Using special stainless steel PAT.

SLIMLINE is a shrink-fit system that holds a carbide cutting tool firmly and accurately. MST’s unique and exclusive material used in manufacturing the holder is able to achieve cool shrink fitting at temperatures of 300°C or lower. Simple design hot air heater with using an industrial drier is available for shrinking operation.

The optimum holder for mold and 5 axis application

- Slim and long design: Less interference
- Ultimate run-out accuracy: High accuracy, Extending cutter life

Carbide cutter

φ3 ～ φ25

Ultra-thin
 Thickness
1.5 mm

Hot air heater
Shrink-fit under 300°C

Accuracy
MONO series
2 PIECE modular

3 μm 5 μm

Can be water-cooled immediately after shrink fitting.
Modular System

Free combination

The optimum design for small and high-speed machining centers.

Easy Storage, Affordable, Lightweight

Mini 6 type
Ultra-small・Lightweight

Mini 8 type
Small・Lightweight

12 type
Standard

Mono Block Series

Mono Curve
Rigid tool holder even though long gauge length. The optimum tool holder for 5-axis machining.

Mono 3°
The holder best suited to your machining needs can be selected from 3,000 variations.

Mono Block Series

SHRINK-FIT HEATER

HOT AIR HEATER

ELECTROMAGNETIC INDUCTION HEATER

STRAIGHT arbor

Any kinds of existing tool holders are available to chuck a straight arbor type.
The difference of thermal expansion

1.6 times

8°C

Heat treatment temperature

430°C

Temperature of shrink-fit

200°C

Special stainless steel

Die steel SKD61

Guaranteed accuracy 3 μm

MST SLIM LINE

Competitor's Shrink-fit tool holder
1.0

11x10⁻⁶/c

Red Zone

Allowable temperature limit depends on holder material and heat treatment temperature. Hardness and bore diameter of a shrink-fit holder transform due to repeated heating (overheating) and cooling operation. Its critical operation is called Red Zone.

HOT AIR HEATER

★ No necessity to change a heating nozzle
★ No limitation for holder design
★ No accuracy deterioration

3 minutes

Low heating temperature shrinking

INDUCTION HEATER

★ Necessary to exchange heating coil
★ Expensive heating coil
★ Limitation for holder design

10 seconds

Over heating

Repeated shrinking operation at Red Zone causes fatigue of shrink-fit holder material.

SLIMLINE heating temperature is max. 430°C. SLIMLINE doesn’t have overheating problem because its Red Zone is 720°C. Other shrink-fit holder needs high heating temperature, max. 630°C. Its temperature is over Red Zone, 580°C. It creates overheating easily.

Over heating

A cutting tool doesn’t shrink in. A cutting tool doesn’t shrink out.

Hardness of the holder transforms

Run-out accuracy becomes bigger.
Effective for 5-axis machining.

With 5-axis machining, the spindle and workpiece are positioned in various ways. This causes the column and the spindle to interfere with the workpiece and the table. To avoid this interference, 5-axis machining requires longer tooling (tool holder and cutting tool) than 3-axis machining. With commonly used shrink-fit tool holder and collet chuck, the tip of the holder is larger and more likely to interfere, and until now the only way to avoid interference has been to increase the overhang of the tool. In contrast, SLIMLINE has a slim body with a very thin tip (thickness 1.5 mm) compared with a standard tool holder, offering higher visibility. Therefore, the holder itself can be moved deep into a workpiece and the overhang of the tool can be minimized. With using SLIMLINE, it achieves significant improvement of machining accuracy and extending cutter life dramatically.

The overall length of a tooling (tool holder + cutting tool) is getting longer in 5 axis application.

High-definition and efficient machining

- **Cutting condition**
  - **SLIMLINE**
  - Collet Holder
  - SKD61 (S0HRC)
  - \( \phi 23 \), \( \phi 35 \)
  - Feed (mm/min): 3,000
  - Depth of cutting (mm): Ad 0.2, Finishing allowance 0.1
  - Machining time (min): 75
  - Cutting distance (m): Rough cutting 180 → 360
  - Surface roughness (μm): 2.2
  - Roundness (μm): 5.0

- **Results**
  - Collet Holder
  - SLIMLINE

We provide the static rigidity calculation software for all range of SLIMLINE with using the optimum combination with a cutting tool.

- **Available for free to all who request one**

- **Searching results**
  - Shank: BT40
  - Cutting tool: Ball d8-B0L (d8-R4)
  - **Select “Shank”, “Cutting tool” and input “machining depth”, “Slope angle” and “Clearance” as searching condition.
  - It searches and rank the smallest deflection value of a cutting tool from 3,000 kinds of SLIMLINE variation, it means you can find the most rigid SLIMLINE.
  - It calculates L/D value of a cutting tool projection for cutting edge diameter, which indicates cutting condition.
NEW CONCEPT
ANGLE ATTACHMENT

EASY MAINTENANCE!
YOU CAN CARRY OUT MAINTENANCE AND REPAIRS ON YOUR OWN

90° Type

Easy installation for machines
The existing positioning block is available without any modification.
(The positioning block for an oil hole holder is also available.)

Height adjustable type

Deliver time 3 Days

US $ 2,000

LIGHT WEIGHT BT30 1.8 KG

M2～M16
For tapping (HFT Type)

φ1～φ20
For drilling (HFD Type)

Free setting of cutting directions

Can be freely combined for any application.

For drilling • endmilling φ1～20
For tapping M2～M12
For drilling φ1～7

Cutting data Drilling

<table>
<thead>
<tr>
<th>Cutting data</th>
<th>Drilling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cutting speed m/min</td>
<td>21.4</td>
</tr>
<tr>
<td>Feed mm/min</td>
<td>80</td>
</tr>
<tr>
<td>Rotation speed min⁻¹</td>
<td>800</td>
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<tr>
<td>BT50-HFD12-195-T85</td>
<td></td>
</tr>
</tbody>
</table>

User’s voice
With using multiple units of Angle Head Half thanks to inexpensive purchasing cost, continues operation for all applications such as side and inside machining is available without changing a position of work-piece.
**DETa-1 COLLET HOLDER**

**A Type (DTA)**

**NUT-TIGHTENING TYPE**

Easy operation

**B Type (DTB)**

**PULL COLLET DESIGN**

SIMPLE & SLIM • well-balanced characteristics, and highly cost-effective

**E Type (DTE)**

**PULL COLLET DESIGN**

Available for 7MPa coolant through! Pre-balanced high rigidity and massive body.

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**2mm collapsibility with just one collet!**

**D3**  
\[ \phi 0.5 \sim \phi 3.175 \]

**D7**  
\[ \phi 1 \sim 7 \]

**D12**  
\[ \phi 2.5 \sim \phi 13 \]

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