correct way.

**HIGH RIGIDITY**

**PATENT DESIGN**

PAT NO.
**TW** M614470
**TW** M614781
**CN** ZL201922325128.6
**CN** ZL202120822487.7
**CN** ZL202120822431.1
**JP** 3233841
**CN** 202021103718
**US** 11440150

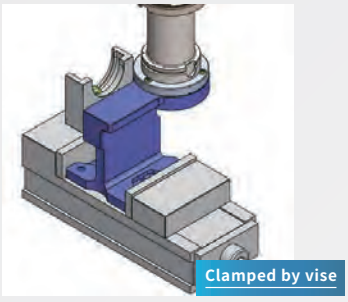

**AVAILABLE TAPER**
DIN 69893-A HSK-A

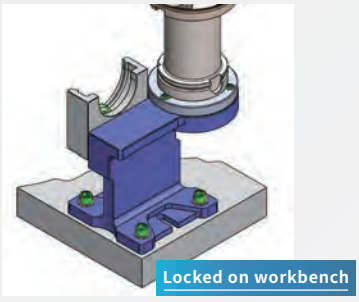


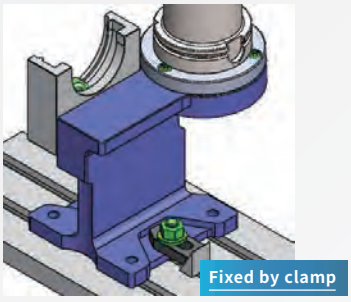
Superior performance for installing and uninstalling accessories in long-reach or heavy holders.

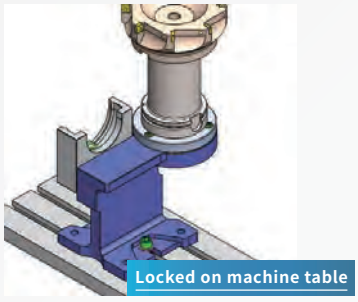
The crossbar design of vertical tool pot helps with tool holders positioning and prevents slippage.

- Nodular-cast-iron base has strengthened rigidity.
- The design of bottom seat is patented, which can be fixed not only on the workbenches, but also in machines by vises or clamps.


Clamped by vise


Locked on workbench


Fixed by clamp


Locked on machine table

# ASSEMBLY DEVICE

## TWO-WAY TYPE-7/24 TAPER SERIES

**STABLE** **HIGH RIGIDITY** **PATENT DESIGN**

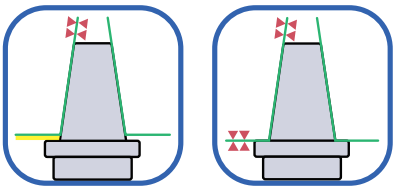
- The body and tool pot are precisely machined, so it allows stable and firm mounting.
- The horizontal tool pot has a patented heightened design, making tool assembling and dismounting more stable.

PAT NO.

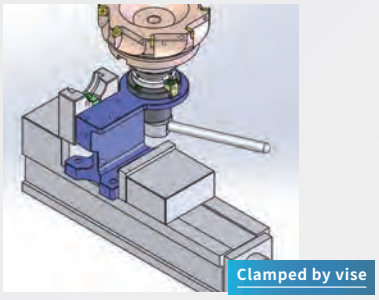
**TW** M614470
**CN** ZL201922325128.6
**CN** ZL202120822487.7
**JP** 3233841
**DE** 202021103718
**US** 11440150

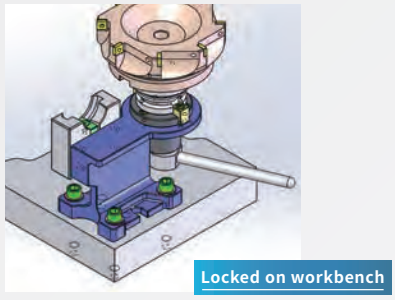

**AVAILABLE TAPER**

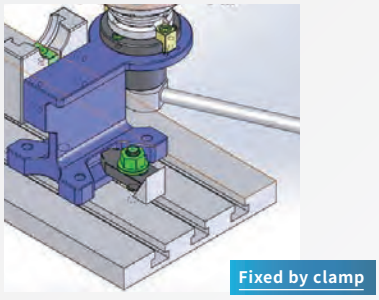
MAS 403 BT/SBT、ANSI B5.50 CAT/SCAT、DIN 69871-A DAT/SDAT

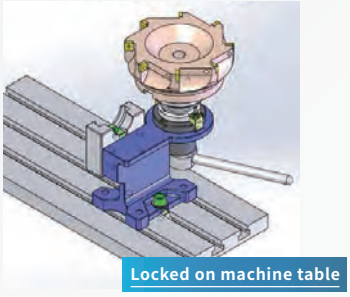



- Superior performance for installing and uninstalling accessories in long-reach or heavy holders.
- Nodular-cast-iron base has strengthened rigidity.
- The design of bottom seat is patented, which can be fixed not only on the workbenches, but also in machines by vises or clamps.



# ASSEMBLY DEVICE
# ROLLER BEARING TYPE

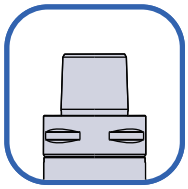
**STABLE** **HIGH RIGIDITY** **USER-FRIENDLY**

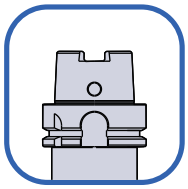
- The body and tool pot are precisely machined so it allows stable and firm mounting.
- Nodular-cast-iron base has strengthened rigidity.
- No direction restriction, making it easy to clamp.

PAT. NO.
**TW** M621995
**JP** 3236278
**DE** 202021003893
**CN** ZL202122878903.8


- Compatible with HSK-A/E/F/T type tool holders and PSC tool holders.

**AVAILABLE TAPER**


PSC


HSK

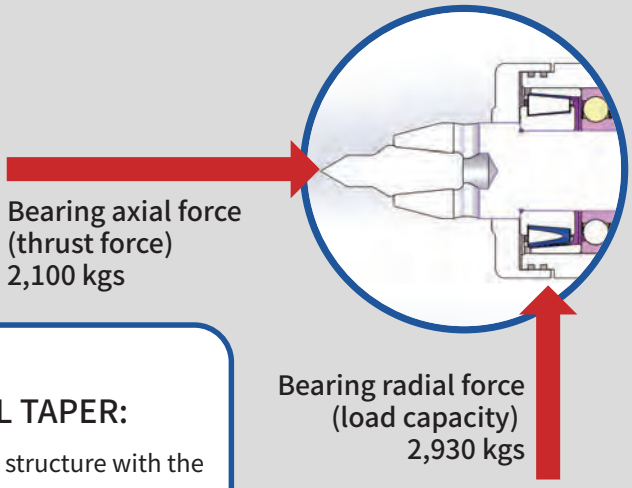
- Use roller bearing to fix the tool holder flange, so the taper can remain free of contact.

## Reminder:

- The tolerance of the tool holder flange OD must be within h10.
- Roller bearing type is not suitable for drawbar clamping holders. For the use of drawbar clamping holders, it's recommended to use two-way type assembly device.

# PSC Interchangeable Type Live Center


ISO 26623-1



Bearing axial force
(thrust force)
2,100 kgs

Bearing radial force
(load capacity)
2,930 kgs

## Features of PSC POLYGONAL TAPER:

- Triple-face contact structure with the best bending strength.

  Superior repeat positioning accuracy(±2μm).

The special waterproof cap design can prevent the cutting fluid from penetrating the center to prolong the use life.

Max. revolution:
4,500 RPM

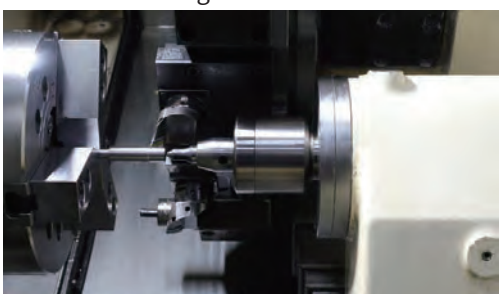
With the design of tip exchangeable.
The runout accuracy of the PSC Live Center used with the tip is within 5μm.

## Tips are attached according to PSC Live Center type:

| | Ø6 | Ø8 | Ø10 | Ø12 | Ø26 | Ø32 | Ø50 | |
|---|---|---|---|---|---|---|---|---|
| LC50 | ◆ | ◆ | ◆ | ◆ | | ◆ | | ◆ |
| LC68 | | ◆ | ◆ | ◆ | ◆ | | ◆ | ◆ |

## Applicable machine types:

CNC lathe, Turn-mill multitasking machine, special purpose machine and 4/5-axis vertical machining machine with tailstock.

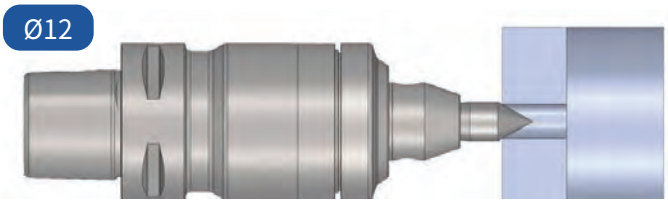


## Applicable machining:

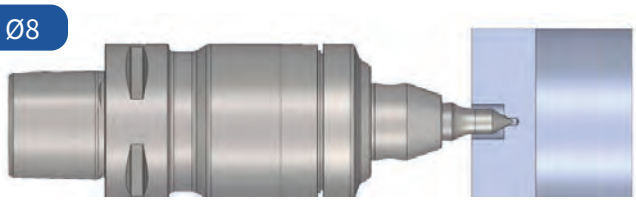
- Long shaft workpiece
- Medium & heavy turning
- Milling

## PSC Live Center Application:

Ø12



Ø8



# SMG NON-PULLOUT MILLING CHUCK

JP PAT NO. 3244223
DE PAT NO. 202023105263

## ***Firmly clamp the tool*** ,ideal for machining difficult-to-cut materials like titanium and nickel alloys.


SBT

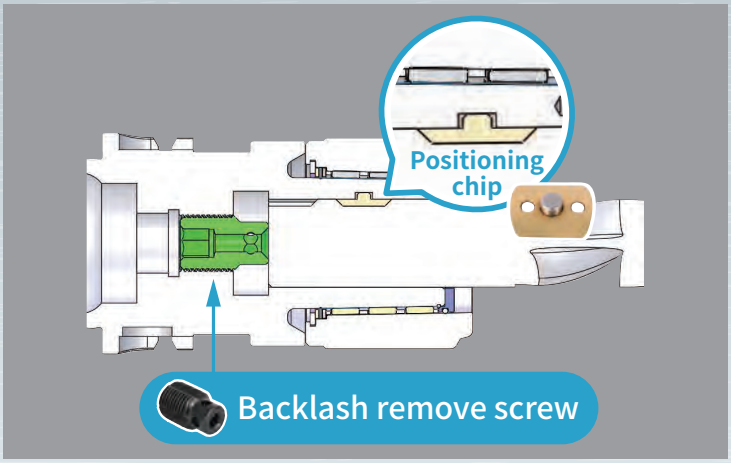
HSK

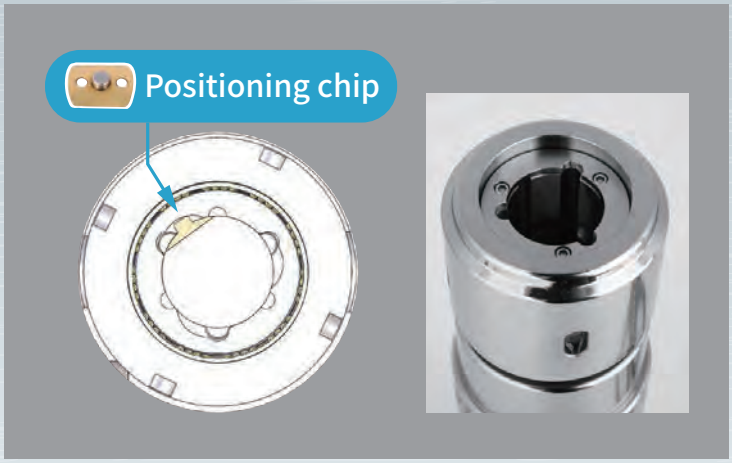


*Durable for coolant pressure up to 70 bar*

- Firmly clamp the tool
- Run-out accuracy: 5μm
- Suitable for heavy duty application
- Capable of high coolant pressure

- Patented positioning chip and backlash remove screw firmly clamp the tool, and effectively prevent tool slippage and pullout during manufacturing process.
- Used with standard Weldon tools (ISO3338-2, JIS B4005, DIN1835).
- SMG designed with 3 coolant grooves delivers coolant to improve metal chips removal and prolong tool life.

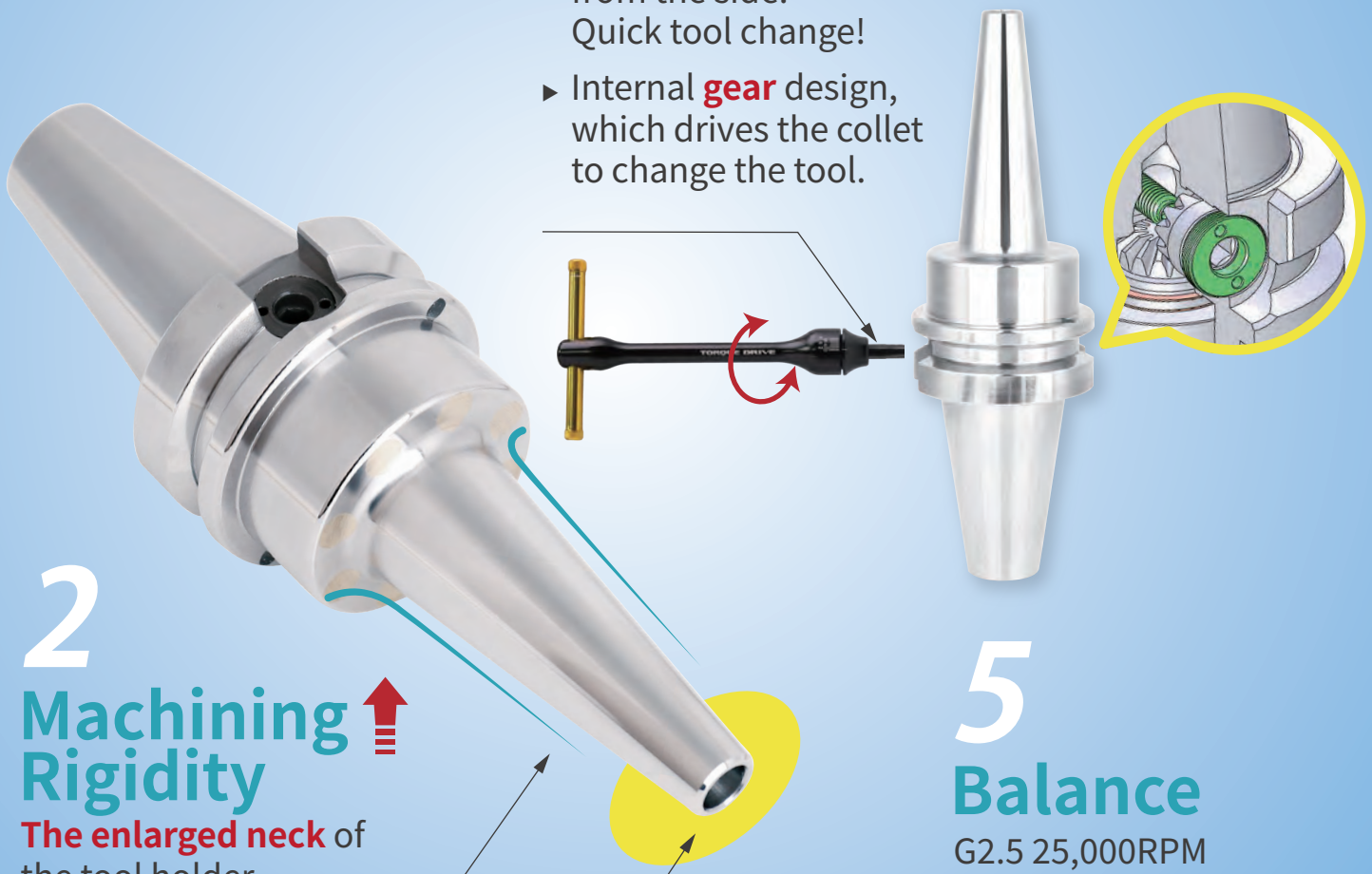


# USC ULTIMATE SIDE CLAMPING CHUCK

## 1 Quick tool change

- **Clamp/Unclamp** from the side. Quick tool change!
- Internal **gear** design, which drives the collet to change the tool.



## 2 Machining Rigidity

**The enlarged neck** of the tool holder improves machining rigidity.

## 3 Reducing Interference

The USC design **w/o nut** is good for interference reduction.

## 4 Center Coolant Available

**Effectively removes metal chips**, extends tool life and improves surface finish of workpiece.

## 5 Balance

G2.5 25,000RPM

# ShrinkPRO Quencher Heating Machine

## Enhance cooling efficiency by 5 times!
(Compared to air cooling units)

### Used for Both Hot Work Steel and Heat Resistant Steel Shrink Fit Chucks
Tool holder length can reach up to 555mm.

### Shrink Fit Chuck Placement
Heating time is automatically set based on tool diameter.

### Touchscreen Control Panel
Switchable between metric and imperial units, with built-in heating time for different tool diameters.

### Cutting Tool Storage Box
Automatic liquid injection to assist in cooling the tools.

### Shrink Fit Chuck Stand
Capable of holding up to 8 shrink fit chucks.

### Shrink Fit Chuck Liquid Cooling Area
Features an automatic liquid injection function for effective tool holder cooling.



**3** phase
208V~480V
Power 22kW

Liquid cooling in only **30** seconds

Quick tool change in **1~5** seconds

Touchscreen with **5** languages Easy to operate

| MODEL NO. | POWER | MAX. POWER | FUSE | SIZE (CM) | SUITABLE CUTTER MATERIAL | DIAMETER RANGE OF CUTTER | WEIGHT (KGS) |
|---|---|---|---|---|---|---|---|
| 408-001-001-002 | 3 phase, 208V ~480V | 22kW | 20A | 94x61x180 | Solid carbide | Ø3 ~ Ø32mm | 133 |

# SFS SERIES

## SFS SLIM-FIT COLLET CHUCK &
## SFS/MFS SLIM-FIT SHRINK EXTENSION

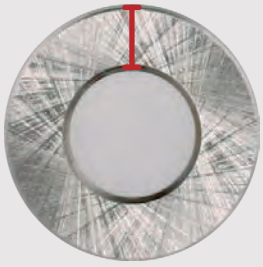
**HIGH PRECISION** | **FOR 5 AXIS MACHINING** | **HIGH SPEED** G2.5 25000rpm

- Modular design with drawbar clamping, saving purchasing costs.
- Two types of extension made from hot work die steel (SFS) and heat resistant steel (MFS) are available.
- Slim-fit shrink extension is available with S type and R type.

**S Type:**
thickness 1.5mm

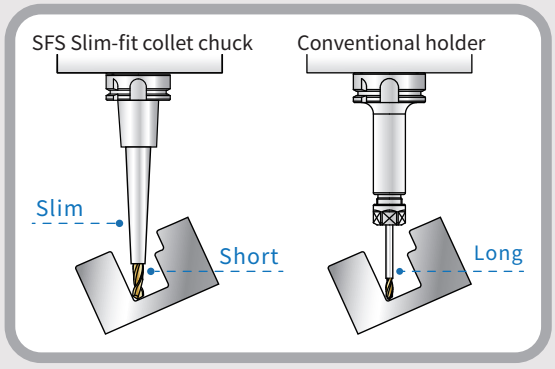
Avoid interference

**R Type:**
thickness 2.25mm~4mm



High rigidity

- Perfect design for 5-axis machining.




- Used for coolant -through cutting tools.

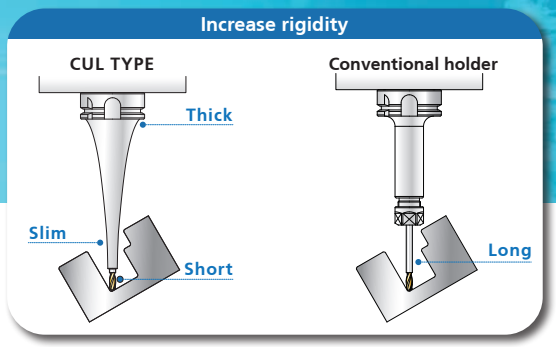
The pull stud used for BT30/SBT30xSFS Slim-fit collet chuck is ONE PIECE design with draw bolt. If you have a demand for customized pull studs, please contact our sales personnel.

# SFC SHRINK FIT CHUCK
## CUL TYPE / CP TYPE

## Perfect design for 5-axis machining!

### CUL TYPE
CURVE LINE


Gauge length:
150~300mm,
6''~12''




**Increase rigidity!**

**Avoid interference!**

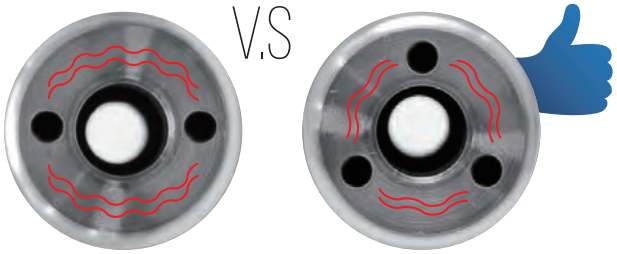
**Prolong tool life!**

D E PAT NO. Nr.202023103516
J P PAT NO. 3243077
C N PAT NO. ZL202321062463.1

### CP TYPE
with 3 coolant holes


- Coolant fluid from 3 coolant holes concentrates on tools, optimizing heat dissipation and chip evacuation, and ensuring better surface finish of workpiece.
- The CP type of 3 coolant holes allows internal holes to expand evenly free from deformation and maintain good runout accuracy, extending the use life of holder.

2CP TYPE V.S 3CP TYPE



[ with 2 coolant holes ] [ with 3 coolant holes ]

▸ CUL TYPE ▸ CP TYPE

▸ 3 coolant holes allow more even hole expansion!

# FMH-SDG FACE MILL ARBOR

SBT HSK PSC

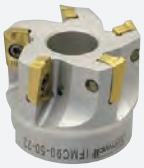
SDG SILENT DAMPING GENIUS

***The holder is designed with a built-in dynamic vibration absorber, which can effectively absorb radial and axial machining vibration to improve the surface finish of the workpiece, prolong tool life, maintain spindle accuracy, and optimize overall production efficiency.***

**Face Milling Cutter**

KFMC 45°

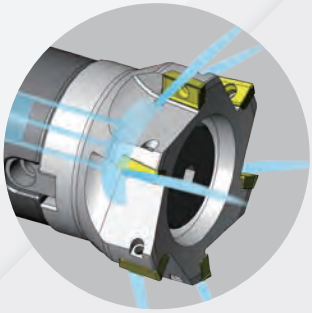
SFMC 45°



IFMC

▸ Cutter with coolant holes

▸ Screw with coolant flutes



# BUILT-IN DAMPING MECHANISM
# SILENT DAMPING GENIUS
## BORING SERIES

SDG KPT
SILENT DAMPING GENIUS

NEW

**Silent Damping Genius is an anti-vibration technology for long overhanging and deep cavity operations.**

- Silent Damping Genius equipped with damping mechanism eliminates vibration, improves workpiece surface finish, roundness, tool life, maintains spindle precision, and increases the overall production efficiency!


**REMINDER**

- The closer vibrating point gets to the damping mechanism, the higher damping effect will be.
- To maintain runout accuracy, all damping products need to be placed upright in stock.

COMPENSATION FOR INACCURACY

BETTER TAP USE LIFE

COOLANT THROUGH


# STA SYNCHRONIZED TAPPING HOLDER

- One of SYIC products patented by US invention.

PAT. NO.
TW I615223
J P 3203456
D E 202016100106
U S 9796059
C N ZL201620889099.X

- Modular design: tap holder body with adapter is modular design, lowering purchase cost.
- Internal steel component allows the micro-compensation for the misfeed of spindle ballscrew and overload.Improve tapping quality and tap life. Optimum male and female threaded fitting is achieved due to the premium design!


- If interference occurs, longer adapter can be custom made.
- Coolant-through is available with coolant pressure up to 70 bar. STA has long use life even the synchronized micro-compensation mechanism is used at high coolant pressure.
- The tap use life is increased by at least 2 times compared to traditional tapping system.

| Tap capacity | |
|---|---|
| ▸ M1.6 ~ M5 | ▸ M1.6 ~ M16 |
| ▸ M1.6 ~ M6 | ▸ M6 ~ M18 |
| ▸ M1.6 ~ M12 | |

HIGH SPEED

SHORTER TOOL OVERHANGING LENGTH

SLIM DESIGN

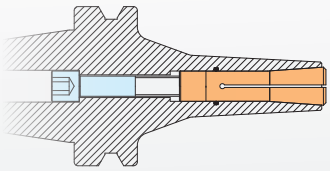
5μm


# EBL SLIM-FIT COLLET CHUCK SYSTEM

- Taper option: BT/SBT, CAT/SCAT, DAT/SDAT, HSK, PSC, ISO30 and straight shank.


- EBL collet is designed to have extended length which can shorten the tool overhanging length and improve the machining stability. EBL sealed collet is also available.

- The optimized design of thicker neck improves the machining rigidity and eliminates vibration.



- **Comparison:**

Cutting Data

Material: S45C

S: 4500rpm

F: 500mm/min

Ap: 12mm

Ae: 0.3mm

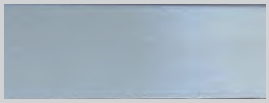
- BT40 x SBL6 - 70

SBL

- Surface Roughness **Ra: 1.695μm**

- BT40 x EBL6 - 70

EBL



- Surface Roughness **Ra: 0.216μm**

Better

MODULAR SYSTEM

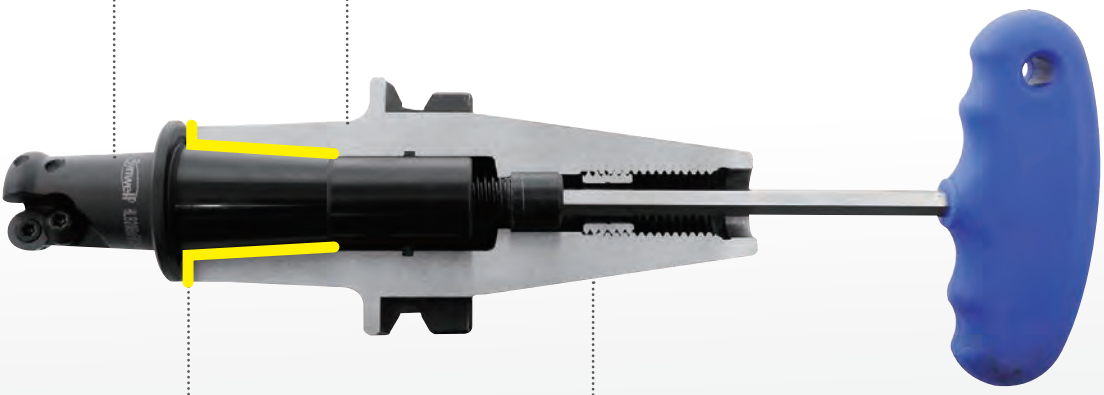
TWO FACE CONTACT

DRAWBAR CLAMPING DESIGN

# HBL COLLET CHUCK + HLB FACE CONTACT TYPE CUTTING TOOLS

- Modular design
  reduces the purchase cost of tool holder. Applicable for various kinds of processing.

- HLB CUTTING TOOL-ONE PIECE DESIGN WITH SLC COLLET TAPER
  Eliminate the gap between HLB cutter and HBL tool holder.
  The taper of HLB cutter remains 4° slanted design, which improves holding power, concentricity and rigidity.



- Two-face contact between collet taper, collet flange and the end of HBL tool holder, increases the rigidity of machining.

- HLB drawbar clamping design
  strengthens the axial clamping force.

## HBL & HLB SYSTEM

-  HLB / R
-  HLB / GR
-  HLB / IAP
  HLB / CIAP
-  HLB / PMB
-  HLB / PCK
-  HLB / MCK
-  SMB Finish Boring Head
-  SCK Roughing Boring Head
-  HLB / SFC
-  HLB / BFC
-  SLC Collet

# QUICK CHANGE TAPPING CHUCK

QUICK CHANGE
TAPPING CHUCK

***with length compensation on tension and compression**

- quick and easy tool change in second!
- Absorb any inaccuracies between the synchronous movement of the rotating spindle and the moving Z axis, increasing tap life and improving tapping quality.

TAPPING
COLLET

***with safety clutch mechanism**

To prevent tap breakage when higher torque is applied to a tap (Use with a Quick Change Tapping Chuck with length compensation)

## Installing and Removing Steps:

### Tapping chuck and tapping collet

- Pull down the sleeve of the tapping chuck.
- Insert tapping collet into tapping chuck and they are connected firmly.
- Pull back the sleeve of the tapping chuck to remove the tap collet.


### Tapping collet and tap

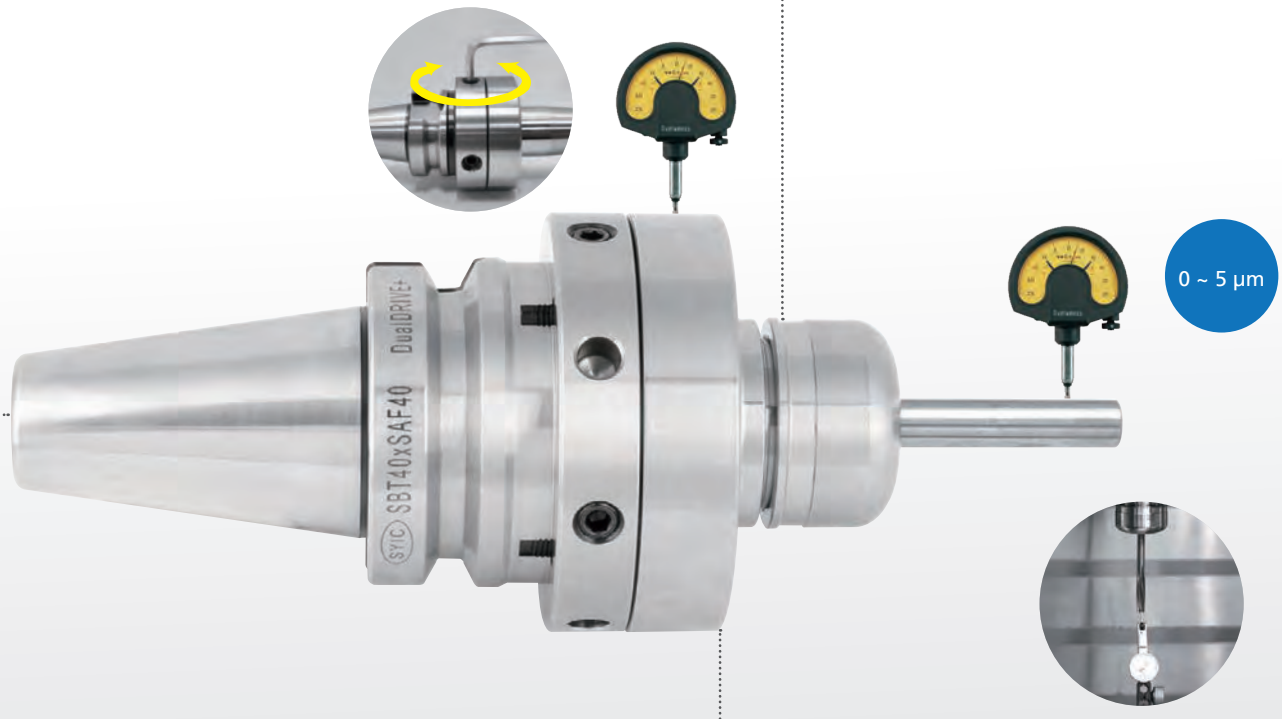
- Insert a tap into the bottom of tapping collet and rotate the tap manually to connect them firmly.
- Push down the ball bush to remove the tap.

PRECISION ADJUSTABLE

<5μm

# SAF RUNOUT ADJUSTABLE HOLDER

- Output choices: SK3, UT and SFC.




- BT/SBT, CAT/SCAT, DAT/SDAT, HSK and PSC are available.

- Drive axial and radial set screws for precision adjustment and the runout accuracy of the tool edge can be adjusted within 5 μm.

QUICK TOOL CHANGE

HIGH COOLANT PRESSURE

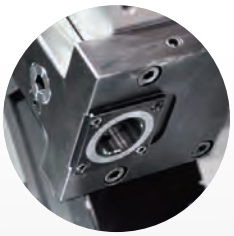
HIGH PRECISION

# PSC SYSTEM FOR LATHE (EXTERNAL SERIES)

## PSC QUICK TOOL CHANGE SYSTEM FOR LATHE

- Conventional tool holders take longer time on tool change, PSC system saves time on tool change to increase the time for production.

Conventional Tool Holders



New Tool Holders

## POLYGONAL TAPER (ACCURATE POSITIONING)

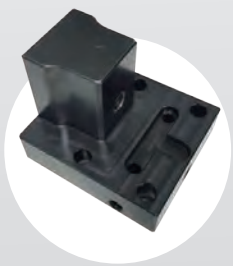
- Use polygonal form from PSC as the coupling structure to achieve ultimate repeated positional precision which is ±2μm.

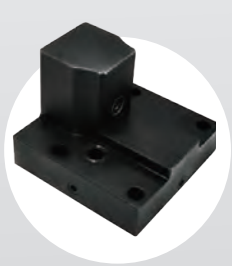
## DURABLE FOR HIGH PRESSURE COOLANT SUPPLY

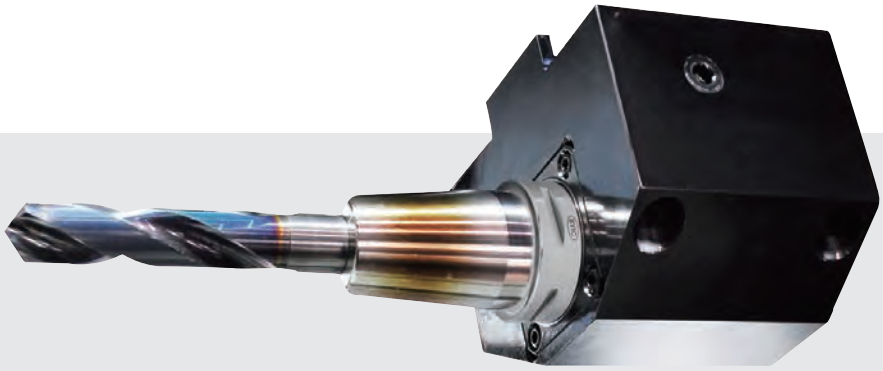
- Use PSC system with high pressure coolant supply up to 130 bar can improve the efficiency and extend tool use life.

## CUSTOM MADE AVAILABLE UPON REQUEST

- The designs and dimensions of turning tool posts are varied for different brands, the new quick change system of internal and external turning tools can be custom-made upon request.



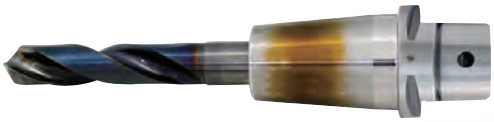




# PSC SYSTEM FOR LATHE (INTERNAL SERIES)

## APPLICATION OF SHRINK FIT CLAMPING

- With PSC system, shrink fit chucks can be used to improve the clamping power and runout accuracy.



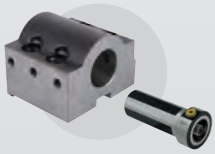
## ONE-PIECE DESIGN OF INTERNAL TURNING TOOLS AND HIGH SPEED DRILLS

- With these tool holders, you can have better productivity and improved processing efficiency.

## PSC SYSTEM

One-Piece Tool Post

One-Piece Tool Post



PSC / MWLN

PSC / DTJN

PSC / MDJN

PSC / SPD
High Speed
Drill

PSC / SLN
Side Lock
End Mill Holder

PSC / SFC
Shrink
Fit Chuck

Internal Boring Bar

PSC / STUP

PSC / SCLC

PSC / SDUC

Internal
Boring
Bar

PSC / ER
Collet
Chuck

ER Collet

ER Sealed
Collet

Nut

POLYGONAL TAPER

RIGIDITY IMPROVED

MODULAR DESIGN

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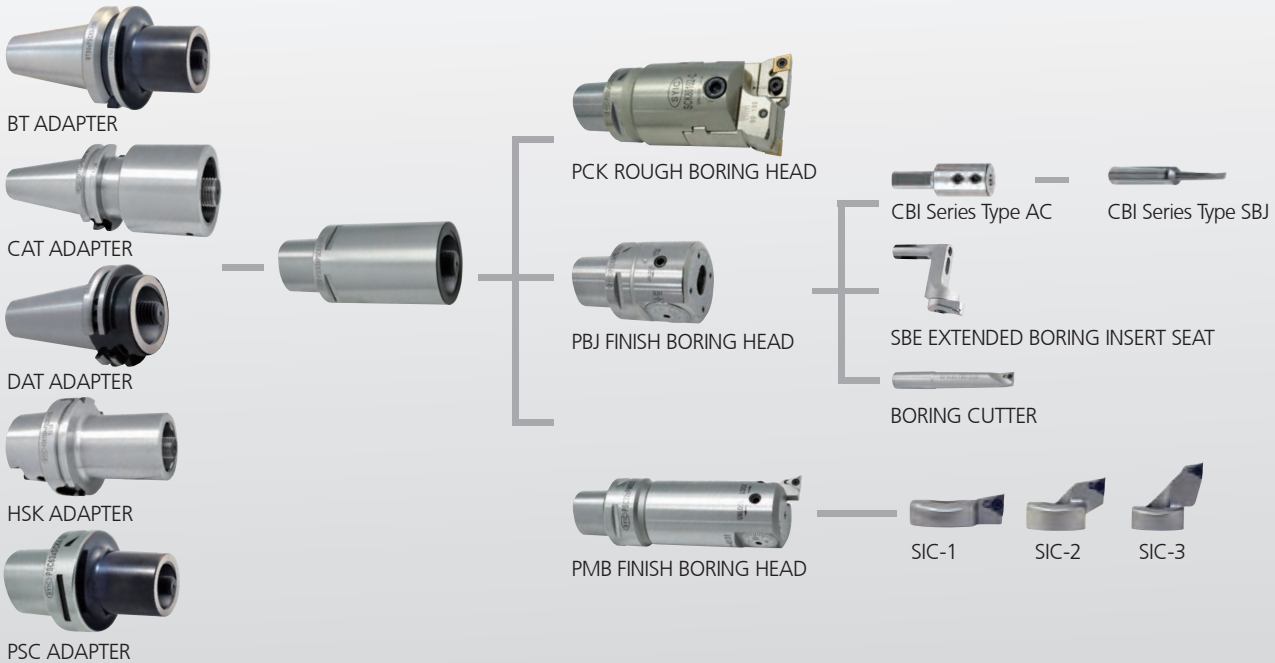
# PSC ONE-PIECE BORING SYSTEM

- Use polygonal taper as coupling structure, achieving high torque transmission and rigidity.

- PSC one-piece boring head has high rigidity and is convenient to extend the length with PSC extensions.

- Modular design: applicable for different spindles with the converting of adapters and convenient to change different PSC one-piece boring heads.
- To enlarge boring diameter, use different insert seat for PMB finish boring head and use SBE extended boring seat for PBJ finish boring head.



ADJUSTABLE BALANCE

COOLANT THROUGH

1μm

# SMU BLACK KNIGHT FINISH BORING HEAD


- The design of groove helps drain coolant fluid away and absorb vibrations.

- Coolant hole design can effectively remove the metal chips and durable for coolant pressure 1300PSI.

- Move the insert seat to the specific interval and then do micro-adjustment.


- Precision adjustment.

- Balance adjustment according to the boring diameter can be done; max. speed of revolution: 1,200rpm.

| MODEL NO. | TYPE | BORING RANGE | SCK NO. |
|---|---|---|---|
| 19590 | SMU32 | 32~42 | SCK3 |
| 19591 | SMU41 | 41~54 | SCK4 |
| 19592 | SMU53 | 53~70 | SCK5 |
| 19593 | SMU68 | 68~100 | SCK6 |

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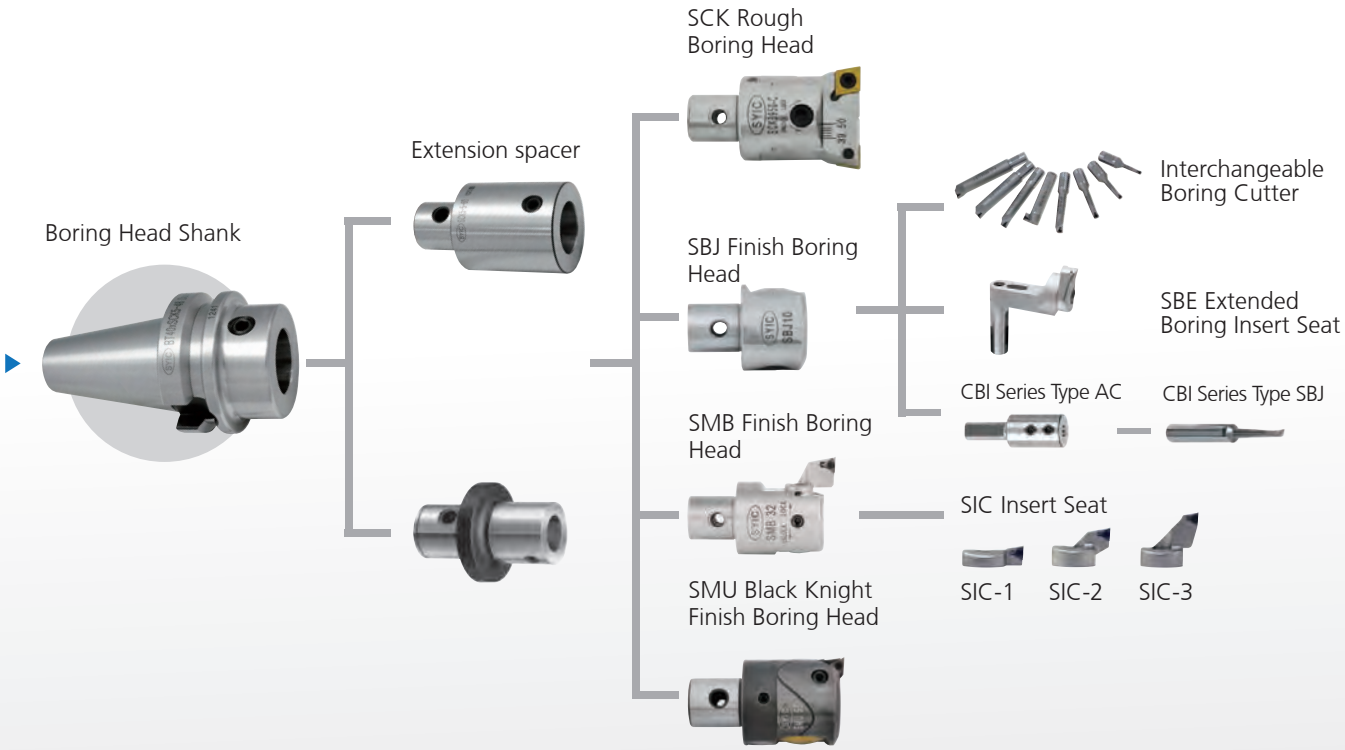
MODULAR SCK SYSTEM

HIGH RIGIDITY

HIGH PRECISION


# ROUGH BORING




## ROUGHING TWIN ADJUSTMENT BORING HEAD


- Dual synchronous movement.
- Adjustment unit: 1mm on radius.

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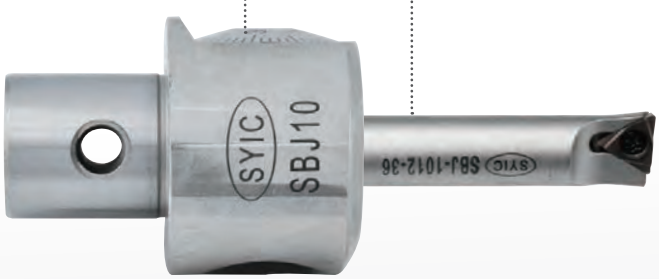
# FINISH BORING

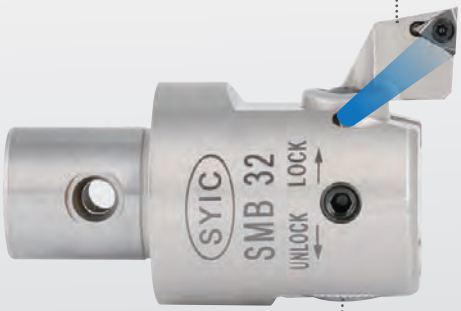
## SBJ BORING HEAD FOR FINISHING

- One division for adjustment is 10μm on diameter.
- Not only work with boring bars, but also work with SBE extended boring insert seats for large diameters.




## SUPER MICRON EXCHANGEABLE FINISH BORING HEAD

- Exchangeable insert seats offer various boring ranges.




SIC-1 SIC-2 SIC-3

- One division for adjustment is 10μm on diameter.

# MQL TECHNOLOGY

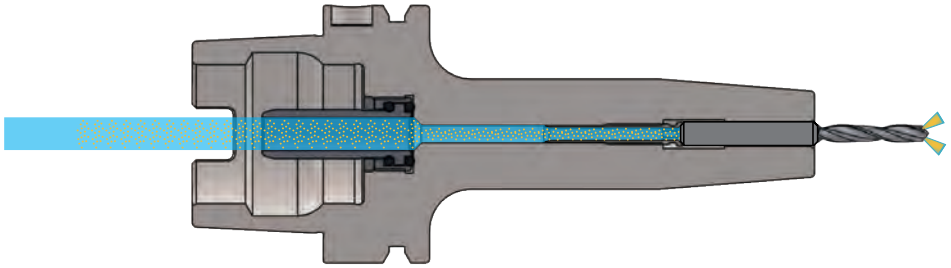
## What is MQL?

MQL (Minimum Quantity Lubrication) is a near dry machining with compressed air stream and minimal quantity of oil lubrication in an aerosol format to the cutting surface.

## MQL technology:

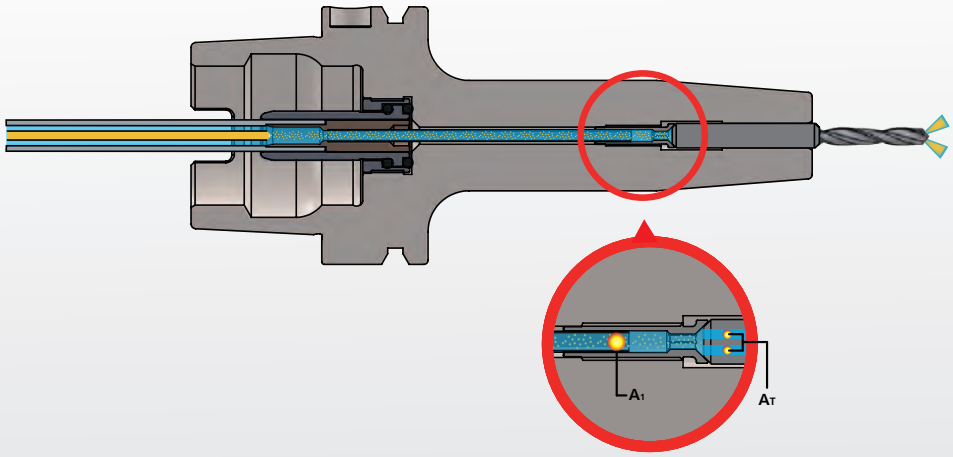
**MQL-a type: 1 channel**

The compressed air and oil lubrication are mixed before entering the machine spindle and delivered to the tool through machine spindle and tool holder.



**MQL-b type: 2 channels**

The compressed air and oil lubrication are delivered through 2 separate channels and mixed in the chamber and then delivered to the tool.

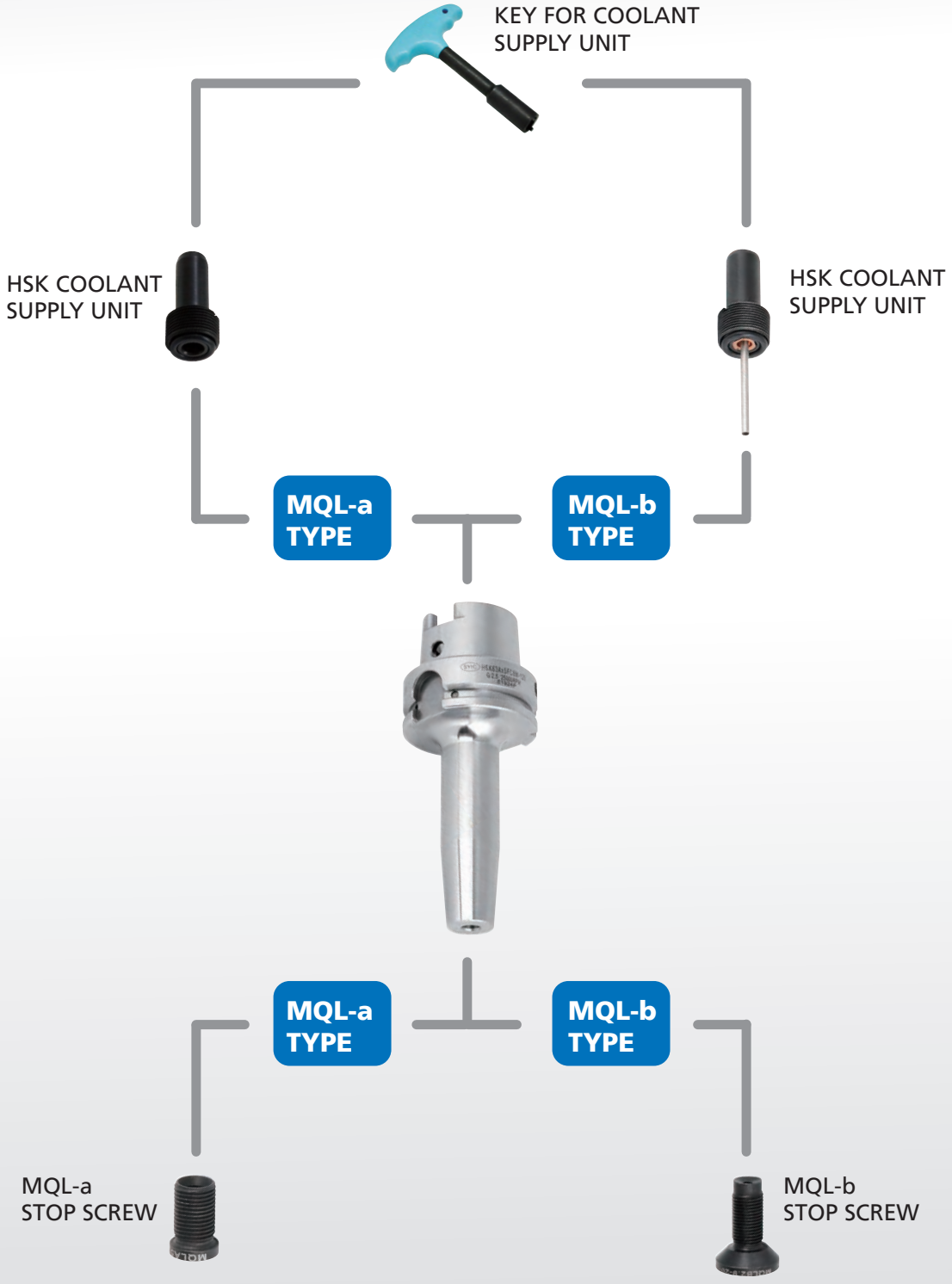



| $A_1$ mm² | $A_T$ mm² |
|---|---|
| 2.01 | 0 ~ 1.6 |
| 4.15 | 1.4 ~ 3.0 |
| 9.08 | 2.5 ~ 6.5 |
| 16.62 | 5.5 ~ 16.6 |
| $1xA_T \leq A_1 \leq 4xA_T$ | |

**When selecting MQL-b type shrink fit chucks, please note:**

To ensure an optimal delivery of coolant fluid flow to the cutting edge, the cross-section ratio between the cross-section of coolant supply unit's pipe $A_1$ (mm²) and the sum of tool coolant channels' cross-section $A_T$ (mm²) should be 1:1 to 4:1. It is recommended to use the combination with the ratio the closest to 1:1.

# APPLICATION DIAGRAM




**Reminder:**

Shrink Fit Chuck MQL-a Type and Shrink Fit Chuck MQL-b Type are assembled with stop screw and coolant supply unit as standard accessories. Shrink Fit Chuck MQL type is "the holder body" without any accessories, and the stop screw and coolant supply unit should be ordered "separately".

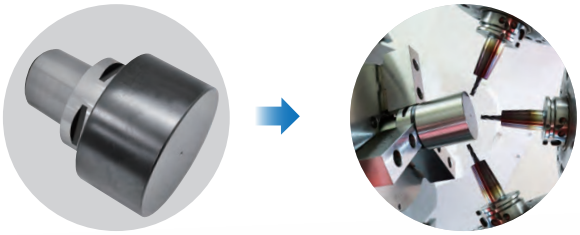
DIFFERENT HARDNESS

CUSTOM MADE

# BLANK SERIES

## MAKE YOUR OWN TOOL

- Blanks allow users to process the shapes they want.

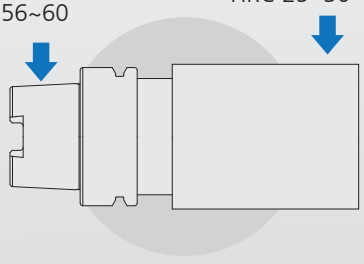


- Available Taper:
  BT, CAT, DAT, SBT, SCAT, SDAT,
  HSK, PSC

## DIFFERENT HARDNESS POSSIBLE

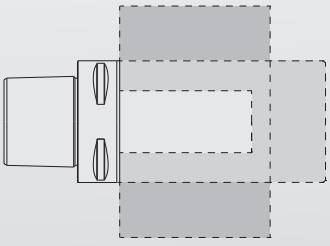
Hardness of Taper:
HRC 56~60

Hardness of Blank:
HRC 25~30



## CUSTOM MADE ACCEPTED

- Different sizes can be custom made on request.
- Take PSC63 for example:



HIGH SPEED

WITHOUT KEY-WAY

HIGH PRECISION


# SMALL TOOL HOLDER

## FEATURES

- **7:24:**
  ISO 15, 20, 25, 30, 40
  BT 30, 40
  DAT 30, 40
- **HSK:**
  HSK 25, 32, 40
- Without key-ways.
- Light cutting.
- While tool change, spindle needn't be positioned.

## ER COLLET CHUCK (M TYPE)

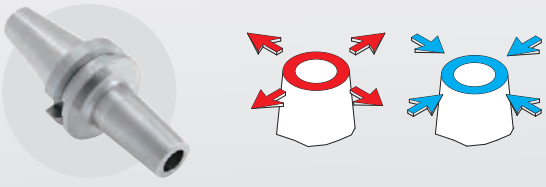
POWER GOOD

Clamping power improved by 75%!

## SBL SLIM-FIT COOLET CHUCK

- Collet chuck designed w/o nut and with inner-holding collet.
- Strong rigidity & high stability!

## SFC SHRINK FIT CHUCK



- Slim design avoids interference.

## FACE MILL ARBOR & FACE MILLING CUTTER

- Shrink Fit Face Milling Cutter

No Gap

Reduced vibration & faster feed, speed & productivity.Longer tool & insert life!

GOOD DUST REMOVAL

FOR WOOD WORKING

25,000 rpm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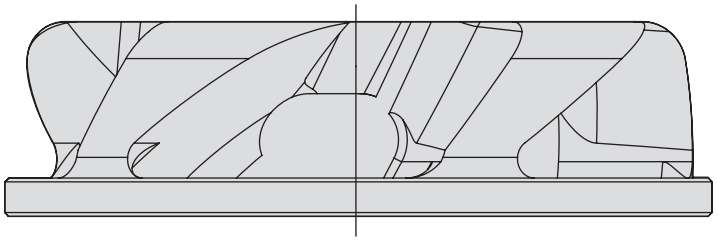
# PROF FAN NUT

## FEATURES

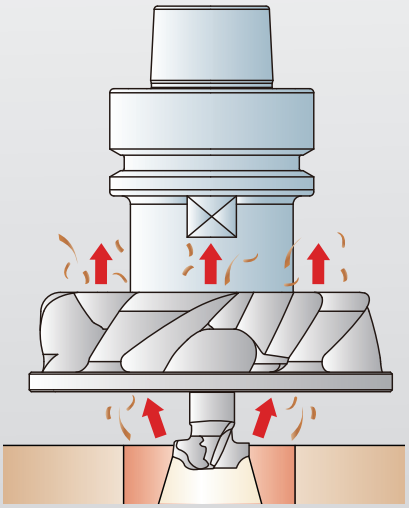


- Special design of fan blade shape facilitates dust removal to 99.8%.
- Improve the evacuation of wooden dust, extend tool life and increase efficiency.
- Can be used for standard ER collet chucks, easy to operate.
- The special surface treatment of POWER GOOD nut enhances the clamping force.
- Decrease the wooden particle in the air to maintain a healthy working environment.
- Balanced to 25,000RPM at G2.5.

## ILLUSTRATION

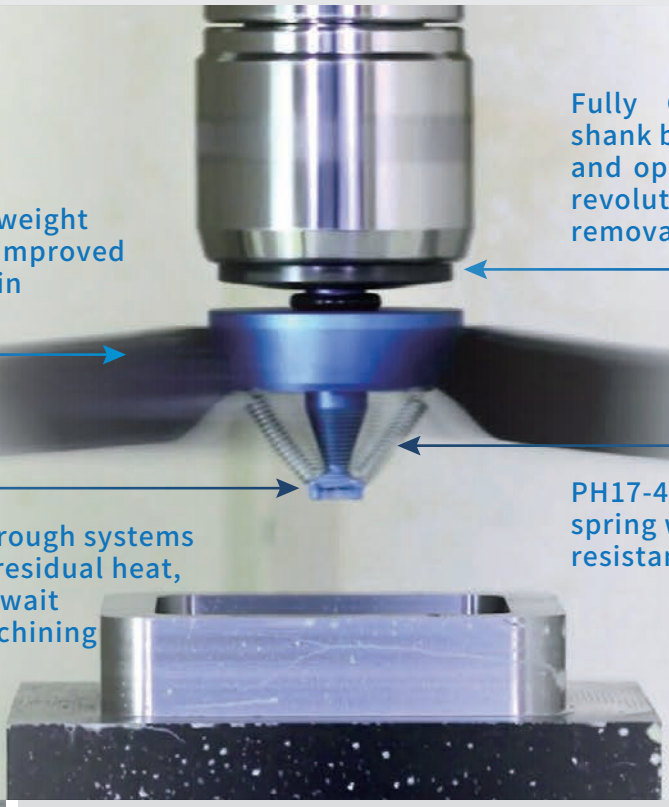
- The wood dust was lifted up through the blades.

| TYPE |
|---|
| FN-ER32-B |
| FN-ER40-B |
| FN-EOC25 |



# CHIP REMOVER

**Automatic chip cleaning** **Center coolant through** **Improve workplace safety**

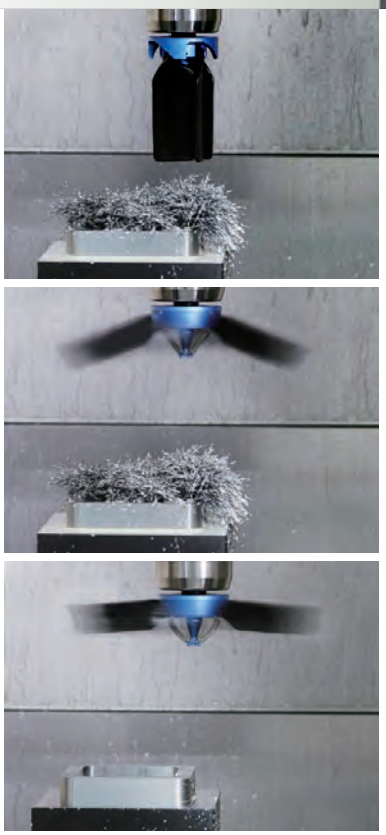


High-strength and lightweight carbon fiber blades for improved durability and stability in high-speed operations.

Fully CNC-machined aluminum shank body for enhanced strength and optimal performance at high revolution, ensuring superior chip removal efficiency.

Designed for coolant through systems to effectively dissipate residual heat, reducing measurement wait time and enhancing machining efficiency.

PH17-4 stainless steel tension spring with high fatigue resistance for extended use life.



## [ Caution! ]

- During operation, metal chips and coolant will be scattered, chip removers must be used in a completely closed and fully covered machine.
- Use center coolant supply only when chip remover stops rotating.
- Please strictly follow the revolution recommendation in Model specification table. Never exceed the limit of max. RPM.
- Please use suitable collets for clamping chip remover shank (16mm). Worn and damaged collets should be changed immediately to avoid hazard caused by defective clamping.
- The heights and diameters are varied from folded wings and open wings when chip remover is stopped and initiated. Please keep safe distance from the workpiece when the chip remover stops and rotates.
- To maintain the product functionality and safety do not disassemble, reassemble or modify chip remover.

## *MEMO*

## *MEMO*

## *MEMO*

## *MEMO*

## *MEMO*

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