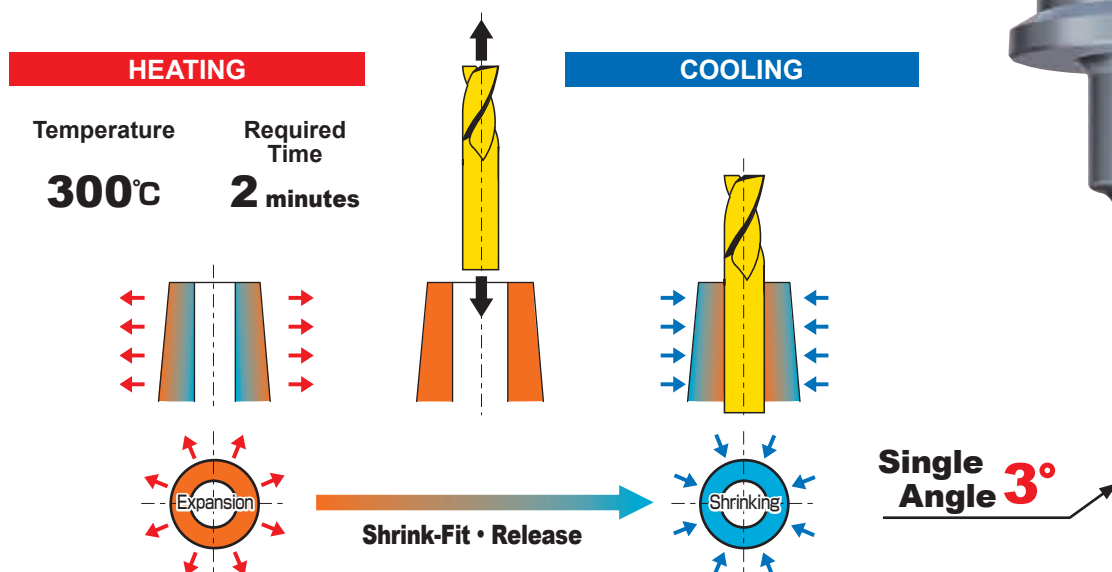


Slimline is a shrink-fit system that holds a carbide cutting tool firmly and accurately. MST's unique and exclusive material used in manufacturing the holder is able to achieve cool shrink fitting at temperatures of 300°C or lower. Slimline uses an industrial-dryer-based, hot-air, shrink-fit heater. A lineup of 3,000 holders with different shapes is available for a wide variety of applications. Its simple, ultra-slim shape allows the shortest possible cutter overhang, providing strong, stable clamping strength while maintaining high precision.



Special Material for Shrink-Fit

- Its thermal expansion coefficient is 1.6 times higher than that of regular steel.
- Shrink fitting and removing is achieved using a hot-air heater.
- Can be immersed in water to cool it off.
- Will not overheat even if heated for a long time.
- Ultra-thin 1.5 mm edge walls.

HOT AIR HEATER

Required Carbide Cutter
Shank Tolerance
($\phi 3 \sim 5 \rightarrow h6$ / $\phi 6 \sim 25 \rightarrow h7$)

Induction Heating System

HEAT ROBO

電磁 1200

$\phi 3 \sim \phi 12$

Water Cooling

Can be water-cooled immediately after shrink fitting.
A large-scale cooler is not required.



Nozzle

Over Heating ×

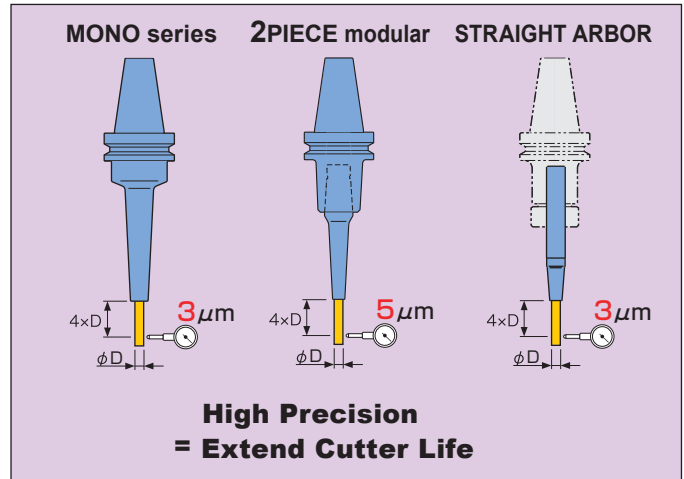
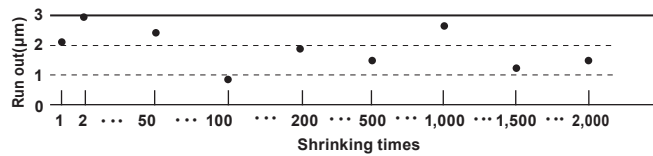
SKD 700°C



High Precision

Regardless of skill level can insert tools firmly and with high precision. Slimline holders can be used for more than 2,000 shrink fittings and releases without compromising precision.

Repeated Shrink Fitting and Removing Test



Strong Clamping Force

	Shrink-Fit holder (Slimline)	Collet Holder (Existing Holder)
Chucking Principle	A shrink-fit system that uses the difference between the thermal expansion coefficient of the holder and carbide cutting tool.	A system to hold a cutting tool that uses elastic deformation of a collet which has slits.
Clamping Force (φ6)	6.2kgf · m	2.1kgf · m
	<p>Thermal Expansion → Shrinkage Force</p>	<p>Elastic Deformation</p>

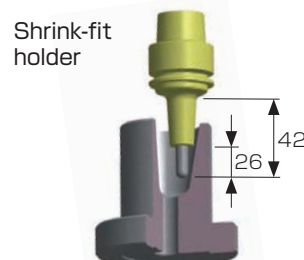
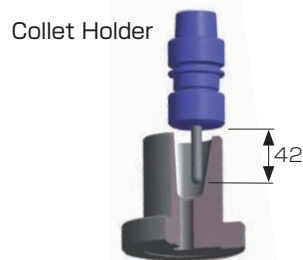
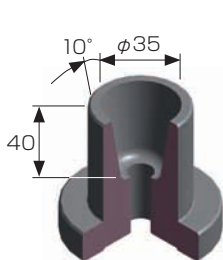
Twice Long Tool Life

Cutting distance per an end-mill

Process	Rough Cutting		Finish Cutting	
	Collet Holder E32-CTH10-55 (C10-6P)	Slimline E32-SLRA6-50-M22	Collet Holder E32-CTH10-55 (C10-6P)	Slimline E32-SLRA6-50-M22
SKD61 (50HRC)	180m	360m Twice	90m	135m 1.5 Times
SKD11 (60HRC)	40m	60m 1.5 Times	45m	90m Twice

F (Feed) : 3,000mm/min.
t (Depth of cutting) : 0.15mm
N (Rotation speed) : 24,000min⁻¹

Machine : SODICK HIGHTECH MC430L
Cutter : MITSUBISHI MATERIAL KOBE TOOLS
2 flutes carbide cutting tool
IMPACT MIRACLE Ball End Mill (R3)
VF-2SB-R0300S06



Compatible with The Coolant-Through Capability

Allows reliable coolant supply without leakage. No need for accessory parts.



Use Customization

User customization (additional machining) is also possible to avoid interference by reducing the edge wall thickness down to 1.5 mm.

See P.156 for instructions.



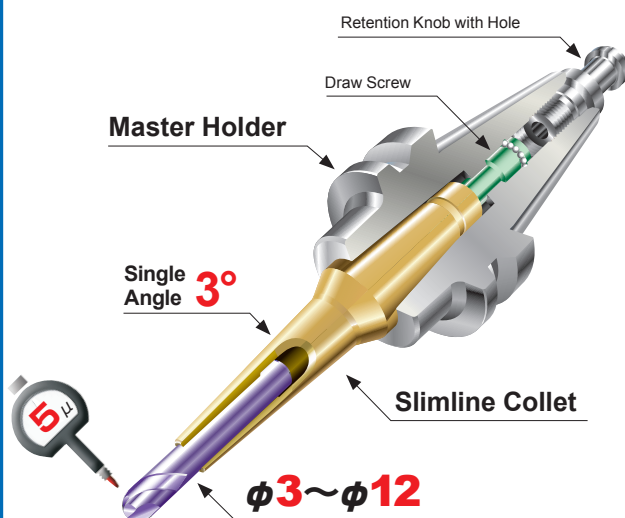
Modular System

2 PIECE MODULAR SYSTEM

Compatible Diameters of Cutting Tools

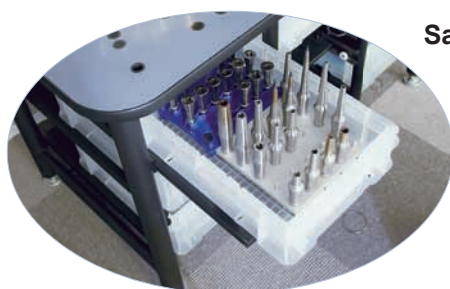
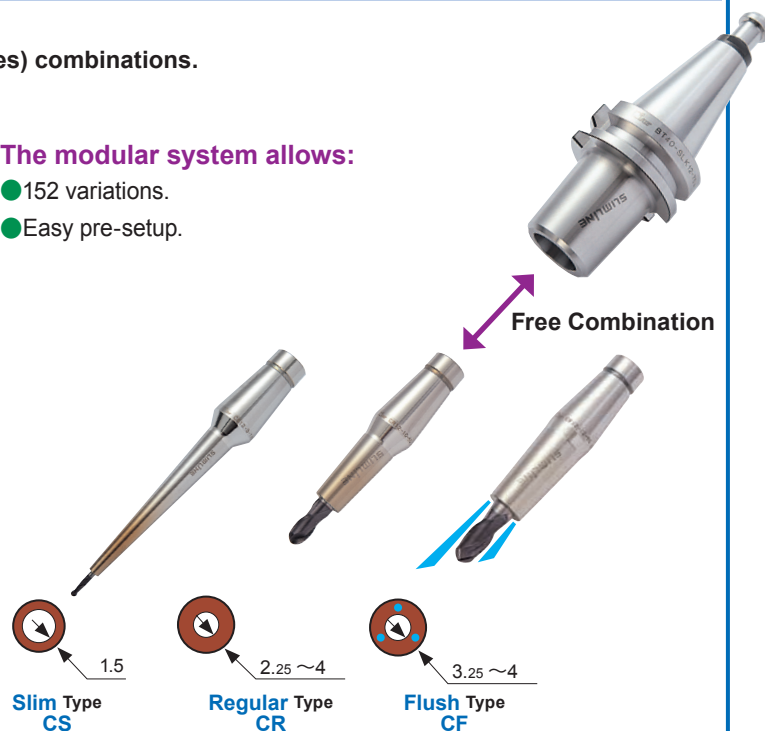
$\phi 3 \sim \phi 12$

- Compact- easy to store and handle.
- Variety of shank shape (21 types) and collet (80 types) combinations.

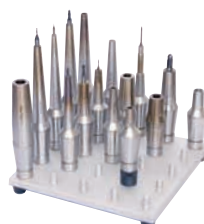


The modular system allows:

- 152 variations.
- Easy pre-setup.



Saves Space



Recombination of Collets

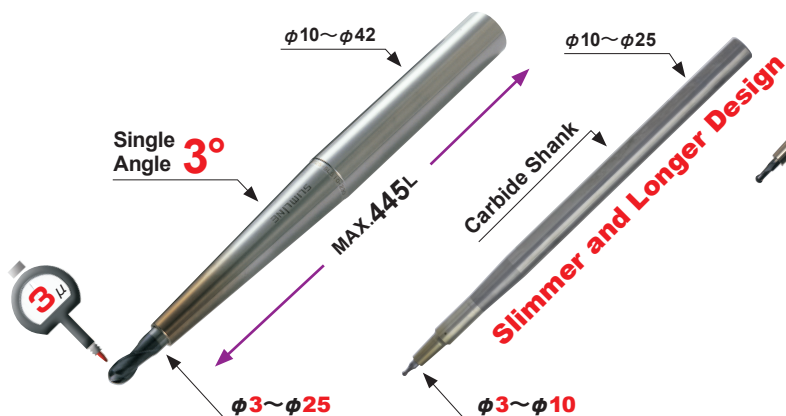


STRAIGHT ARBOR SYSTEM

Compatible Diameters of Cutting Tools

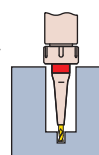
$\phi 3 \sim \phi 25$

- Precisely extending the reach of standard cutting tools.
- 111 variations are possible when combined with carbide types.

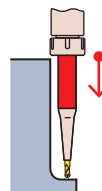


The length is freely adjustable for a perfect fit.

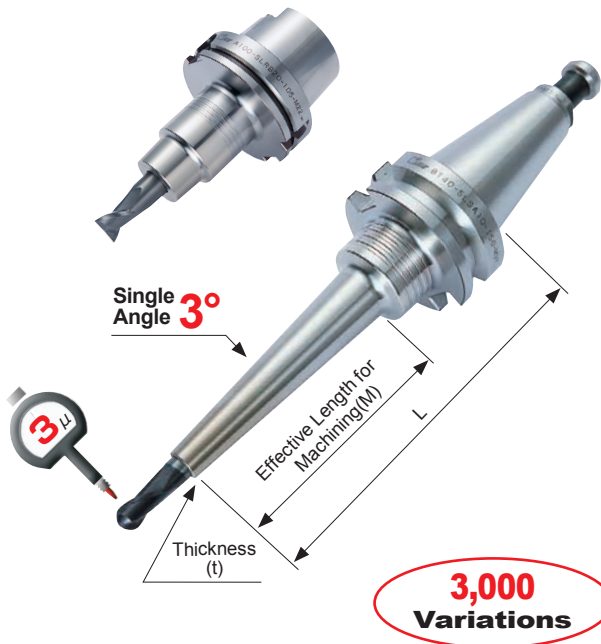
Shortening results in higher rigidity.



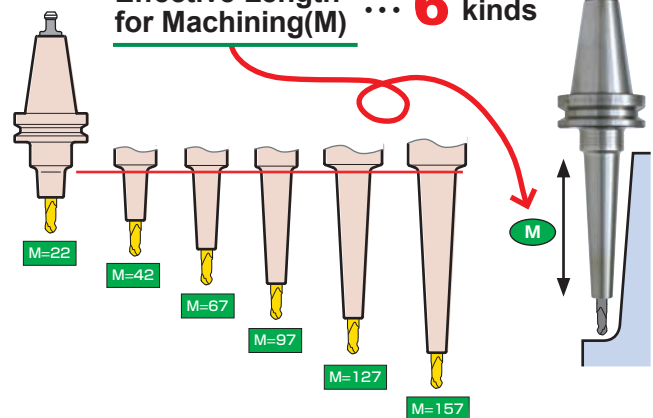
Lengthen to avoid interference.



- The holder best suited to your machining needs can be selected from 3,000 variations of differing shank shapes, cutting tool chucking diameters, holder lengths (L), effective machining lengths (M), and holder edge thicknesses.

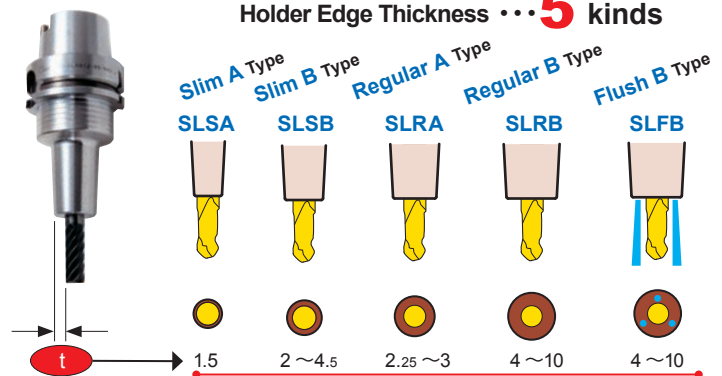


Effective Length
for Machining(M) ... **6** kinds



The optimum shape can be selected based on your work piece dimensions.

Holder Edge Thickness ... **5** kinds



High Rigidity

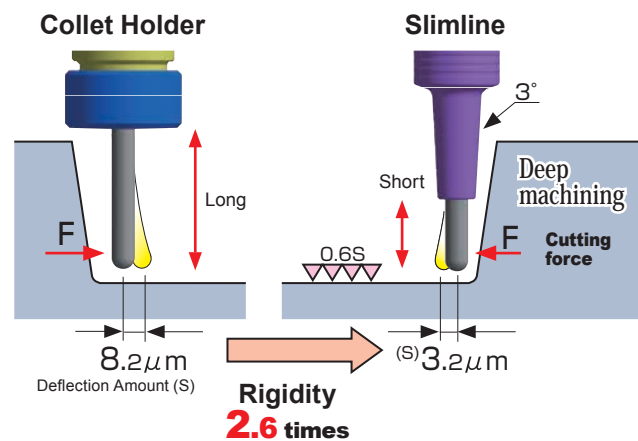
- Slimline holders rarely interfere with work pieces because of their highly compact, slim design with a single angle of 3 degrees and a wall thickness of just 1.5 mm.
- Slimline ensures a much longer service life for your cutting tools. Deep machining, which is difficult for conventional holders, is possible.
- Ideal for machining a deep cavity with a three-dimensional shape or machining a 5-axis turbine blade.

The overhang of the cutting tool has a great influence on deflection (rigidity).
Deflection increases in proportion to the overhang length (L³).

$$\text{Deflection Amount}(S) = \frac{6.8 \times F \times L^3}{E \times D^4}$$

S: Deflection amount L: Length of overhang E: Young's modulus (Carbide 59000kgf/mm²)
D: Shaft diameter F: Load

The Minimum Cutter Projection



- The most suitable setting for high rigidity is calculated automatically.



Static Rigidity Calculation Software
for Slimline

Free software for checking interference with work pieces is provided.



See P.159