

A lineup of
3,000!

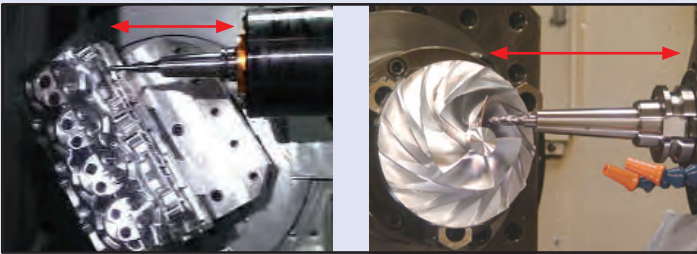
SHRINK-FIT TOOL HOLDER SLIMLINE

Using special stainless steel **PAT.**

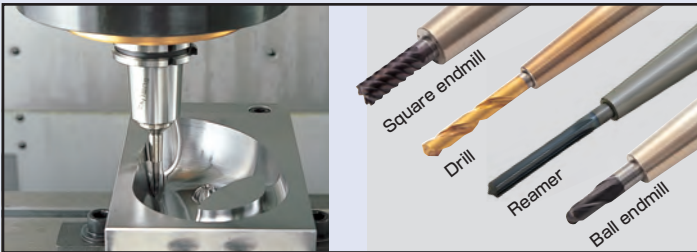
SLIMLINE is a shrink-fit system that holds a carbide cutting tool firmly and accurately. MST's unique and exclusive material used in manufacturing the holder is able to achieve cool shrink fitting at temperatures of **300°C** or lower. Simple design hot air heater with using an industrial drier is available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



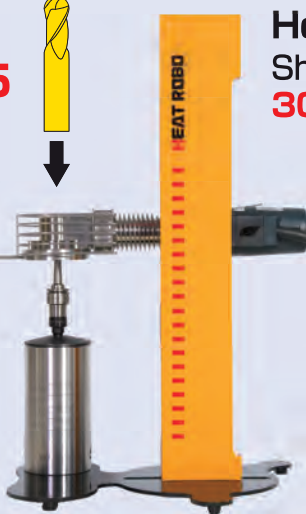
Carbide cutter

$\phi 3 \sim \phi 25$



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

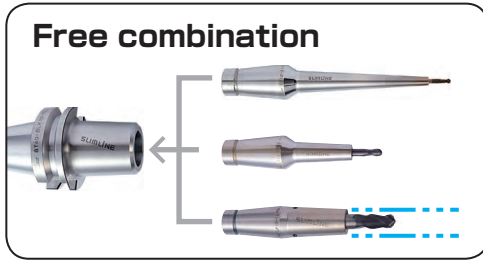
3 μ m

5 μ m

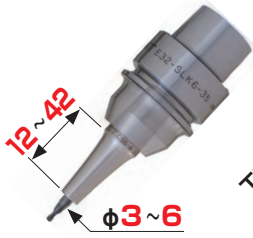
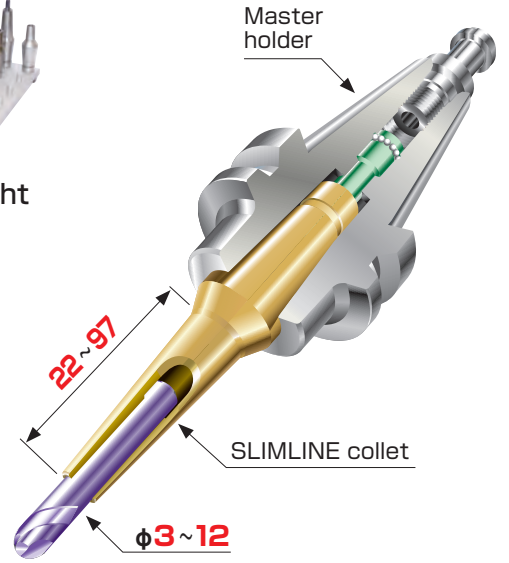


Modular System

2 PIECE modular



Easy Storage,
Affordable, Lightweight



The optimum design for
small and high-speed
machining centers



mini 6 type
Ultra-small · Lightweight



mini 8 type
Small · Lightweight

12 type
Standard



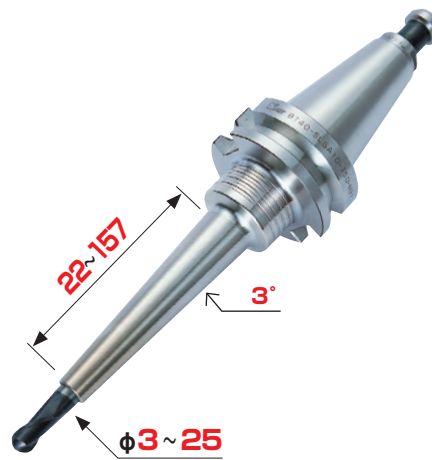
Mono Block Series

MONO 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.



3500
Variations



High
accuracy

1 μm

UNO

Ultrahigh precision
Shrink-fit tool holder Ideal for
micro-precise application.

SHRINK-FIT HEATER



HOT AIR HEATER

HEAT ROBO
Baby 3000S

230V
φ3~25

High power



ELECTROMAGNETIC INDUCTION HEATER

HEAT ROBO
DENJI 電磁 1200S

100V
φ3~12

High power



HEAT ROBO
DENJI 電磁 5000S

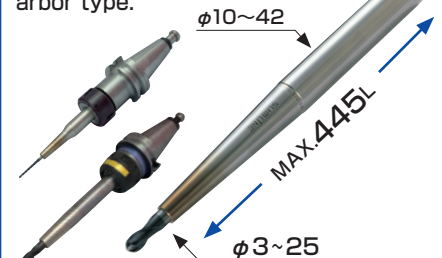
200V
φ3~25

High power



STRAIGHT arbor

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



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

**M S T
 SLIM LINE**

The difference of thermal expansion

Competitor's Shrink-fit tool holder

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

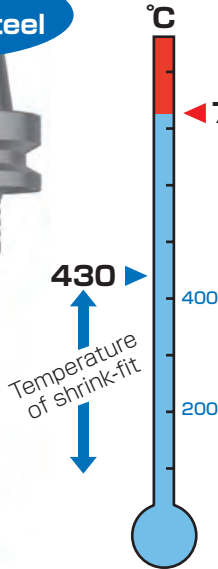
1.6 times

1.0

Special stainless steel

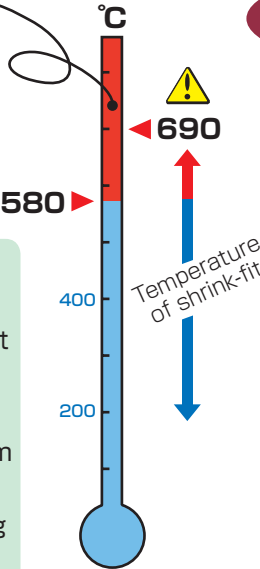
Die steel SKD61

Guaranteed accuracy
3 μm



Red Zone

Heat treatment temperature



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

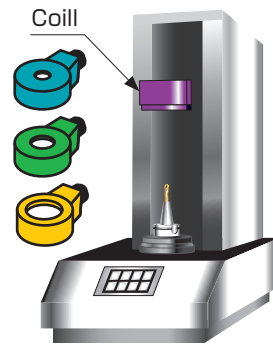


SLIMLINE heating temperature is max. 430°C. SLIMLINE doesn't have overheating problem because its Red Zone is 720°C. Other shrink-fit holder needs high heating temperature, max. 630°C. Its temperature is over Red Zone, 580°C. It creates overheating easily.

INDUCTION HEATER

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

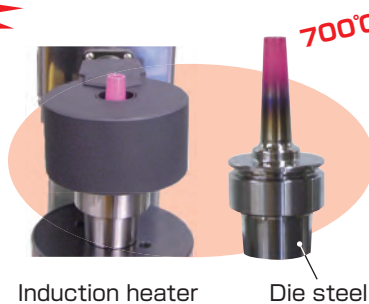
10 seconds



Over heating

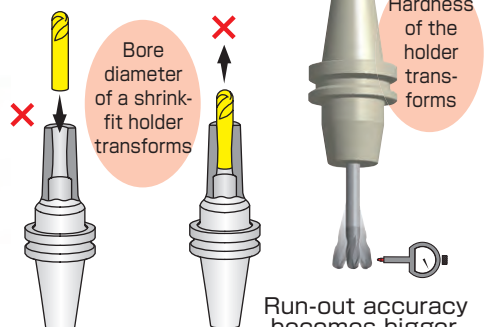
Over heating

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



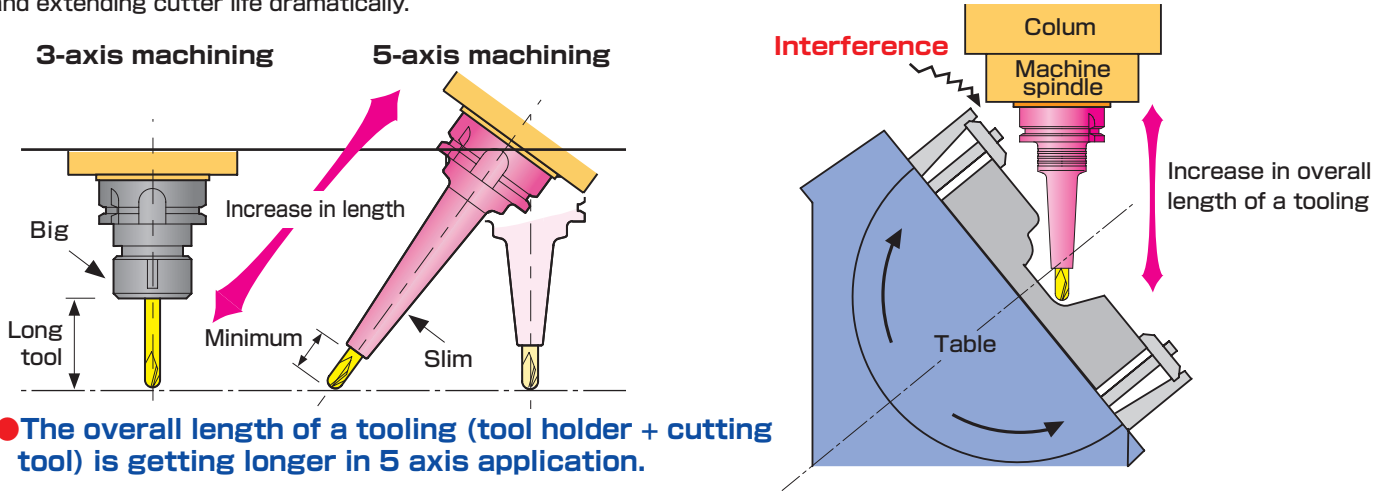
700°C After heating

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



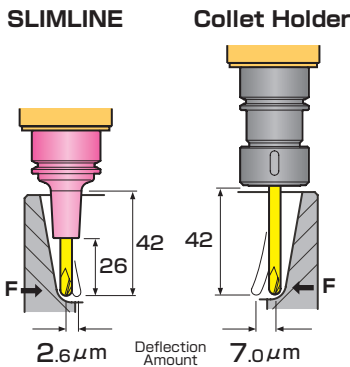
Effective for 5-axis machining.

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.

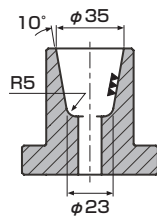


High-definition and efficient machining

● Cutting condition ●



SKD61 (50HRC)



Machining	Rough cutting	Finishing
Rotation speed (min ⁻¹)	12,000	24,000
Feed (mm/min)	3,000	3,000
Depth of cutting (mm)	Ad 0.2	Finishing allowance 0.1
	Rd 0.6	Pf (Spiral) 0.15
Machining time (min)	75	6.5

● Results ●

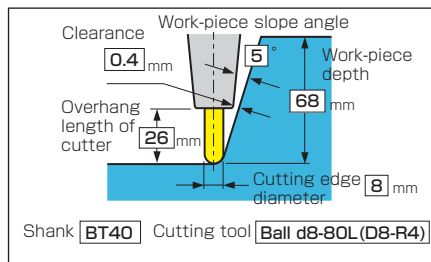
		Collet Holder	SLIMLINE
Roundness [µm]		5.0	0.8
Surface roughness [µm]		2.2	1.7
Cutting distance [m]	Rough cutting	180	360
	Finishing	90	135

Available for free to all who request one

Static rigidity calculation software for SLIMLINE PAT.P

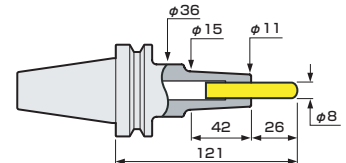


We provide the static rigidity calculation software for all range of SLIMLINE with using the optimum combination with a cutting tool.



Searching results

Priority	Type	Holder model	Collet model	Deflection Amount S(µm)	L/D	overhang (mm)	Angle (°)	Effective length (mm)
1	MONO	BT40-SLSAB-95-M42		3.433	6.2	26.0	5.0	68.3
2	2P	BT40-SLK12-45F	CS-12-8-55	3.625	6.3	26.0	5.0	71.1
3	2P	BT40-SLK12-4	CS-12-8-55	3.643	6.3	26.0	5.0	71.1
4	MONO	BT40-SLSAB-125-M42		5.316	6.3	26.0	5.0	68.3
5	MONO	BT40-SLSAB-155-M42	CR-12-8-55	5.332	6.4	26.0	5.0	68.3



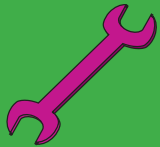
- Select "Shank", "Cutting tool" and input "machining depth", "Slope angle" and "Clearance" as searching condition.
- It searches and rank the smallest deflection value of a cutting tool from 3,000 kinds of SLIMLINE variation, it means you can find the most rigid SLIMLINE.
- It calculates L/D value of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

BT30 1.8 KG



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



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



Free setting of cutting directions

Can be freely combined for any application.



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



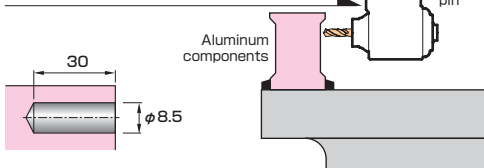
For tapping
M2 ~ M12



Cutting data Drilling

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

BT50-HFD12-195-T85



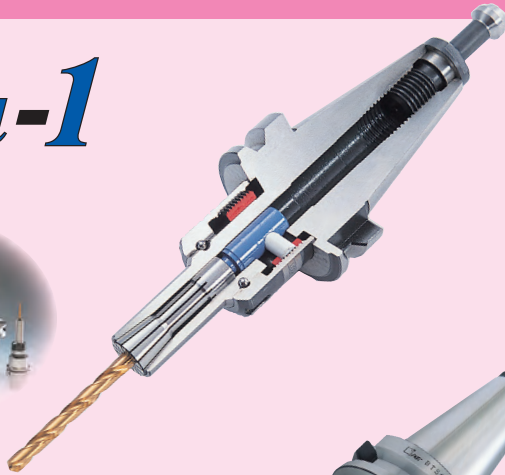
User's voice

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.

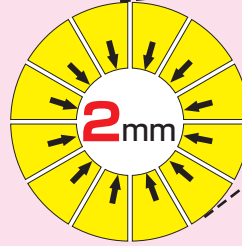
DETa-1 COLLET HOLDER

DETa-1

Drill End mill Tap



2mm collapsibility
with just one collet !



DETa-1 Collet

AType (DTA)
NUT-TIGHTENING TYPE

Easy operation

5 μ m
(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



Belgium	☎
DIATool BVBA	32-14 40 18 30
OSG Belgium s.a.n.v.	32-10-230511
PRODUTEC BV	32 (0) 50 72 95 95
Czech Republic	☎
GRUMANT s.r.o	420-283-870-731
HOFMEISTER	420-377-242-062
Precision Tools Service Czech s.r.o.	420 225 020 413
Denmark	☎
Balling Maskiner ApS	45-24-79-03-00
HCT TOOL AS	45-70-20-84-84
OSG SCANDINAVIA A/S	45-4675-6555
Finland	☎
OY FMS -TOOLS AB	358-9-8190950
France	☎
DOGA S.A.	33-130664141
MECA DIFFUSION	33-4-5018-3027
MMC METAL FRANCE S.A.R.L.	33-1-6935-5353
OSG France s.a.r.l.	33-1-49-90-10-10
Germany	☎
GDE	49-2353-9098-0
HSC TECHNIK	49-7950-2132
MAKINO GMBH	49-7021-503 201
MATSUJIRA MACHINERY GMBH	49-6122/7803-32
MMC HARTMETALL GMBH	49-2159-91 89 40
OSG GMBH	49-7161-60640
YAMAZEN EUROPE GMBH STUTTGART HEAD OFFICE	49-711-90115-0
Italy	☎
FEBAMETAL S.P.A.	39-011 770 14 12
MAKINO ITALIA S.R.L.	39-0295-948290
MMC EMILIA ROMAGNA SRL	39-0536-946687
MMC ITALIA S.P.A.	39-02 9377031
OSG ITALIA SRL	39-011-7705211
Netherlands	☎
OSG MAC WORLD NEDERLAND B.V.OS	(31) 348-44-2764
PRODUTEC BV	31-183-600-560
SVM	31-40-2040923
Norway	☎
AS NOR-SWISS	47-23 24 10 20

Poland	☎
AWAR TECH s.c.	48-71-791 3808
Portugal	☎
PRECITOOL, Lda.	351-244-542-111
SIMPLEFER-COMERCIO DE FERRA MENTAS, LDA.	351-244-575-350
Romania	☎
MAZAROM IMPEX SRL	40-21-232-8001
Slovakia	☎
MAKINO S.R.O.	421-2-682-491-20
Slovenia	☎
BTS COMPANY d.o.o.	386-1-5841-400
MJM Maruša Brinovec s.p.	38 6 31 335 760
Spain	☎
JANA TOOLS SL	34-94 453 82 24
OSG Comaher SL	34-945-242-400
UTILTALL S.A.	34-93-498-4465
Sweden	☎
RAVEMA AB	46-370-48800
Switzerland	☎
STREULLI TECHNOLOGIES AG	41-1-7394070
Turkey	☎
CNC ILERI TEKNOLOJI	90-212-786-6200
FORM TEKNİK	90-212-297-3397
TANDEM TAKIM TEZGAHLARI	90-216-313-1413
TEKNİKA HIRDAVAT SANAVI VE TICARET LTD. STL	90-212-674-28-64
UK	☎
MATSUJIRA MACHINERY PLC.	44-1530-511400
MMC HARDMETAL U.K. LTD	44-1827-312312
OSG UK LTD.	44-845-3051066
SGS CARBIDE TOOL (UK)LTD.	44-1189-795200
Brazil	☎
OSG FERRAMENTAS DE PRECISAO LTDA.	55-11-6190-0900
New Zealand	☎
TOTAL CNC PRODUCTS	90-212 786 62 00
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OSG CANADA LTD.	1-905-632-8032
SINGLE SOURCE TECHNOLOGIES, INC.	1-519-737-8999
Mexico	☎
OSG /ROYCO, S.A. DE C.V.	52-55-51-19-3363

USA	☎
MITSUBISHI MATERIALS U.S.A CORP.	1-800-486-2341
OSG TAP & DIE, INC.	1-800-837-2223
PRECISION TOOLS SERVICE, INC.	1-812-342-1234
SINGLE SOURCE TECHNOLOGIES, INC.	1-248-232-6268
TECNARA TOOLING SYSTEMS, INC.	1-562-941-2000
VEGA TOOL CORP.	1-800-228-2969
India	☎
ASSOCIATED ENGINEERING SERVICES CO.,LTD.	91-44-23821581
MAKINO INDIA PVT LTD.	91-80-28419500
MMC HARDMETAL INDIA PVT. LTD.	91-80-2351-6083
ORION INNOVATIVE TECHNOLOGIES	91-1-22163340
OSG (INDIA) PVT. LTD.	91-124-4008737/41
VALIANT INDIA	91-96-2359-1743
Indonesia	☎
PT. YAMAZEN INDONESIA	62-21-451-3345
PT. JAVATEC TRIMITRA UTAMA	62-21-458-77288
Malaysia	☎
YAMAZEN (MALAYSIA) SDN BHD	60-3-703-1057
YUASA MECHATRONICS (M)SDN. BHD.	60-3-2164-7119
NEWLINE MACHINE TOOL SDN.BHD.	60-3-8961-1973
Singapore	☎
A-TECH	65-67733148
MAKINO ASIA PTE LTD.	65-6861-5722
NOBEL MACHINE TOOLS PTE LTD.	65-6749-3636
OSG ASIA PTE LTD.	65-68444350
YAMAZEN (SINGAPORE)PTE LTD.	65-6276-9488
Thailand	☎
FACTORY MAX CO.,LTD.	66-2-7599100
MAKINO	66-2-971-5750
OSG THAILAND CO.,LTD.	66-2-706-5387
PRECISION TOOLS SERVICE (THAILAND)CO.,LTD.	66-2-308-2470
TOTAL TOOLS CO.,LTD.	66-2-971-6856-8
YAMAZEN (THAILAND) CO.,LTD.	66-2-328-8833
Vietnam	☎
YAMAZEN VIETNAM CO.,LTD	84-8-3517-4711

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