

A lineup of
3,000!

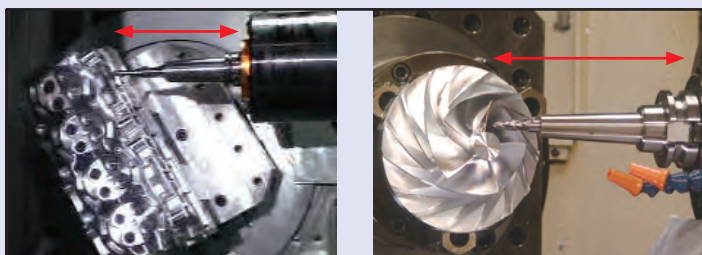
SHRINK-FIT TOOL HOLDER SLIMLINE

Using special stainless steel PAT.

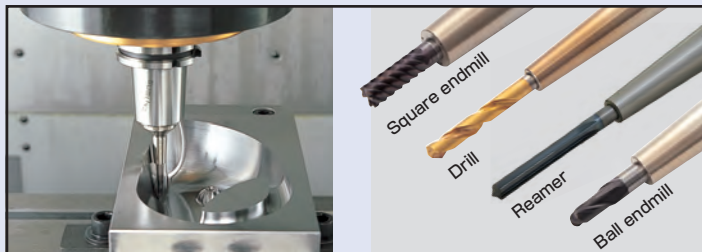
Slimline is a shrink-fit system that holds a carbide cutting tool firmly and accurately. MST's unique and exclusive material used in manufacturing the holder is able to achieve cool shrink fitting at temperatures of **300°C** or lower. Simple design hot air heater with using an industrial drier is available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

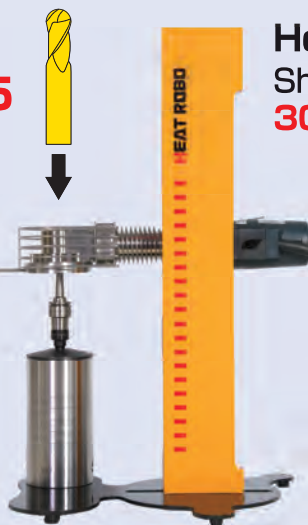


Carbide cutter



Hot air heater
Shrink-fit under
300°C

Can be water-cooled
immediately after
shrink fitting.



Its thermal
expansion
coefficient is
1.6 times
higher than that
of regular steel.

Slim
Single angle
3°

Ultra-thin
Thickness
1.5mm

Accuracy
MONO series
2PIECE modular
3 μ m
5 μ m

Minimum
overhang



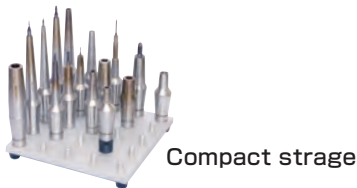
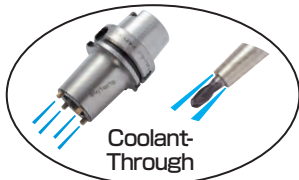
MSTcorporation

1006E

Modular System

2 PIECE modular

Free combination



80 kinds

Slimline Collet
Slim • Regular • Flush

Effective Length for Machining (M)
22 42 67 97

$\phi 3 \sim \phi 12$

$\left[\begin{array}{cccccc} \phi 3 & 3.175 & 4 & 5 & 6 \\ 7 & 8 & 9 & 10 & 11 & 12 \end{array} \right]$

33 kinds

MAS BT30・40・50
HSK A50・63・100
E50・F63
DIN DN40・50
CAT. CT40・50

Master Holder



Thickness
1.5 ~ 4 mm

Mono Block Series

MONO series

MONO **CURVE**



Effective Length for Machining (M)
40 ~ 274

Two dimensional curve

Rigidity 3 times

$\phi 4 \sim \phi 25$

$\left[\begin{array}{cccccc} \phi 4 & 6 & 8 & 10 \\ 12 & 16 & 20 & 25 \end{array} \right]$

MONO **3°**



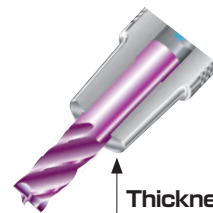
Effective Length for Machining (M)
22 42 67 97 127 157

$\phi 3 \sim \phi 25$

$\left[\begin{array}{cccccc} \phi 3 & 3.175 & 4 & 5 & 6 \\ 8 & 10 & 12 & 16 & 20 & 25 \end{array} \right]$



The length is freely adjustable for a perfect fit.



Thickness
1.5 ~ 10

3,000 Variations

SHRINK-FIT HEATER



ELECTROMAGNETIC INDUCTION HEATER

HEAT ROBO
DENJI 電磁 1200S

100V
 $\phi 3 \sim \phi 12$



HOT AIR HEATER

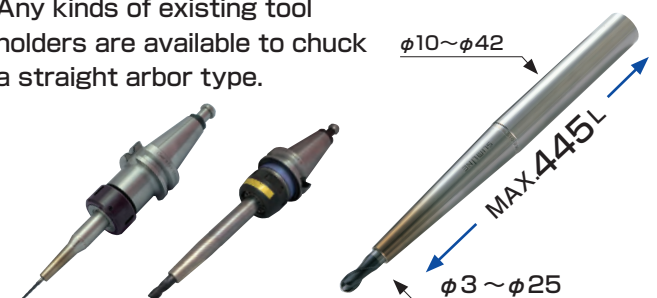
HEAT ROBO
Baby 3000S

200V 230V
 $\phi 3 \sim \phi 25$



STRAIGHT arbor

Any kinds of existing tool holders are available to chuck a straight arbor type.



$\phi 10 \sim \phi 42$

$\phi 3 \sim \phi 25$

MAX.445L

[thermal expansion coefficient]
 $17 \times 10^{-6}/^{\circ}\text{C}$

**M S T
SLIM LINE**

1.6 times

The difference
of thermal
expansion

**Competitor's
Shrink-fit
tool holder**

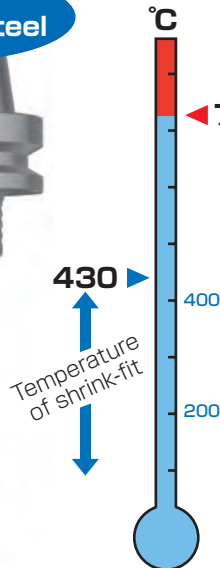
1.0

$11 \times 10^{-6}/^{\circ}\text{C}$

**Special
stainless steel**

**Die steel
SKD61**

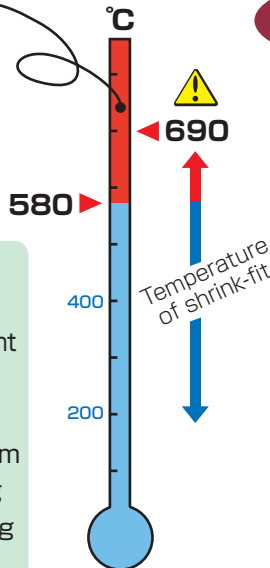
Guaranteed
accuracy
3 μm



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.

Red Zone

**Heat
treatment
temperature**

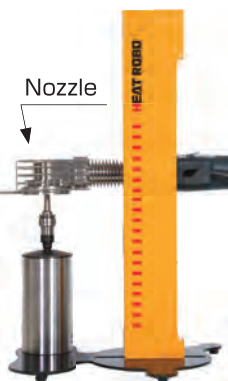


HOT AIR HEATER

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

3 minutes

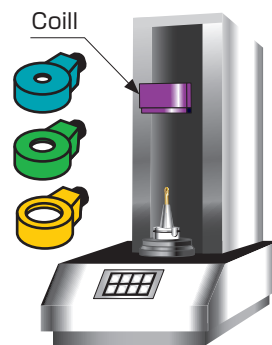
Low heating
temperature
shrinking



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.

INDUCTION HEATER

- ★ Necessary to exchanging heating coil
- ★ Expensive heating coil
- ★ Limitation for holder design



10 seconds

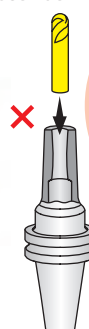
**Over
heating**

Over heating

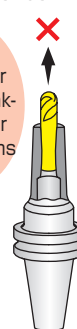
Repeated shrinking
operation at Red
Zone causes fatigue
of shrink-fit holder
material.



A cutting tool
doesn't shrink in.

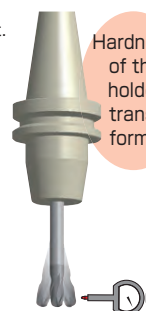


A cutting tool
doesn't shrink out.



Bore
diameter
of a shrink-
fit holder
transforms

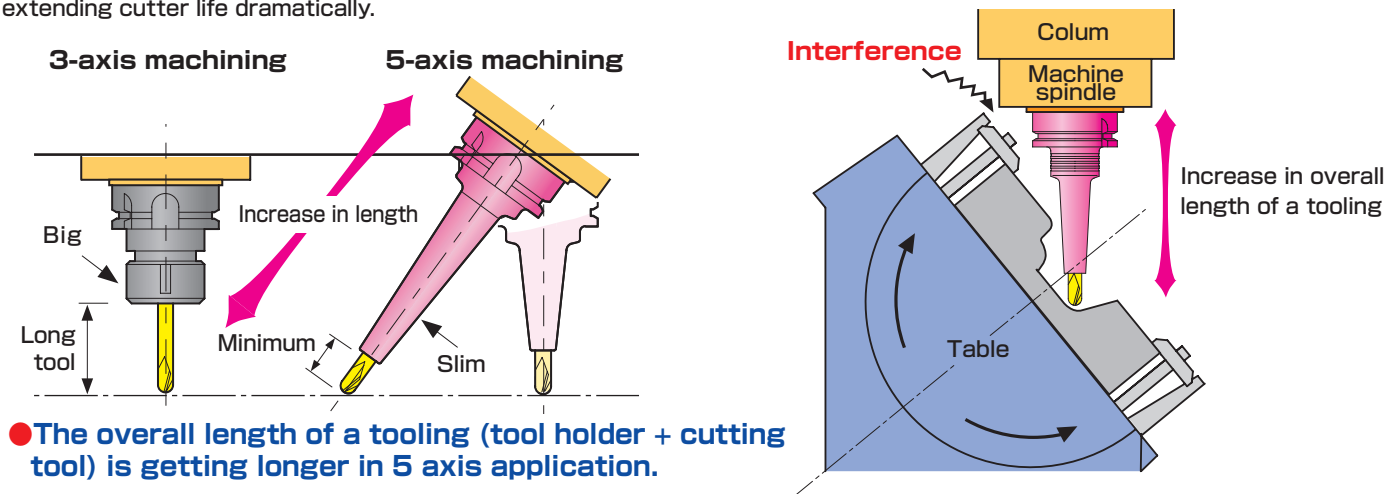
Hardness
of the
holder
trans-
forms



Run-out accuracy
becomes bigger.

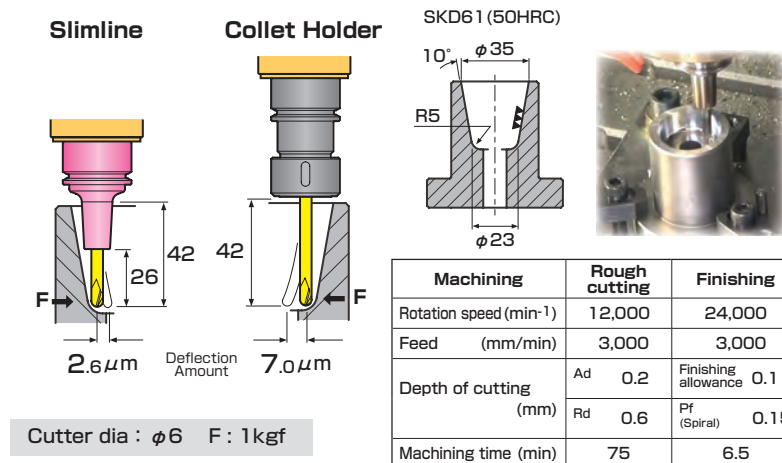
Effective for 5-axis machining.

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 1.5mm) 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.



High-definition and efficient machining

● Cutting condition ●



● Results ●

		Collet Holder	Slimline
Roundness [μm]		5.0	0.8
Surface roughness [μm]		2.2	1.7
Cutting distance [m]	Rough cutting	180	360
	Finishing	90	135

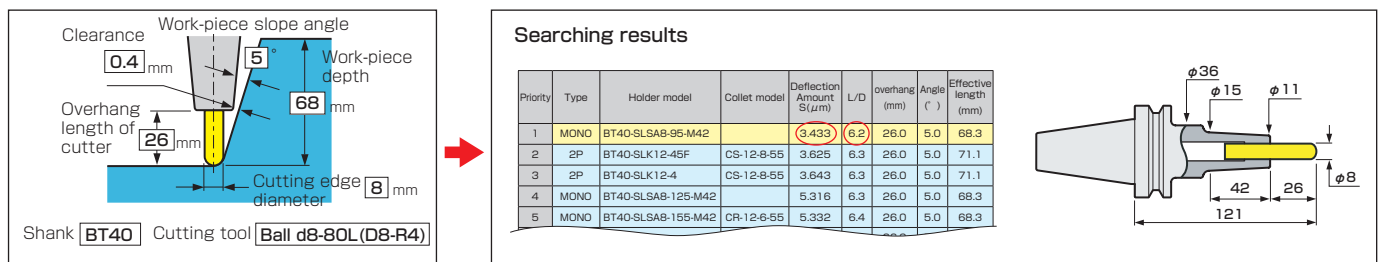
Available for free to all who request one

Static rigidity calculation software for slimline

PAT.P



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



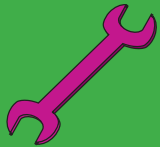
- Select "Shank", "Cutting tool" and input "machining depth", "Slope angle" and "Clearance" as searching condition.
- It searches and rank the smallest deflection value of a cutting tool from 3,000 kinds of Slimline variation, it means you can find the most rigid Slimline.
- It calculates L/D value of 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



Bearing



Instruction video



Gear



US \$ **2,000**



DELIVERY
TIME

3 Days



LIGHT **BT30**
WEIGHT **1.8KG**



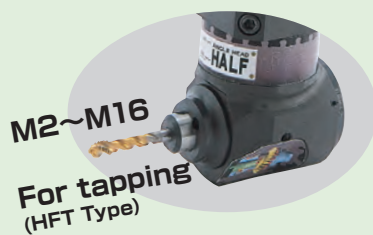
**90°
Type**

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

The system for
exchanging
parts



M2~M16
For tapping
(HFT Type)

$\phi 1 \sim \phi 20$
For drilling
(HFD Type)



Free
setting of
cutting
directions

Can be freely combined for
any application.



For drilling • endmilling
 $\phi 1 \sim 20$



For tapping
M2 ~ M12

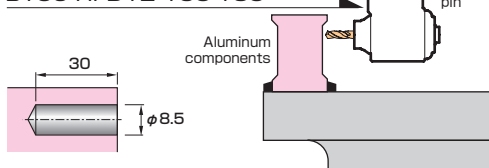


For drilling
 $\phi 1 \sim 7$

Cutting data Drilling

Cutting speed m/min	21.4
Feed mm/min	80
Rotation speed min ⁻¹	800

BT50-HFD12-195-T85



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.

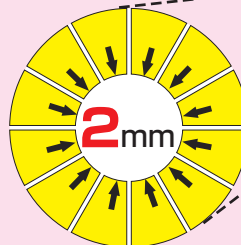
DETa-1 COLLET HOLDER

DETa-1

Drill End mill Tap



2mm collapsibility
with just one collet !



DETa-1 Collet

AType (DTA)
**NUT-TIGHTENING
TYPE**

Easy operation

5μm
(Ultra Precision type)



BType (DTB)
PULL COLLET DESIGN

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

EType (DTE)
PULL COLLET DESIGN

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



Fewer collet types
means easier collet
management



D3



φ 0.5 ~ φ 3.175

D7



φ 1 ~ φ 7

D12



φ 2.5 ~ φ 13

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