MACHINE ACCESSORIES

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

NO.79-2302A

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

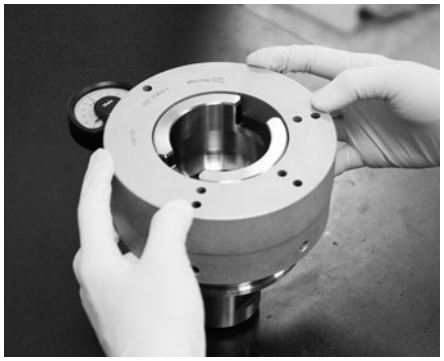
Quality creates reputation; reputation ensures quality.

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 BT (MAS403), CAT (ANSI B5.50), DAT (DIN69871-A), HSK (DIN69893), PSC (ISO26623-1), VDI (DIN ISO10889) 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.

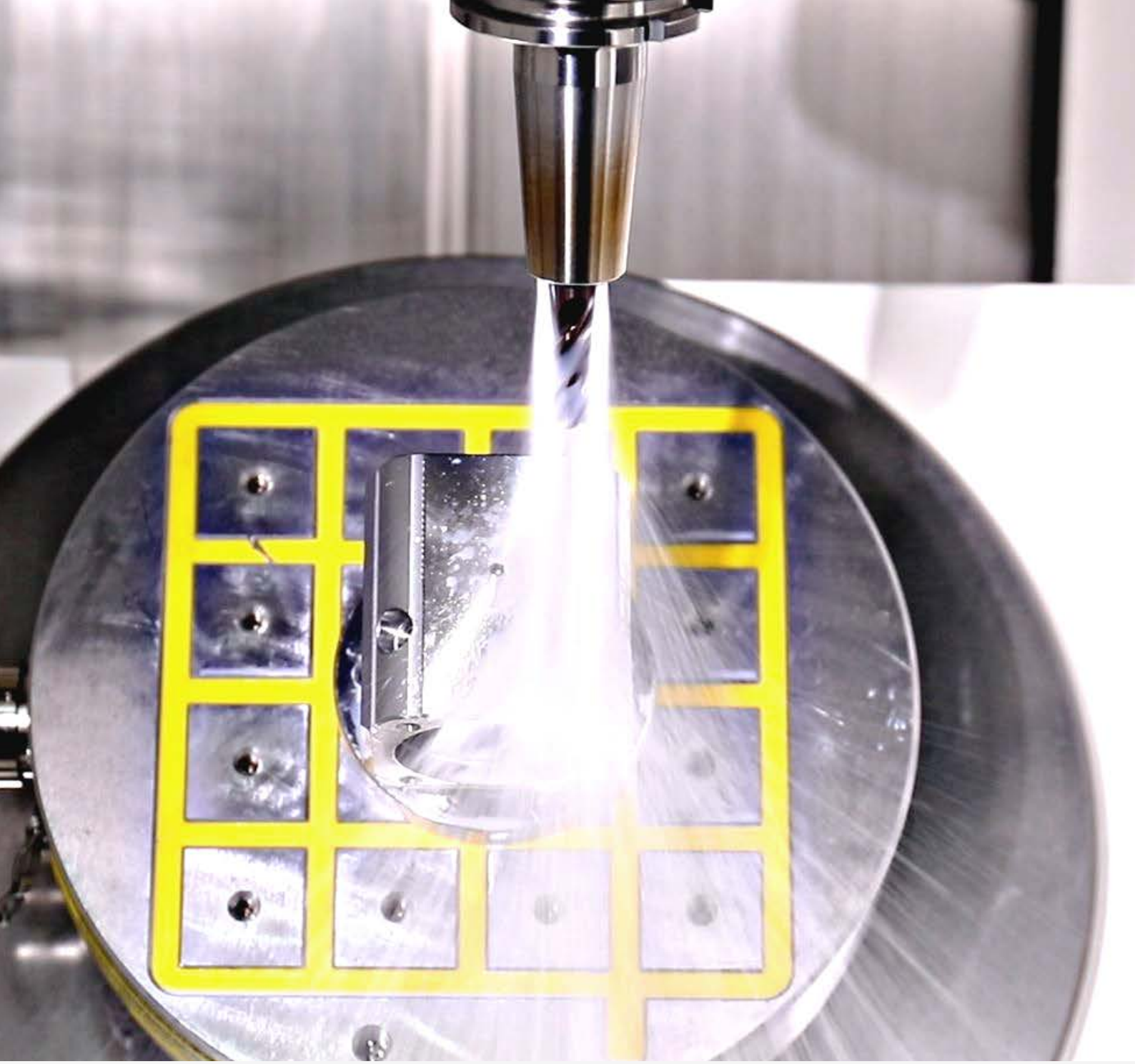
人力提昇
Capability improvement

思維清晰
Clear thinking

觀念正面
Positive mindset

心態健全
A sound mind

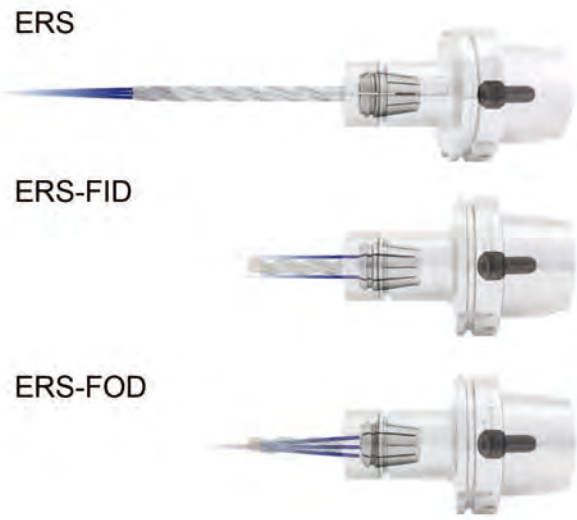
能力卓越
Excellent ability

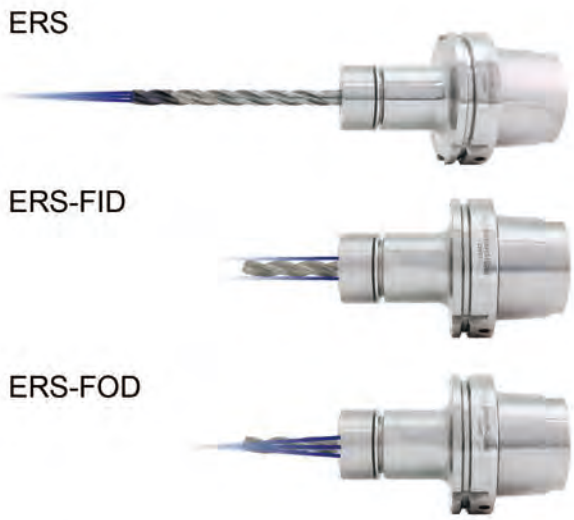


Innovation is our mission!

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 of HSK63A/PRO-E





Coolant application of HSK100A/PRO-E

PRODUCT CATEGORY

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

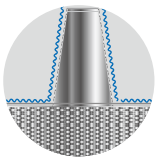
7:24 SERIES

MAS 403
ANSI B5.50
DIN 69871-A

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

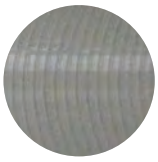


Regular Holders

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.

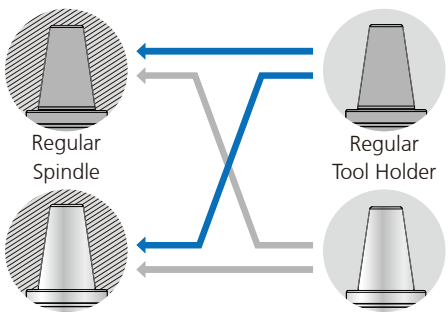


Regular Holders

DualDRIVE+ Holders

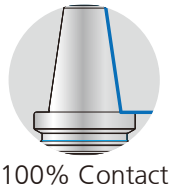
ECONOMICAL AND COMPATIBLE

- DualDRIVE+ tool holders and spindles are compatible with regular tool holders and spindles.



- 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

DIN 69893

SPINDLE TYPE	FEATURES	AVAILABLE TAPER
▸ HSK	▸ **TAPER** 1:9.98 ▸ **SURFACE ROUGHNESS** Ra < 0.25μm ▸ **ROUNDNESS** < 0.6μm ▸ **DOUBLE FACE CONTACT**	▸ **TYPE A (69893-1)** 32.40.50.63.80.100 ▸ **TYPE E (69893-5)** 25.32.40.50.63.80.100 ▸ **TYPE F (69893-6)** 40.50.63.80 ▸ **TYPE T (ICTM)** 32.40.50.63.80

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

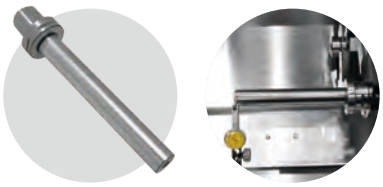
SPINDLE TYPE	FEATURES	AVAILABLE TAPER
▸ PSC	▸ **TAPER** 1:20 ▸ **FORM ACCURACY** ±2μm ▸ **SURFACE ROUGHNESS** Ra < 0.25μm ▸ **DOUBLE FACE CONTACT**	▸ **PSC** 32.40.50.63.80.80X

STRENGTHENED STRUCTURE

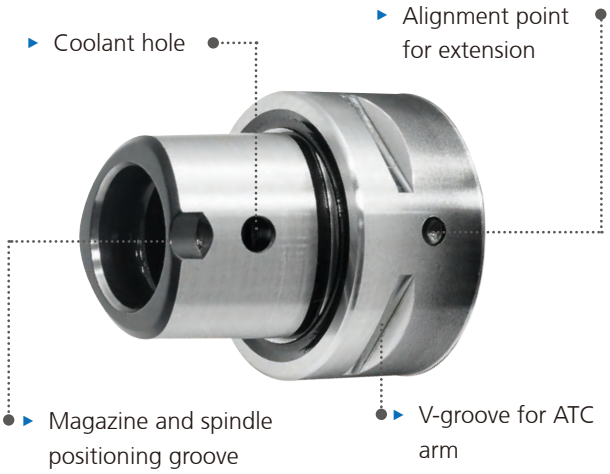
- PSC tooling system is in triangle curve form of polygon, adapting 1/20 tapered coupling structure for two-face positioning and clamping. There is no drive key, tool life can be extended.

HIGH PRECISION

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

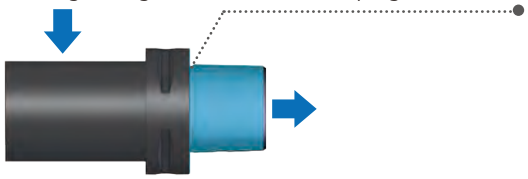


FEATURES



HIGH TORQUE TRANSMISSION AND HIGH RIGIDITY

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



PROMOTE EFFICIENCY

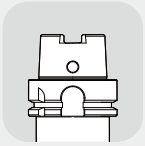
- Quick tool change system is applicable for lathes, easy to operate and quick for changing tools. The modular design enhances machine utilization rate and decreases machine downtime.

QUICK TOOL CHANGE <30sec.

AWC JIG TOOL HOLDER

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

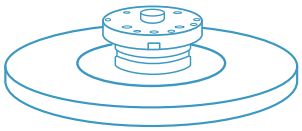
PSC

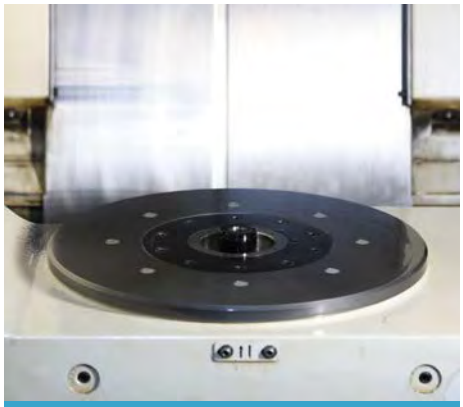


HSK

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.





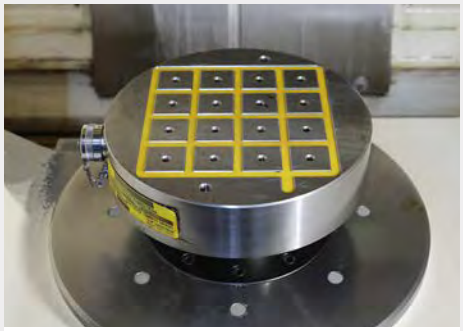
Built-in Type

Hydraulic Type

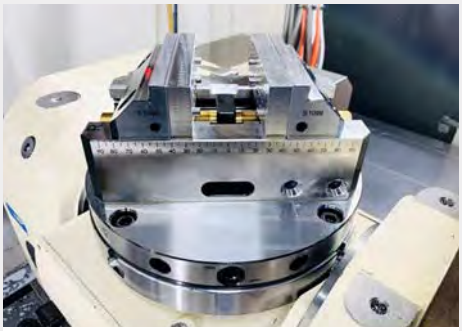
Manual Type

AWC JIG TOOL HOLDER

2 Product Clamping Application



Workpiece clamped by magnetic base

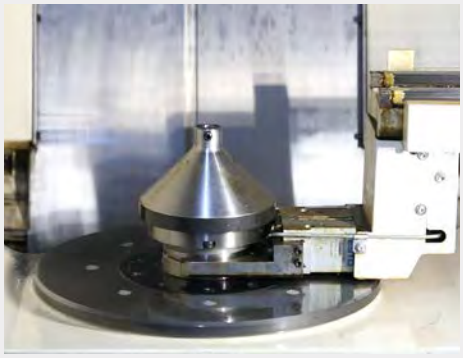


Workpiece clamped by self-centering vise

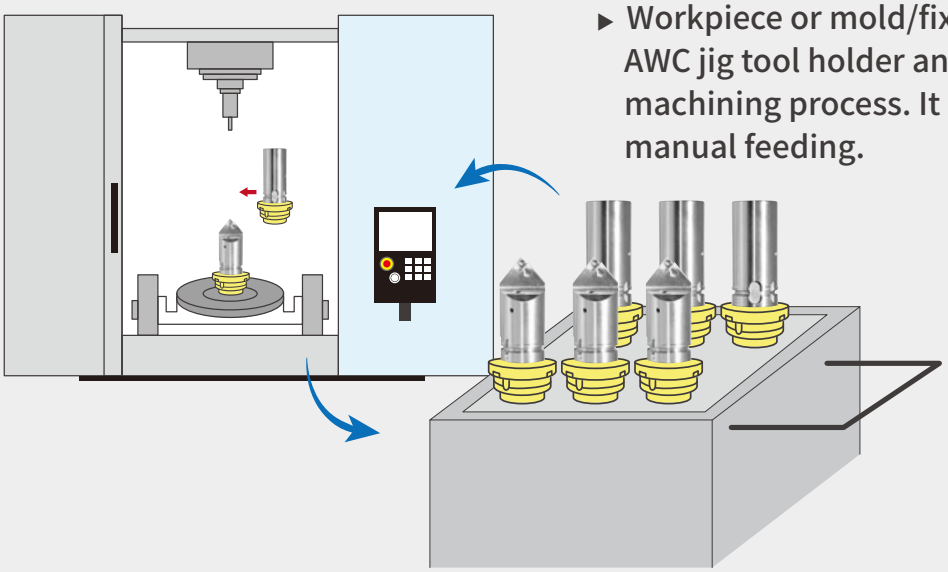
Workpiece clamped by three-jaw chuck

- Suitable for clamping round and square workpieces.
- Suitable for clamping round workpieces.

3 Improve Production Efficiency



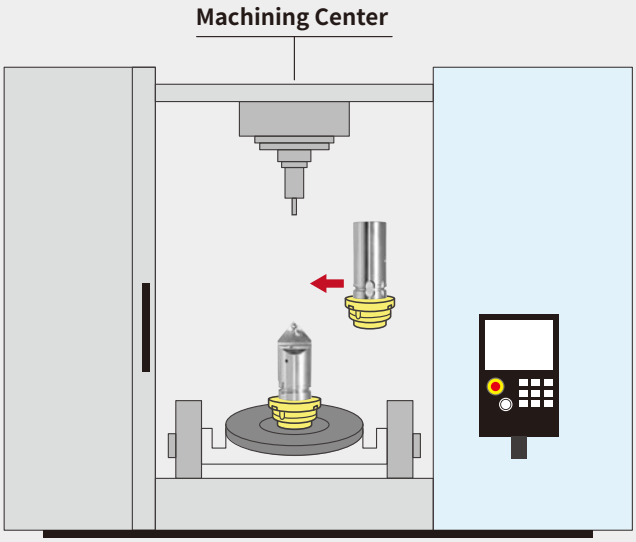
- The tool clamping system of machine table can quickly clamp or change AWC jig tool holders to increase production efficiency.
- Scan the QR-CODE to watch a demonstration video.



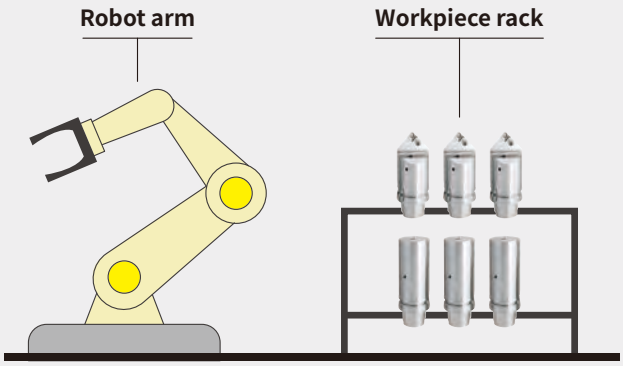
- Workpiece or mold/fixture can be pre-loaded in AWC jig tool holder and quickly changed during machining process. It saves the downtime for manual feeding.

AWC JIG TOOL HOLDER

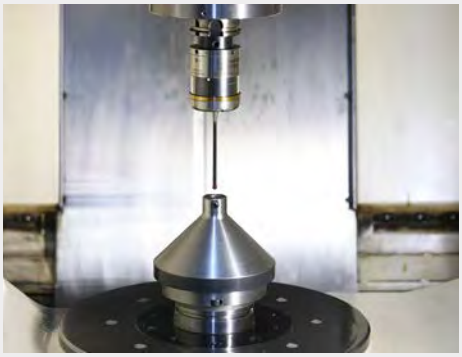
4 Support Automation System



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



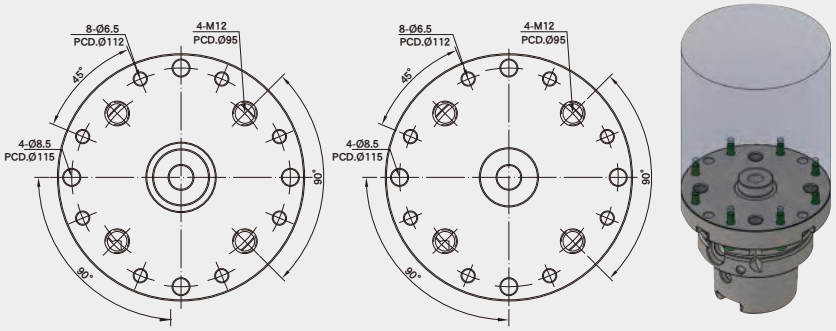
5 Use Touch Probe Holder for Accuracy Compensation



- 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

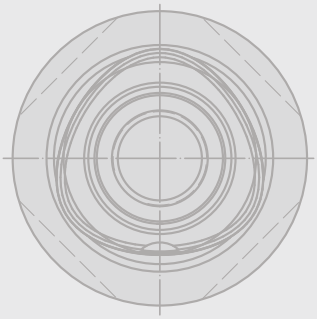
- There are 3 different sizes of screw holes on the face of AWC jig tool holder, which provides customers with various methods of clamping workpieces and molds/fixtures. Different screw hole sizes or quantities are also available for customization.



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.

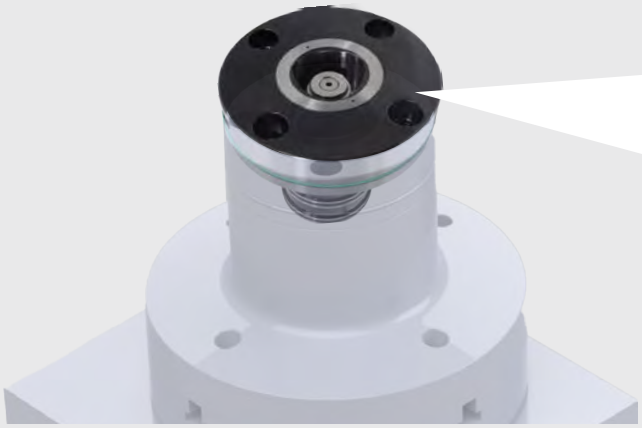


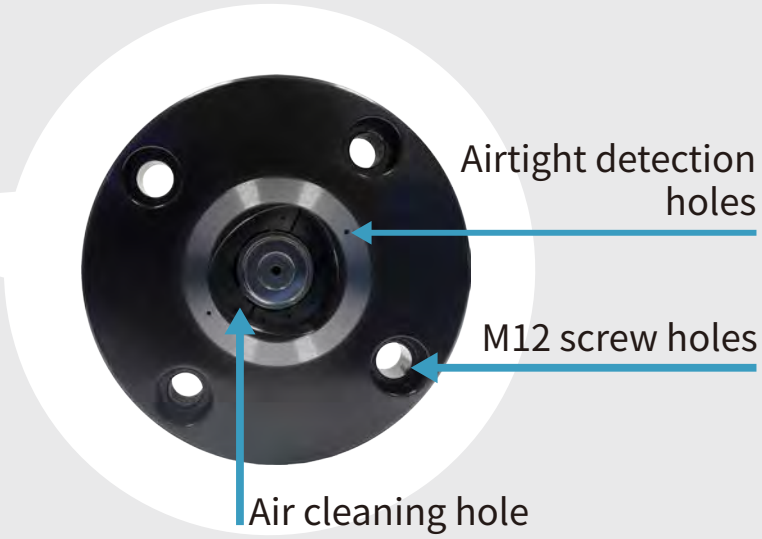
1 Available Type

Hydraulic Type:

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

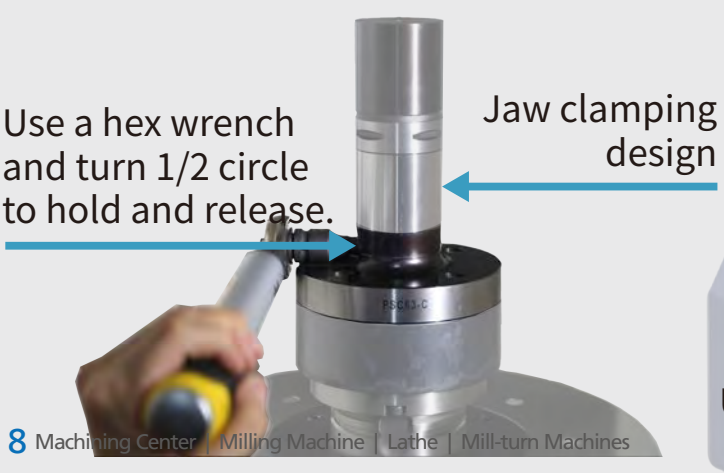
Optimum for Automation





Manual Type:

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

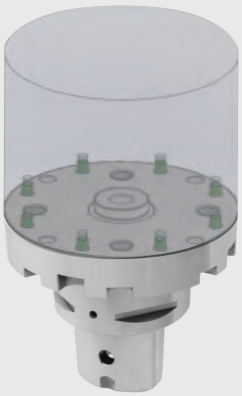


2 Application of PSC Workpiece Quick Change System

PSC Blank

PSC/MLD Milling Chuck

PSC Adapter

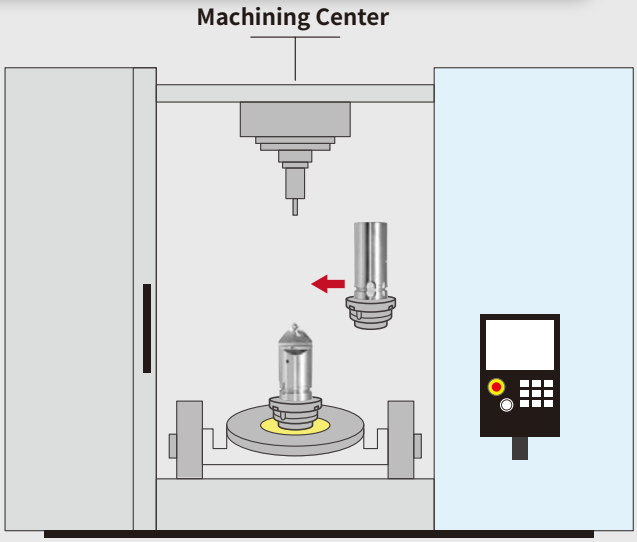


AWC Jig Tool Holder

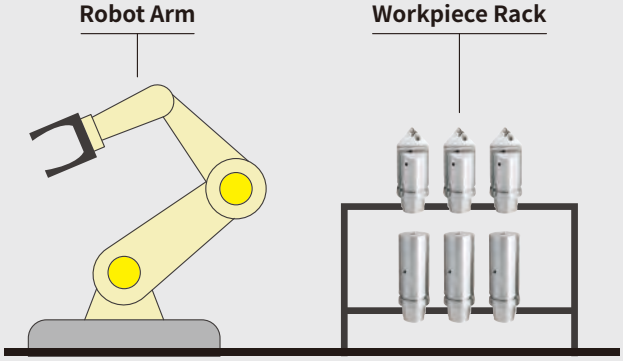
Hydraulic Type

Manual Type

3 Support Automation System



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



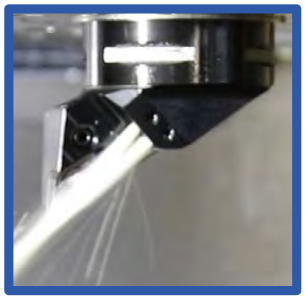
BMT STATIC TOOL HOLDER

▶ 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.

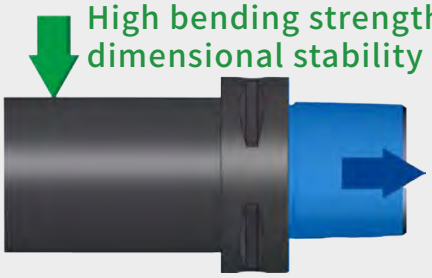
▶ Clamping force is inspected individually before delivery.

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



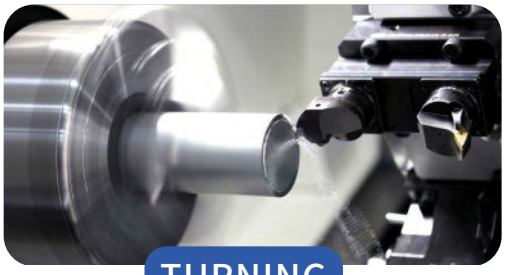
▶ Used with the PSC taper tools, which have the features of bending strength, and superior repeat positioning accuracy.

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

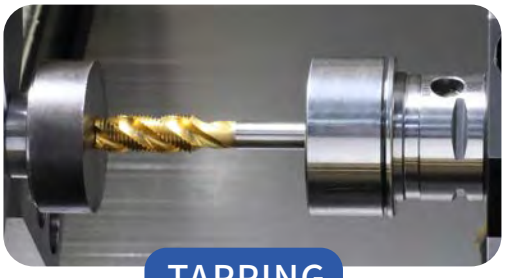
PSC/SDJC

PSC/SVJB

DRILLING

PSC/SPD
High Speed Drill

PSC/SFC
Shrink Fit Chuck



TAPPING

PSC/PRO-E
Collet Chuck

ERS

ERS-FID

ERS-FOD

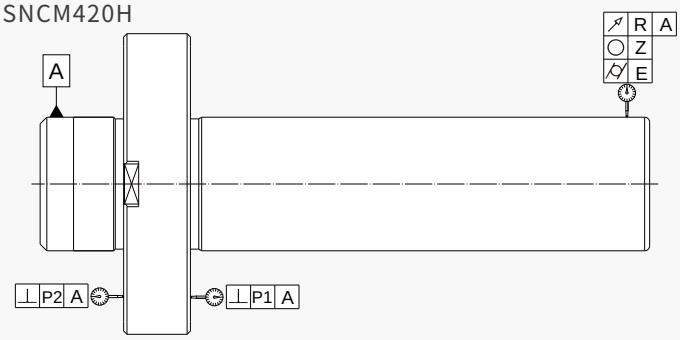
PRO-E
Power Good Nut

BMT TURRET MASTER BAR

PRECISION TYPE

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

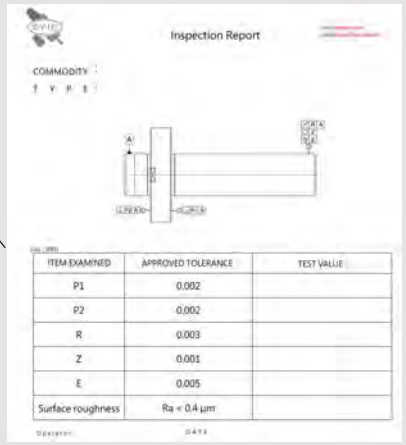
Material : SNCM420H



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

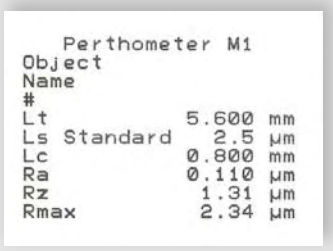
100% GUARANTEED PRECISION:

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	


Perthometer M1
Object
Name
#
Lt 5.600 mm
Ls Standard 2.5 μm
Lc 0.800 mm
Ra 0.110 μm
Rz 1.31 μm
Rmax 2.34 μm

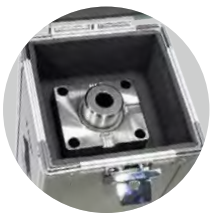
What are the benefits of using BMT Turret Master Bar?

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 ↑

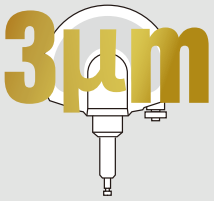
Recommendation of storage:

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.



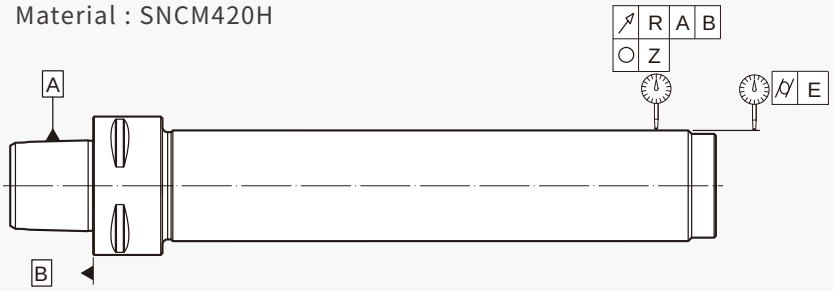
SPINDLE MASTER BAR

PRECISION TYPE



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 !

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 SPINDLE ORIGIN GAUGE

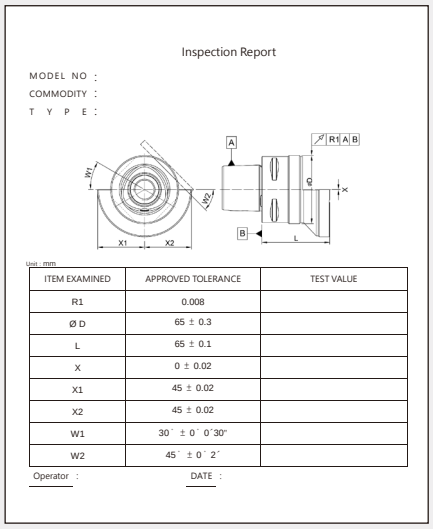
- Regular inspection and calibration of spindle origin achieves premium machining quality.
- SOG is an important gauge to calibrate axial and radial accuracy of CNC machines.

AVAILABLE TAPER

HSK-A | PSC | SBT | SCAT | SDAT

100% GUARANTEED PRECISION:

Every SOG spindle 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

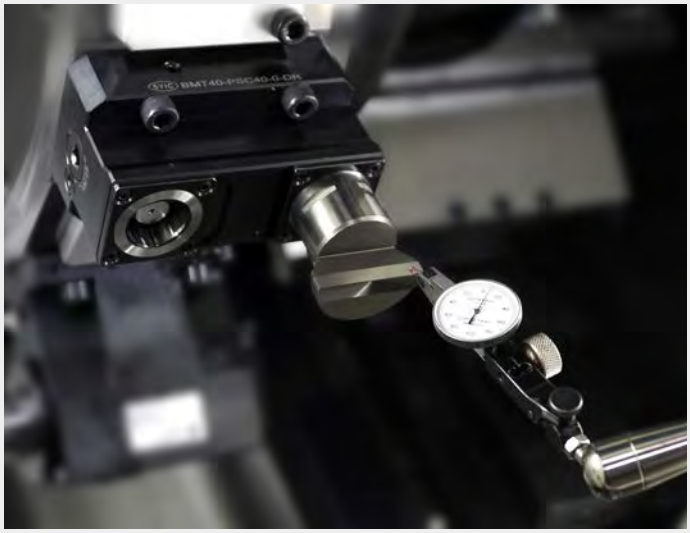
ITEM EXAMINED	APPROVED TOLERANCE	TEST VALUE
R1	0.008	
Ø D	65 ± 0.3	
L	65 ± 0.1	
X	0 ± 0.02	
X1	45 ± 0.02	
X2	45 ± 0.02	
W1	30° ± 0° 0'30"	
W2	45° ± 0° 2'	

Operator : DATE :

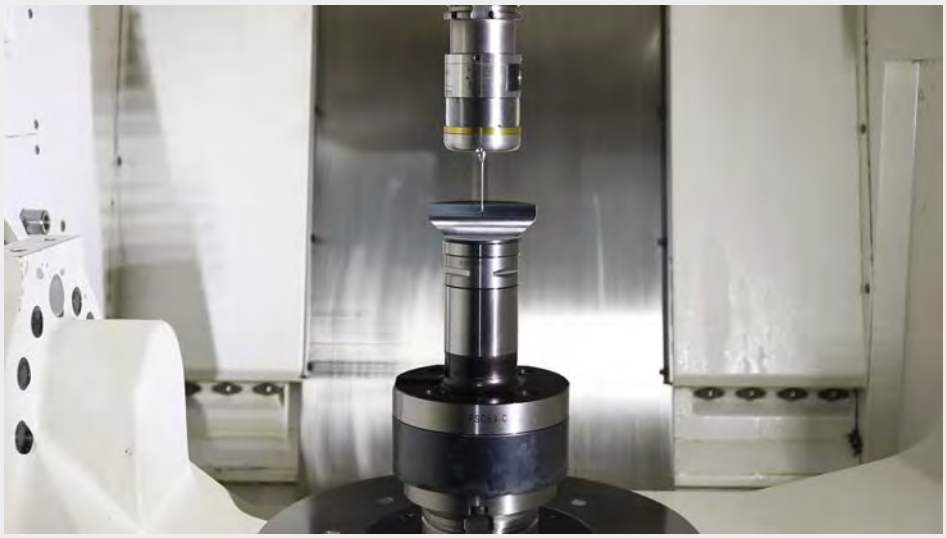
Application of SOG Spindle Origin Gauge

Calibrating spindle accuracy of mill-turn machines

Calibrating tool post accuracy of CNC lathes



Setting rotary table machining origin of 5 axis machining centers



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

ATC ALIGNMENT TOOL SET

Guardian of Machine Accuracy

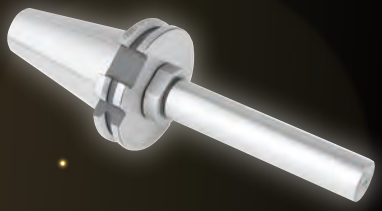
Used for checking ATC positioning accuracy between ATC arm and machine spindle, and between ATC arm and tool magazine.

- ▶ **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+

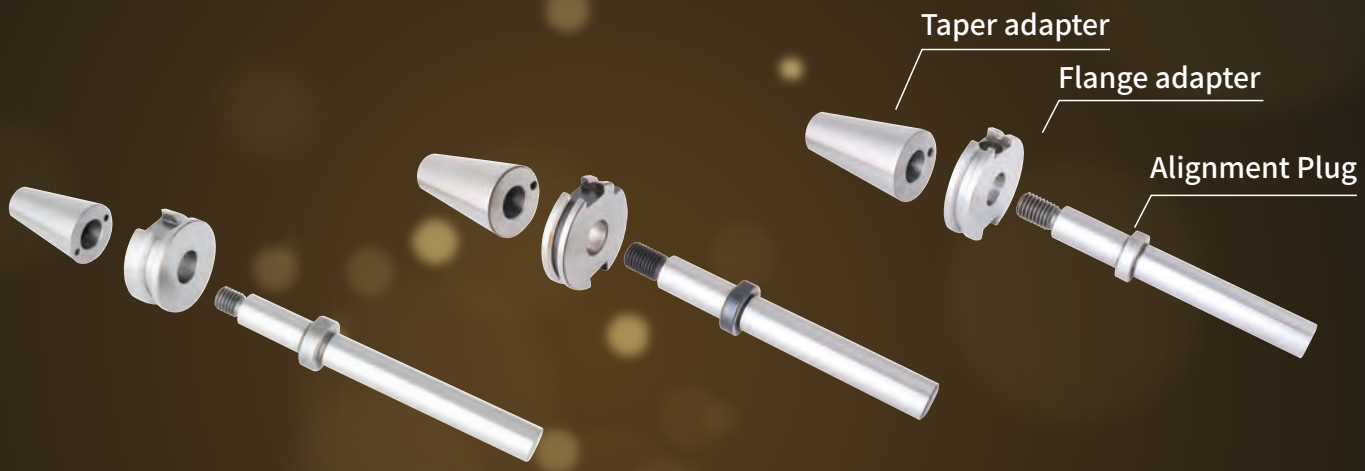
SDAT
DIN 69871-A
DualDRIVE+



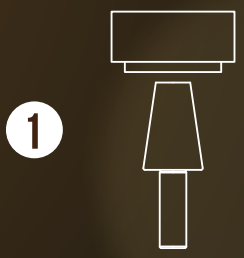
HSK
DIN 69893
A, E, F Type

PSC
ISO 26623-1

INSTRUCTIONS FOR USE
(SBT/SCAT/SDAT SERIES)

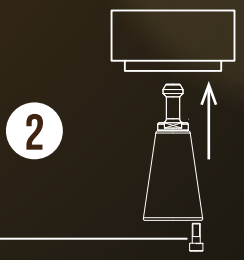


01 Clean machine spindle by spindle wiper.

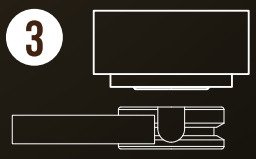


02 Assemble the taper adapter with pull stud and screw, insert taper adapter into spindle manually with screw and push machine controller button to clamp taper adapter, then loosen the screw.

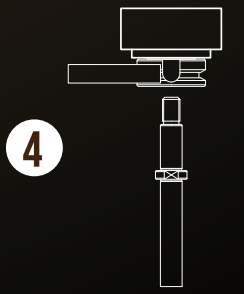
M4x0.7P (#30)
M6x1.0P (#40 & #50)



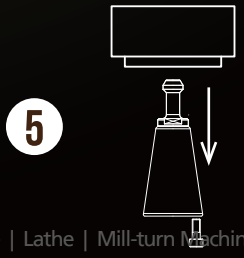
03 Install the flange adapter into gripper of ATC arm and press machine controller button to move ATC arm to align with machine spindle.



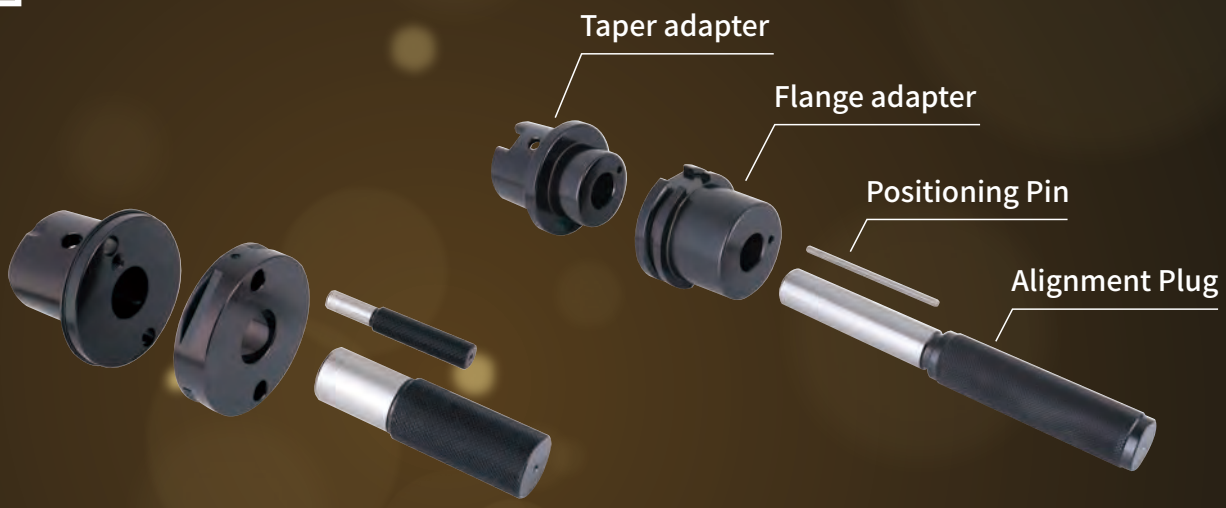
04 Insert alignment plug into the holes of flange adapter and taper adapter for alignment.
If alignment plug can be inserted with ease and the movement is smooth, the alignment is done.
If alignment plug can' t be inserted into the holes of flange adapter and taper adapter, or it is hard to be inserted,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



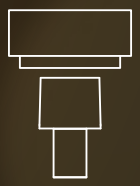
05 After completing alignment, unload alignment plug and flange adapter. Hold the taper adapter manually with screw and release it from spindle by pressing release button.



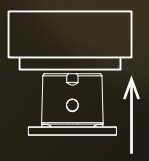
INSTRUCTIONS FOR USE
(PSC & HSK SERIES)



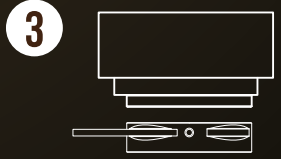
01 Clean machine spindle by spindle wiper.



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.
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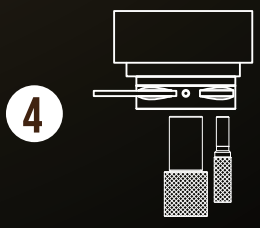
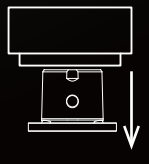


05 After completing alignment, unload alignment plug, positioning pin and flange adapter. Hold the taper adapter by hand and remove it from spindle by pressing releasing button.



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

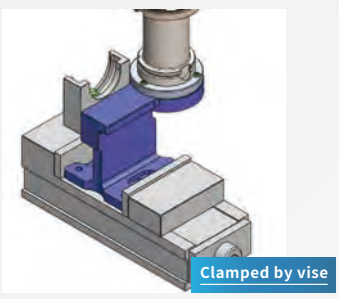
PATENT DESIGN

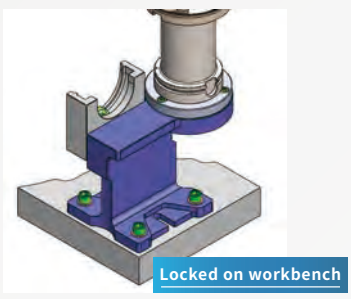
PAT NO.
TW M614470
TW M614781
CN ZL201922325128.6
CN ZL202120822487.7
CN ZL202120822431.1
JP 3233841
CN 202021103718
US 11440150

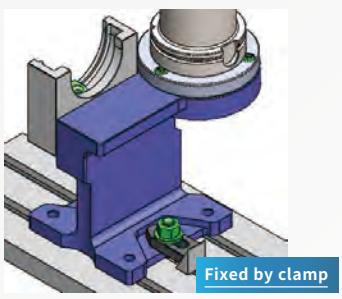
AVAILABLE TAPER
DIN 69893-A HSK-A

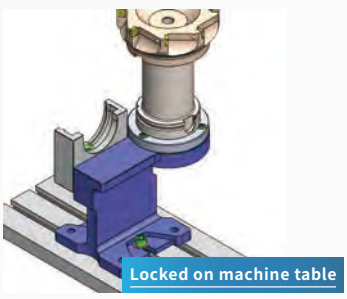
- Superior performance for installing and uninstalling accessories in long-reach or heavy holders.
- The crossbar design of vertical tool pot helps with tool holders positioning and prevents slippage.

- 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

- 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.

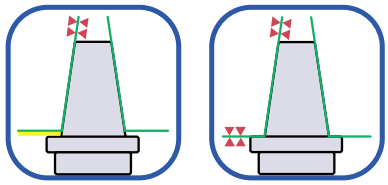
HIGH RIGIDITY

PATENT DESIGN

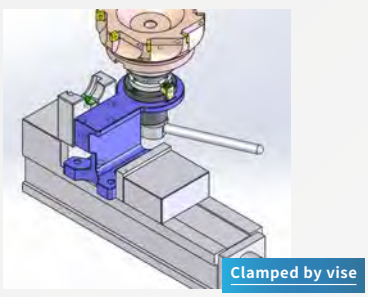
PAT NO.
TW M614470
CN ZL201922325128.6
CN ZL202120822487.7
JP 3233841
DE 202021103718
US 11440150

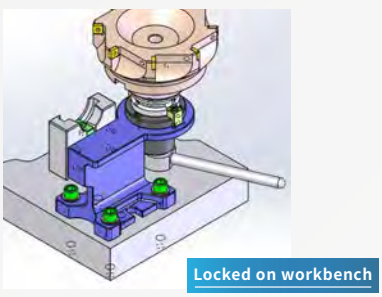
AVAILABLE TAPER

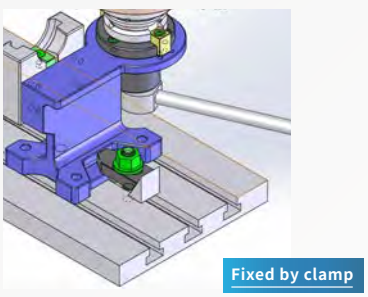
MAS 403 BT/SBT、ANSI B5.50 CAT/SCAT、DIN 69871-A DAT/SDAT

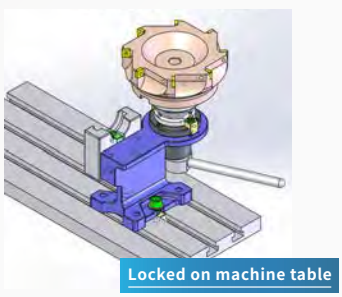


- Superior performance for installing and uninstalling accessories in long-reach or heavy holders.
- Nodular-cast-iron base has strengthened rigidity.
- The design of bottom seat is patented, which can be fixed not only on the workbenches, but also in machines by vises or clamps.









ASSEMBLY DEVICE
ROLLER BEARING TYPE

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

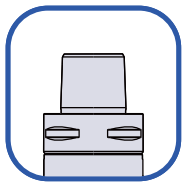
- The body and tool pot are precisely machined so it allows stable and firm mounting.
- Nodular-cast-iron base has strengthened rigidity.
- No direction restriction, making it easy to clamp.

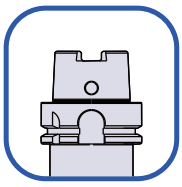
PAT. NO.

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

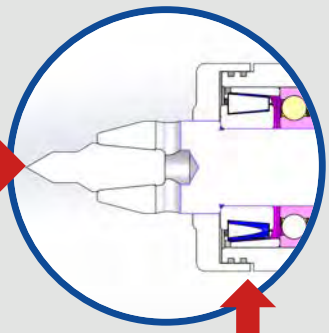
- Use roller bearing to fix the tool holder flange, so the taper can remain free of contact.

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 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.

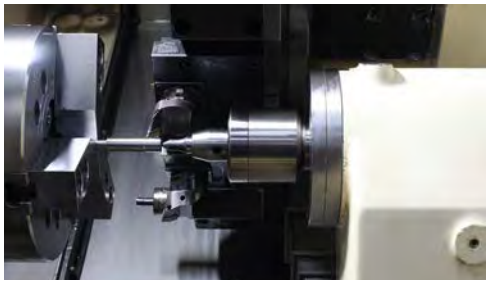
Max. revolution:
4,500 RPM

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

Standard Accessory:

Applicable machine types:

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

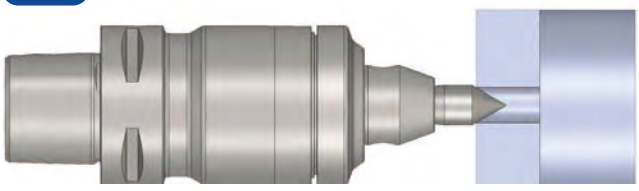


Applicable machining:

- ▶Long shaft workpiece
- ▶Medium & heavy turning
- ▶Milling

PSC Live Center Application:

Ø32



Ø8

SAU ANGLE HEAD HOLDER

萬向銑削頭 [UNIVERSAL TYPE]

Japanese-made Bearing

Precision: P4

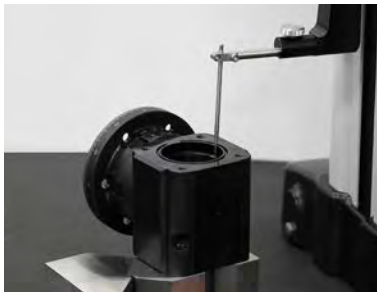
Ground Gear

JIS B1704 : 1978 : 2

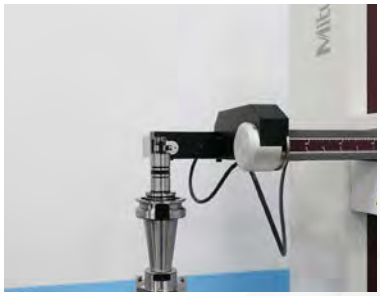
- Max. revolution: 4,000rpm.
- Max. torque: 40N-m.
- Max. coolant pressure: 20 kgf/cm² (100PSI).
- ATC is available for all angle head series.

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

大鋼炮銑削頭

Machine spindle
BT/SBT
CAT/SCAT
DAT/SDAT

Coolant through coolant nozzle

Output
SBT30
PSC50
ER40
MLD32
FMA25.4

Japanese-made Bearing

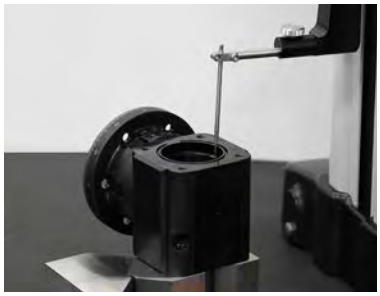
Precision: P4

Ground Gear

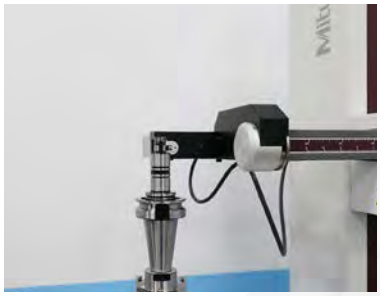
JIS B1704 : 1978 : 2

- 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

中鋼炮銑削頭

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

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

Japanese-made Bearing

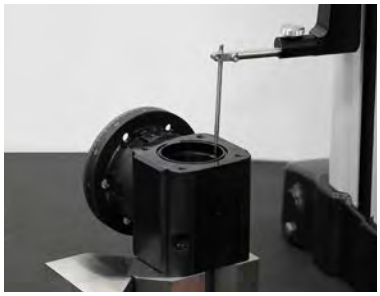
Precision: P4

Ground Gear

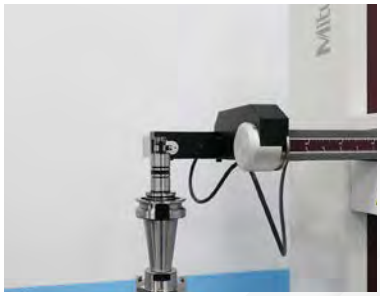
JIS B1704 : 1978 : 2

- 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

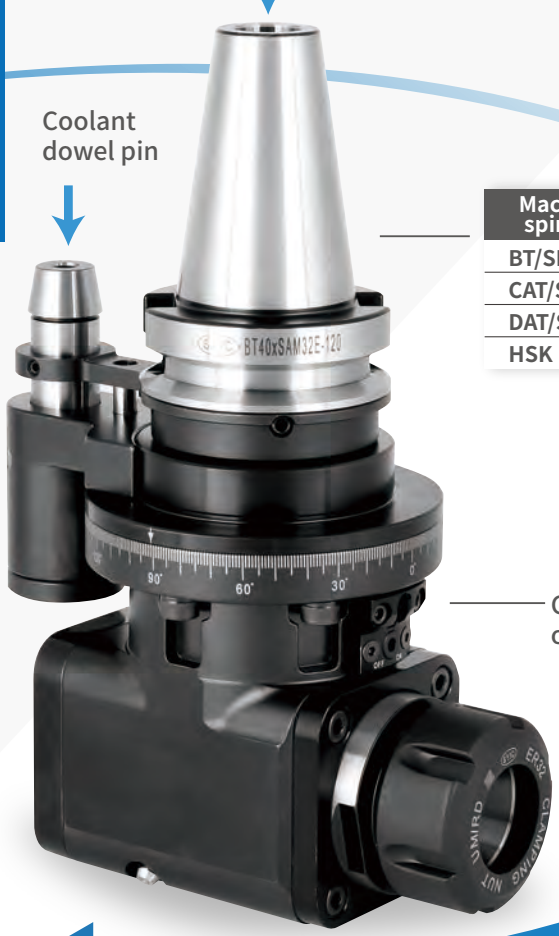
Surface roughness: Ra<0.25μm

SAM ANGLE HEAD HOLDER

小鋼炮銑削頭

Coolant feed through spindle

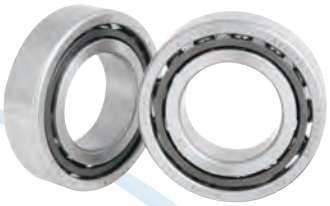
Coolant dowel pin



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

Coolant through cutting tools or through coolant holes

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



Japanese-made Bearing

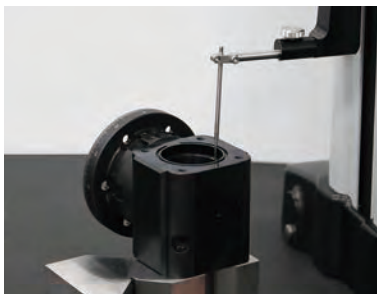
Precision: P4

Ground Gear

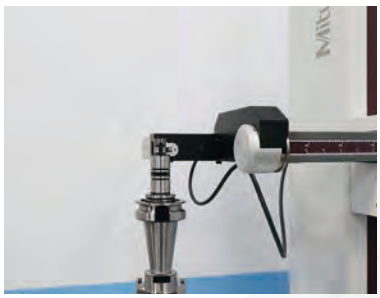
JIS B1704 : 1978 : 2

- Max. revolution: 4,000rpm.
- Max. torque: 20N-m.
- Max. coolant pressure: 7 kgf/cm^2 (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

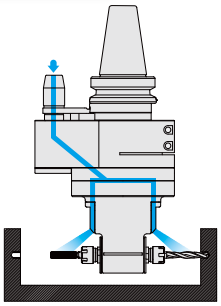
雙頭龍銑削頭 [FOR DUAL SIDE MACHINING]

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

S2

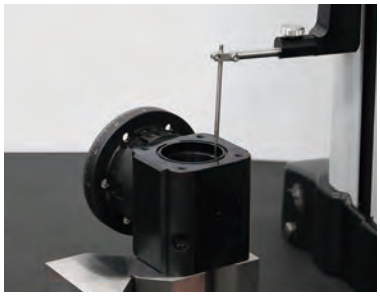
S1

Output
ER11/16/20
SK306/10/13

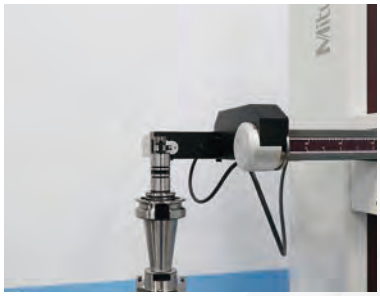
Direction of rotation:
S1- opposite to machine spindle
S2-same as spindle

- 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

小徑銑削頭

Machine spindle
BT/SBT

Output
ER8
SK306

Japanese-made Bearing

Precision: P4

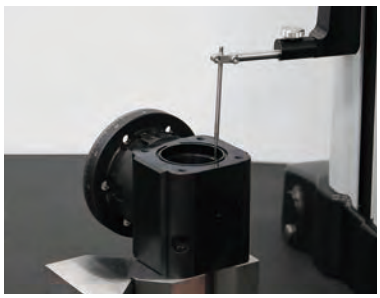
Ground Gear

JIS B1704 : 1978 : 2

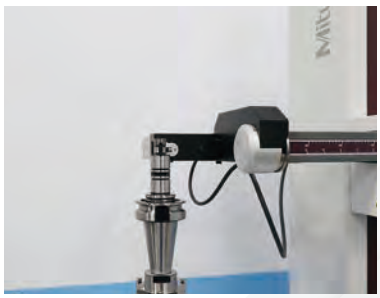
DE PAT NO. 202021100353
CN PAT NO. ZL202022589176.9
TW PAT NO. M617869
DE PAT NO. 202022101763
JP PAT NO. 3237391

- 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

小徑銑削頭 **[SLIM TYPE]**

Coolant dowel pin

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

Coolant through two coolant holes

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

Japanese-made Bearing

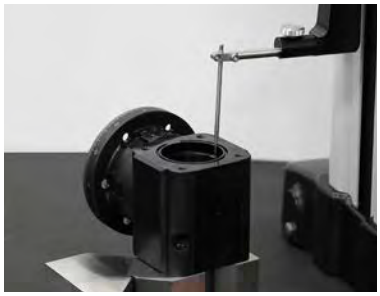
Precision: P4

Ground Gear

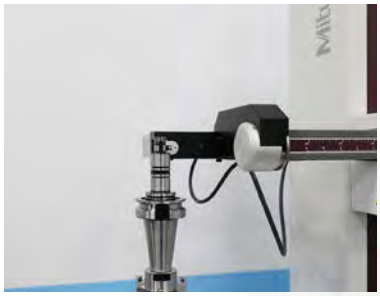
JIS B1704 : 1978 : 2

- Max. revolution: 6,000rpm.
- Max. torque: 10N-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

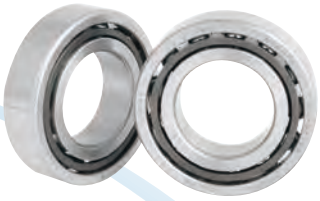
SAD ANGLE HEAD HOLDER

小徑銑削頭 **[SLIM TYPE]**

Machine spindle
BT/SBT
HSK-A

Slim design, for deep hole machining.

Output
EBL8
SK310



Japanese-made Bearing

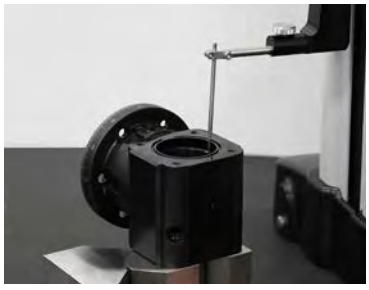
Precision: P4

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

SMG NON-PULLOUT MILLING CHUCK

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

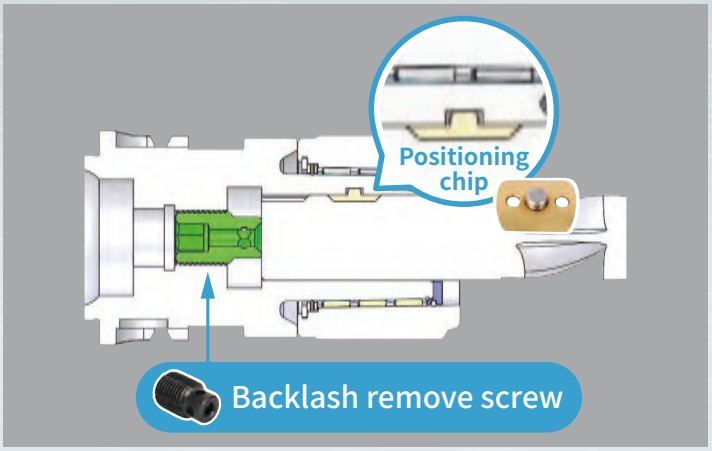
Firmly clamp the tool

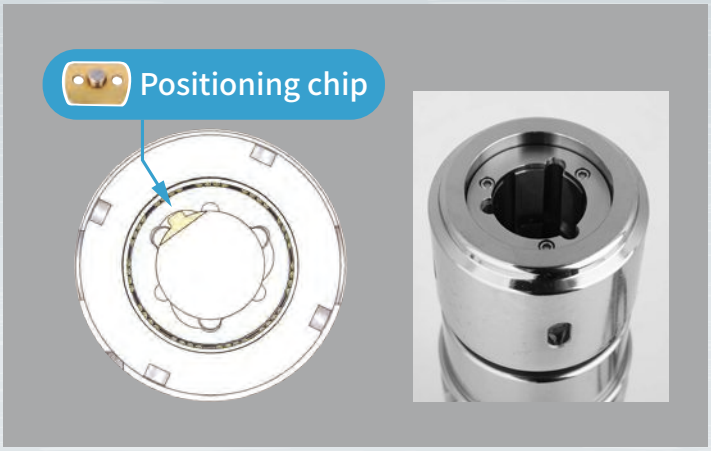
Run-out accuracy: 5μm

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.**

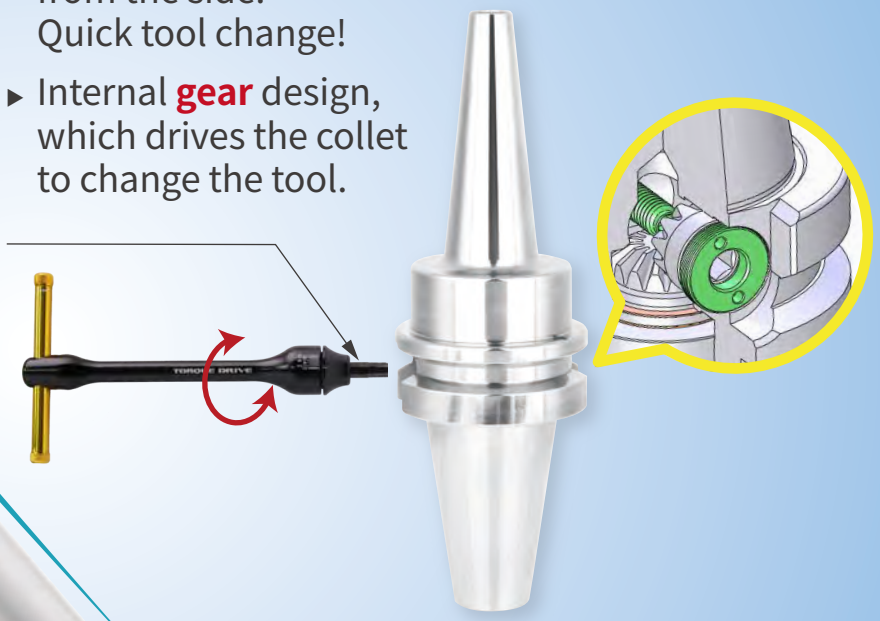




USC ULTIMATE SIDE CLAMPING CHUCK

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

PRO-E COLLET CHUCK

Superior interchangeability with ER collets.
Optimized design improves machining stability.

- The design of straight parts above and below the thread makes PRO-E tool holders have better contact with clamping nuts to achieve higher runout accuracy.

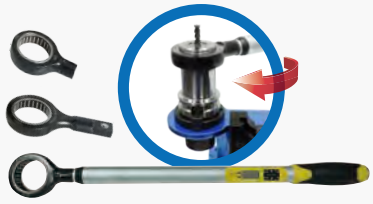
- The enlarged design of holder ID hole optimizes the coverage of ER collet, shortens the tool overhanging length and improves runout accuracy and machining stability.

- Can use with ERS metallic sealed collets for coolant tools; coolant pressure can be up to 70 bar. Coolant collets FID and FOD type are also available.

- Assembled with all ER collets.
- ER collets must conform to ISO 15488 standard.

POWER GOOD

- "Power Good" increases the holding power by at least 60%.



- The clamping nut is without slots for reducing the windshear and noise. The best choice for high speed machining.

SFS SERIES

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

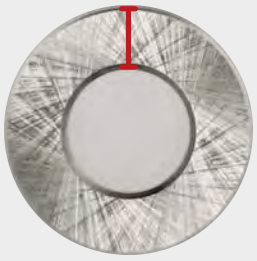
HIGH PRECISION | **FOR 5 AXIS MACHINING** | **HIGH SPEED** G2.5 25000rpm

- 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

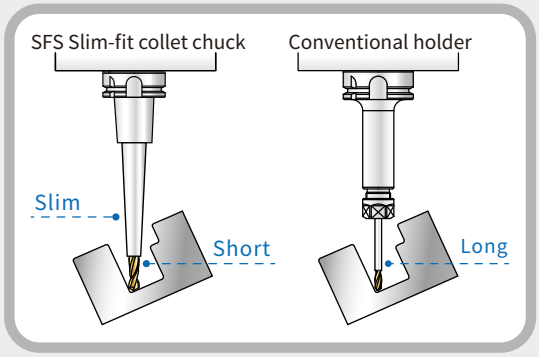
Avoid interference

R Type: thickness 2.25mm~4mm



High rigidity

- Perfect design for 5-axis machining.



- Used for coolant -through cutting tools.

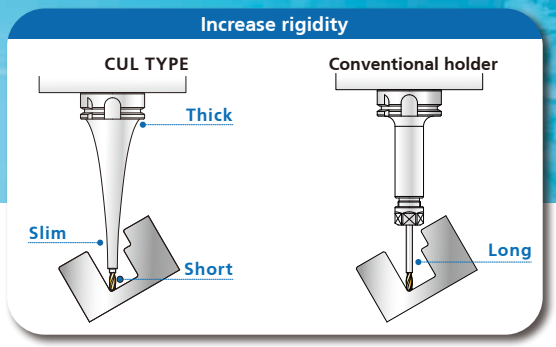
The pull stud used for BT30/SBT30xSFS Slim-fit collet chuck is ONE PIECE design with draw bolt. If you have a demand for customized pull studs, please contact our sales personnel.

SFC SHRINK FIT CHUCK
CUL TYPE / CP TYPE

Perfect design for 5-axis machining!

CUL TYPE
CURVE LINE

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

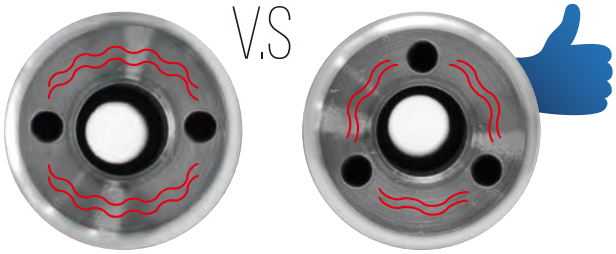


Increase rigidity!
Avoid interference!
Prolong tool life!

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

SDG KPS
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°

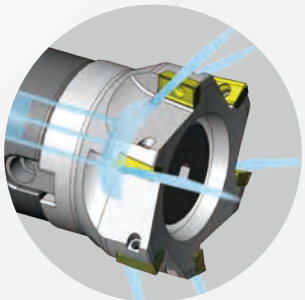
SFMC 45°

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

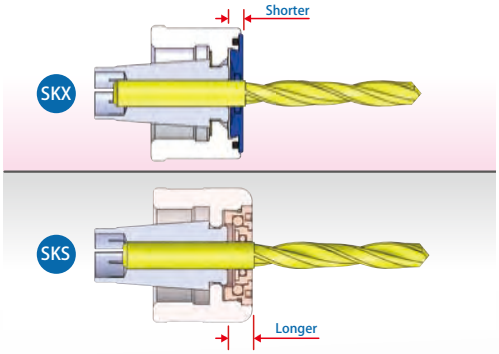
- The closer vibrating point gets to the damping mechanism, the higher damping effect will be.
- To maintain runout accuracy, all damping products need to be placed upright in stock.

HIGH SPEED | HIGH RIGIDITY | HIGH PRECISION | 5μm

SKX COLLET CHUCK SYSTEM

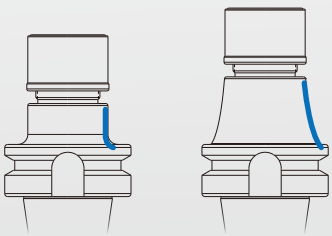
- SKX sealed nuts and sealed caps are capable of coolant pressure up to 70 bar.

- Compared to other brand, shorter distance between sealed cap, sealed nut and collets allows shorter tool overhanging length.



- Special SKX sealed cap holes avoid the problem of slipping when fastening.

- Besides the standard design of straight neck, SKX tool holders of length over 120mm also have curved line design for better rigidity and less vibration.



- SKX tool holders and collets are exchangeable with other brands.

- The OD of SKX nut is the same with other brand, so it's workable with other brand spanners.

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

- 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	
▸ M3~M5	▸ M3~M16
▸ M3~M6	▸ M6~M18
▸ M3~M12	

HIGH SPEED

SHORTER TOOL OVERHANGING LENGTH

SLIM DESIGN

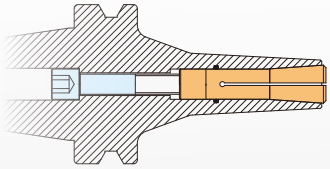
5μm

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

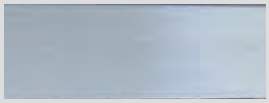
- BT40 x SBL6 - 70

SBL

- Surface Roughness **Ra: 1.695μm**

- BT40 x EBL6 - 70

EBL



- Surface Roughness **Ra: 0.216μm**

Better

MODULAR SYSTEM

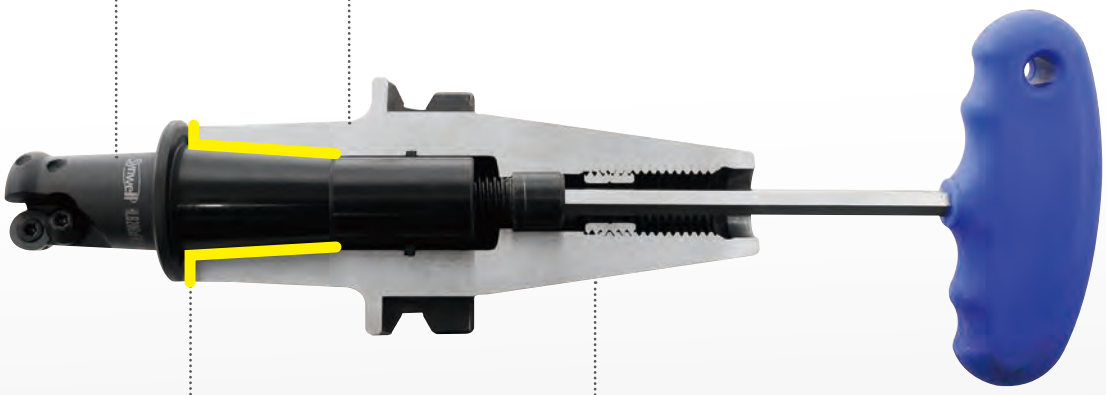
TWO FACE CONTACT

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)

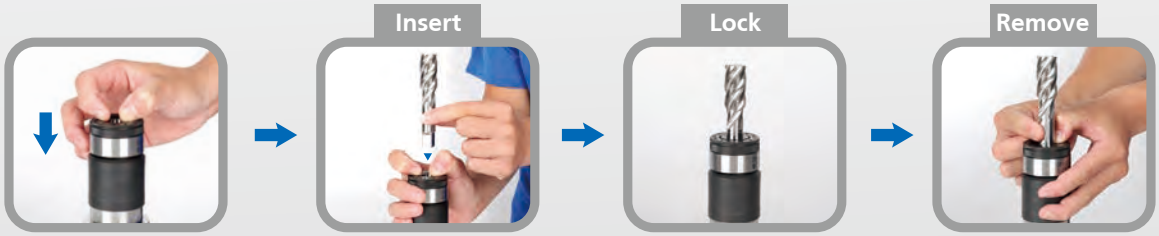
Installing and Removing Steps:

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.

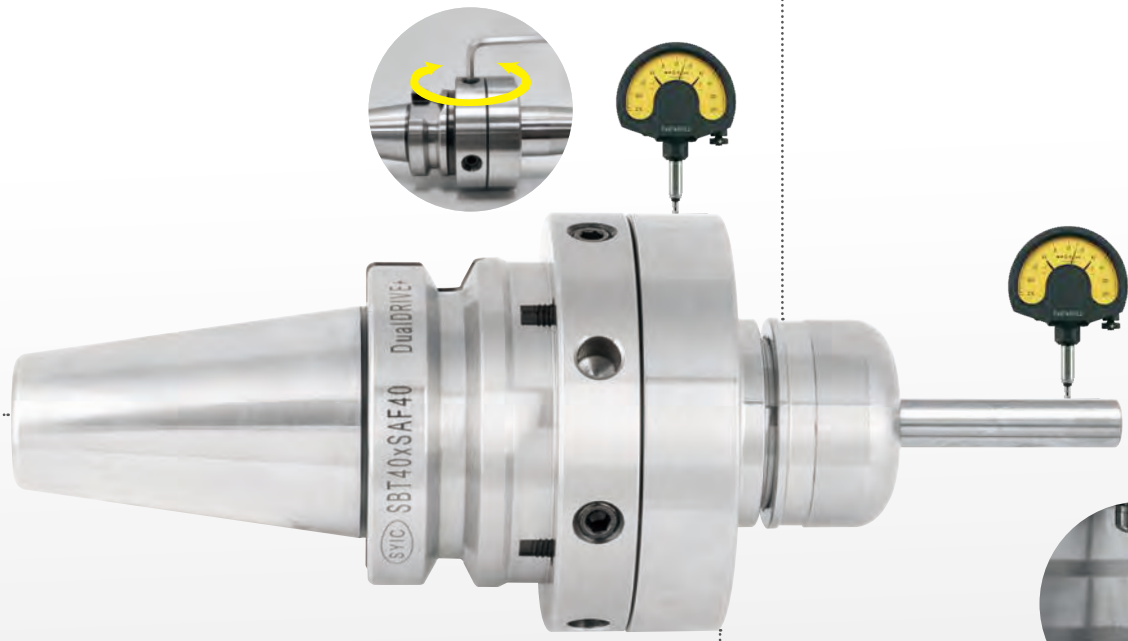


PRECISION ADJUSTABLE

<5μm

SAF RUNOUT ADJUSTABLE HOLDER

- Output choices: SK3, UT and SFC.



0 ~ 5 μm

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

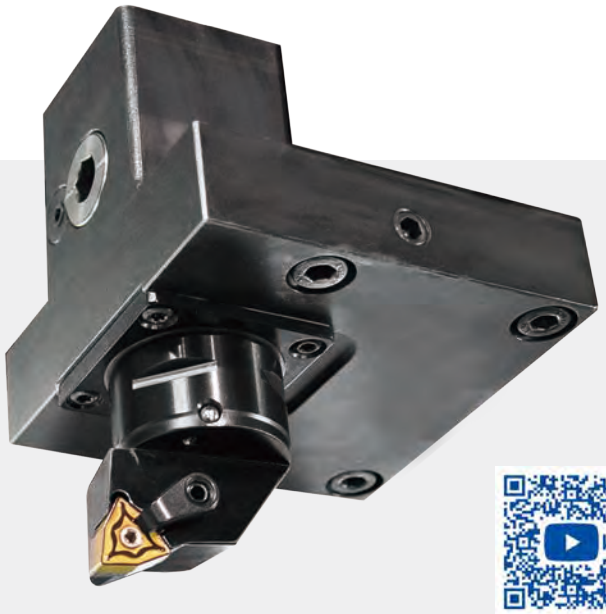
- Drive axial and radial set screws for precision adjustment and the runout accuracy of the tool edge can be adjusted within 5 μm.

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)

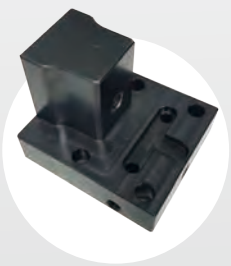
- Use polygonal form from PSC as the coupling structure to achieve ultimate repeated positional precision which is ±2μm.

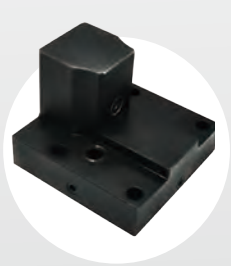
DURABLE FOR HIGH PRESSURE COOLANT SUPPLY

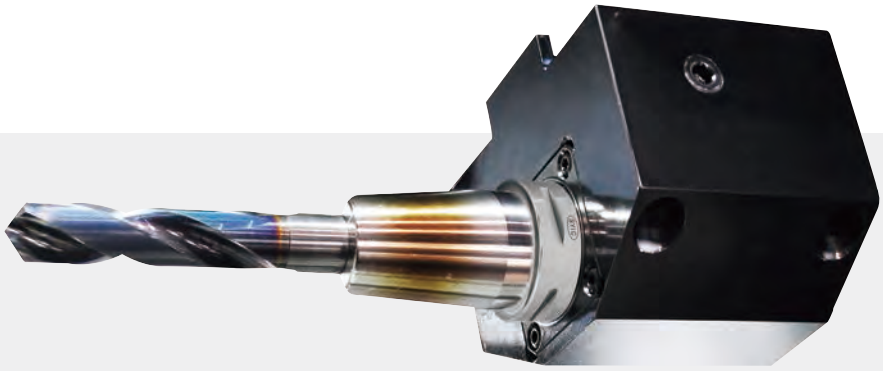
- Use PSC system with high pressure coolant supply up to 130 bar can improve the efficiency and extend tool use life.

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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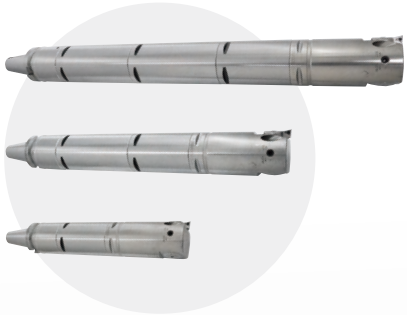
TAIWAN EXCELLENCE

PSC ONE-PIECE BORING SYSTEM

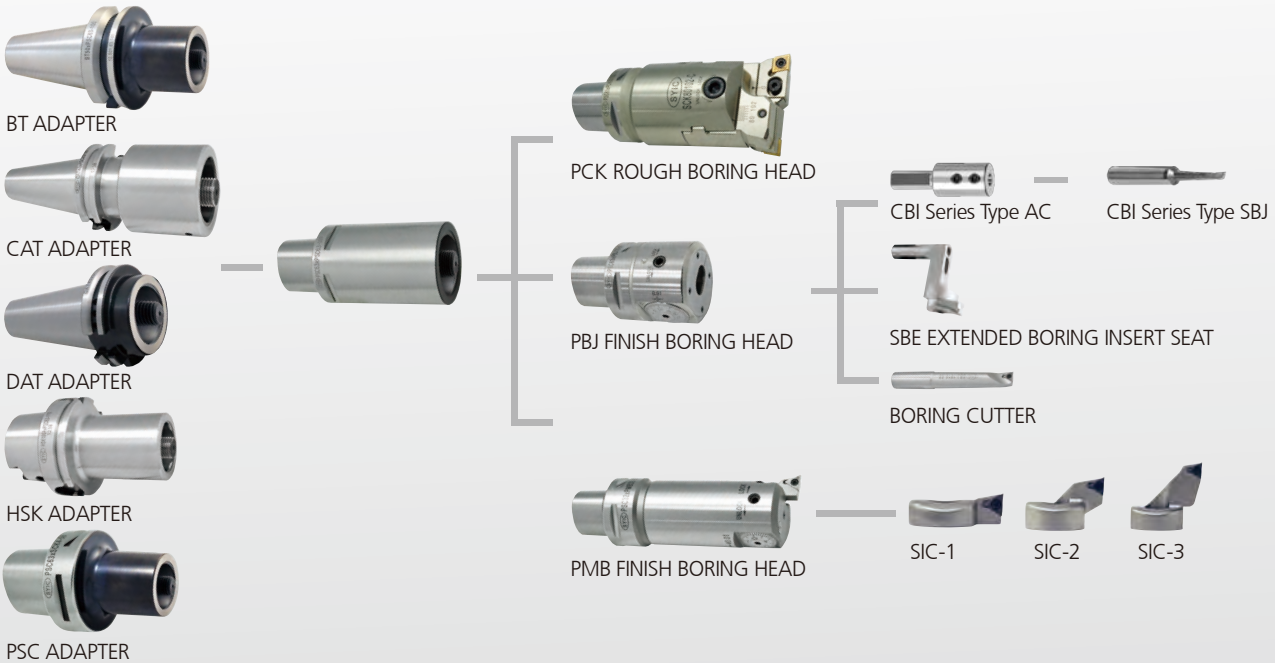
- Use polygonal taper as coupling structure, achieving high torque transmission and rigidity.

- 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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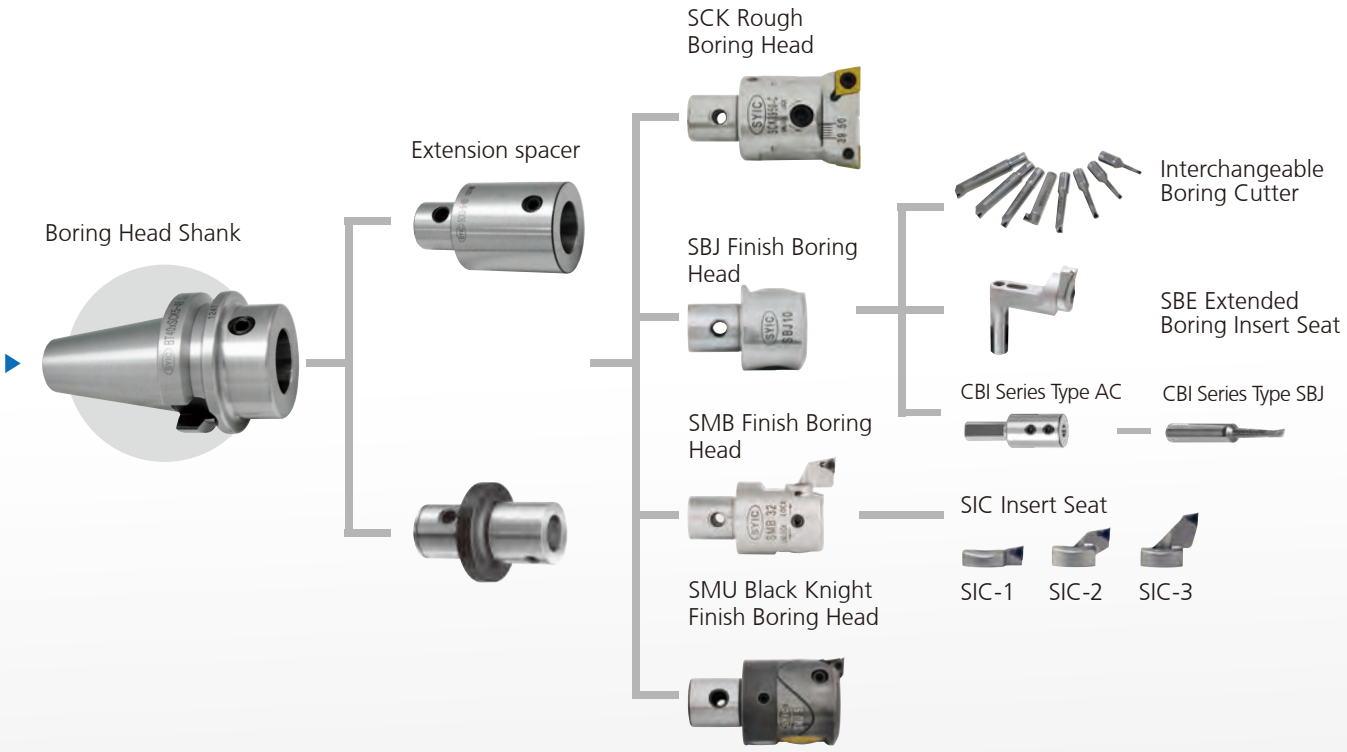
TAIWAN EXCELLENCE

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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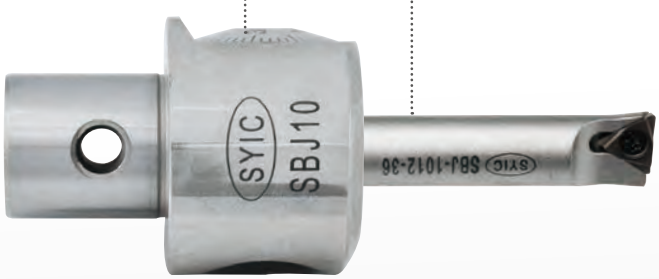
FINISH BORING

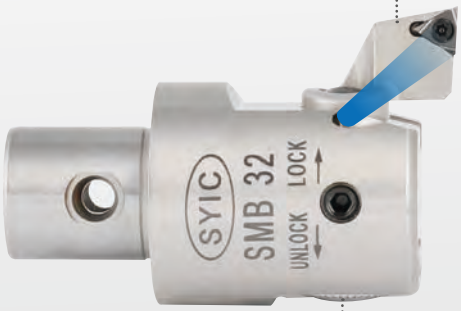
SBJ BORING HEAD FOR FINISHING

- 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

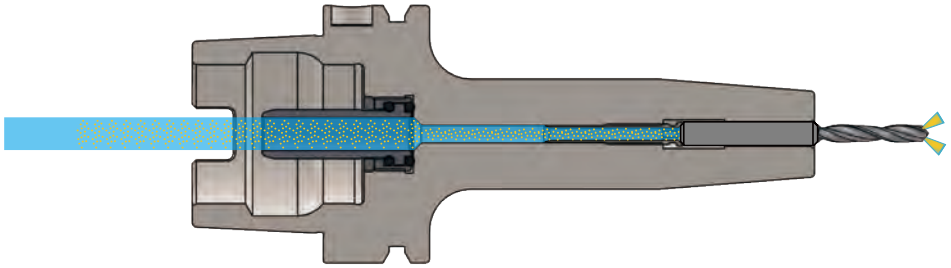
What is MQL?

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:

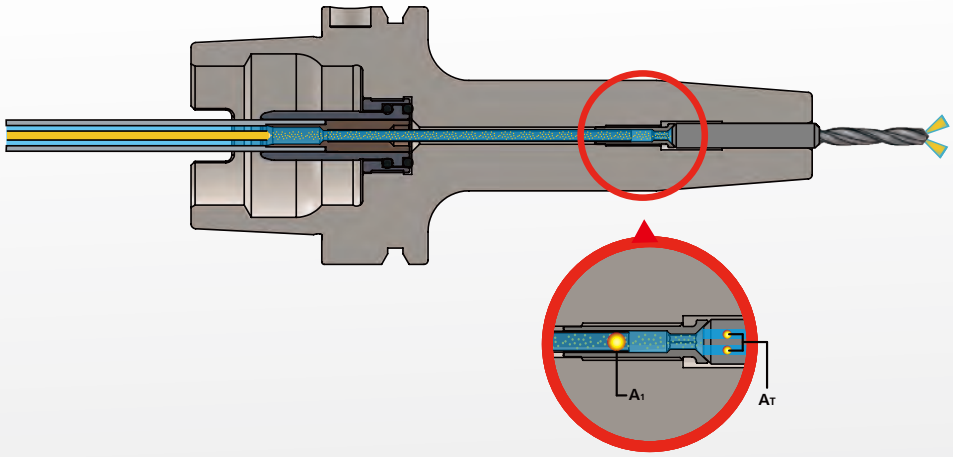
MQL-a type: 1 channel

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.

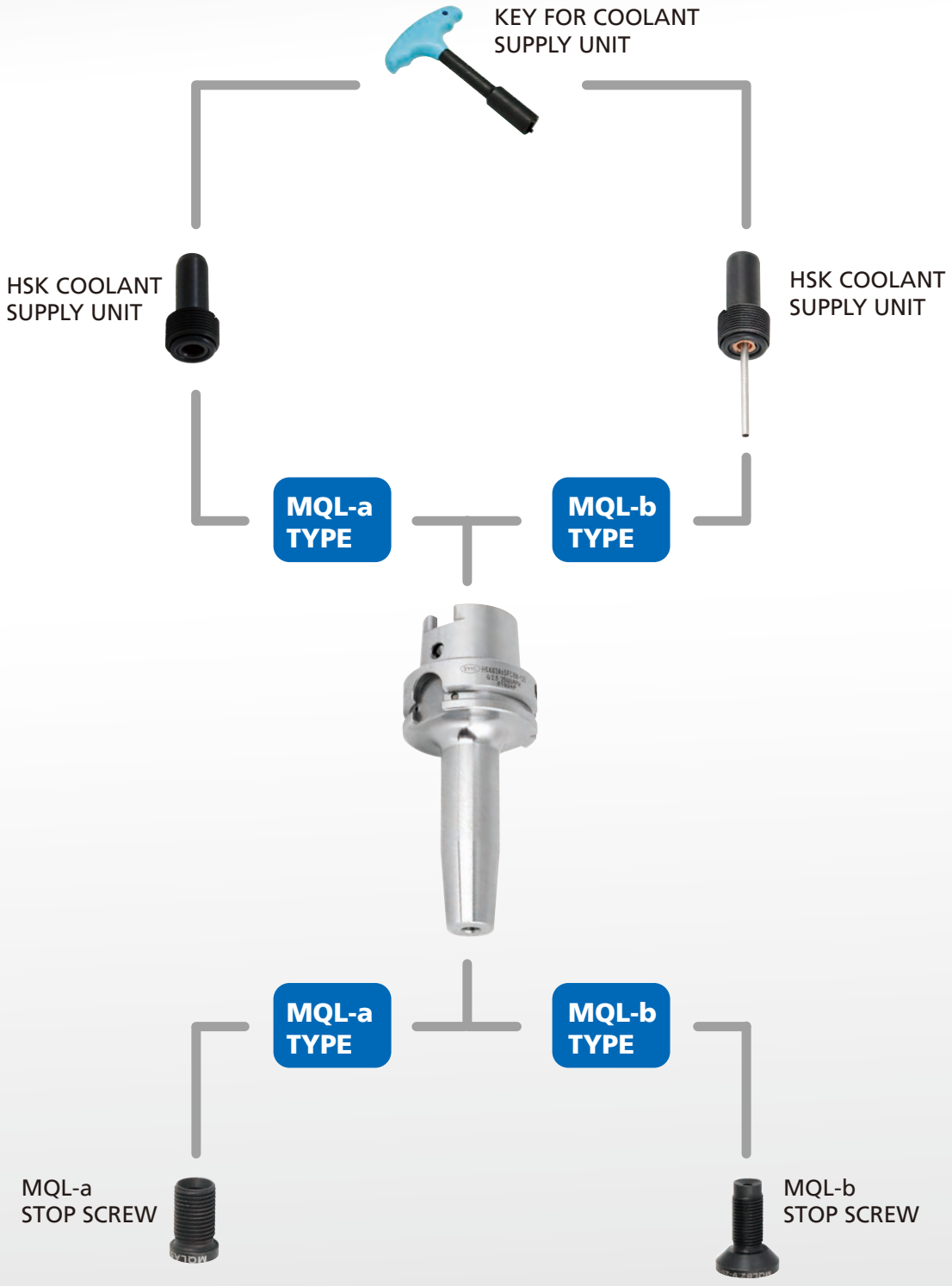


A_1 mm²	A_T mm²
2.01	0 ~ 1.6
4.15	1.4 ~ 3.0
9.08	2.5 ~ 6.5
16.62	5.5 ~ 16.6
$1xA_T \leq A_1 \leq 4xA_T$	

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".

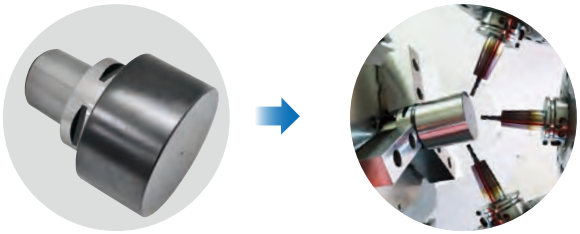
DIFFERENT HARDNESS

CUSTOM MADE

BLANK SERIES

MAKE YOUR OWN TOOL

- Blanks allow users to process the shapes they want.

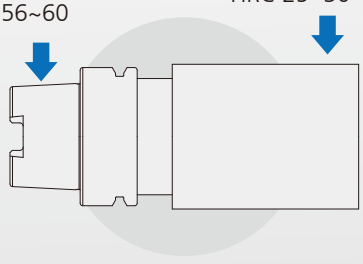


- Available Taper:
  BT, CAT, DAT, SBT, SCAT, SDAT,
  HSK, PSC

DIFFERENT HARDNESS POSSIBLE

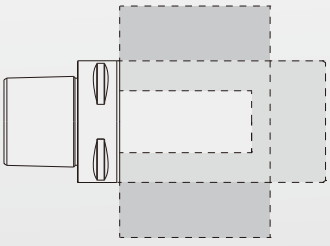
Hardness of Taper:
HRC 56~60

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)

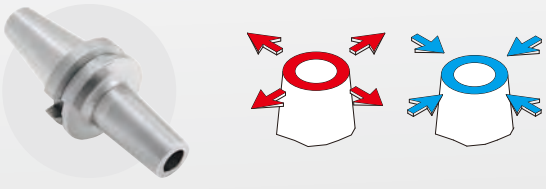
POWER GOOD

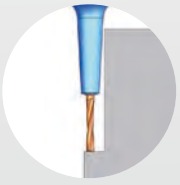
Clamping power improved by 60%!

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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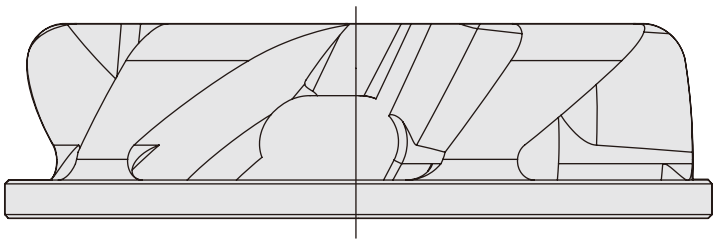
FNER FAN NUT

FEATURES

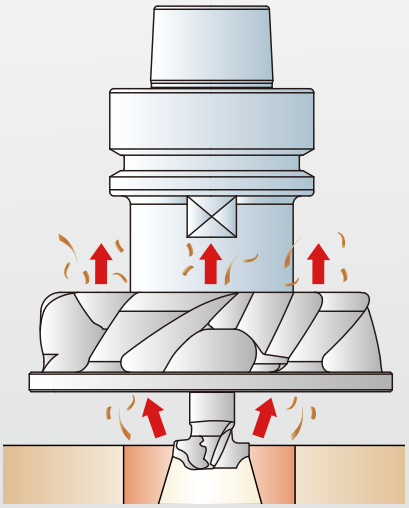


- Special design of fan blade shape facilitates dust removal to 99.8%.
- Improve the evacuation of wooden dust, extend tool life and increase efficiency.
- Can be used for standard ER collet chucks, easy to operate.
- The special surface treatment of POWER GOOD nut enhances the clamping force.
- Decrease 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

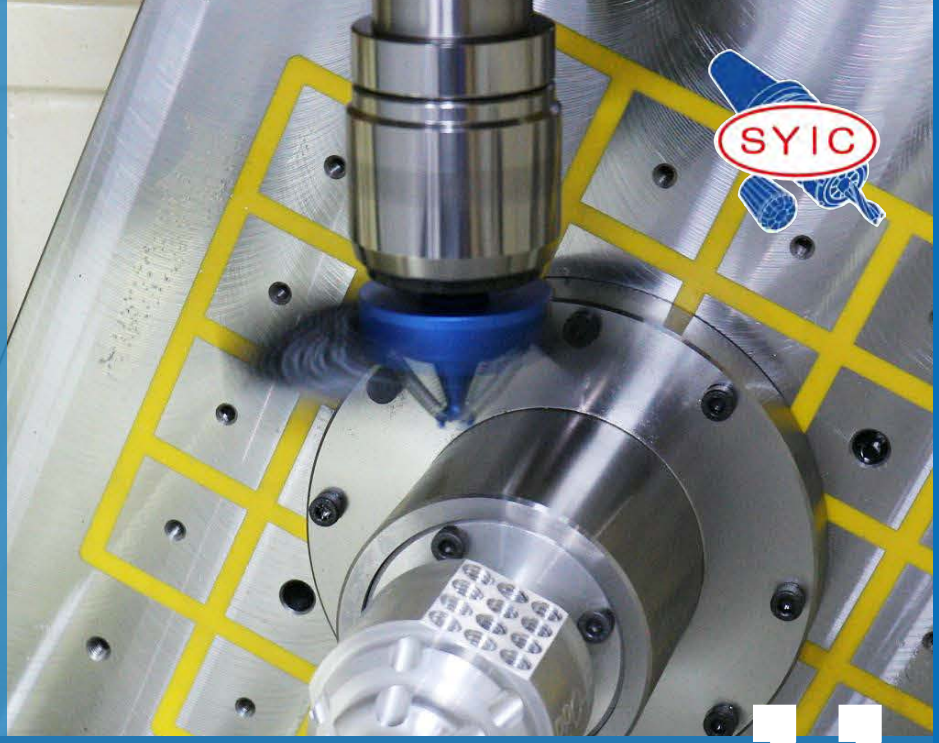


CHIP REMOVER

Automatic chip cleaning

Center coolant through

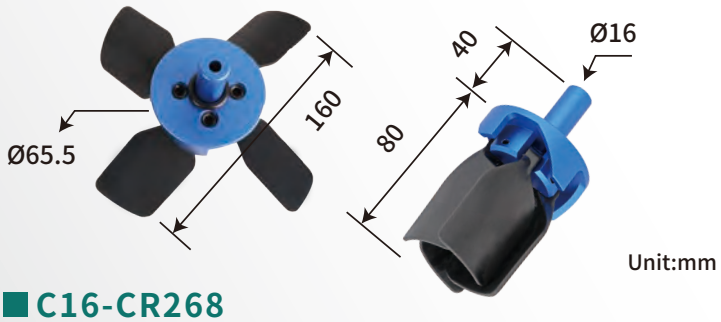
Improve workplace safety



Cleaning metal chips and coolant is no more a nightmare!

Automatic cleaning saves labor, time and improves workplace safety.

C16-CR168

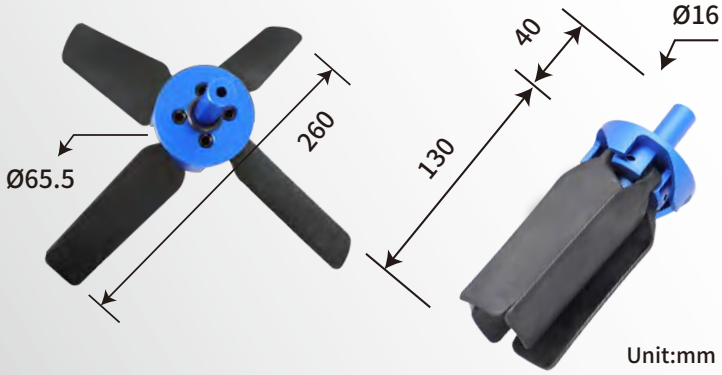


Unit:mm

Model No.	408-008-000
Specification	C16-CR168
RPM recommendation	Min. 7000 /Max. 12000rpm
Rotation Direction	Clockwise
Distance between open wings and metal chips & fluid	100~150mm
Feed rate recommendation	1000~3000mm/min
Net weight	0.18kg

Ideal for small machine with few chips and coolant.

C16-CR268

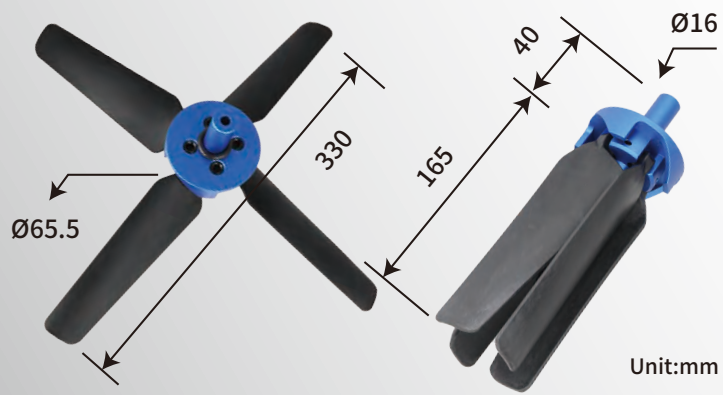


Unit:mm

Model No.	408-008-001
Specification	C16-CR268
RPM recommendation	Min. 5000 /Max. 8000rpm
Rotation Direction	Clockwise
Distance between open wings and metal chips & fluid	100~150mm
Feed rate recommendation	3000~15000mm/min
Net weight	0.2kg

Ideal for medium machine with a large number and hard-to-remove metal chips.

C16-CR338

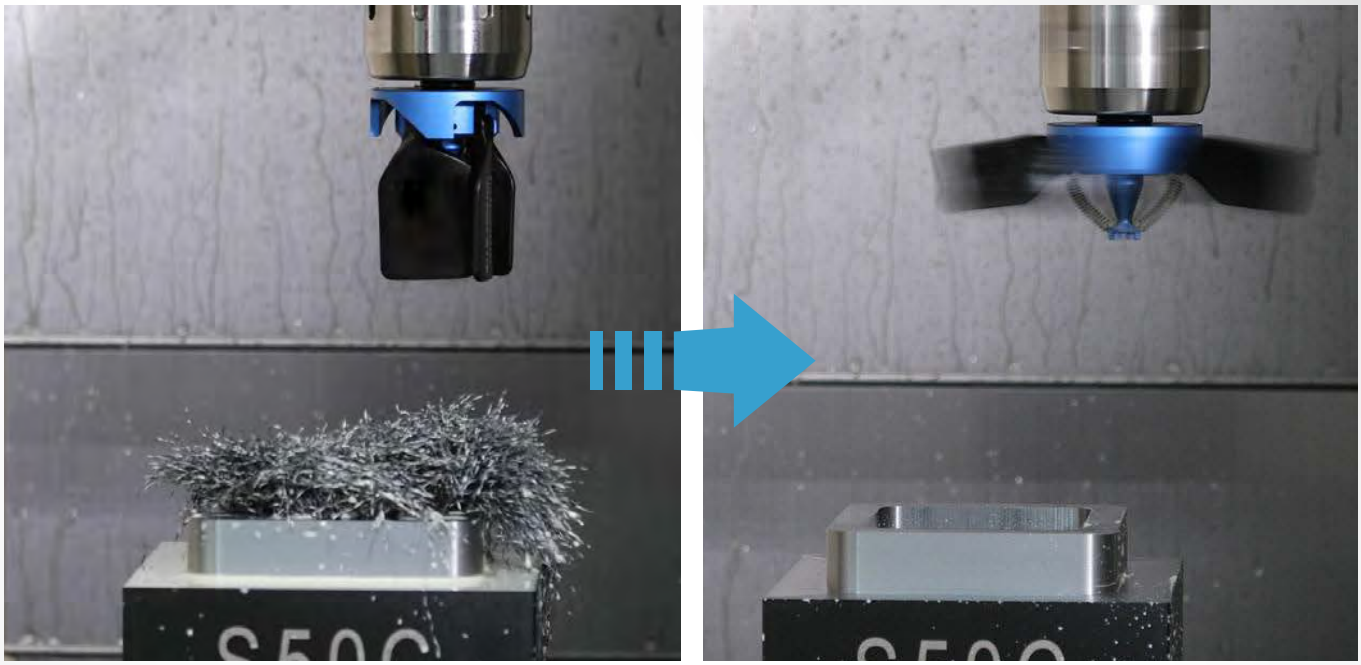


Unit:mm

Model No.	408-008-002
Specification	C16-CR338
RPM recommendation	Min. 4000 /Max. 7000rpm
Rotation Direction	Clockwise
Distance between open wings and metal chips & fluid	100~150mm
Feed rate recommendation	3000~15000mm/min
Net weight	0.22kg

Ideal for big machine with a large number and hard-to-remove metal chips.

Before vs. After



1. Use with collet chucks, the shank is 16mm.
2. Suitable for vertical and horizontal machine centers.
3. Cleaning by automation saves labor, increases productivity and assures workplace safety.
4. Capable of center coolant through, removing metal chips and coolant effectively.
5. Pre-shipment inspections are performed to ensure product reliability.

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.

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MEMO

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