



Speed of INNOVATIONS,  
Feed of EXPERTISE

SERVING MANUFACTURING INDUSTRIES  
WORLD WIDE...





**SIGMA**  
**TOOLINGS**

SPEED OF INNOVATIONS, FEED OF EXPERTISE



## Introduction

Sigma Toolings, an almost 1.5 decade old manufacturer in comprehensive high end tooling solutions, with an excellent manufacturing plant in Maharashtra and sales and marketing offices in Delhi, Pune, Bengaluru, Jamshedpur, Baroda, Chennai, Aurangabad, with a blue chip list of over 600 customers, including Indian and multi national giants, ISO certification and mission critical government compliance.

Our solutions are working successfully in diverse engineering segments of Automobile, Heavy engineering, Engine, Valve, Oil and Gas, Turbo Chargers, Power Generation, Earth moving equipments, etc. Our mission-critical engineering services, knowledge and expertise to achieve competitive advantage with product portfolio for complete Tool Crib Management. All of our products are backed by an unparalleled level of responsive customer support. Our Product Range which can compete well – in terms of quality, support and price, in International Markets, includes Fine Boring Units, Ring Groove Tools, Light Weight Boring Bars etc.

We have developed products like, Antivibration Tools, Valve Seat Valve Guide, Aluminum Light Weight Boring Bars, Fine Boring Units, Ring Groove Tools, Line Boring Bars, Actuating Boring Bars, which do not have any Indian substitutes. These products are substantially economical as compared with Japanese & German products. Our strong in-house Research and Development department, gives us the ability to innovative as also adapt quickly to emerging technologies.

### Our manufacturing range includes

- Antivibration Tools
- Valve Seat Valve Guide
- Combination Boring Bars
- Fine Boring Units
- Milling Cutters
- Line Boring Bars
- Special Indexable Form Tools
- Indexable Drilling Tools
- Trepanning Tools
- Back Spot Face Tools/Automatic Back Facers

### We Offer

- Complete Project Management of Special Tools.
- Comprehensive and Complete Documentation Package
- Ability to Provide Complete Special Tooling Solutions
- Ships the Tooling Package Assembled and Tagged for Gauge Plain Length
- Guaranteed Quality and Cycle Time
- On the Floor Technical Support
- Cycle Time Estimations
- Pre-Sales Consultancy
- Proving of tools on the machine
- Design, Development and Manufacturing of Combination Boring Bars, Line boring bars, Combination Drills, Milling Cutters, Anti Vibration Tools, Automatic Spot Facers, Customized Tools

Reducing your cost of tooling is the most important aspect of our program for you.

### Solutions for diverse segments

- Aerospace
- Automobile
- Tractor and Farm Equipments
- Heavy Engineering
- Oil and Gas Industry
- Power Generation
- Earth moving Equipments
- Railways

## Vision

To enhance customer satisfaction and our image globally and achieve exponential growth to leadership through world class products and service.

## Mission

Develop a lean, flexible, and scalable organization and Contribute to our community by sustaining and advancing the Manufacturing Culture.



## Goal

To sustain as India's no.1 customized tool manufacturer and emerge as best cutting tool solution provider globally.

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# Automotive & Commercial Vehicles Tooling

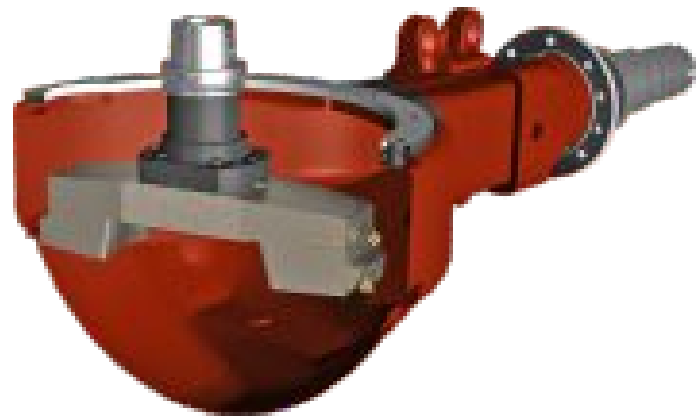
AUTOMOTIVE TOOLING



We provide complete set of tooling for following components

- Banjo Axle Beam
- Case Differential
- Differential Carrier
- Cylinder Block
- Cylinder Head
- Steering Knuckle
- Disc Brake Anchor Bracket
- Disc Brake Caliper
- Case Transmission

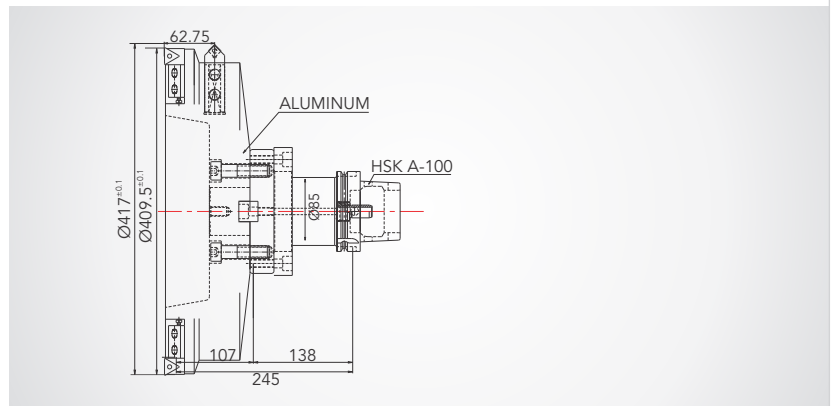
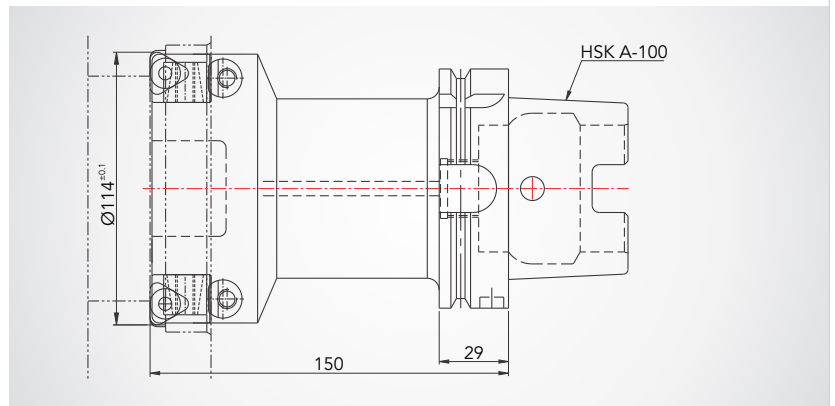
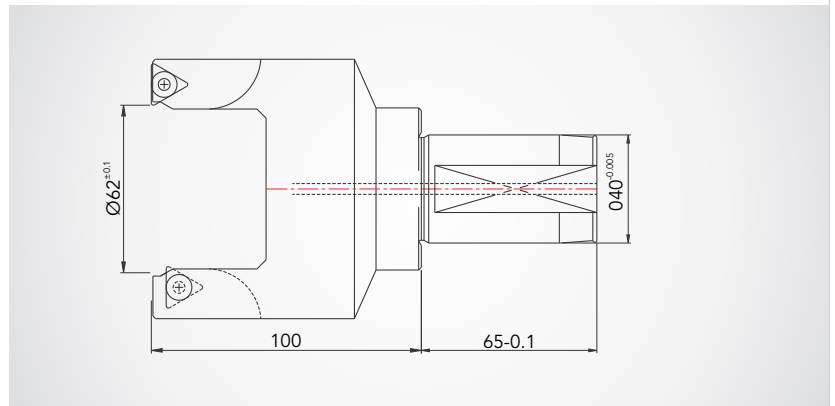
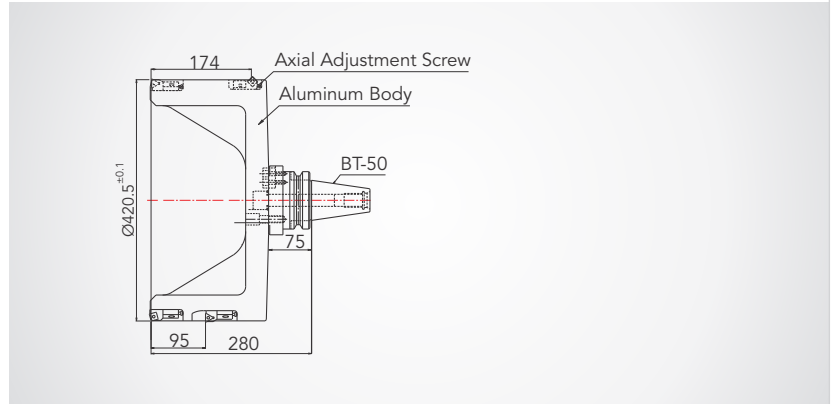
## Banjo Axle Beam



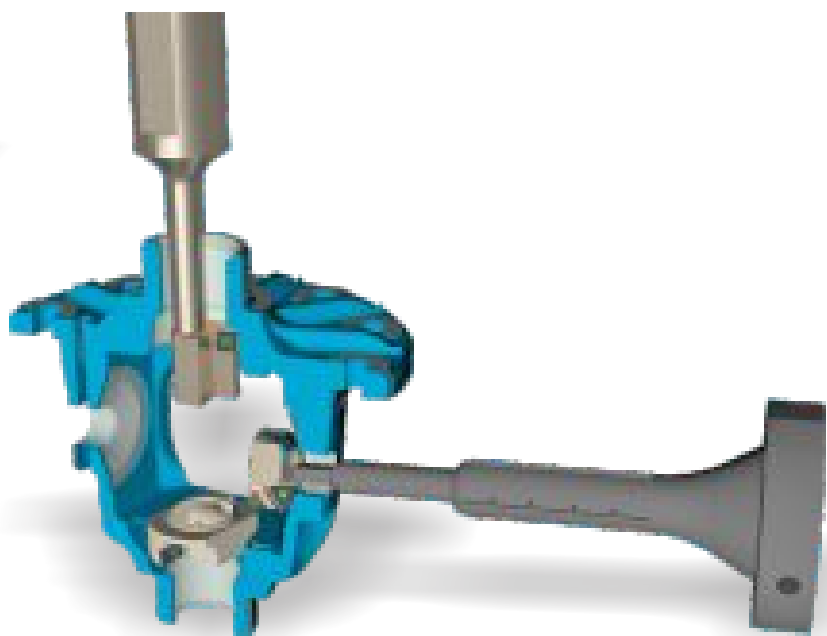
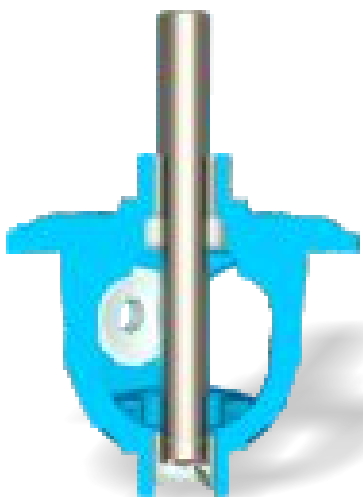
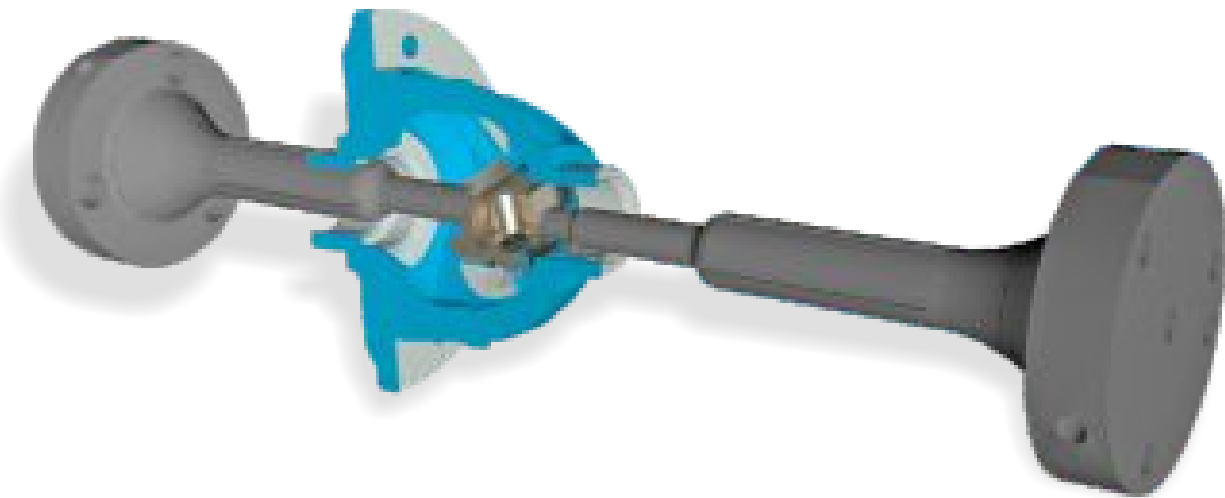
### Banjo Axle Beam Tooling

- Aluminium Body Boring Bar
- OD Turning Tool
- Plunge Boring Tool
- Light Weight Aluminium Boring Bar
- Drills
- Relieve Milling Cutter

# Banjo Axle Beam

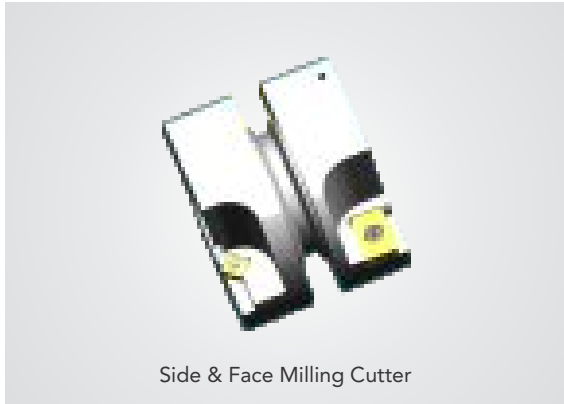


## Case Differential

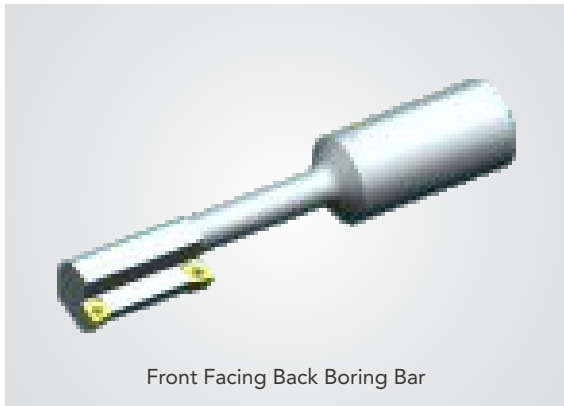
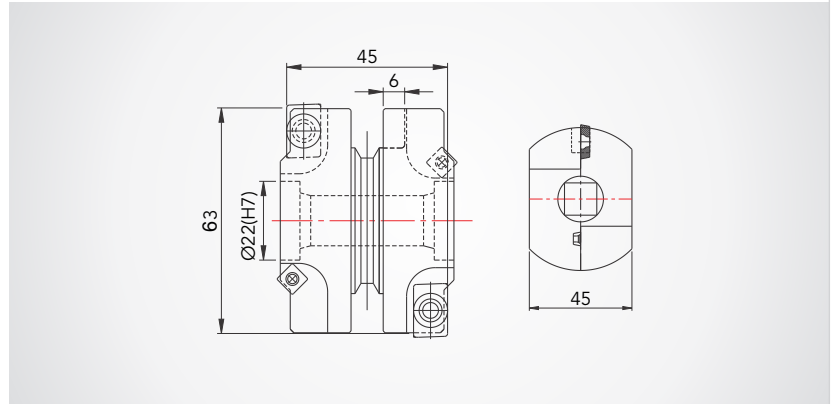


### Case Differential Tooling

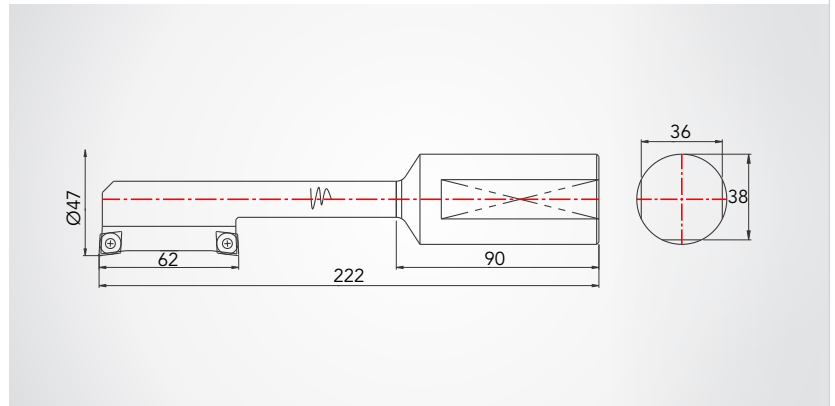
- Side & Face Milling Cutter
- Front Facing Back Boring Bar
- Spherical Milling Cutter
- Cross Bore Tool
- Goose Neck Tool
- Main Bore Tool
- Live & dead Arbor



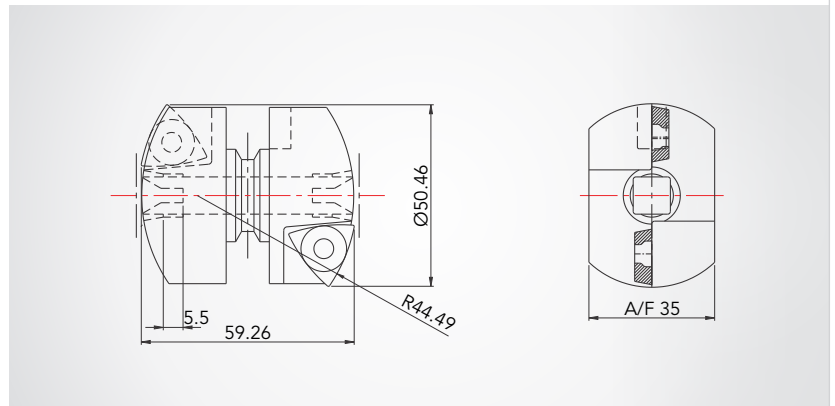
Side & Face Milling Cutter



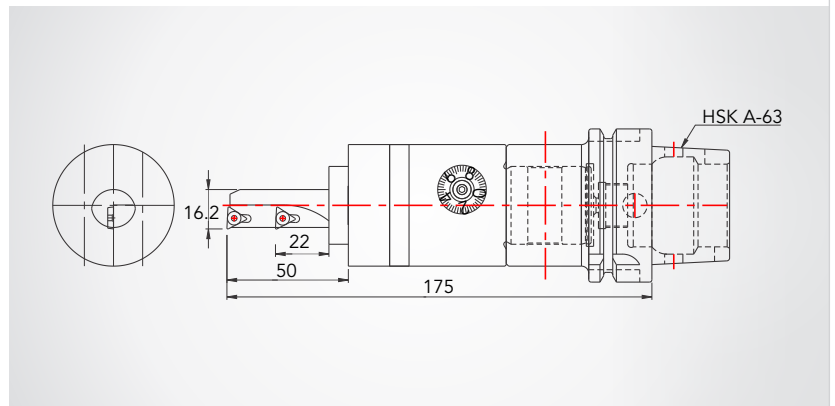
Front Facing Back Boring Bar



Spherical Milling Cutter

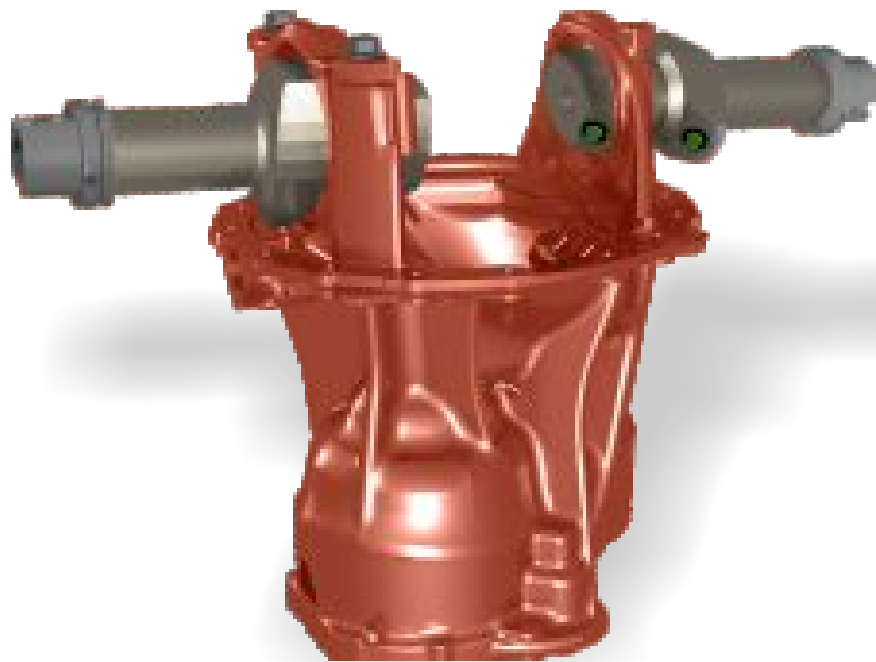
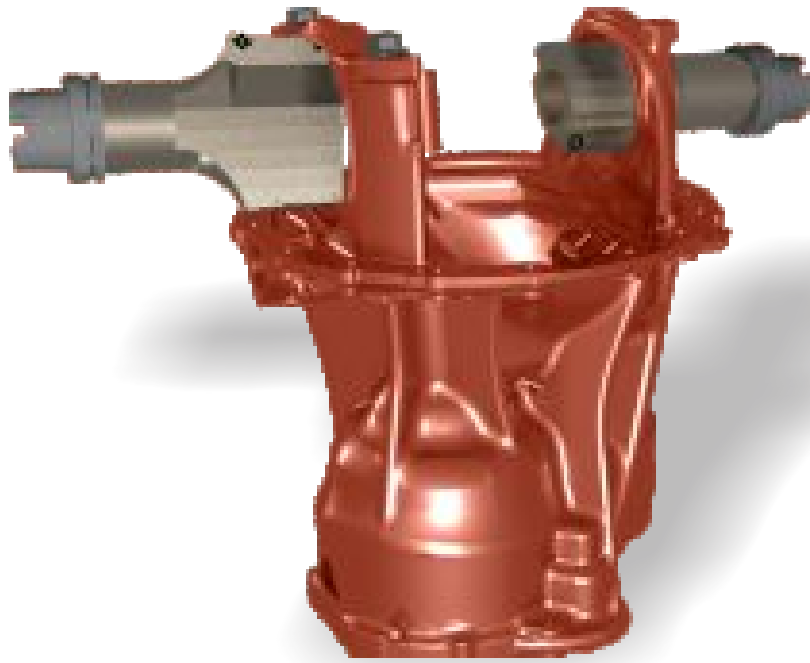


Cross Bore Tool



## Case Differential

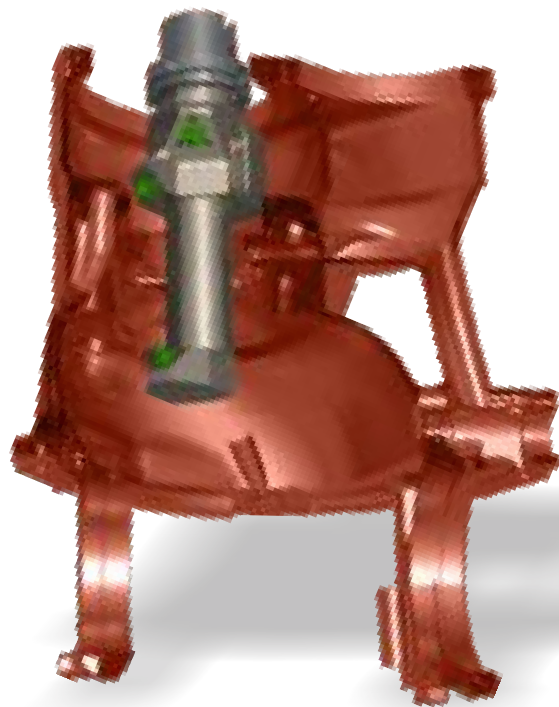
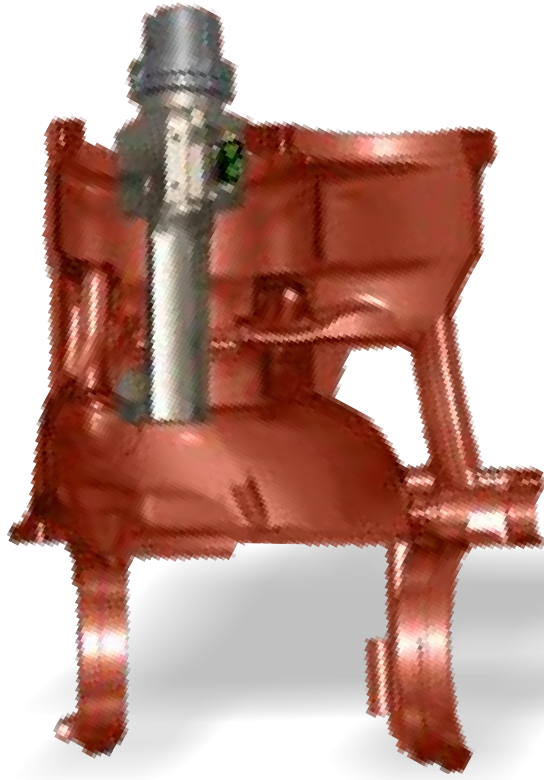




### Differential Carrier Tooling

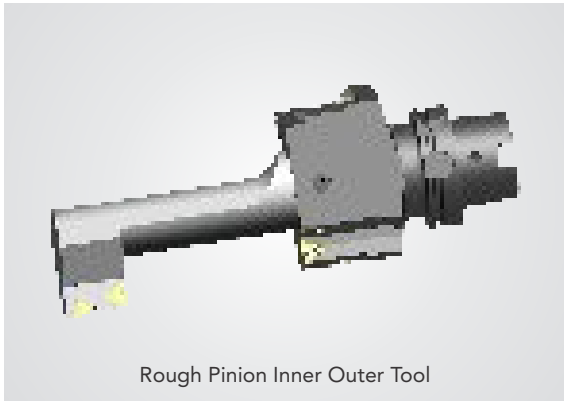
- Rough Pinion Inner Outer Tool
- Finish Pinion Inner Outer Tool
- Rough Differential Tool
- Finish Differential Tool

## Differential Carrier

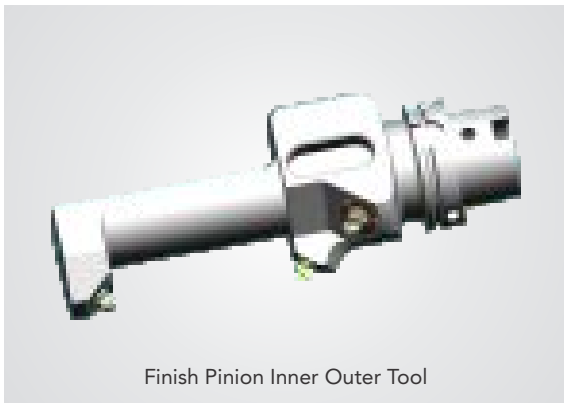
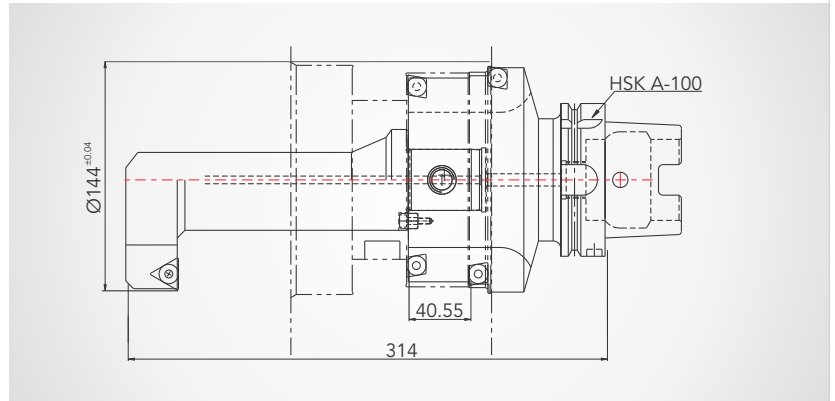




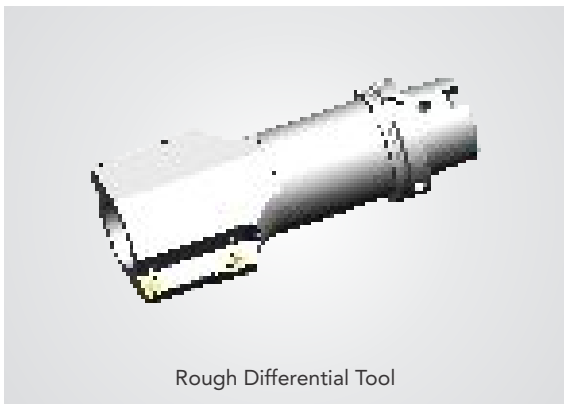
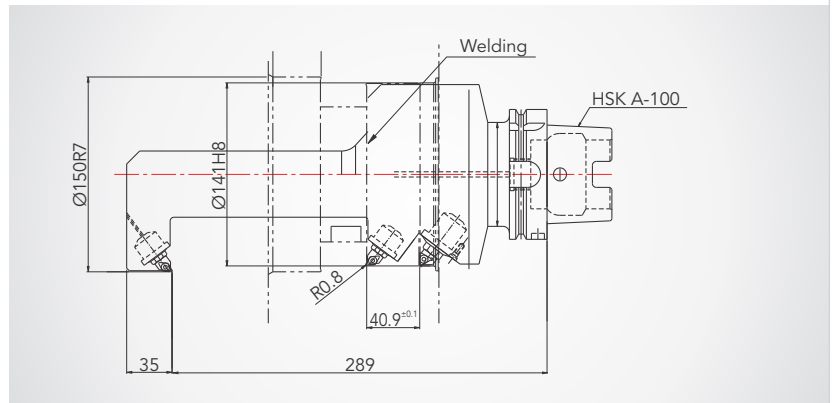
# Differential Carrier



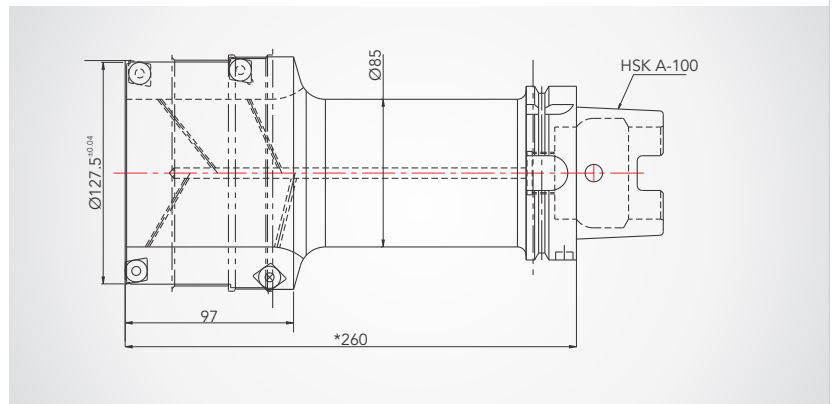
Rough Pinion Inner Outer Tool



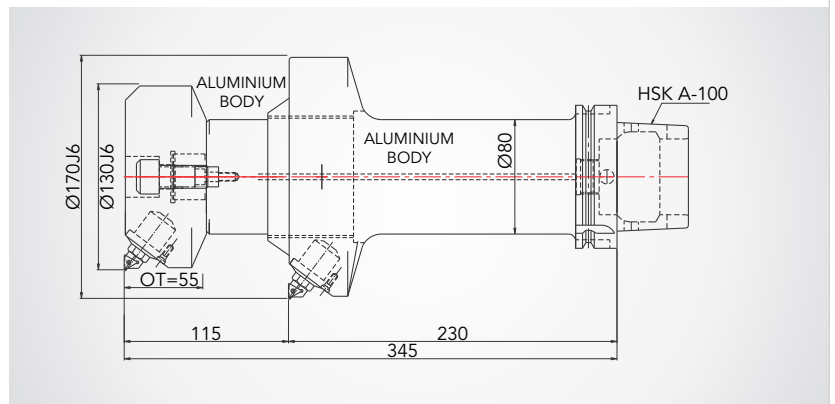
Finish Pinion Inner Outer Tool



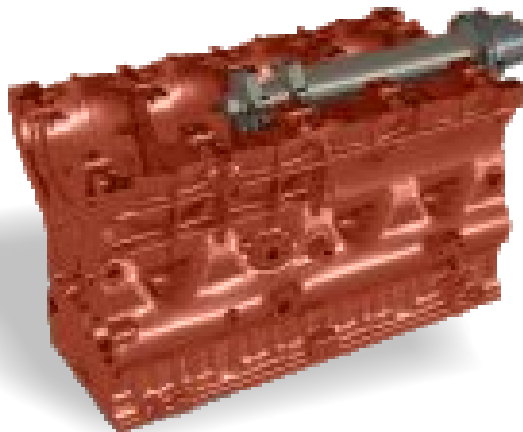
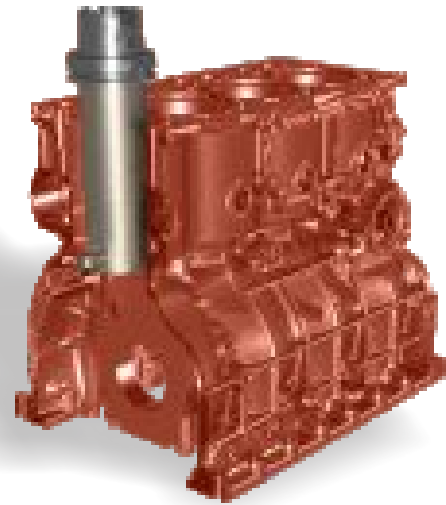
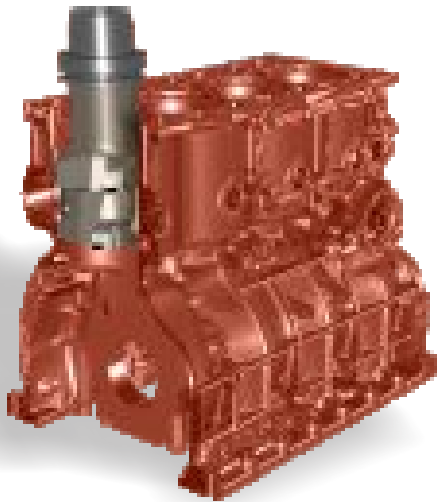
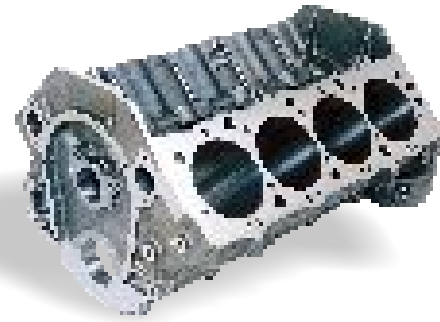
Rough Differential Tool



Finish Differential Tool

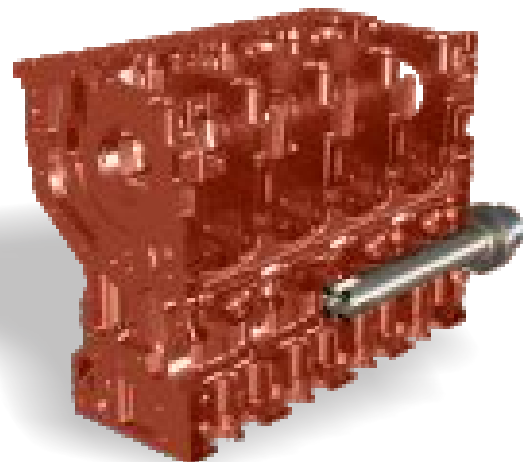


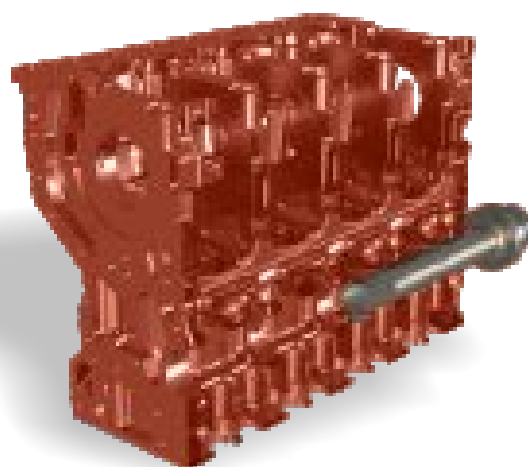
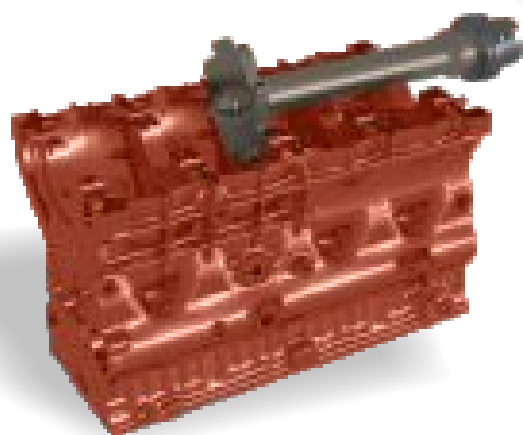
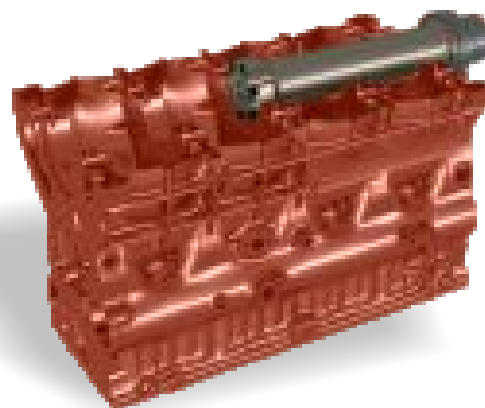
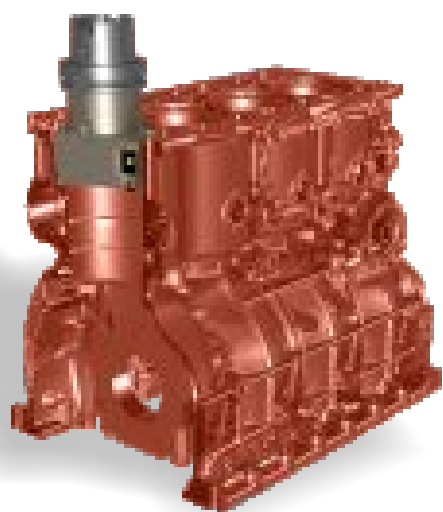
## Cylinder Block



### Cylinder Block Tooling

- Liner / Cylinder Rough Tool
- Liner / Cylinder Finish Tool
- Rough Thrust Cutter
- Combination Finish Boring Bar
- Cam Bore Finish Samurai Tool (Antivibration Tool)
- Cam Line Boring Bar
- Crank Line Boring Bar
- Water Jacket Boring Tool
- Web Milling Cutter
- Cheek Face Milling Cutter

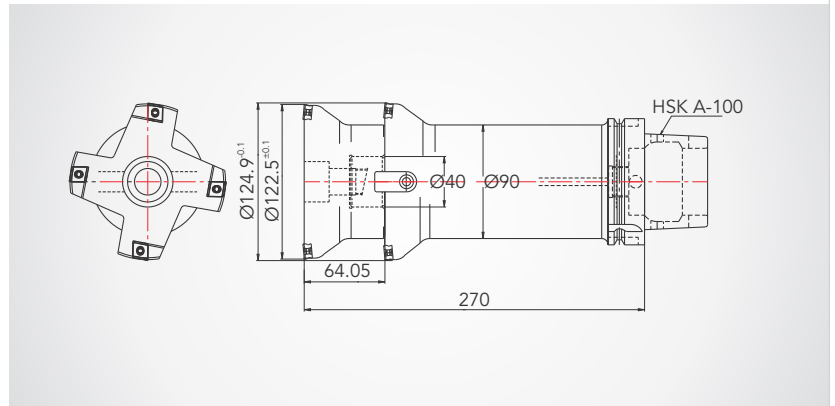




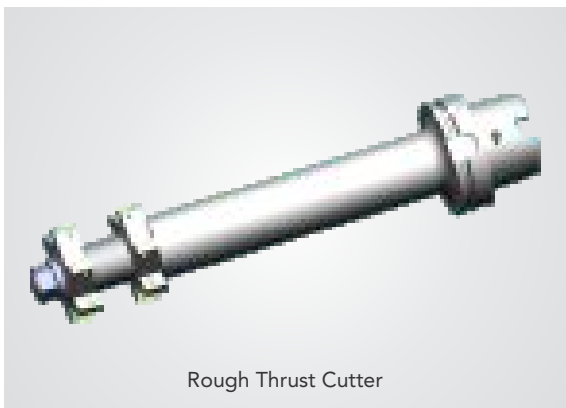
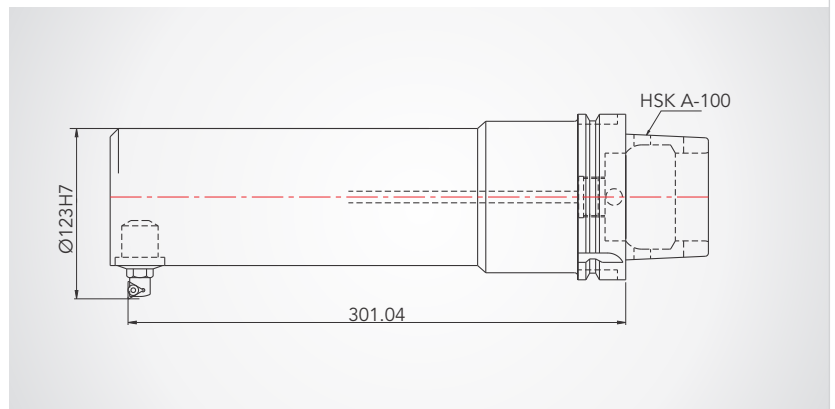
# Cylinder Block



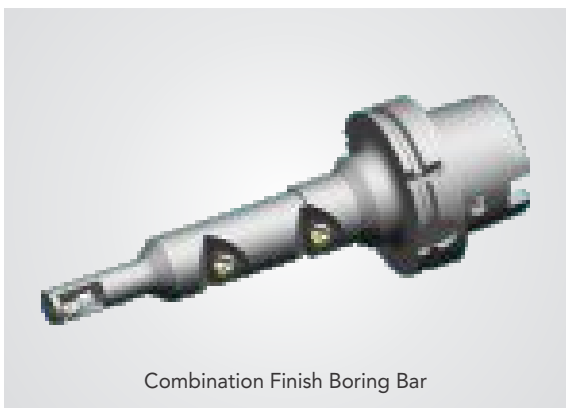
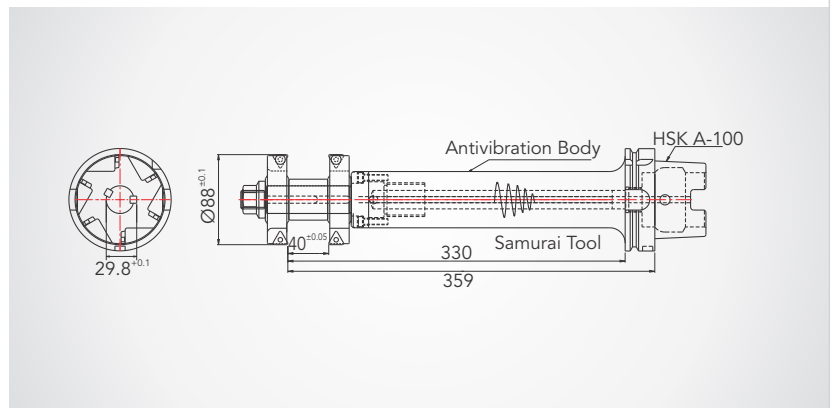
Liner / Cylinder Rough Tool



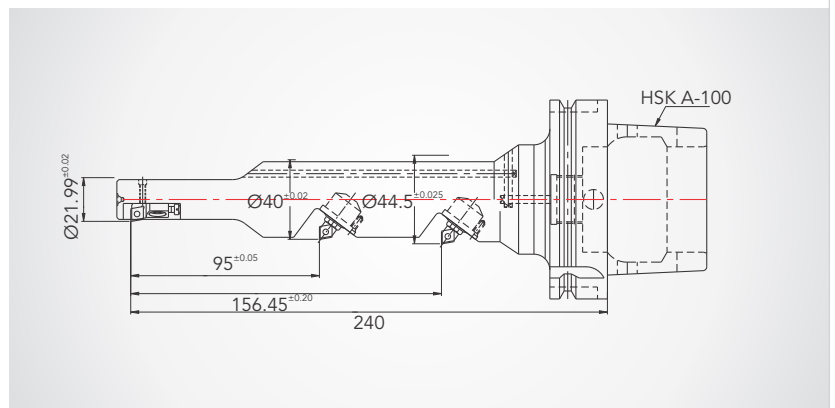
Liner / Cylinder Finish Tool



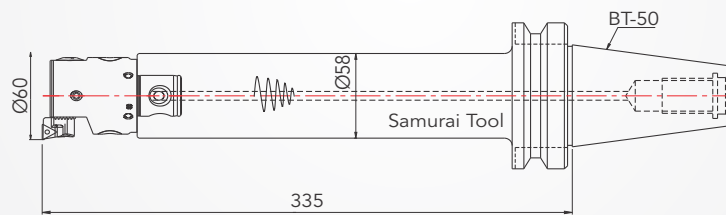
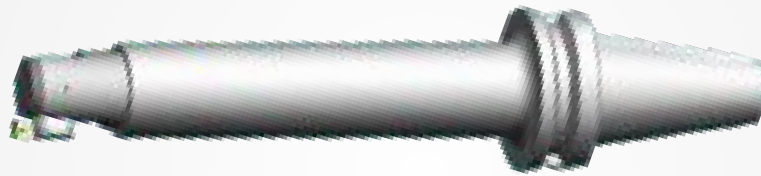
Rough Thrust Cutter



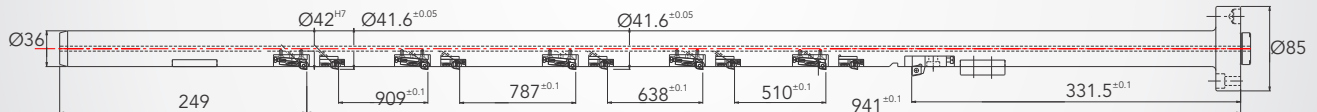
Combination Finish Boring Bar



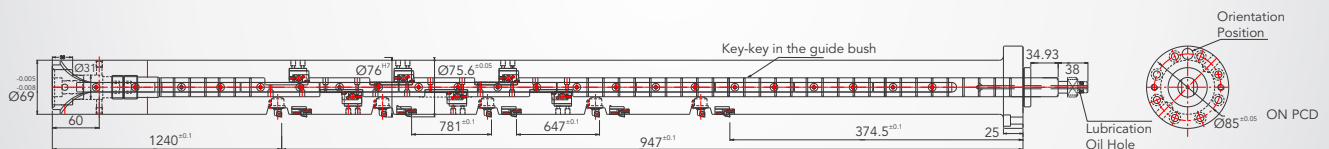
Cam Bore Finish Samurai Tool (Antivibration Tool)



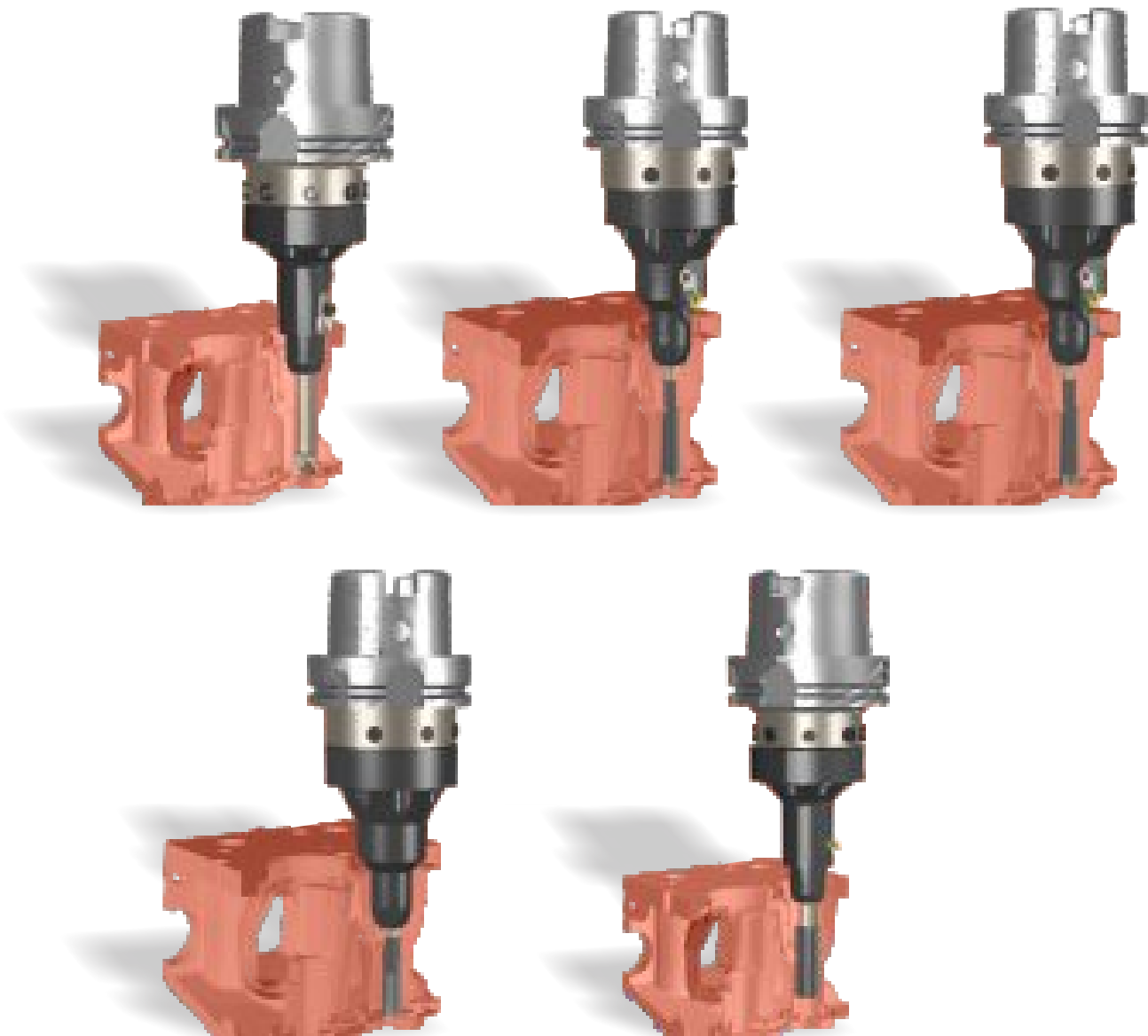
Cam Line Boring Bar



Crank Line Boring Bar



## Cylinder Head

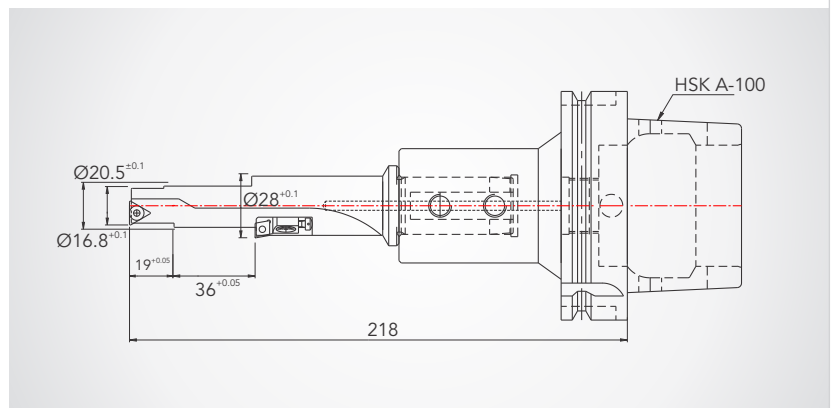
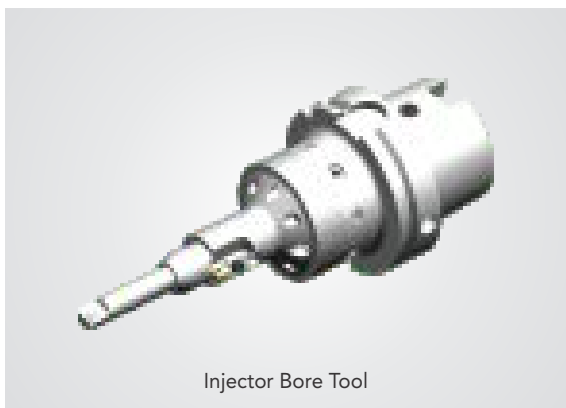
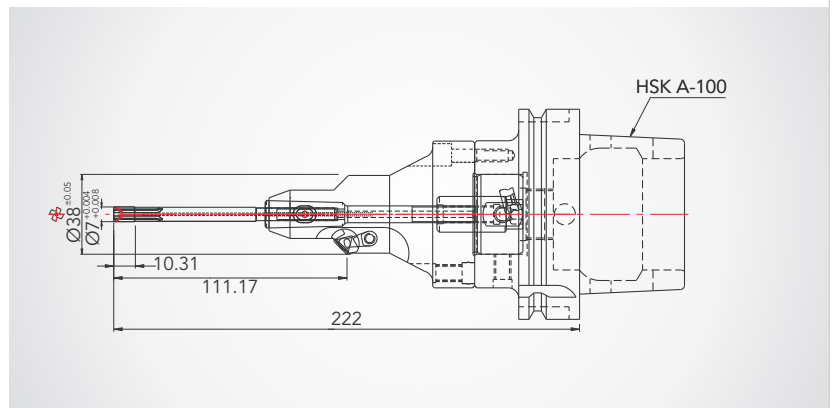
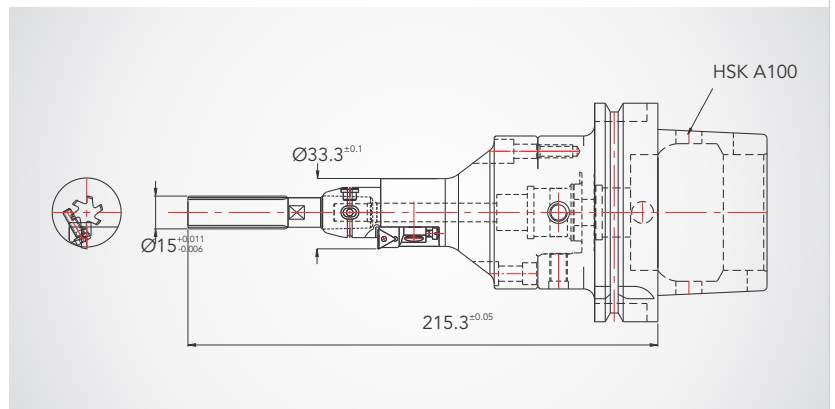
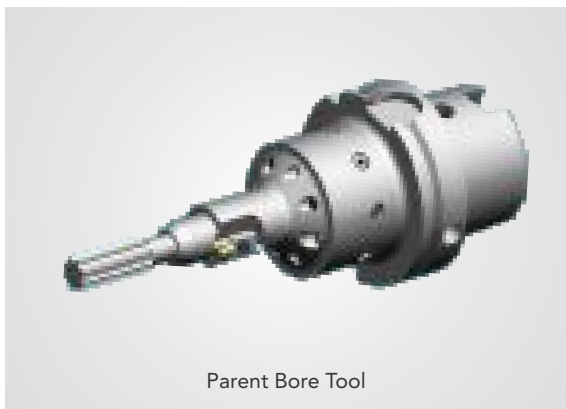
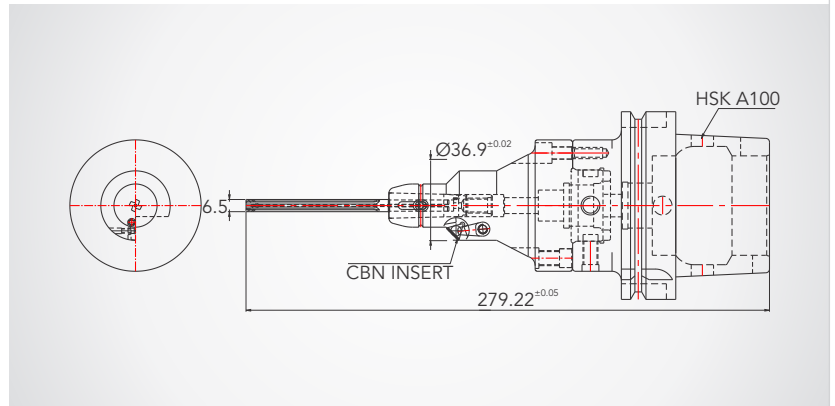


### Cylinder Head Tooling

- Exhaust Valve Semi Finish Tool
- Parent Bore Tool
- Exhaust Valve Finish Tool
- Injector Bore Tool
- Valve OD Profile Tool
- Spring Seat Cutter
- Cross Hole Tool



# Cylinder Head



## Cylinder Head



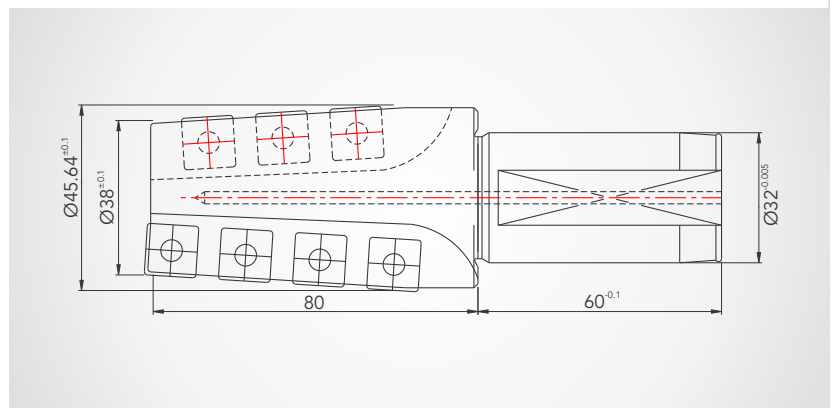
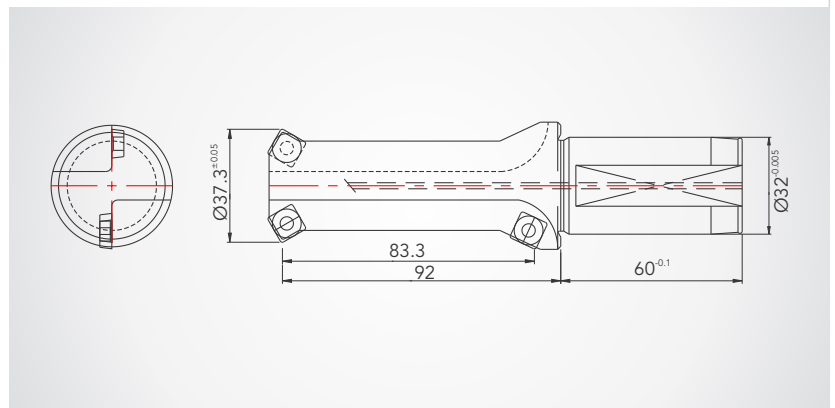
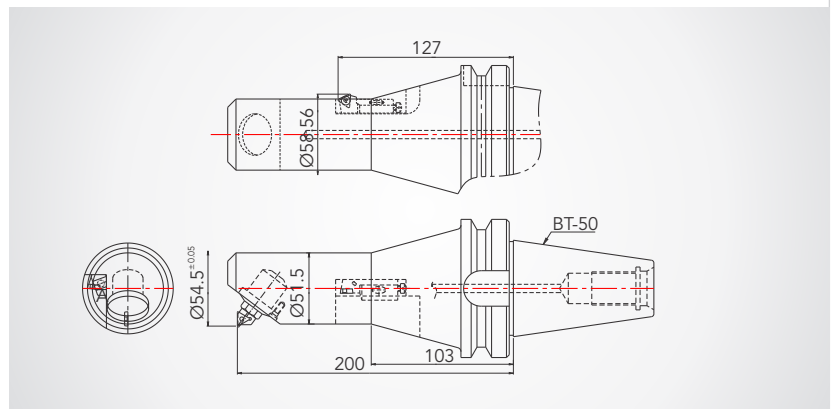
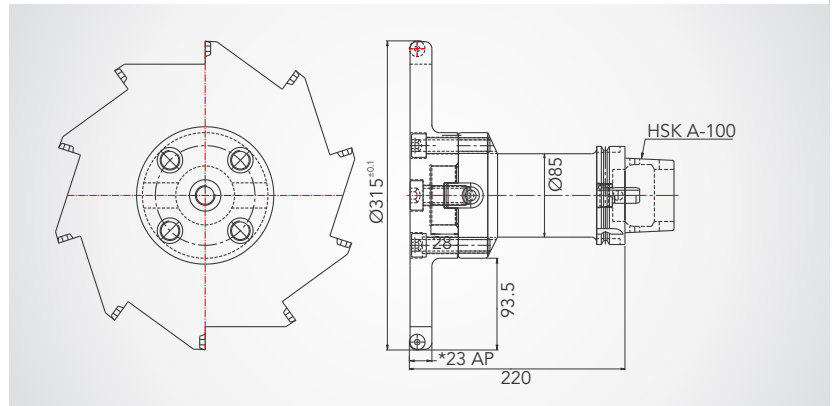




### Steering Knuckle Tooling

- Profile Milling Cutter
- Micron Adjustable Finish Boring Bar
- Plunging/Milling Chamfer Tool
- Rough Taper Bore Tool
- Finish Taper Bore Reamer

# Steering Knuckle



# Tractor & Farm Equipments Tooling



We provide complete set of tooling for following components

- Rear Axle Housing
- Speed Housing
- Carrier Housing
- Trumpet Housing
- Cylinder Block and Head
- Lifter Housing
- Case Transmission

TRACTOR & FARM EQUIPMENTS TOOLING

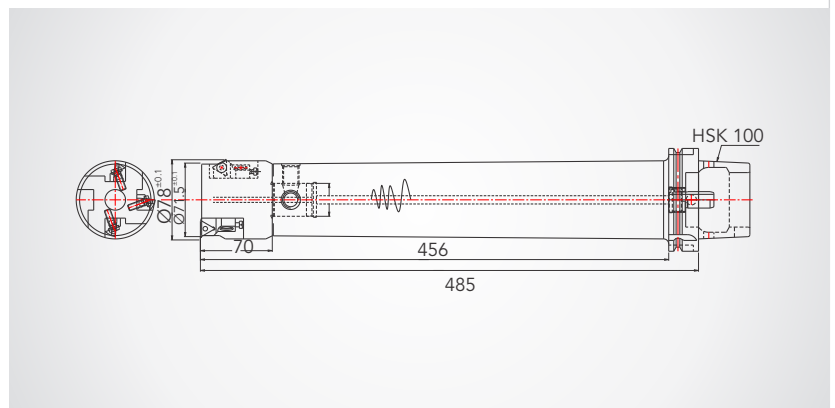
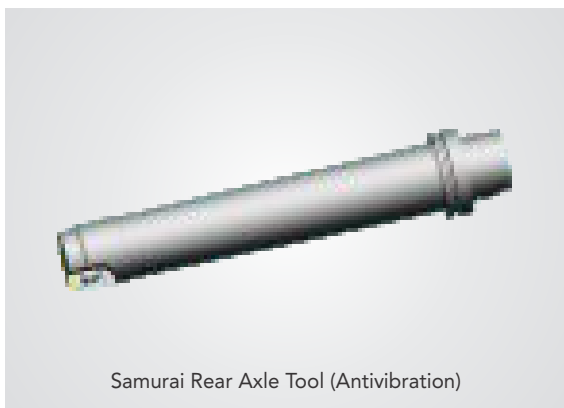
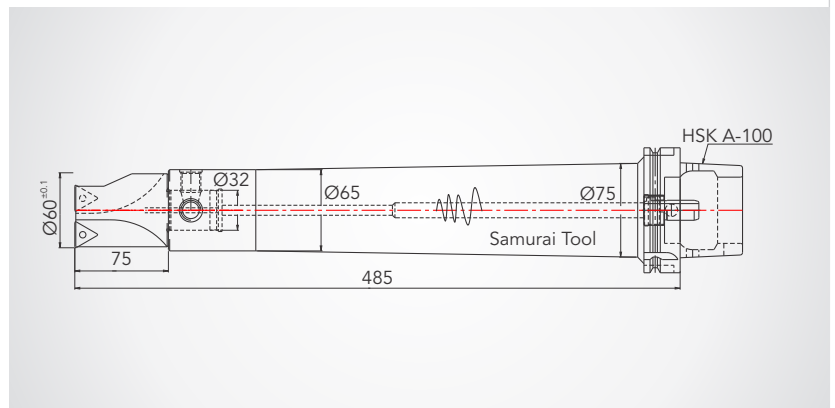
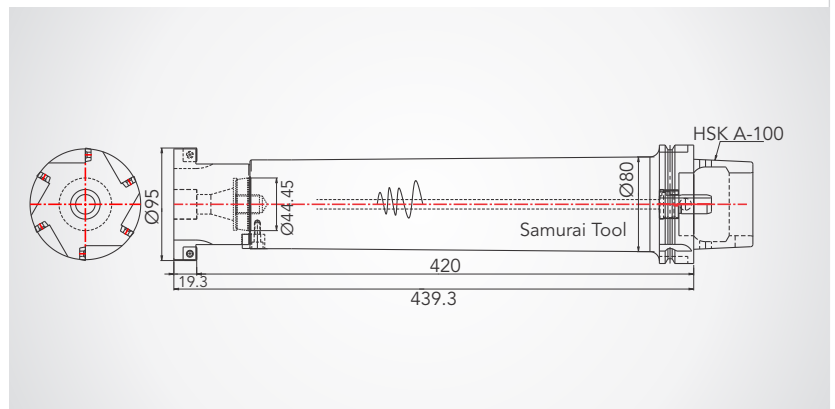
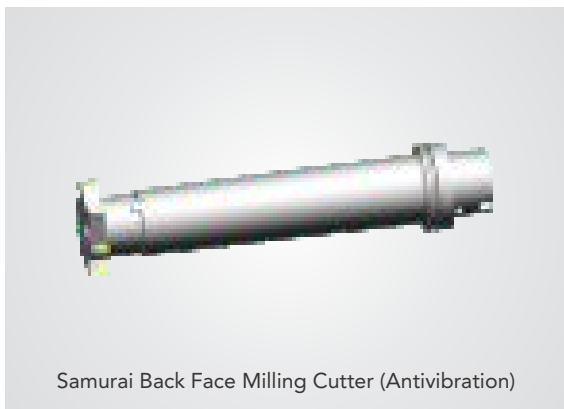
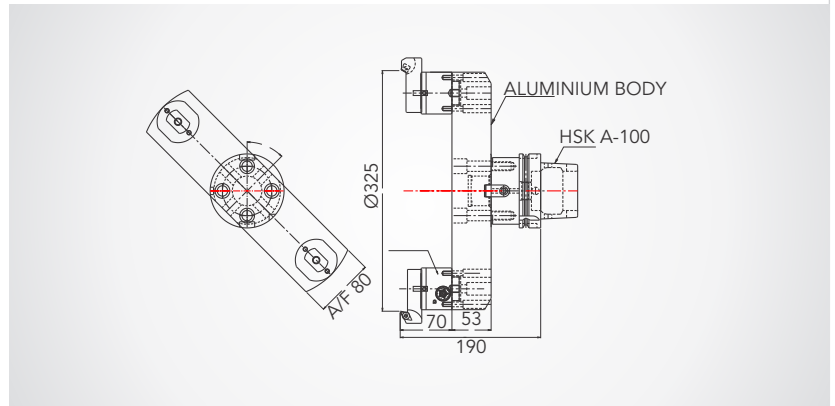
## Rear Axle Housing



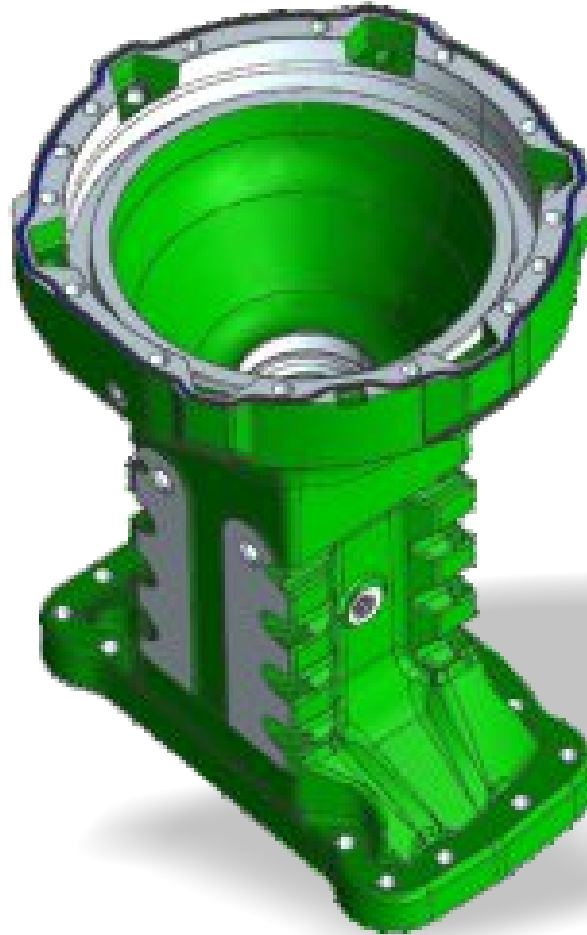
### Rear Axle Housing Tooling

- Rear Axle Tool
- Main Shaft Bore Tool
- Idler Shaft Bore Tool
- Reverse Shaft Bore Tool
- Drain Plug Tool

# Rear Axle Housing



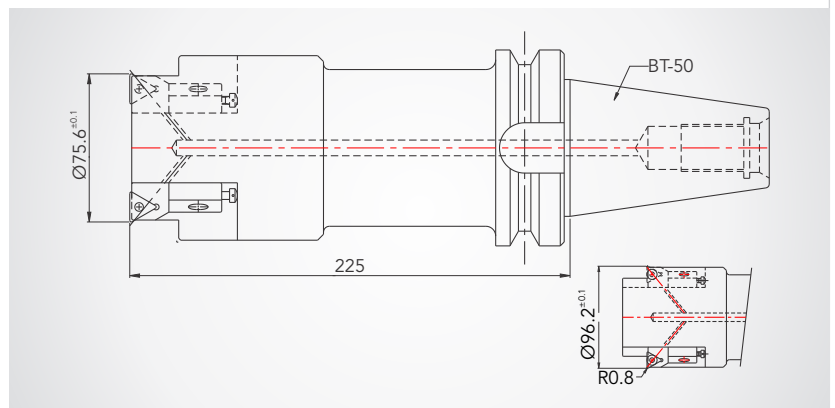
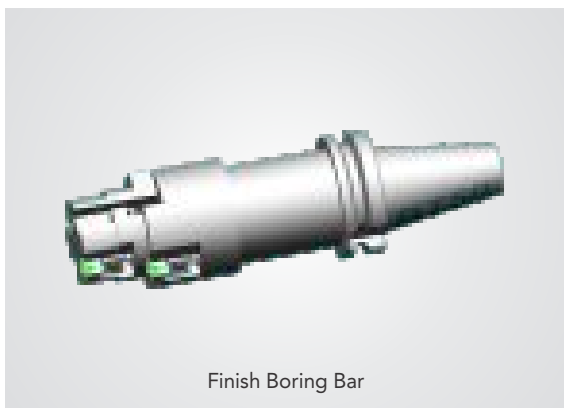
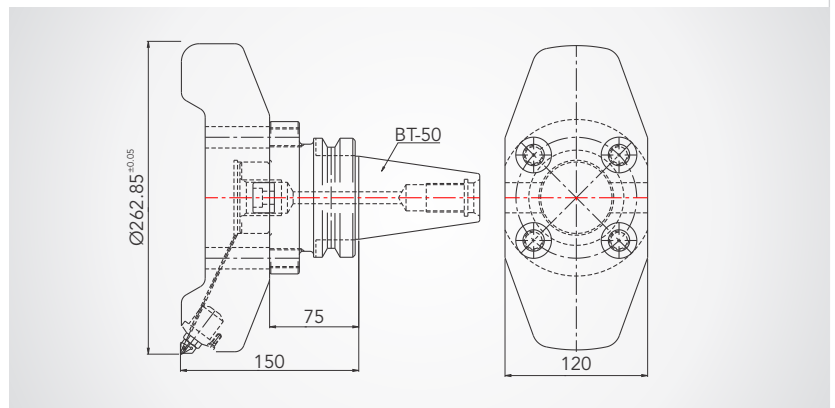
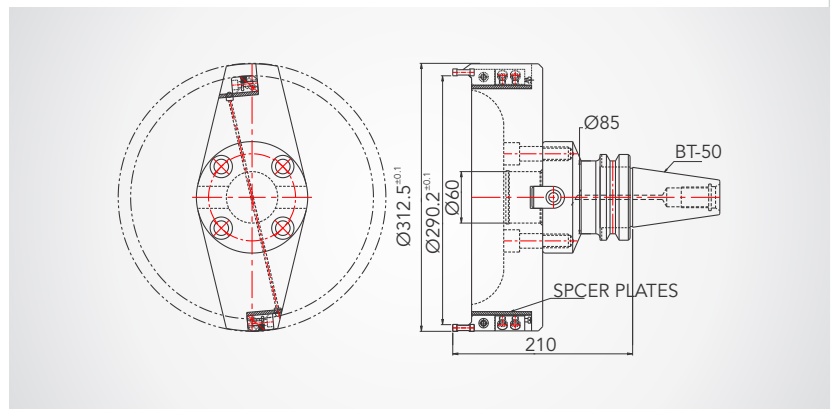
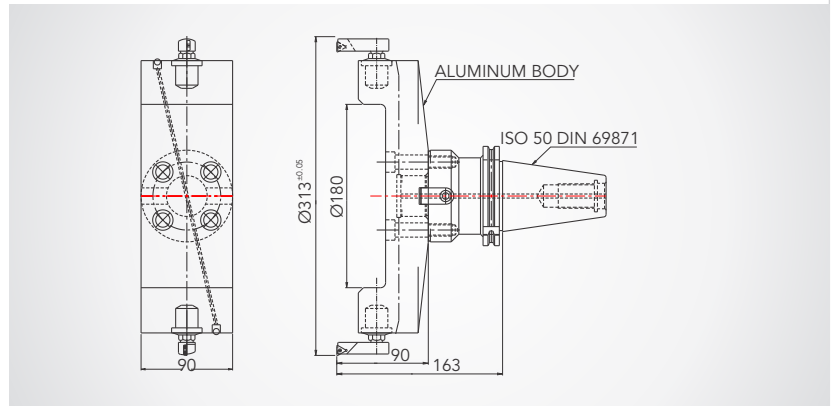
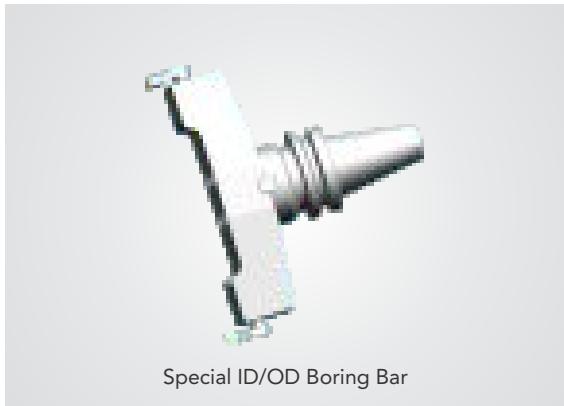
## Trumpet Housing



### Trumpet Housing Tooling

- ID/OD Boring Tool
- Rough Grooving Tool
- Finish Grooving Tool
- Main Bore Tool

# Trumpet Housing



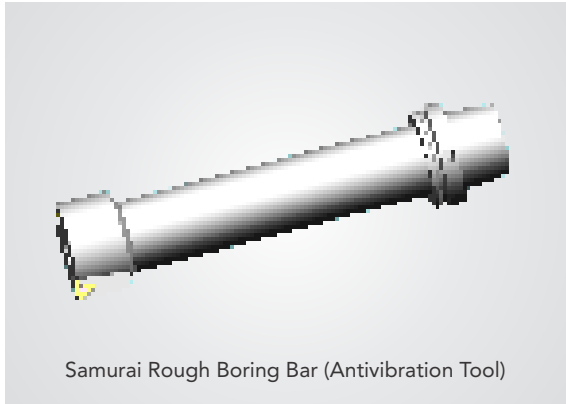
## Speed Housing



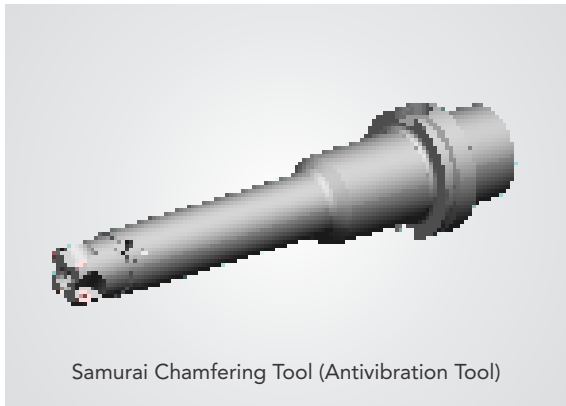
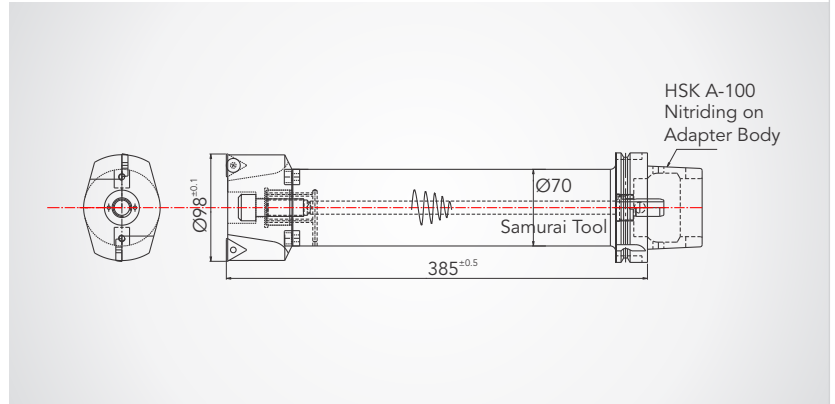
### Speed Housing Tooling

- Samurai Rough Boring Bar (Antivibration)
- Samurai Chamfering Tool (Antivibration)
- Samurai Semi Finish Boring Bar (Antivibration)
- Samurai Pilot U-Drilling Tool (Antivibration)

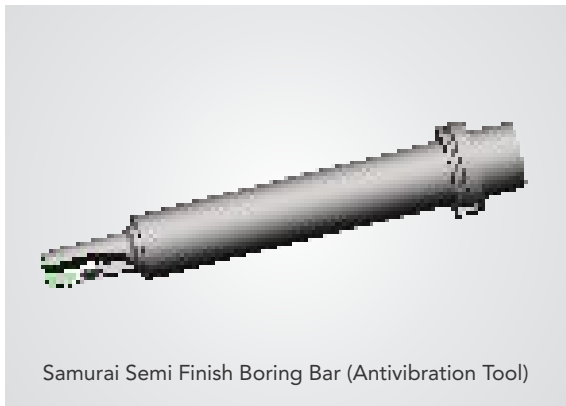
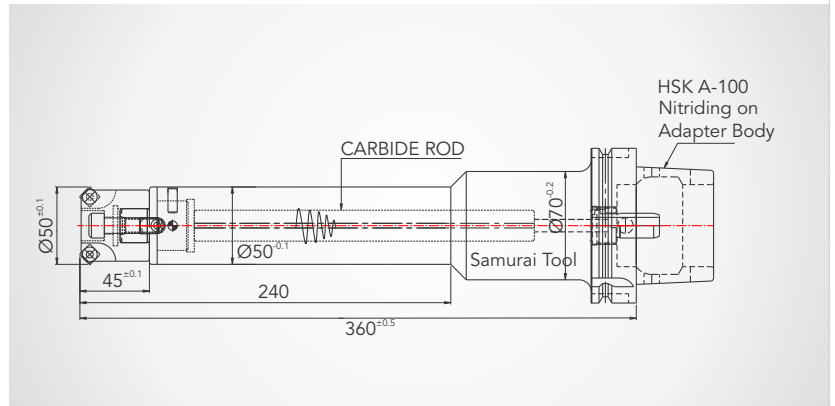




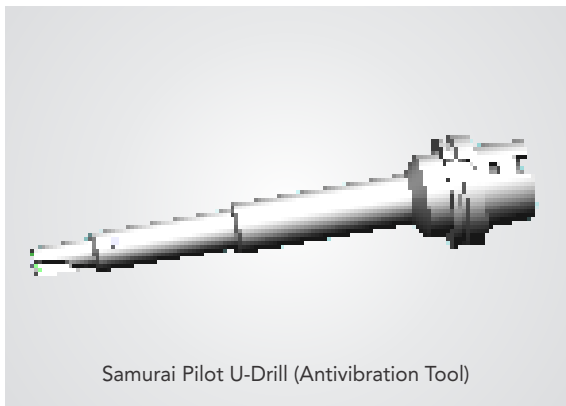
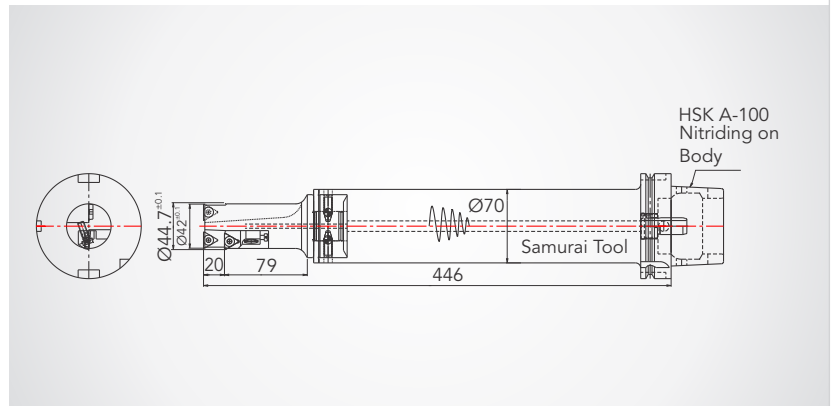
Samurai Rough Boring Bar (Antivibration Tool)



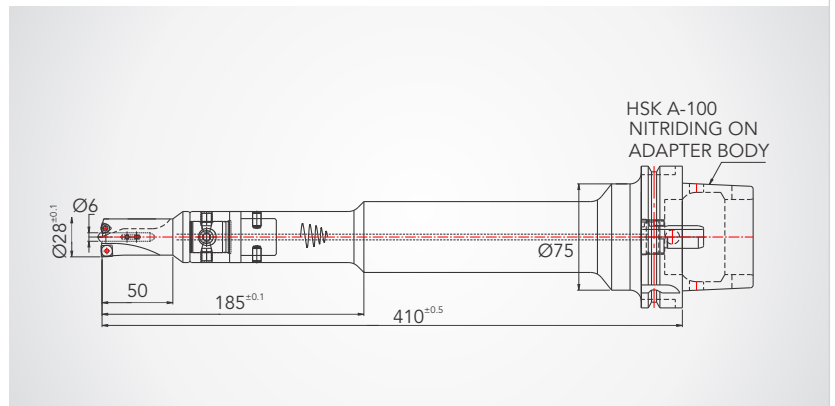
Samurai Chamfering Tool (Antivibration Tool)



Samurai Semi Finish Boring Bar (Antivibration Tool)



Samurai Pilot U-Drill (Antivibration Tool)



# Oil and Gas Equipments Tooling

OIL AND GAS EQUIPMENTS TOOLING

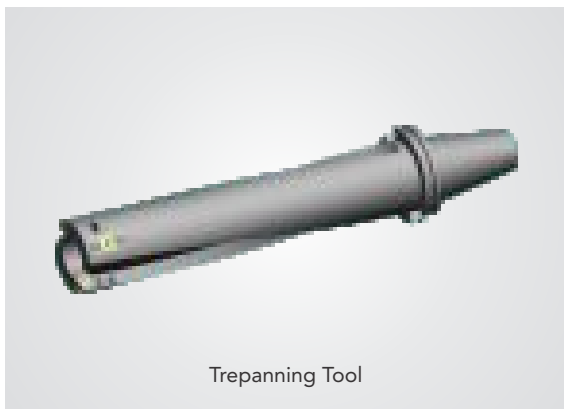
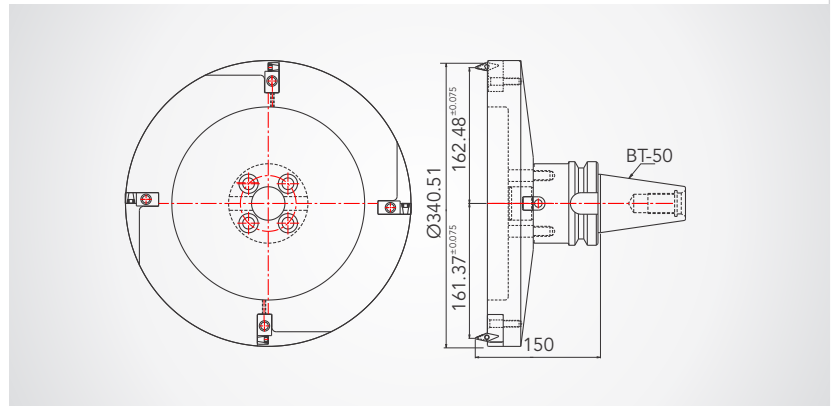


## Oil and Gas Tooling

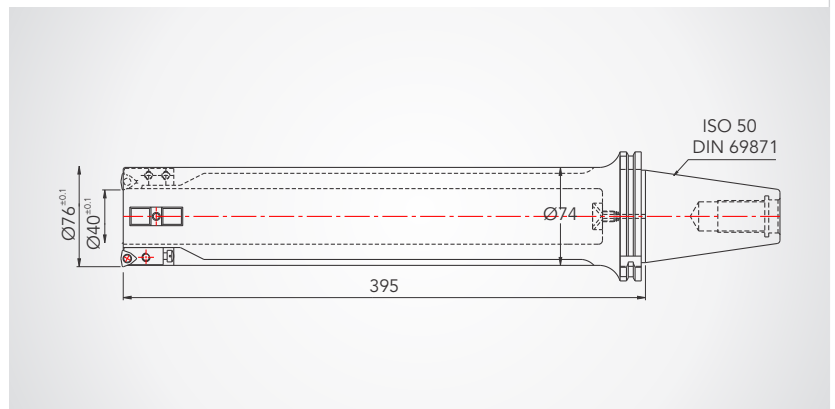
- Ring Groove Tool
- Trepanning Tool
- VTL Boring Bar
- Pocket Boring Bar
- Drills



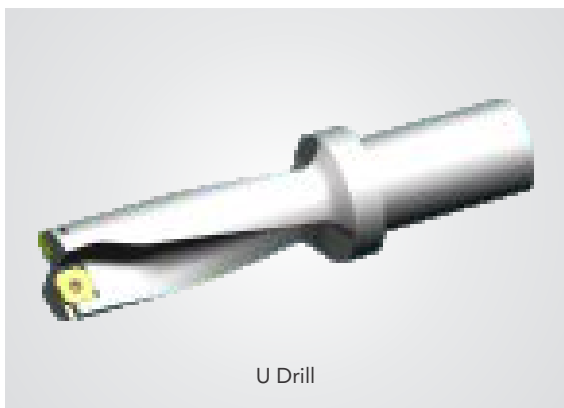
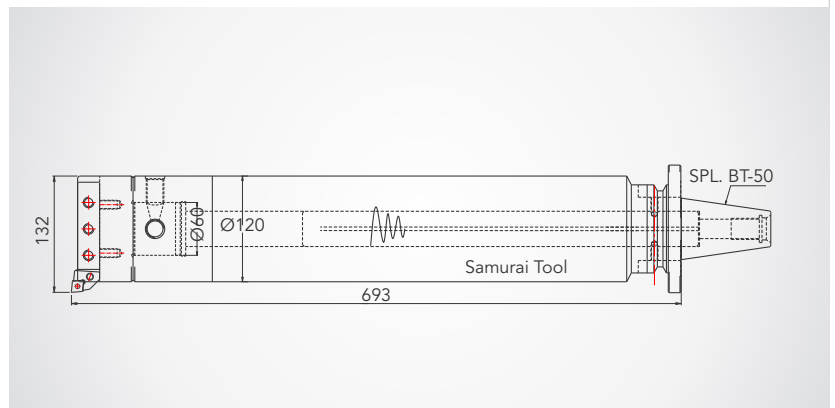
Ring Groove Tool



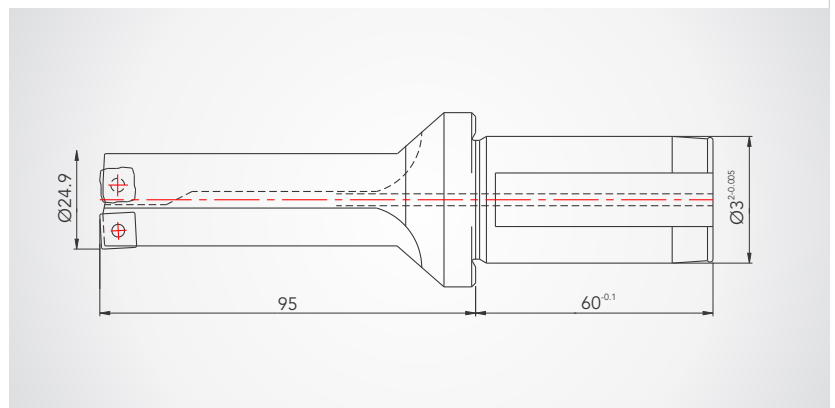
Trepanning Tool



Samurai VTL Boring Bar (Antivibration)



U Drill



# Fixed Pocket High Positive Geometry Tools

Sigma Ground and high positive geometry inserts with four cutting edges for boring offers very high productivity with less cycle time.

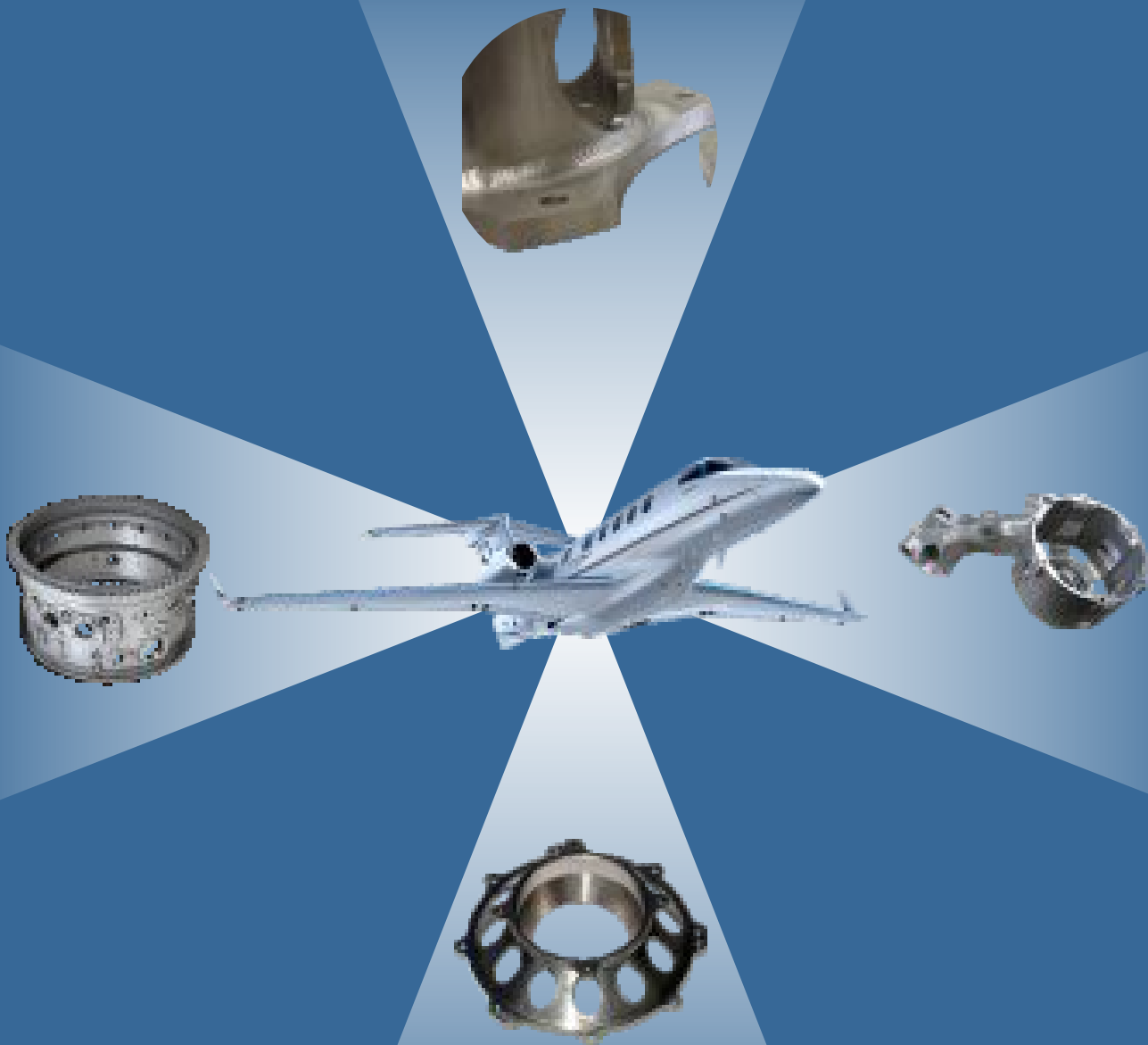
Special plunging geometry with chip splitting grooves allows high penetration rate for plunging operations.

High positive inserts are extremely suitable for machining counter bores with big face machining.



# Aerospace Components Tooling

AEROSPACE COMPONENTS TOOLING



We provide complete set of tooling for following components

- Rear Cone
- Titanium Center Piece
- Bearing Housing
- Engine Cases
- Manifolds

# Tangential Boring Bars

- Allows very high feed rates against ISO inserts.
- Extremely stable cutting.
- High feed inserts.
- More cutting edges possible.
- Tough cutting edge & high positive geometry.
- Ex-stock availability for all grades.

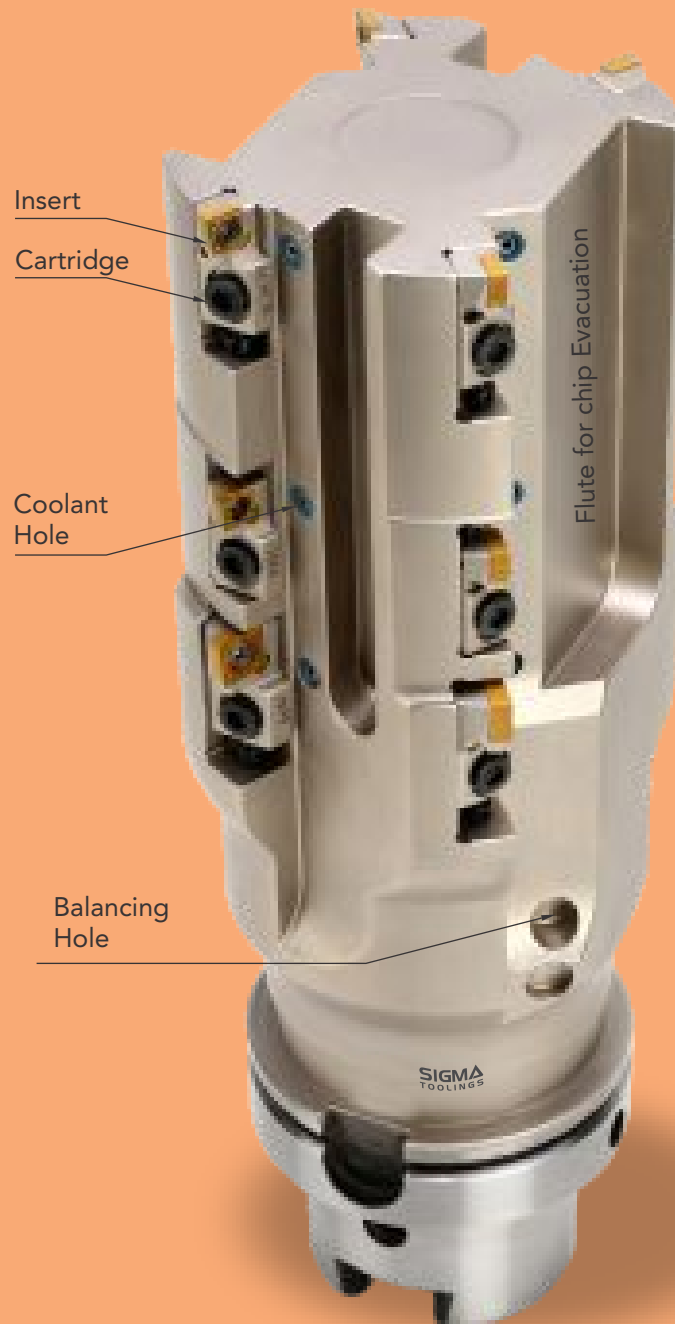


# Integral Boring Bars

INTEGRAL BORING BARS

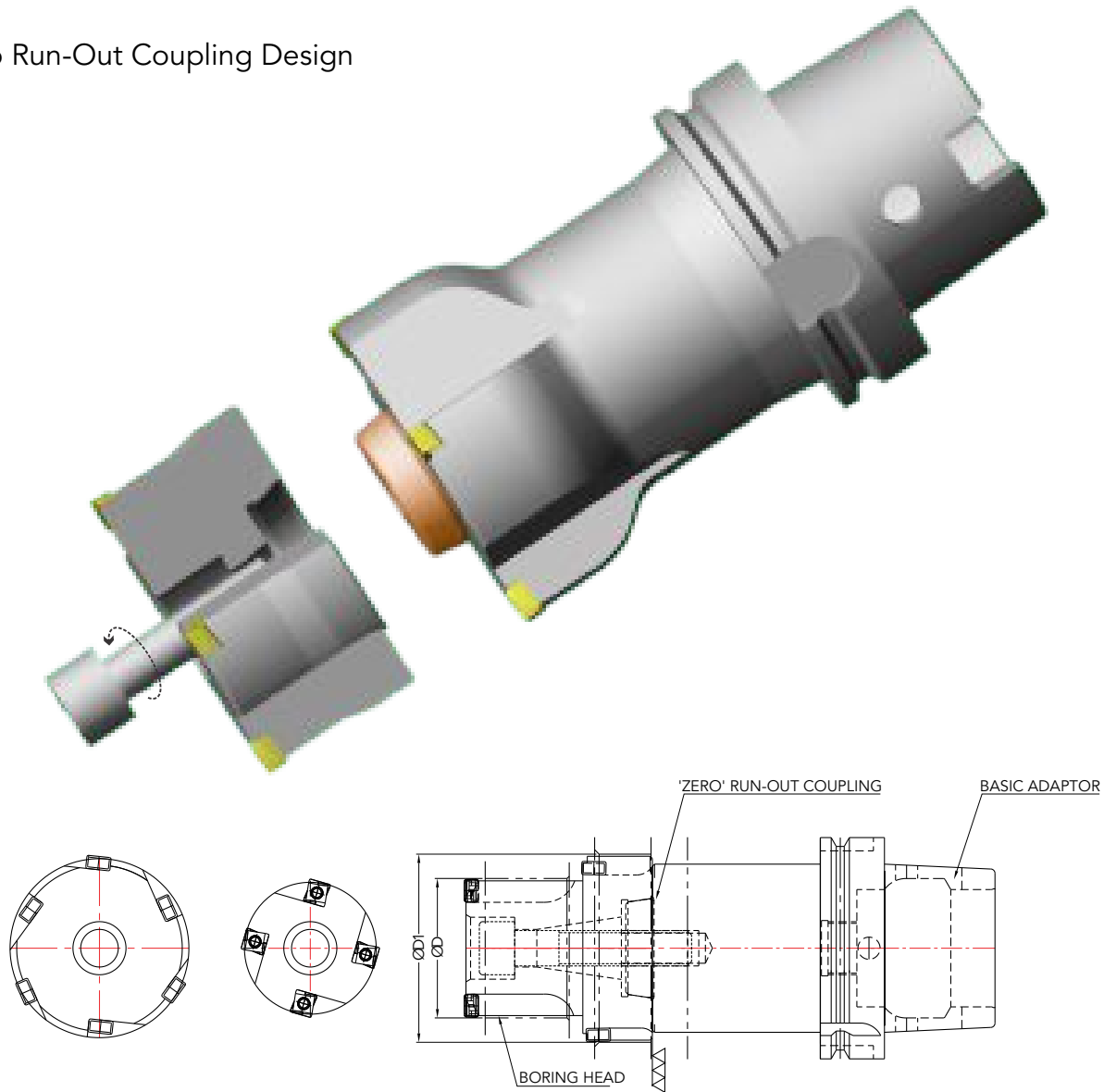
Integral boring bars are offered with different integral tapers like BT, ISO/SK (DIN69871), HSK, NT etc. These are suitable for high loads and maintain rigidity throughout machining operation.

Integral boring bars do not have runout problems and provides highest torque transmission to the operation. These tools are balanced at higher rpm.



# Integral Boring Bars

## Zero Run-Out Coupling Design



### ZERO RUN-OUT COUPLING

Sigma has designed the zero run-out coupling to maintain axial & radial run-out within close tolerance of  $\pm 0.005\text{mm}$ . It is rigid because of face butt clamping.

### HIGH POSITIVE TANGENTIAL-INSERT

Sigma tangential cutting insert with tough cutting edge & high positive chip breaker reduce cutting forces.

### BORING HEAD

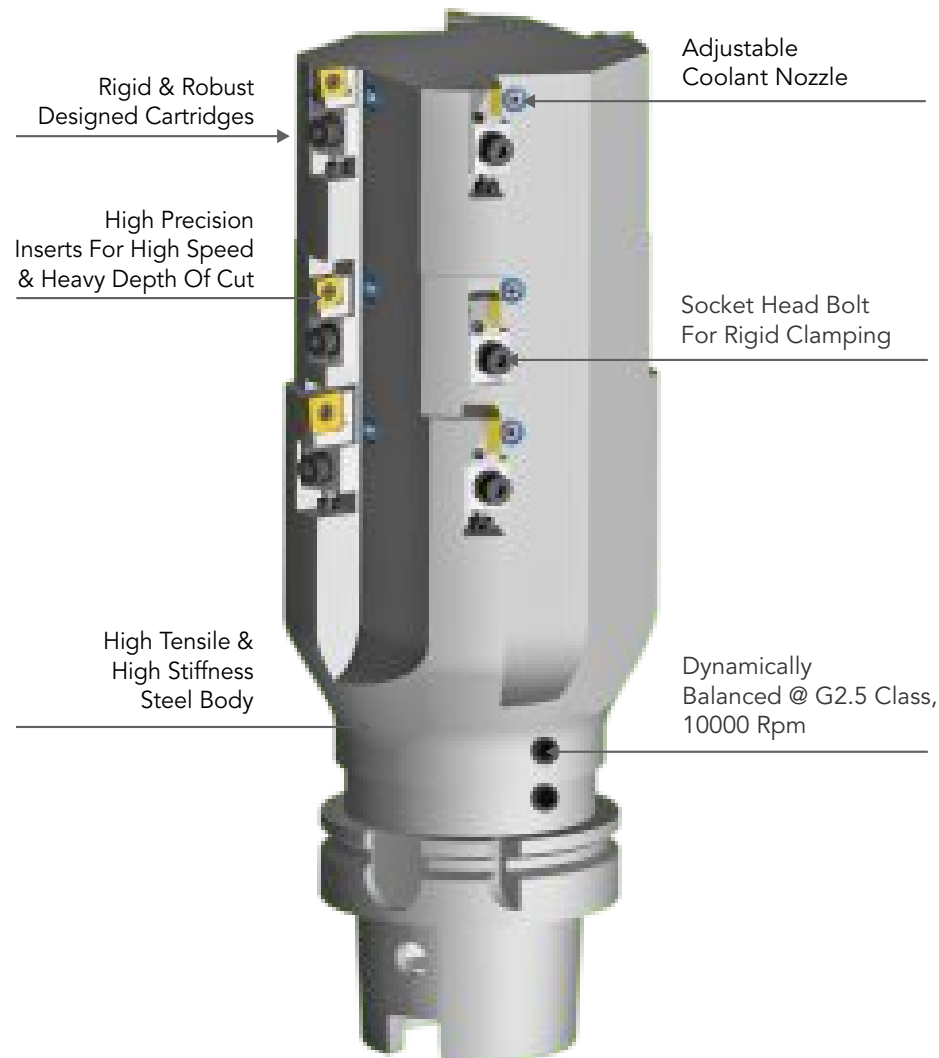
Boring head is made of special tool steel which is having high tensile strength & high stiffness with unique surface treatment which gives smooth surface, excellent chip flow & increased body life by 30~35 % as compare with regular tool steel.

We offer two category of inserts  
CNHQ 1006 & SNHQ 1106

INSERT	BORING RANGE	Z
CNHQ 1006ST200	$\text{Ø}30\sim\text{Ø}40$	02
SNHQ 1106ST300	$\text{Ø}40\sim\text{Ø}60$	03
	$\text{Ø}60\sim\text{Ø}80$	05
	$\text{Ø}80\sim\text{Ø}100$	06

Above range applicable for through boring





## Technical Data For Boring Bar

### COOLANT HOLE

Sigma has designed a special adjustable coolant system which can be set very easily on insert cutting points and being special nozzle system it gives high pressure to the flow of coolant which helps fast cutting and easy flow of chips.

### CARTRIDGE

Sigma customized cartridges are compact and robust in design and also they sustain heavy cutting forces.

### BALANCING

Balancing of rotary tools plays a very important role in its performance. Boring bars at sigma are dynamically balanced as per the service RPM. It also helps in increasing the life of machine spindle and accuracy of the bore.

### CLASS OF TAPER

Holding system requires high precision with fine grinding. We at sigma maintain CLASS of TAPER as per ISO Class AT2.

### COATING

Coating of customized boring bars is an important aspect. We have a unique coating setup which prevents the wear and tear of the tools and also increases its life by 35%.

# Finish Boring Bars

Sigma offers wide range of standard and combination of Finish Boring Bars. Finish Boring Bars are suitable for machining close tolerance bores.

Our Finish Boring Bar range starts from Diameter 24 to 1030 mm and they are dynamically balanced at G2.5 and 10,000 RPM.



# Off Highway Equipments Tooling

OFF HIGHWAY EQUIPMENTS TOOLING

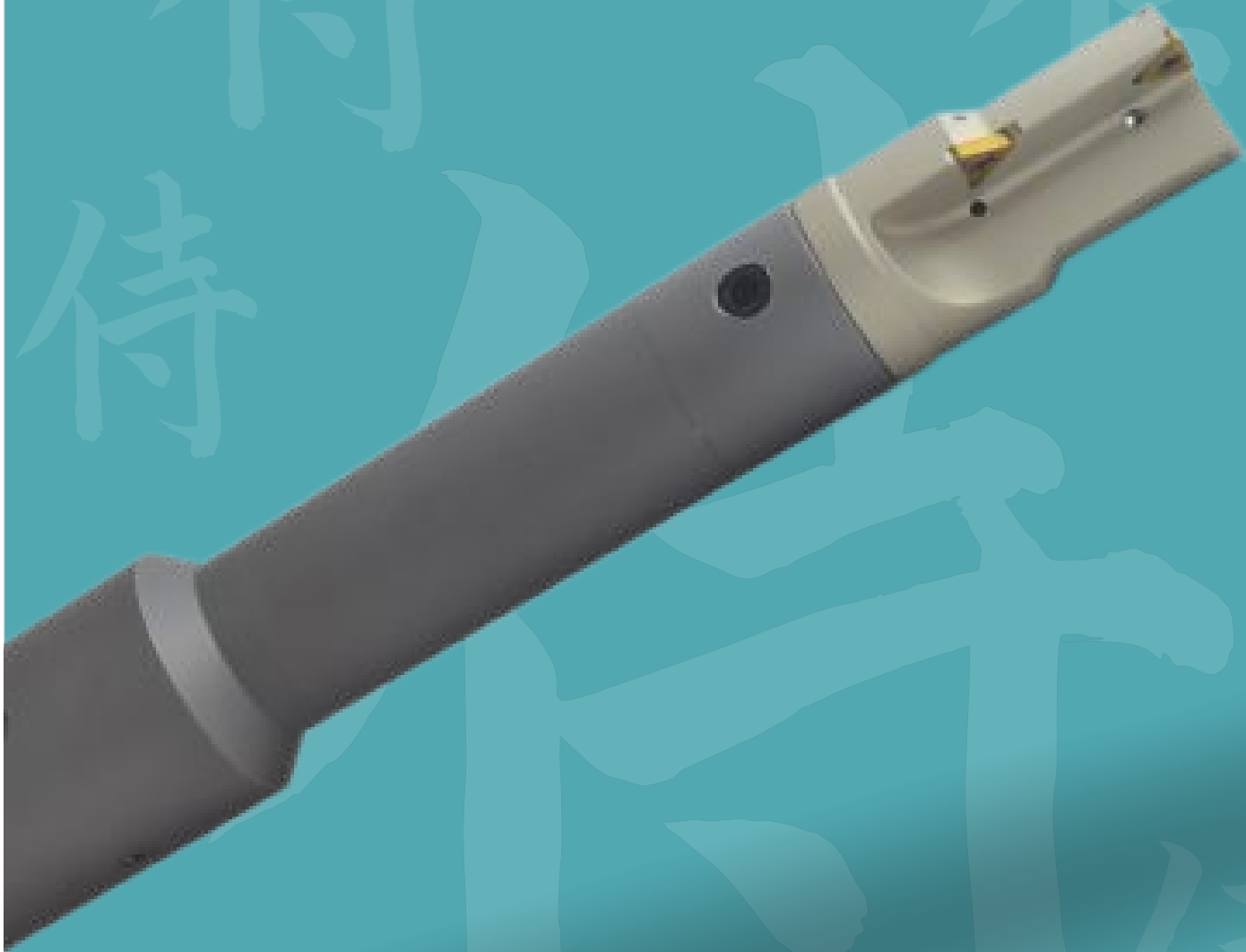


We provide complete set of tooling for following components

- Drive Head
- Swing Frame Bracket
- Flywheel Housing
- Axle Arm
- Loader Arm
- Planetary Carrier
- Main Housing

**SAMURAI** (侍)  
TOOLS  
(ANTIVIBRATION TOOLS)

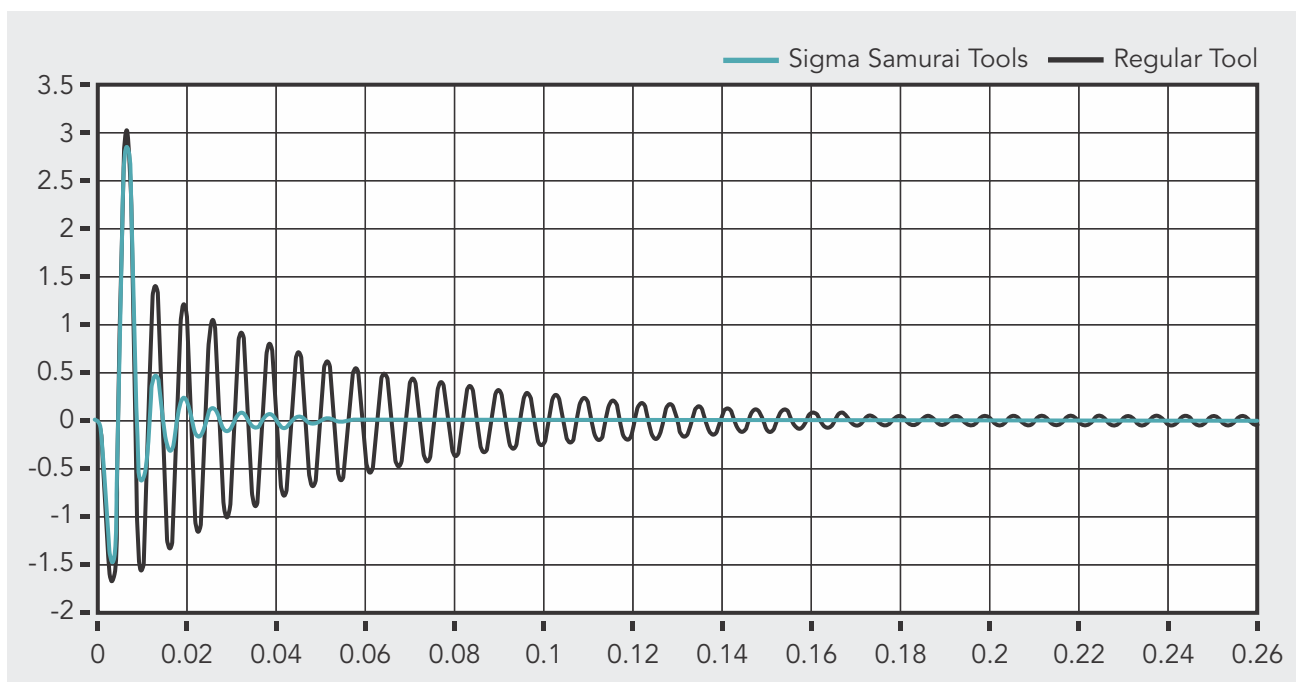




## Introduction

Vibration is often the limiting parameter in gaining high output during machining of deep holes and complex work piece. While using extra-long tools where L/D ratio is greater than 5, the usual cause of vibrations during machining is the dynamic interaction between the cutting process & machine tool structure. Vibrations are critical for a tool to perform well at all designed speed, feed and depth of cuts, to overcome this problem **Sigma** has introduced **Samurai Tools**.

By using Samurai tools you can increase the cutting parameters & at the same time get more secure & vibration free process with close tolerances, good surface & much higher material removal rate, which results into lower cost per component.



Precisely, it can be explained more effectively with the help of following example.

- Regular alloy steel machining boring bar can perform only up to 3.5 L/D to 4 L/D.
- If we try boring operation over and above 4 L/D, there are higher chances of vibration and chatter marks.
- Hence, to do boring above L/D 4, Antivibration tools are recommended.

By using Sigma Antivibration tools you can achieve vibration free machining process, higher cutting parameters, close tolerances, good surface finish and higher metal removal rate, which results into lower cost per component.

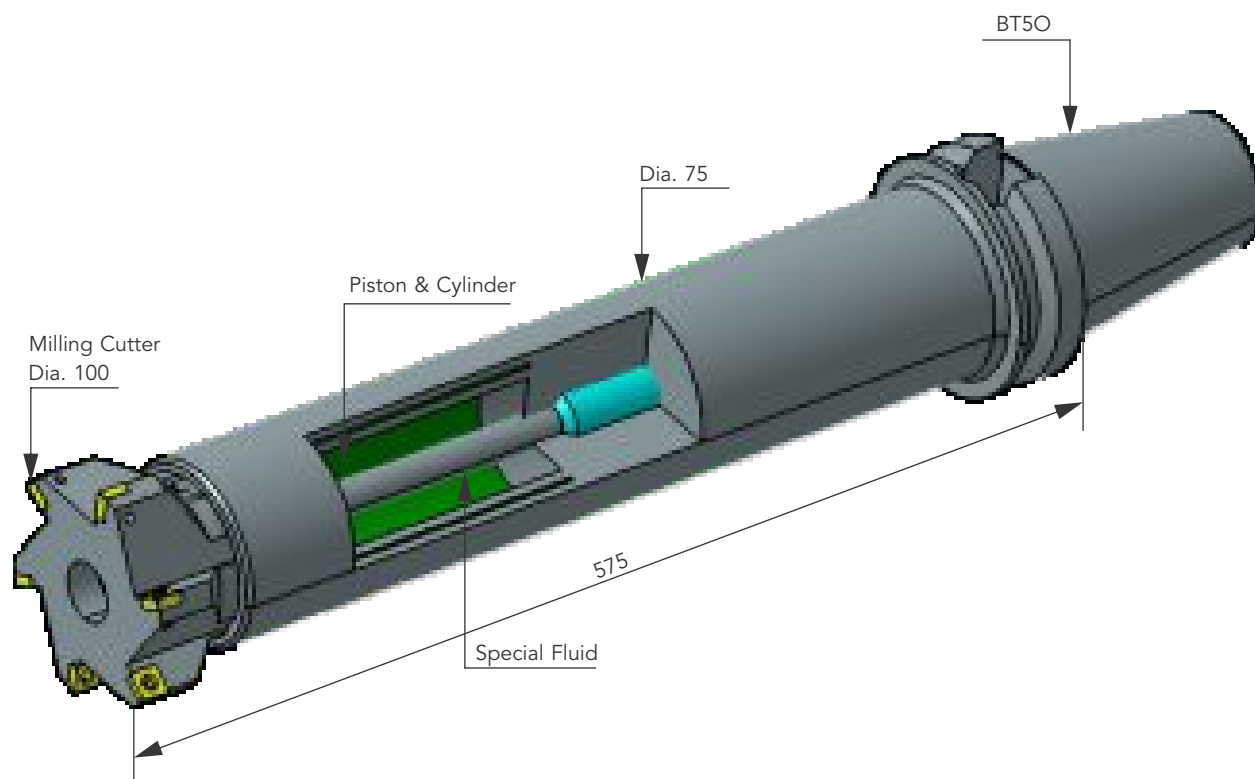
## Mechanism of SAMURAI Tools

(Antivibration Tools)

Sigma Samurai tools has piston and cylinder mechanism with the cylinder filled with a special fluid. The piston acts as a damper, which dampens the vibration generated while machining the component and the special fluid absorbs the vibration, thus providing steady machining, great rigidity and high stability at complex and extreme condition.

Sigma has developed this Samurai Antivibration tool by using special high tensile steel which provides greater strength and rigidity, whereas the piston and cylinder mechanism gives dynamic stability. This tool performs at complex conditions where normal steel & conventional Antivibration boring tools does not work satisfactorily Sigma makes AVT mechanism which is having dampening characteristics increased by as much as 18 to 24 X. In AVT system vibration mechanism is placed where deflection is highest. This mechanism will start absorbing vibration, thus it immediately neutralizes vibration and gives consistent steady result.

These tools can be used for all types of application such as drilling, boring, milling, tapping, parting & grooving. With the help of customized modular clamping system, the front modular head can be changed within minimum setting time resulting into improvised cycle time.



## Types of **SAMURAI** Tools

(Antivibration Tools)

### A. Stationary Samurai Tools for - CNC & Lathe Machines



### B. Rotary Samurai Tools for - VMC & HMC Machines



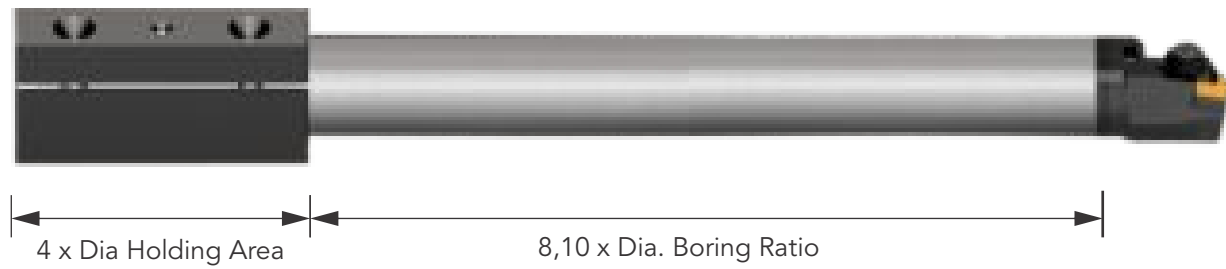


## Guidance For Using SAMURAI Tools

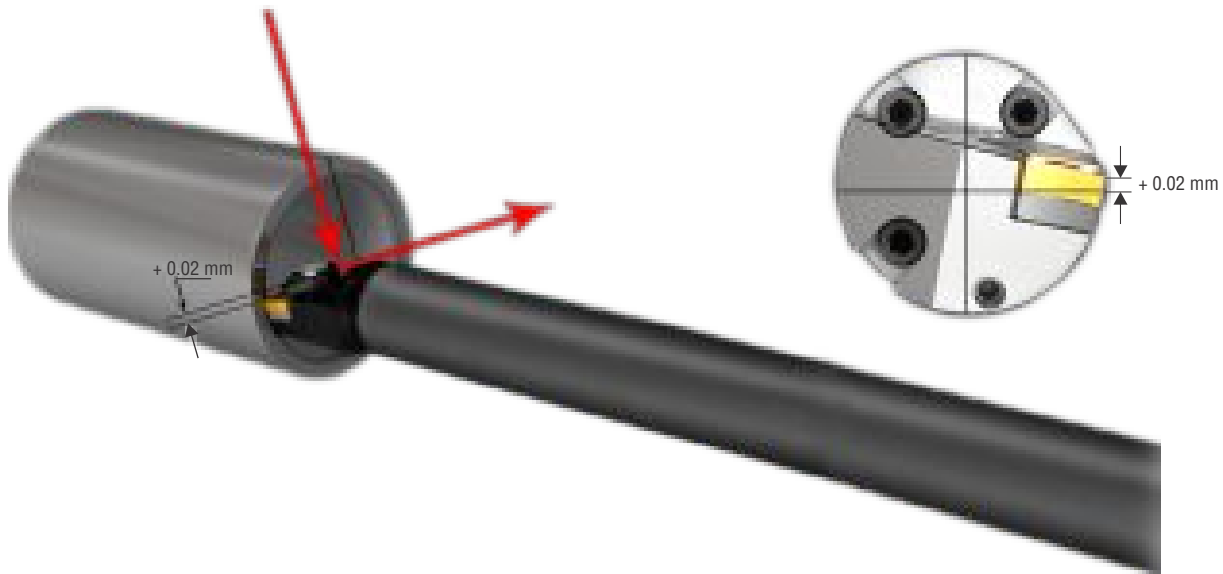
(Antivibration Tools)

Stationary Tool

- A. Holding Should be upto  $L/D = 4$   
(For achieving sufficient holding strength)

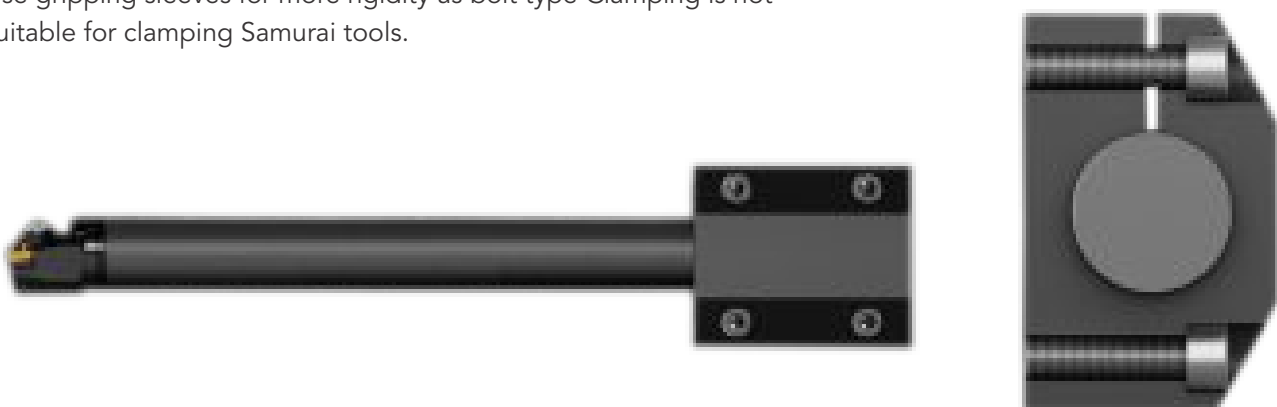


- B. Cutting Point Should be + 0.02 mm above Center height of cutting tool



- C. Clamping

Use gripping sleeves for more rigidity as bolt type Clamping is not suitable for clamping Samurai tools.



## Precautions & Parameters

### Precautions

- Before starting operation, ensure there is no filler gap in holding area.
- Proper coolant flow arrangement at cutting point should be ensured.
- Minimum coolant pressure required is 4 bar.
- Always place the Antivibration/Samurai tools in horizontal position.
- Do not clamp the Antivibration tools over and above the clamping point.

### Parameters

- These Antivibration/Samurai tools can be used at 0.1 feed rate and VC = 80-100.
- Corner radius for finishing = 0.4, Corner radius for roughing = 0.8.
- For roughing max depth of cut is 1.5 mm radially.
- For finishing depth of cut is 0.25 to 0.3 radially.
- Cutting speed of Antivibration tools should be between 80 - 100 meters material per minute.  
while feed rate should be 0.1 mm per tooth.
- Cutting parameters may vary according to the machine, material and cutting conditions.
- For roughing application maximum depth of cut applied at one time can be 5 mm.
- Above L/D 8, it may vary.

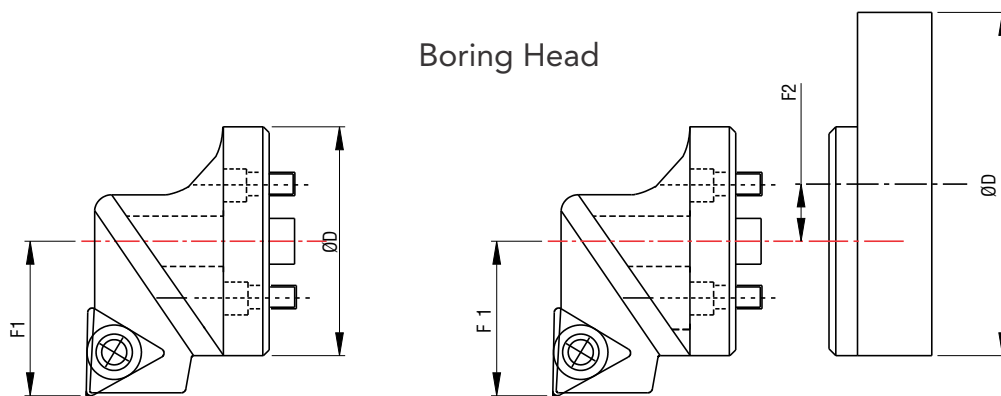
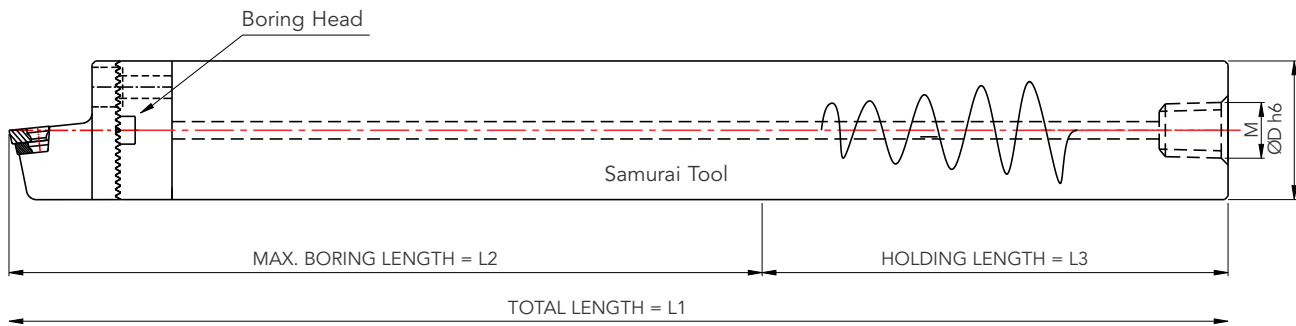
### Life and Reliability

- The Antivibration/Samurai tools are filled with special compressed fluid.
- Each and every tool is tried & tested in house.
- No need of setting or arranging person for trial at customers end.

# SAMURAI Series Product

(Antivibration Tools)

Samurai Tool L/D-6

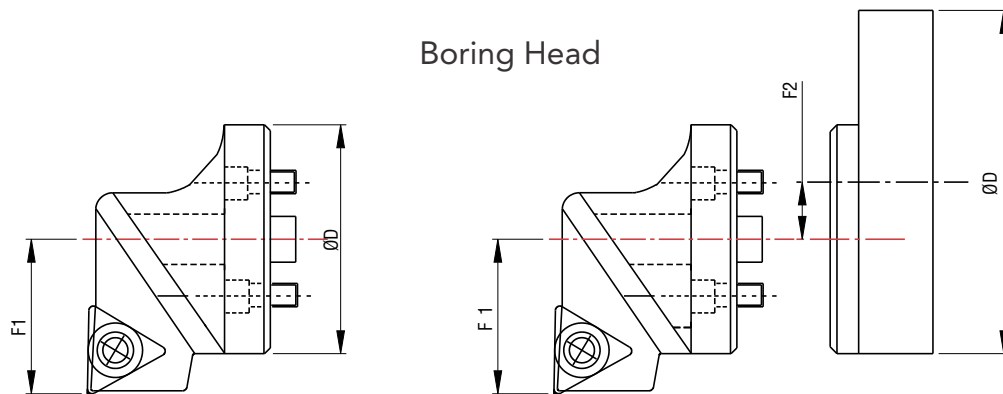
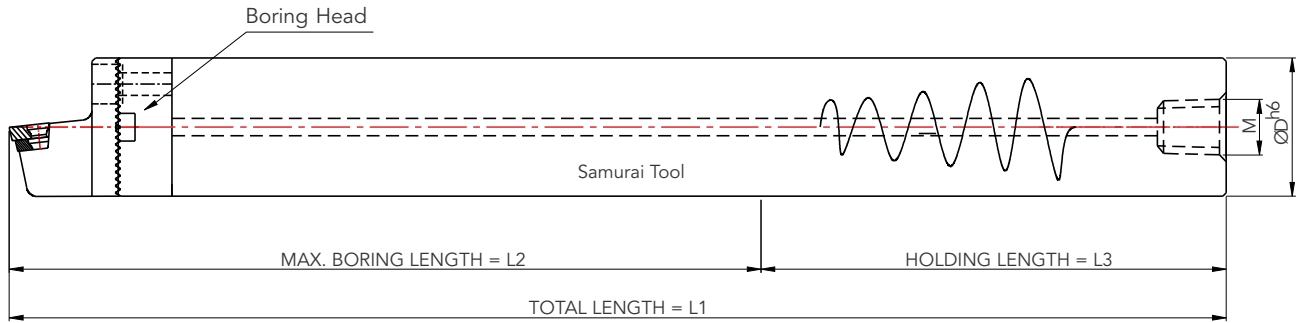


SR. NO.	CODE	ØDh6	F1	F2	L1	L2	L3	M
1	ABB06-25	Ø25	20	—	250	150	100	¼ BSP
2	ABB06-32	Ø32	22	—	325	195	130	3/8 BSP
3	ABB06-40	Ø40	27	—	400	240	160	½ BSP
4	ABB06-50	Ø50	27	5	530	330	200	½ BSP
5	ABB06-60	Ø60	27	10	600	360	240	¾ BSP
6	ABB06-80	Ø80	35	20	800	480	320	¾ BSP
7	ABB06-100	Ø100	35	32	1000	600	400	¾ BSP

# SAMURAI Series Product

(Antivibration Tools)

Samurai Tool L/D-8

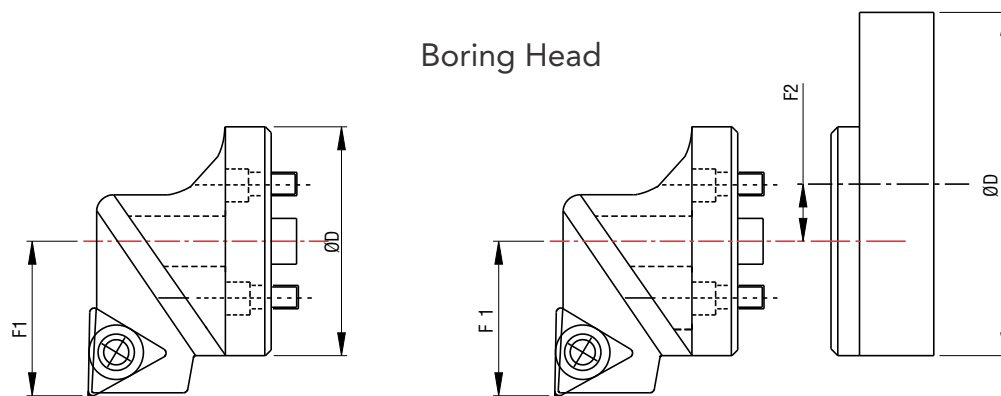
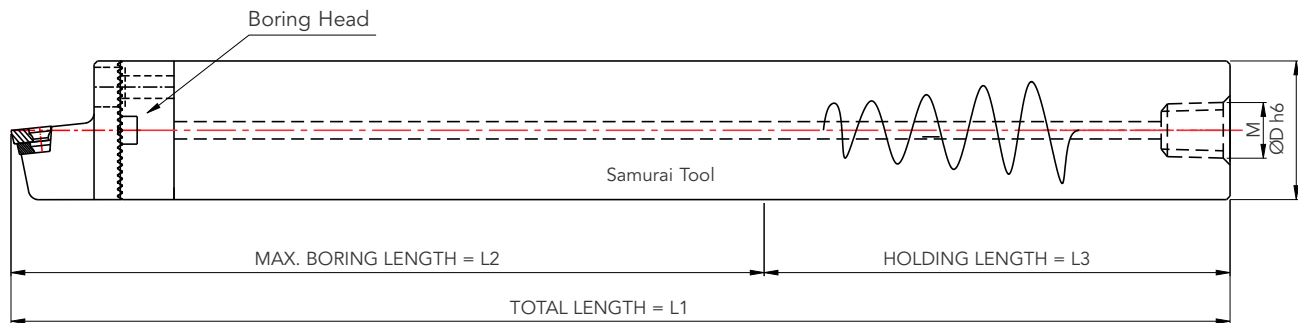


SR. NO.	CODE	ØDh6	F1	F2	L1	L2	L3	M
1	ABB08-25	Ø25	20	—	300	200	100	¼ BSP
2	ABB08-32	Ø32	22	—	390	260	130	3/8 BSP
3	ABB08-40	Ø40	27	—	480	320	160	½ BSP
4	ABB08-50	Ø50	27	5	600	400	200	½ BSP
5	ABB08-60	Ø60	27	10	720	480	240	¾ BSP
6	ABB08-80	Ø80	35	20	960	640	320	¾ BSP
7	ABB08-100	Ø100	35	32	1200	800	400	¾ BSP

# SAMURAI Series Product

(Antivibration Tools)

Samurai Tool L/D-10

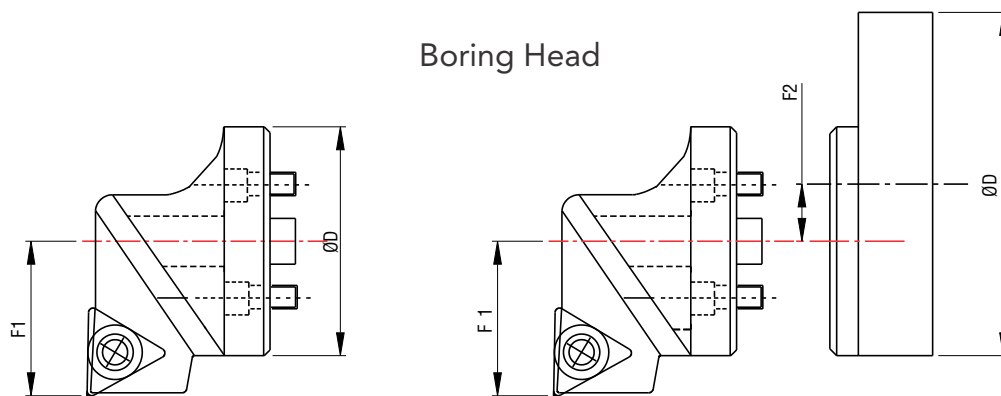
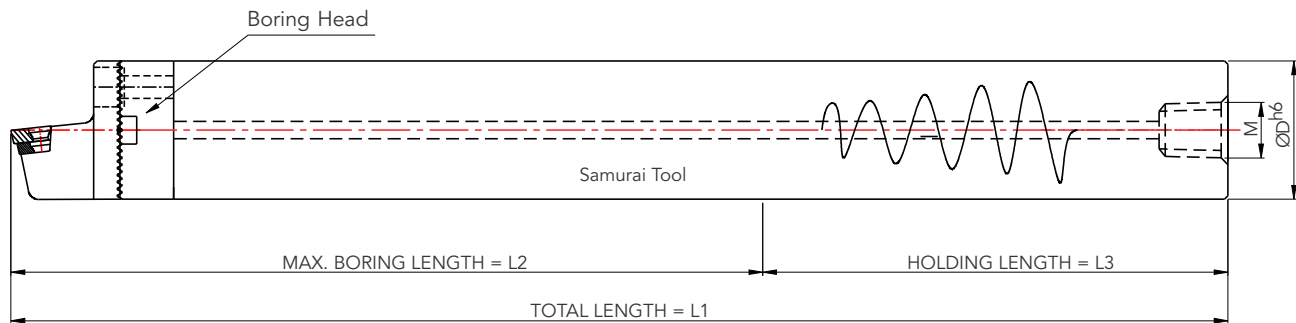


SR. NO.	CODE	ØDh6	F1	F2	L1	L2	L3	M
1	ABB10-25	Ø25	20	—	350	250	100	¼ BSP
2	ABB10-32	Ø32	22	—	450	320	130	3/8 BSP
3	ABB10-40	Ø40	27	—	560	400	160	½ BSP
4	ABB10-50	Ø50	27	5	700	500	200	½ BSP
5	ABB10-60	Ø60	27	10	840	600	240	¾ BSP
6	ABB10-80	Ø80	35	20	1120	800	320	¾ BSP
7	ABB10-100	Ø100	35	32	1400	1000	400	¾ BSP

# SAMURAI Series Product

(Antivibration Tools)

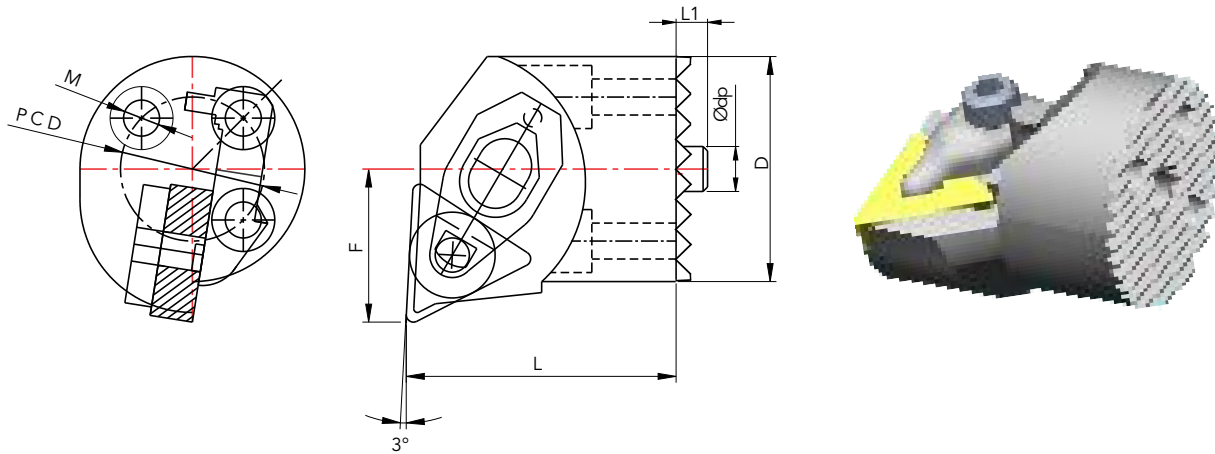
Samurai Tool L/D-14



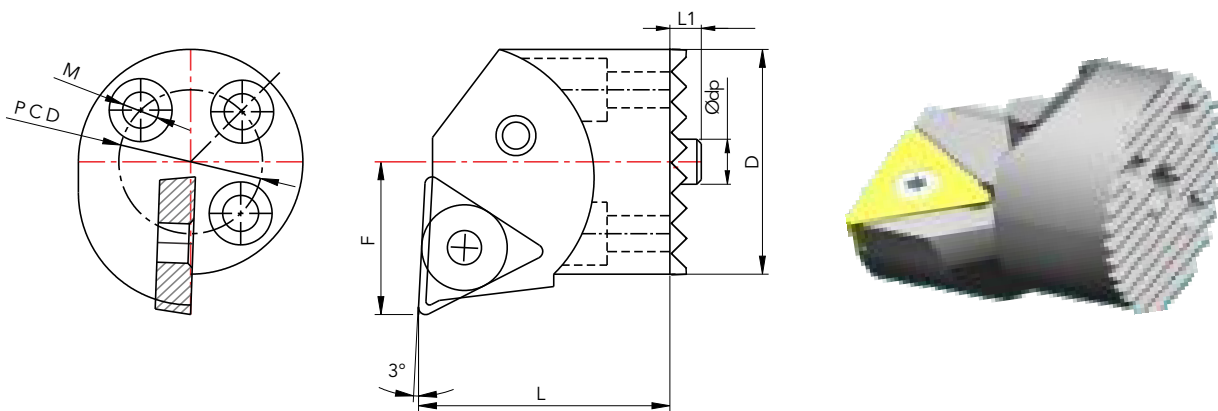
SR. NO.	CODE	ØDh6	F1	F2	L1	L2	L3	M
1	ABB14-25	Ø25	20	—	450	350	100	¼ BSP
2	ABB14-32	Ø32	22	—	580	450	130	3/8 BSP
3	ABB14-40	Ø40	27	—	720	560	160	½ BSP
4	ABB14-50	Ø50	27	5	900	700	200	½ BSP
5	ABB14-60	Ø60	27	10	1080	840	240	¾ BSP
6	ABB14-80	Ø80	35	20	1440	1120	320	¾ BSP
7	ABB14-100	Ø100	35	32	1800	1400	400	¾ BSP

# SAMURAI Series Product

## Boring Heads



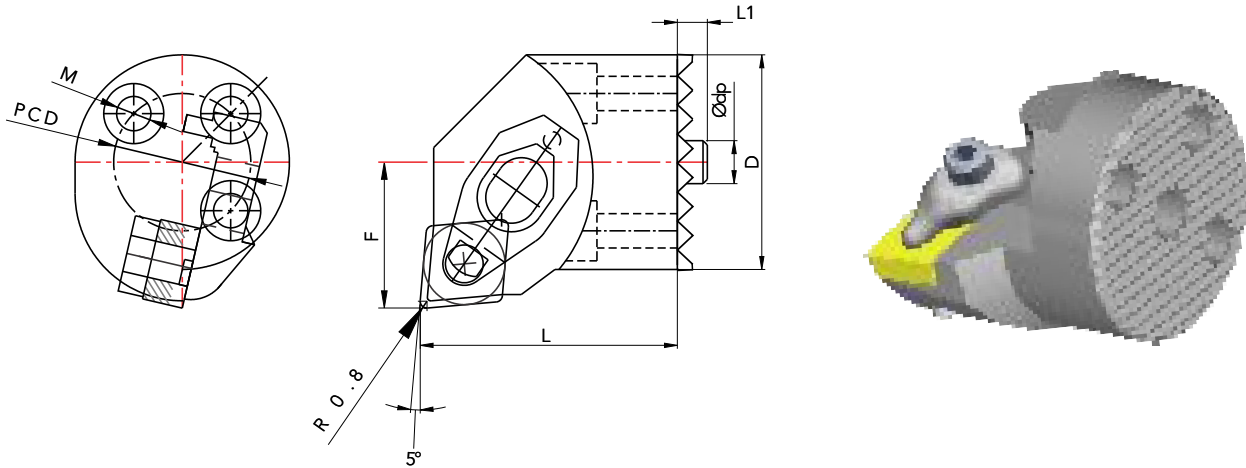
DESIGNATION RIGHT HAND	D DIA.	L OAL	F	PCD	dp	L1	ALLEN HEAD "M"	INSERT	SHIM	SHIM PIN	CLAMP	CLAMP SCREW	SPRING	WRENCH
SMDTUNR/L16 25	Ø25.0	30.0	17.2	Ø5.0	3.5	M4	TNMG 1604	STS 23	SG 400851	DCL 3	DLS 3	SPG3	W-2.5	5008
SMDTUNR/L20 32	Ø32.0	30.0	22.0	Ø6.0	4.0	M5		STS 23	SG 400851	DCL 3	DLS 3	SPG3	W-2.5	5008
SMDTUNR/L24 40	Ø40.0	40.0	27.0	Ø8.0	6.0	M6		---	---	---	---	---	---	---
SMDTUNR/L28 50	Ø50.0	---	---	---	---	---	TNMG 2204	---	---	---	---	---	---	---
SMDTUNR/L32 60	Ø60.0	---	---	---	---	---		---	---	---	---	---	---	---
SMDTUNR/L40 80	Ø80.0	---	---	---	---	---		---	---	---	---	---	---	---
---	Ø100.0	---	---	---	---	---		---	---	---	---	---	---	---



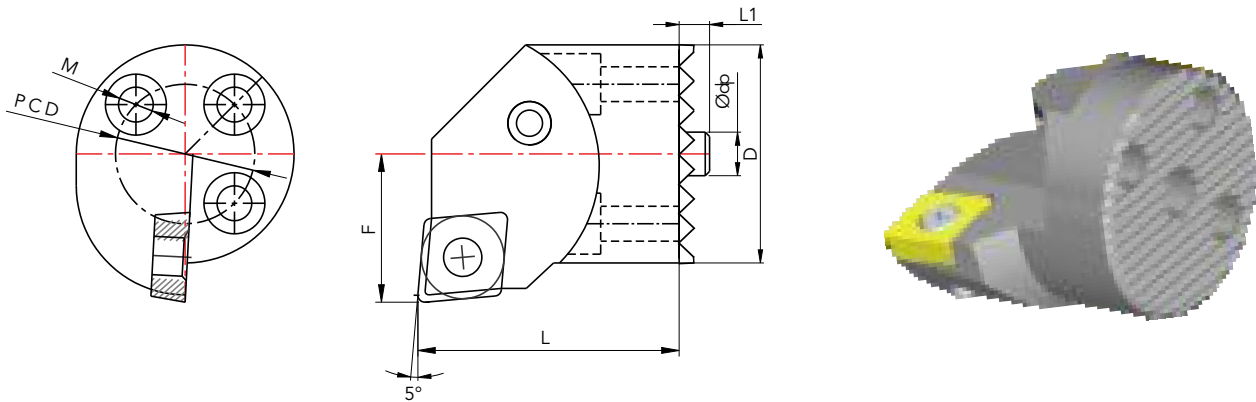
DESIGNATION RIGHT HAND	D DIA.	L OAL	F	PCD	dp	L1	ALLEN HEAD "M"	INSERT	INSERT SCREW	KEY
SMSTUCR/L16 25	Ø25.0	30.0	17.2	Ø16	Ø5.0	3.5	M4	TCMT 16T3	403508	5015
SMSTUCR/L20 32	Ø32.0	30.0	22.0	Ø22.5	Ø6.0	4.0	M5		403508	5015
SMSTUCR/L24 40	Ø40.0	40.0	27.0	Ø28.0	Ø8.0	6.0	M6	TCMT 22 04	404512	5020
SMSTUCR/L28 50	Ø50.0	---	---	---	---	---	---		404512	5020
SMSTUCR/L32 60	Ø60.0	---	---	---	---	---	---		404512	5020
SMSTUCR/L40 80	Ø80.0	---	---	---	---	---	---		404512	5020
---	Ø100.0	---	---	---	---	---	---		404512	5020

# SAMURAI Series Product

## Boring Heads



DESIGNATION RIGHT HAND	D DIA.	L OAL	F	PCD	dp	L1	ALLEN HEAD "M"	INSERT	SHIM	SHIM PIN	CLAMP	CLAMP SCREW	SPRING	WRENCH
SMDCLNR/L16 25	Ø25.0	30.0	17.2	Ø16	Ø5.0	3.5	M4	CNMG 0904	STS 33	SG 40085I	DCL 3-NH	DLS 3	SPG 3	W-2.5 5015
SMDCUNR/L20 32	Ø32.0	30.0	22.0	Ø22.5	Ø6.0	4.0	M5		STS 33	SG 40085I	DCL 3-NH	DLS 3	SPG 3	W-2.5 5015
SMDCUNR/L24 40	Ø40.0	40.0	27.0	Ø28.0	Ø8.0	6.0	M6		STS 44	SG 50A105I	DCL 4	DLS 4	SPG 4	W-3 5015
SMDCUNR/L28 50	Ø50.0	----	----	----	----	----	----	CNMG 1204	STS 44	SG 50A105I	DCL 4	DLS 4	SPG 4	W-3 5015
SMDCUNR/L32 60	Ø60.0	----	----	----	----	----	----		STS 44	SG 50A105I	DCL 4	DLS 4	SPG 4	W-3 5015
SMDCUNR/L40 80	Ø80.0	----	----	----	----	----	----		STS 44	SG 50A105I	DCL 4	DLS 4	SPG 4	W-3 5015
----	Ø100.0	----	----	----	----	----	----		STS 44	SG 50A105I	DCL 4	DLS 4	SPG 4	W-3 5015

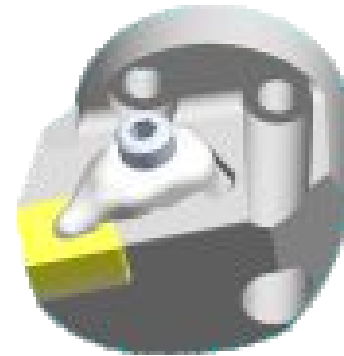
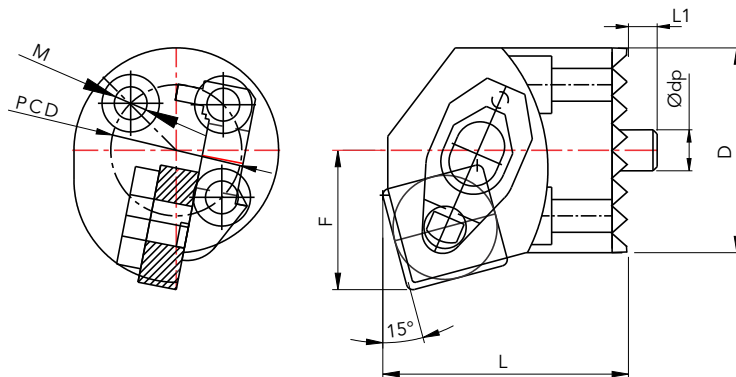


DESIGNATION RIGHT HAND	D DIA.	L OAL	F	PCD	dp	L1	ALLEN HEAD "M"	INSERT	INSERT SCREW	KEY
SMSCUCR/L16 25	Ø25.0	30.0	17.2	Ø16	Ø5.0	3.5	M4	CCMT 09T3	403508	5015
SMSCUCR/L20 32	Ø32.0	30.0	22.0	Ø22.5	Ø6.0	4.0	M5		403508	5015
SMSCUCR/L24 40	Ø40.0	40.0	27.0	Ø28.0	Ø8.0	6.0	M6	CCMT 1204	404510	5020
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SMSCUCR/L32 60	Ø60.0	----	----	----	----	----	----		404510	5020
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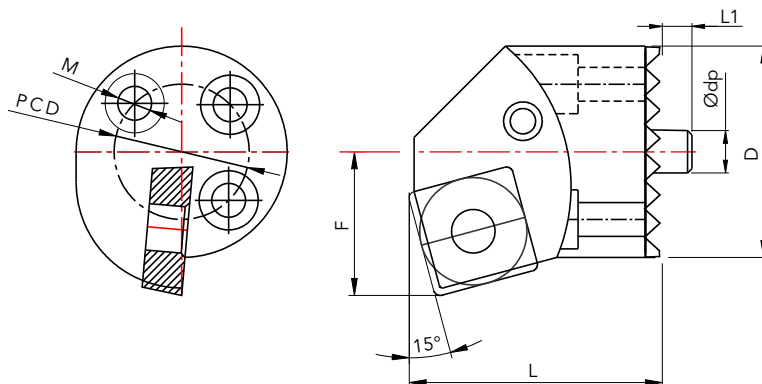


# SAMURAI Series Product

## Boring Heads



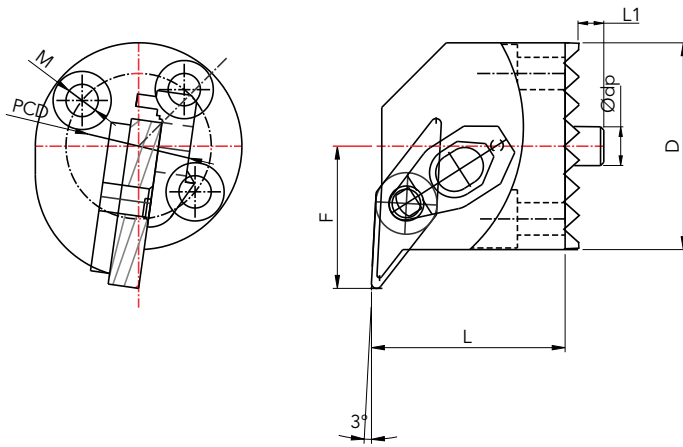
DESIGNATION RIGHT HAND	D DIA.	L OAL	F	PCD	dp	L1	ALLEN HEAD "M"	INSERT	SHIM	SHIM PIN	CLAMP	CLAMP SCREW	SPRING	WRENCH
SMDSKNR/L16 25	Ø25.0	30.0	17.2	Ø16	Ø5.0	3.5	M4	SNMG 1204	STS 44	SG 400501	DCL 4	DLS 4	SPG 4	W-3 5015
SMDSKNR/L20 32	Ø32.0	30.0	22.0	Ø22.5	Ø6.0	4.0	M5		STS 44	SG 400501	DCL 4	DLS 4	SPG 4	W-3 5015
SMDSKNR/L24 40	Ø40.0	40.0	27.0	Ø28.0	Ø8.0	6.0	M6		STS 44	SG 400501	DCL 4	DLS 4	SPG 4	W-3 5015
SMDSKNR/L28 50	Ø50.0	----	----	----	----	----	----		STS 44	SG 400501	DCL 4	DLS 4	SPG 4	W-3 5015
SMDSKNR/L32 60	Ø60.0	----	----	----	----	----	----		STS 44	SG 400501	DCL 4	DLS 4	SPG 4	W-3 5015
SMDSKNR/L40 80	Ø80.0	----	----	----	----	----	----		STS 44	SG 400501	DCL 4	DLS 4	SPG 4	W-3 5015
----	Ø100.0	----	----	----	----	----	----		STS 44	SG 400501	DCL 4	DLS 4	SPG 4	W-3 5015



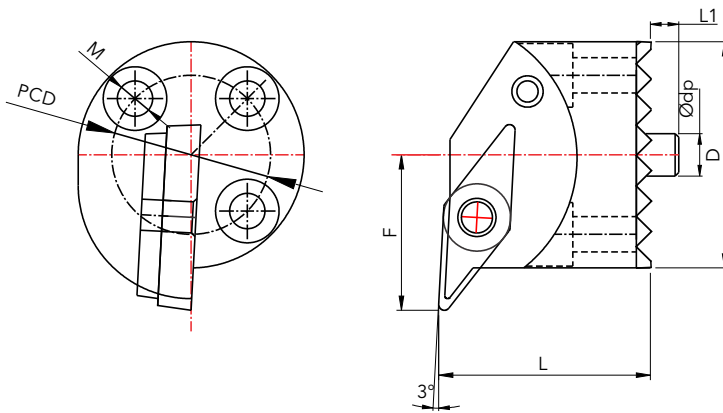
DESIGNATION RIGHT HAND	D DIA.	L OAL	F	PCD	dp	L1	ALLEN HEAD "M"	INSERT	INSERT SCREW	KEY
SMSSKCR/L16 25	Ø25.0	30.0	17.0	Ø16	Ø5.0	3.5	M4	SCMT 1204	404510	5020
SMSSKCR/L20 32	Ø32.0	30.0	22.0	Ø22.5	Ø6.0	4.0	M5		404510	5020
SMSSKCR/L24 40	Ø40.0	40.0	27.0	Ø28.0	Ø8.0	6.0	M6		404510	5020
SMSSKCR/L28 50	Ø50.0	----	----	----	----	----	----		404510	5020
SMSSKCR/L32 60	Ø60.0	----	----	----	----	----	----		404510	5020
SMSSKCR/L40 80	Ø80.0	----	----	----	----	----	----		404510	5020
----	Ø100.0	----	----	----	----	----	----		404510	5020

# SAMURAI Series Product

## Boring Heads



DESIGNATION RIGHT HAND	D DIA.	L OAL	F	PCD	dp	L1	ALLEN HEAD "M"	INSERT	SHIM	SHIM PIN	CLAMP	CLAMP SCREW	SPRING	WRENCH
SMDVUNR/L20 32	Ø32.0	30.0	22.0	Ø22.5	Ø6.0	3.5	M5	VNMG 1604	STS 33	SG 400501	DCL 3	DLS 5	SPG 5	W-4 5015
SMDVUNR/L24 40	Ø40.0	40.0	27.0	Ø28.0	Ø8.0	4.0	M6		STS 33	SG 400501	DCL 3	DLS 5	SPG 5	W-4 5015
SMDVUNR/L28 50	Ø50.0	----	----	----	----	----	----		STS 33	SG 400501	DCL 3	DLS 5	SPG 5	W-4 5015
SMDVUNR/L32 60	Ø60.0	----	----	----	----	----	----		STS 33	SG 400501	DCL 3	DLS 5	SPG 5	W-4 5015
SMDVUNR/L40 80	Ø80.0	----	----	----	----	----	----		VNMG 2204	----	----	----	----	----

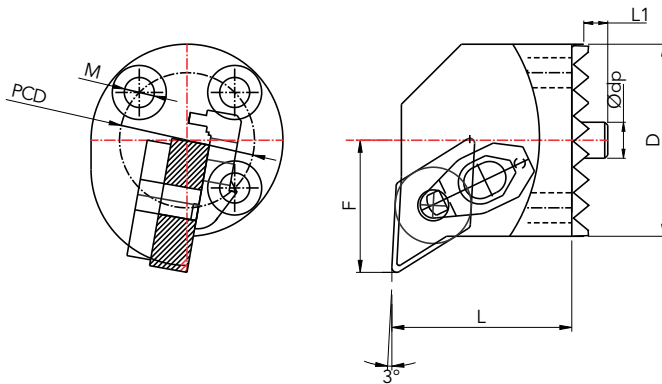


DESIGNATION RIGHT HAND	D DIA.	L OAL	F	PCD	dp	L1	ALLEN HEAD "M"	INSERT	INSERT SCREW	SHIM	SHIM SCREW	WRENCH
SMSVUCR/L20 32	Ø32.0	30.0	22.0	Ø22.5	Ø6.0	4.0	M5	VCMT 1204	SG 350801	STS 32	SG 50090S	5015
SMSVUCR/L24 40	Ø40.0	40.0	27.0	Ø28.0	Ø8.0	6.0	M6		SG 350801	STS 32	SG 50090S	5015
SMSVUCR/L28 50	Ø50.0	----	----	----	----	----	----		SG 350801	STS 32	SG 50090S	5015
SMSVUCR/L32 60	Ø60.0	----	----	----	----	----	----		SG 350801	STS 32	SG 50090S	5015
SMSVUCR/L40 80	Ø80.0	----	----	----	----	----	----		SG 350801	STS 32	SG 50090S	5015
----	Ø100.0	----	----	----	----	----	----		SG 350801	STS 32	SG 50090S	5015

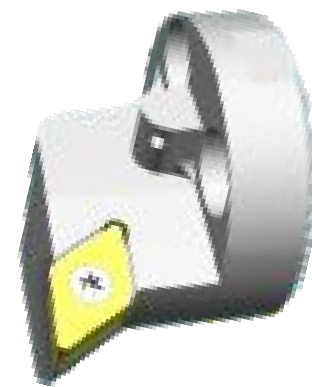
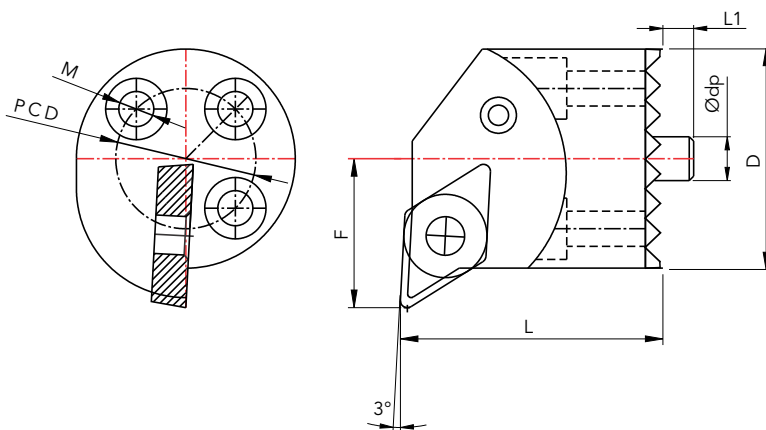
# SAMURAI Series Product



## Boring Heads



DESIGNATION RIGHT HAND	D DIA.	L OAL	F	PCD	dp	L1	ALLEN HEAD "M"	INSERT	SHIM	SHIM PIN	CLAMP	CLAMP SCREW	SPRING	WRENCH
SMDDUNR/L 20 32	Ø32.0	30.0	22.0	Ø22.5	Ø6.0	3.5	M5	DNMG 1506	STS 43	SG 50A105I	DCL 4	DLS 4	SPG 4	W-3 5015
SMDDUNR/L 24 40	Ø40.0	40.0	27.0	Ø28.0	Ø8.0	4.0	M6		STS 43	SG 50A105I	DCL 4	DLS 4	SPG 4	W-3 5015
SMDDUNR/L 28 50	Ø50.0	---	---	---	---	---	---		STS 43	SG 50A105I	DCL 4	DLS 4	SPG 4	W-3 5015
SMDDUNR/L 32 60	Ø60.0	---	---	---	---	---	---		STS 43	SG 50A105I	DCL 4	DLS 4	SPG 4	W-3 5015
SMDDUNR/L 40 80	Ø80.0	---	---	---	---	---	---		STS 43	SG 50A105I	DCL 4	DLS 4	SPG 4	W-3 5015
---	Ø100.0	---	---	---	---	---	---		STS 43	SG 50A105I	DCL 4	DLS 4	SPG 4	W-3 5015

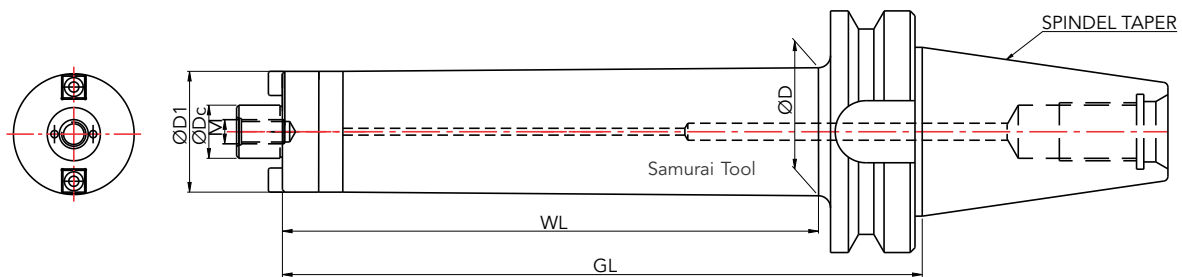


DESIGNATION RIGHT HAND	D DIA.	L OAL	F	PCD	dp	L1	ALLEN HEAD "M"	INSERT	INSERT SCREW	KEY
SMSDUCR/L16 25	Ø25.0	30.0	17.0	Ø16	Ø5.0	3.5	M4	DCMT 11T3	403508	5015
SMSDUCR/L20 32	Ø32.0	30.0	22.0	Ø22.5	Ø6.0	4.0	M5		403508	5015
SMSDUCR/L24 40	Ø40.0	40.0	27.0	Ø28.0	Ø8.0	6.0	M6		403508	5015
SMSDUCR/L28 50	Ø50.0	---	---	---	---	---	---		403508	5015
SMSDUCR/L32 60	Ø60.0	---	---	---	---	---	---		403508	5015
SMSDUCR/L40 80	Ø80.0	---	---	---	---	---	---		403508	5015
---	Ø100.0	---	---	---	---	---	---		403508	5015

# SAMURAI Series Product

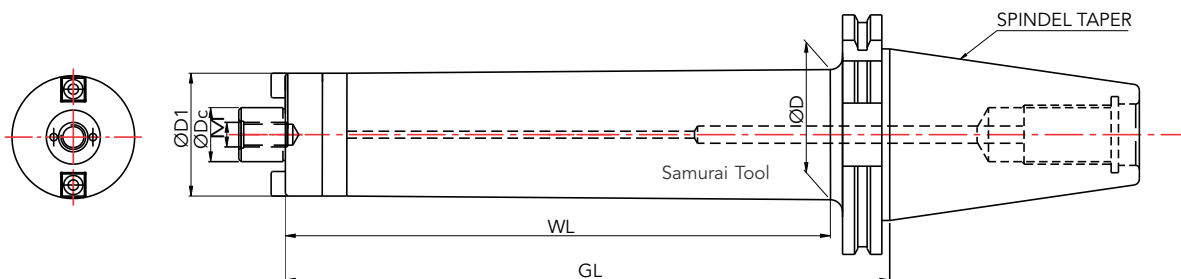
(Antivibration Tools)

## BT 40 & BT 50 L/D-6 Samurai Milling Adaptor



SR. NO.	PART CODE	SPINDEL TAPER	D1	Dc	D	M	WL	GL
01	ABB06-MLD22-BT40-240	BT40	48	22	50	M10	240	272
02	ABB06-MLD22-BT50-250	BT50	50	22	50	M10	250	293
03	ABB06-MLD27-BT50-310	BT50	60	27	63	M12	310	355
04	ABB06-MLD32-BT50-350	BT50	66	32	70	M16	350	395

## SK 40 & SK50 L/D-6 Samurai Milling Adaptor



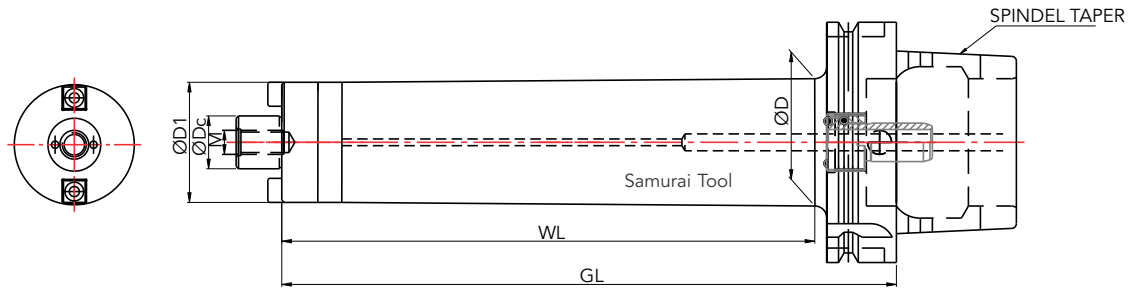
SR. NO.	PART CODE	SPINDEL TAPER	D1	Dc	D	M	WL	GL
01	ABB06-MLD22-SK40-240	SK 40	48	22	50	M10	240	265
02	ABB06-MLD22-SK50-250	SK 50	50	22	50	M10	250	275
03	ABB06-MLD27-SK50-310	SK 50	60	27	63	M12	310	335
04	ABB06-MLD32-SK50-350	SK 50	66	32	70	M16	350	375

# SAMURAI Series Product

(Antivibration Tools)



## HSK A-63 & HSK A-100 L/D-6 Samurai Milling Adaptor



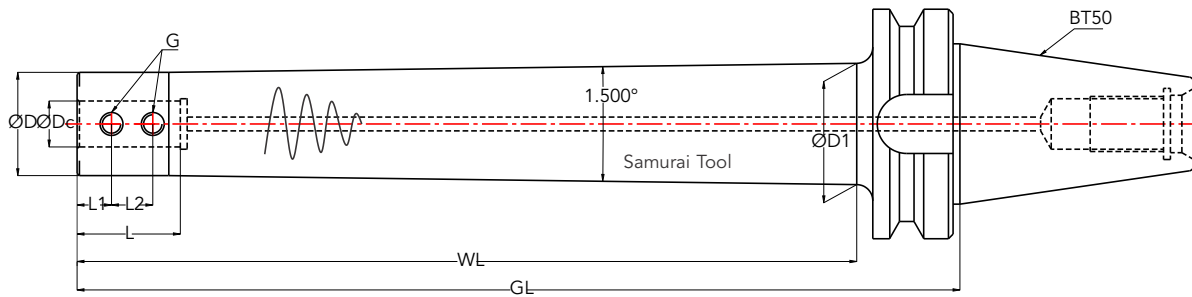
SR. NO.	PART CODE	SPINDEL TAPER	D1	Dc	D	M	WL	GL
01	ABB06-MLD22-HSK63-240	HSK A-63	48	22	50	M10	240	265
02	ABB06-MLD22-HSK100-250	HSK A100	50	22	50	M10	250	285
03	ABB06-MLD27-HSK100-310	HSK A100	60	27	63	M12	310	345
04	ABB06-MLD32-HSK100-350	HSK A100	66	32	70	M16	350	385



# SAMURAI Series Product

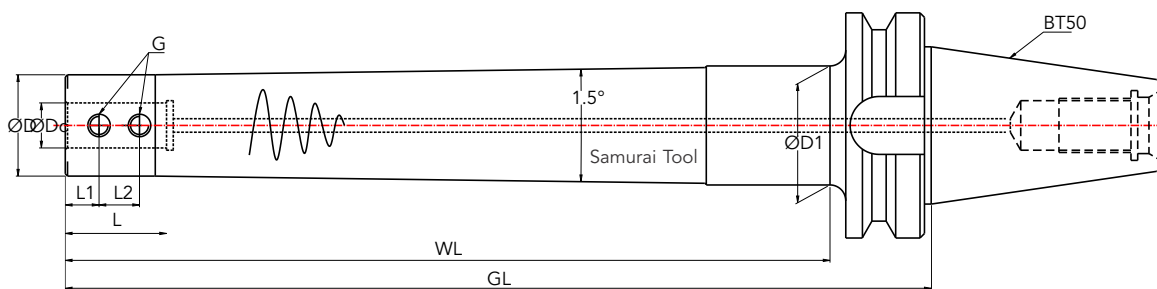
(Antivibration Tools)

## BT 50 L/D-8 Samurai Side Lock Adaptor



SR. NO.	PART CODE	ØDc	D	D1	L	L1	L2	WL	GL	G
01	ABB08-SLA20-BT50-340	20	50	52.9	45	15	18	340	385	M10
02	ABB08-SLA25-BT50-375	25	55	63.6	55	20	22	375	420	M12
03	ABB08-SLA32-BT50-420	32	62	71.5	60	25	20	420	465	M14

## BT 50 L/D-10 Samurai Side Lock Adaptor

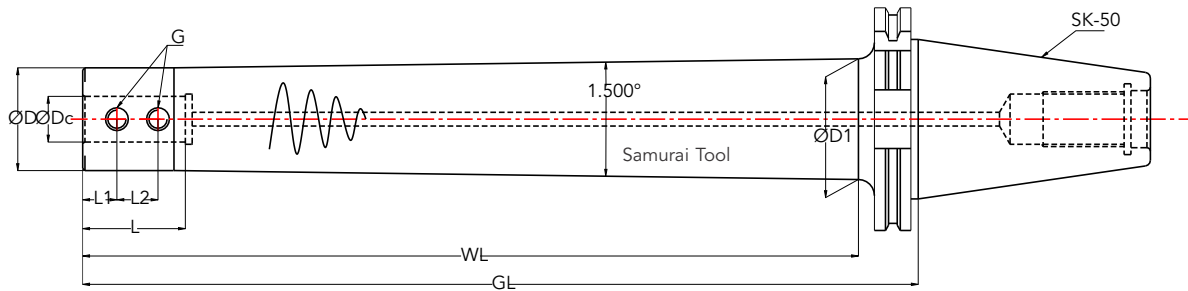


SR. NO.	PART CODE	ØDc	D	D1	L	L1	L2	WL	GL	G
01	ABB10-SLA20-BT50-440	20	50	60.5	45	15	18	440	485	M10
02	ABB10-SLA25-BT50-485	25	55	66.5	55	20	22	485	530	M12
03	ABB10-SLA32-BT50-545	32	62	75	60	25	20	545	590	M14

# SAMURAI Series Product

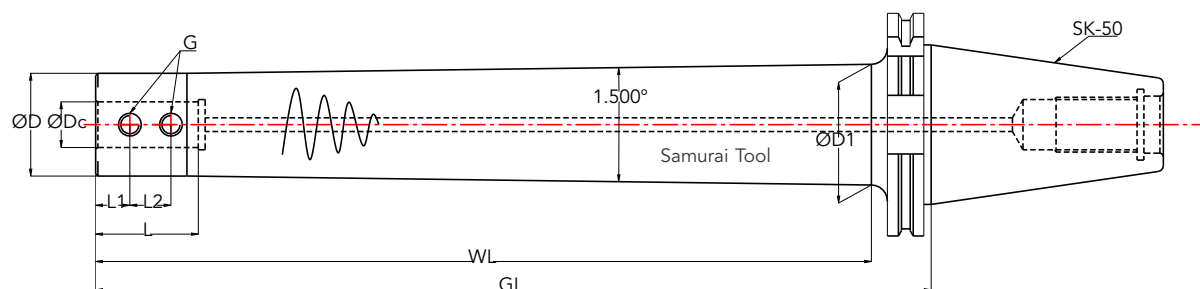
(Antivibration Tools)

## SK 50 L/D-8 Samurai Side Lock Adaptor



SR. NO.	PART CODE	ØDc	D	D1	L	L1	L2	WL	GL	G
01	ABB08-SLA20-SK50-340	20	50	52.9	45	15	18	340	366	M10
02	ABB08-SLA25-SK50-375	25	55	63.6	55	20	22	375	401	M12
03	ABB08-SLA32-SK50-420	32	62	71.5	60	25	20	420	446	M14

## SK 50 L/D-10 Samurai Side Lock Adaptor

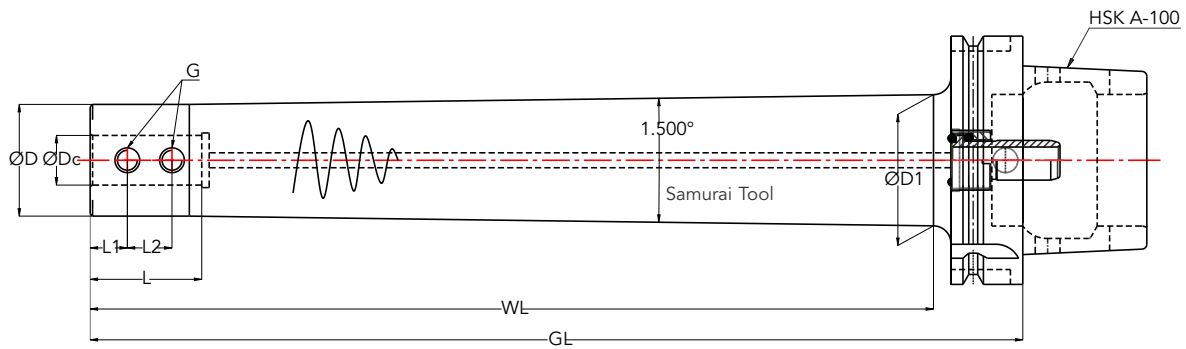


SR. NO.	PART CODE	ØDc	D	D1	L	L1	L2	WL	GL	G
01	ABB10-SLA20-SK50-440	20	50	60.5	45	15	18	440	466	M10
02	ABB10-SLA25-SK50-485	25	55	66.5	55	20	22	485	511	M12
03	ABB10-SLA32-SK50-545	32	62	75	60	25	20	545	571	M14

# SAMURAI Series Product

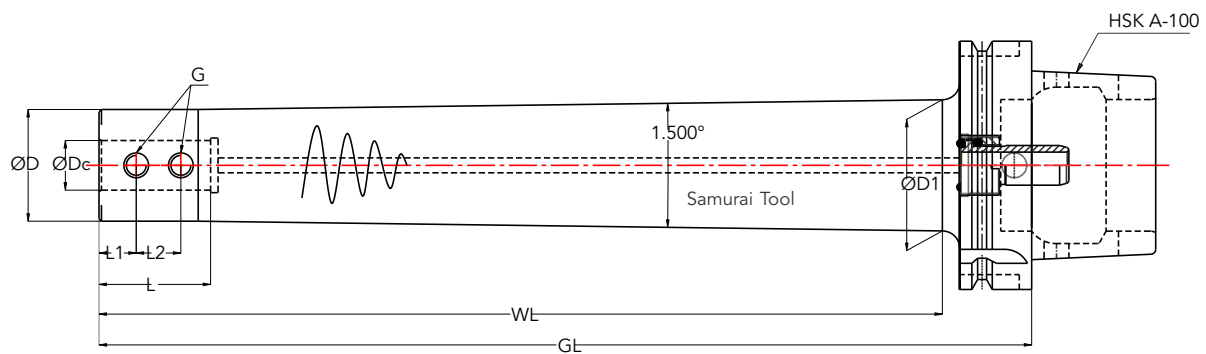
(Antivibration Tools)

## HSK A-100 L/D-8 Samurai Side Lock Adaptor



SR. NO.	PART CODE	ØDc	D	D1	L	L1	L2	WL	GL	G
01	ABB08-SLA20-HSK100-340	20	50	52.9	45	15	18	340	376	M10
02	ABB08-SLA25-HSK100-375	25	55	63.6	55	20	22	375	411	M12
03	ABB08-SLA32-HSK100-420	32	62	71.5	60	25	20	420	456	M14

## HSK A-100 L/D-10 Samurai Side Lock Adaptor



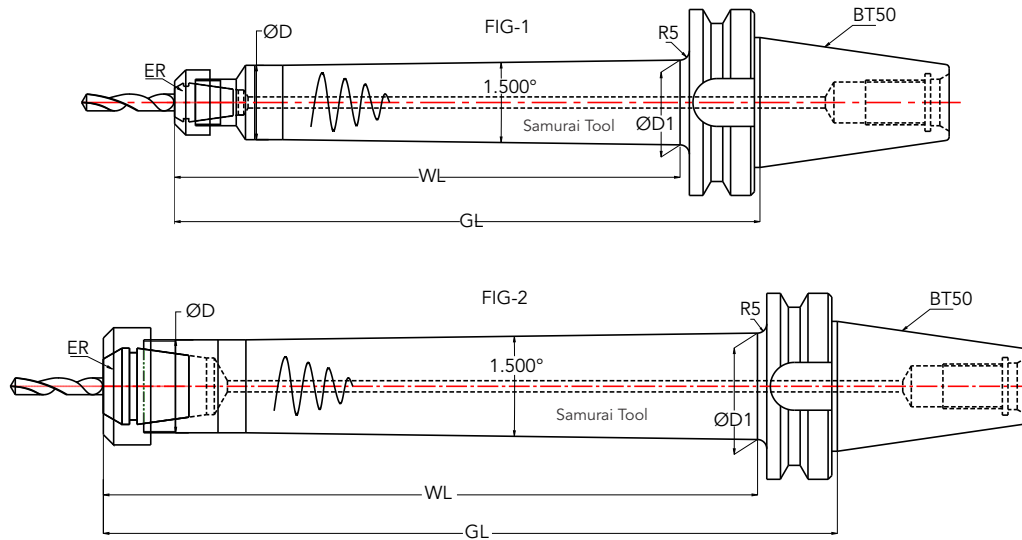
SR. NO.	PART CODE	ØDc	D	D1	L	L1	L2	WL	GL	G
01	ABB10-SLA20-HSK100-440	20	50	60.5	45	15	18	440	476	M10
02	ABB10-SLA25-HSK100-485	25	55	66.5	55	20	22	485	521	M12
03	ABB10-SLA32-HSK100-545	32	62	75	60	25	20	545	581	M14



# SAMURAI Series Product

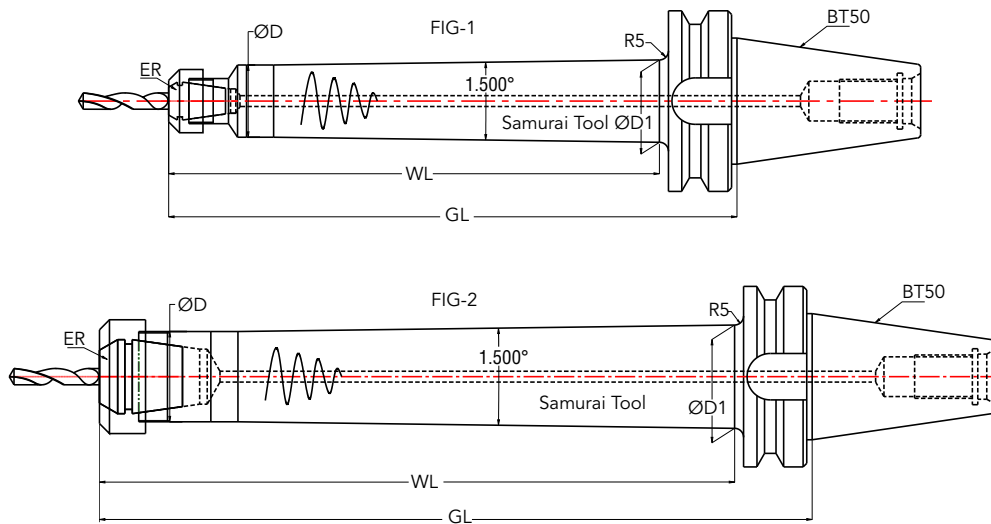
(Antivibration Tools)

## BT 50 L/D-8 Samurai Drill Collet Adaptor



SR. NO.	PART CODE	ER	D	D1	WL	GL	FIG.
01	ABB08-DER20-BT50-272	ER20	40	45	272	315	1
02	ABB08-DER40-BT50-352	ER40	50	57.2	352	395	2

## BT 50 L/D-12 Samurai Drill Collet Adaptor

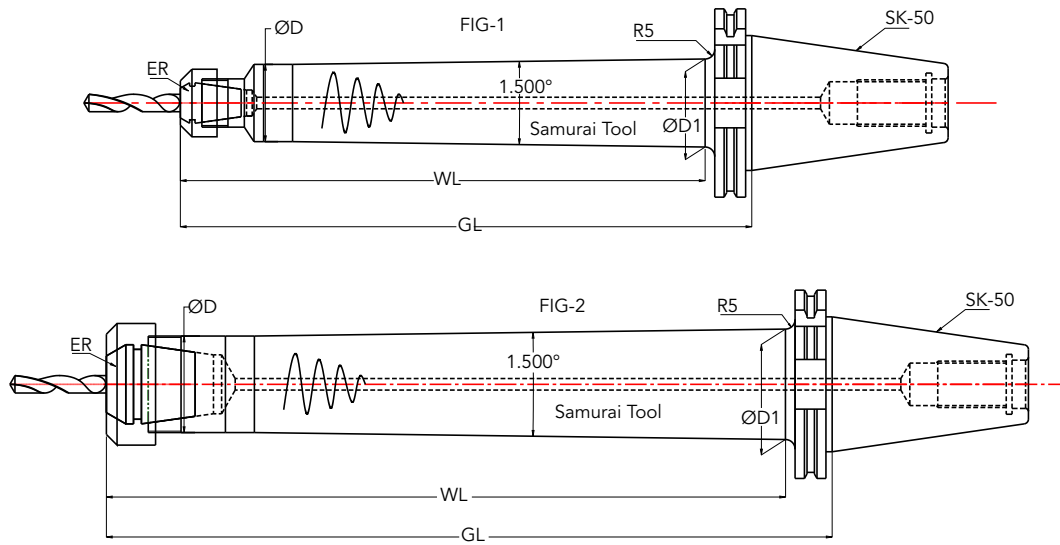


SR. NO.	PART CODE	ER	D	D1	WL	GL	FIG.
01	ABB12-DER20-BT50-430	ER20	40	50	430	473	1
02	ABB12-DER40-BT50-550	ER40	50	62.4	550	593	2

# SAMURAI Series Product

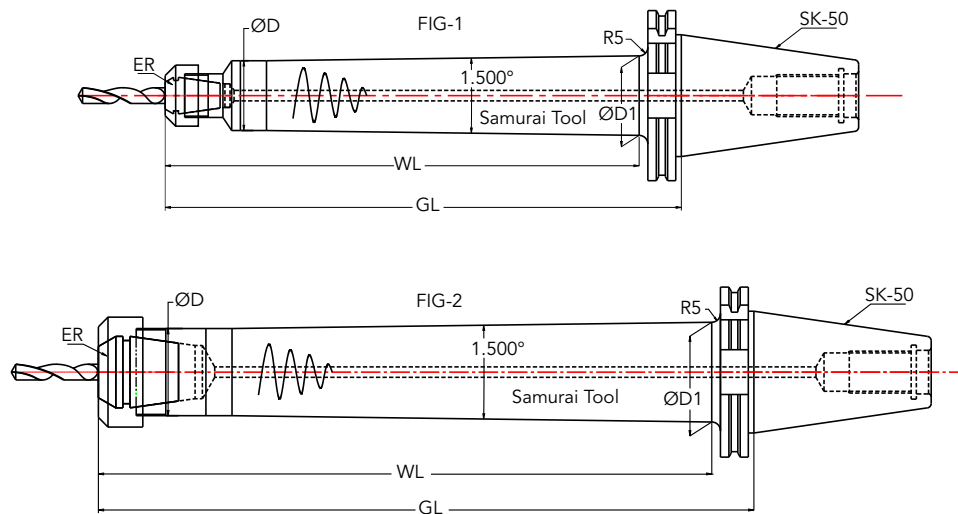
(Antivibration Tools)

## SK 50 L/D-8 Samurai Drill Collet Adaptor



SR. NO.	PART CODE	ER	D	D1	WL	GL	FIG.
01	ABB08-DER20-SK50-272	ER20	40	45	272	296	1
02	ABB08-DER40-SK50-352	ER40	50	57.2	352	376	2

## SK 50 L/D-12 Samurai Drill Collet Adaptor

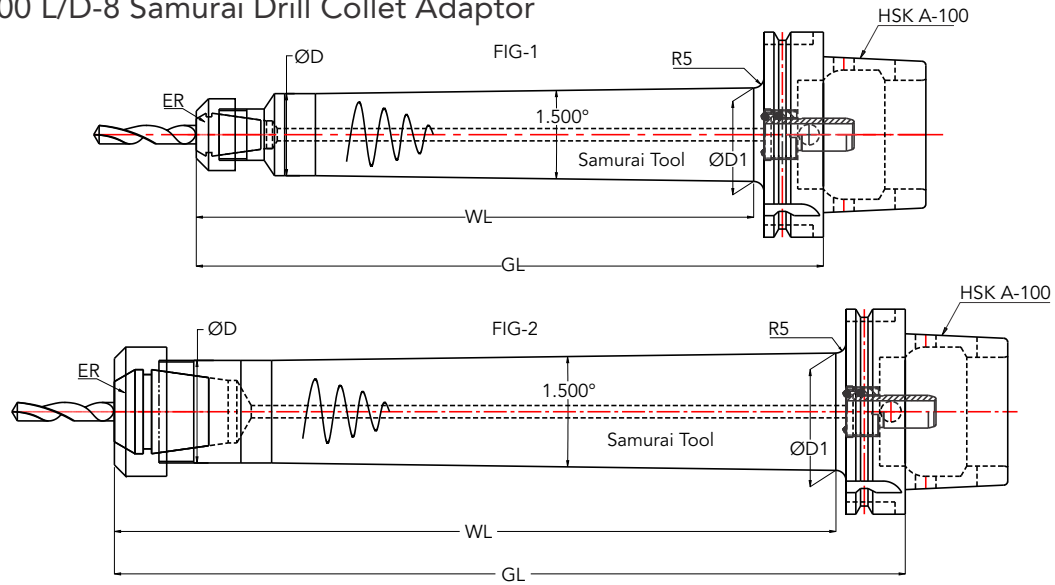


SR. NO.	PART CODE	ER	D	D1	WL	GL	FIG.
01	ABB12-DER20-BT50-430	ER20	40	50	430	454	1
02	ABB12-DER40-BT50-550	ER40	50	62.4	550	574	2

# SAMURAI Series Product

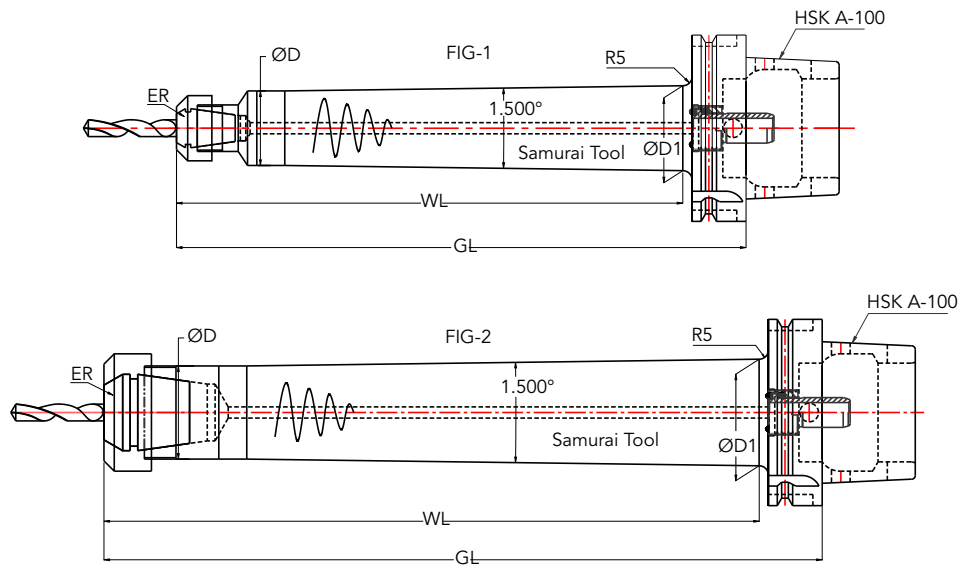
(Antivibration Tools)

## HSK A-100 L/D-8 Samurai Drill Collet Adaptor



SR. NO.	PART CODE	ER	D	D1	WL	GL	FIG.
01	ABB08-DER20-HSK100-272	ER20	40	45	272	306	1
02	ABB08-DER40-HSK100-352	ER40	50	57.2	352	386	2

## HSK A-100 L/D-12 Samurai Drill Collet Adaptor

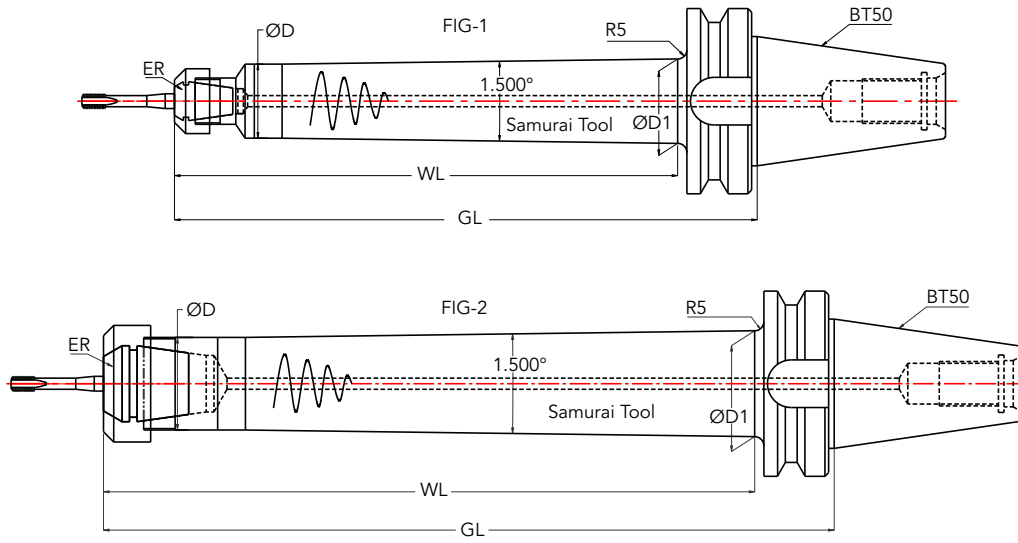


SR. NO.	PART CODE	ER	D	D1	WL	GL	FIG.
01	ABB12-DER20-HSK100-430	ER20	40	50	430	464	1
02	ABB12-DER40-HSK100-550	ER40	50	62.4	550	584	2

# SAMURAI Series Product

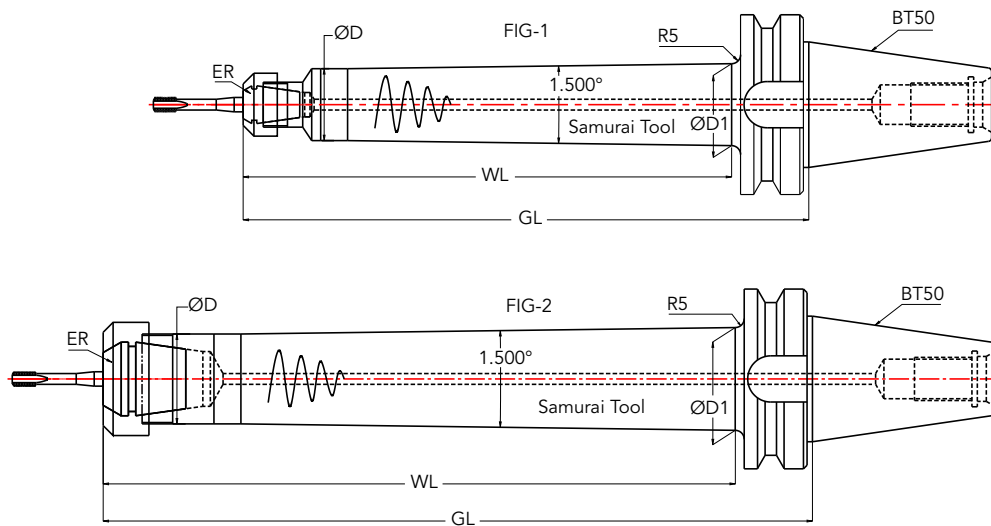
(Antivibration Tools)

## BT 50 L/D-8 Samurai Tap Collet Adaptor



SR. NO.	PART CODE	ER	D	D1	WL	GL	FIG.
01	ABB08-TER20-BT50-272	ER20	40	45	272	315	1
02	ABB08-TER40-BT50-352	ER40	50	57.2	352	395	2

## BT 50 L/D-12 Samurai Tap Collet Adaptor

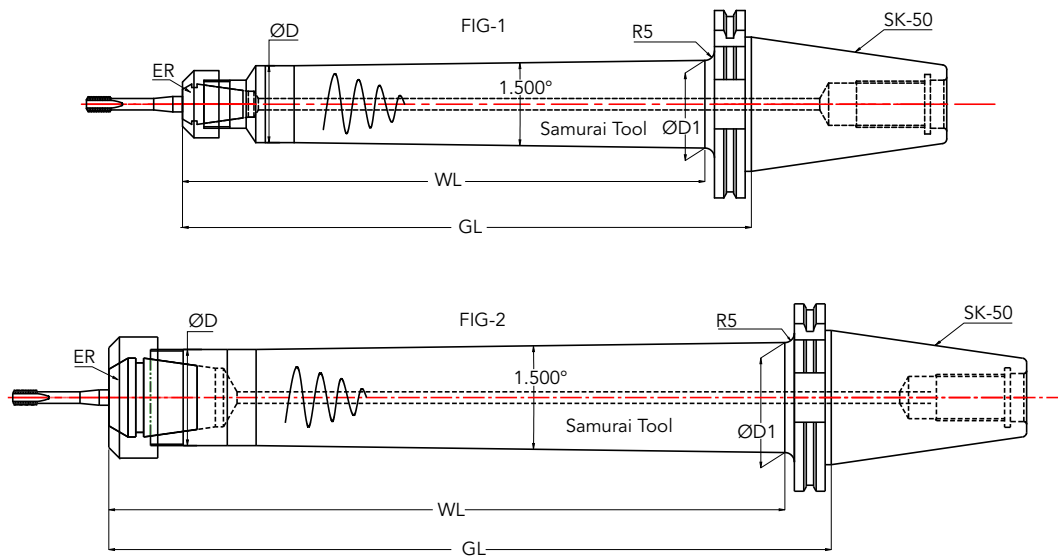


SR. NO.	PART CODE	ER	D	D1	WL	GL	FIG.
01	ABB12-TER20-BT50-430	ER20	40	50	430	473	1
02	ABB12-TER40-BT50-550	ER40	50	62.4	550	593	2

# SAMURAI Series Product

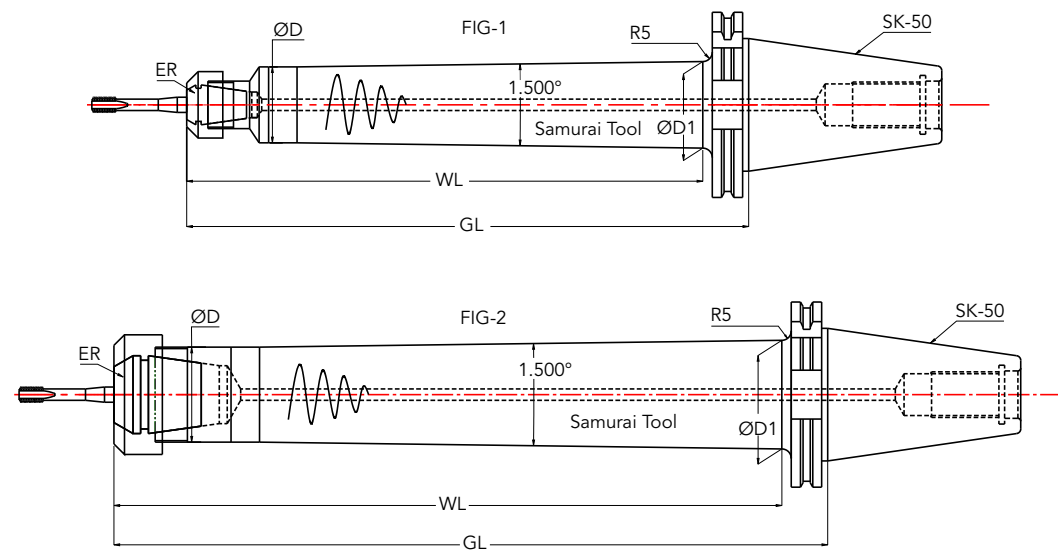
(Antivibration Tools)

## SK 50 L/D-8 Samurai Tap Collet Adaptor



SR. NO.	PART CODE	ER	D	D1	WL	GL	FIG.
01	ABB08-TER20-SK50-272	ER20	40	45	272	296	1
02	ABB08-TER40-SK50-352	ER40	50	57.2	352	376	2

## SK 50 L/D-12 Samurai Tap Collet Adaptor

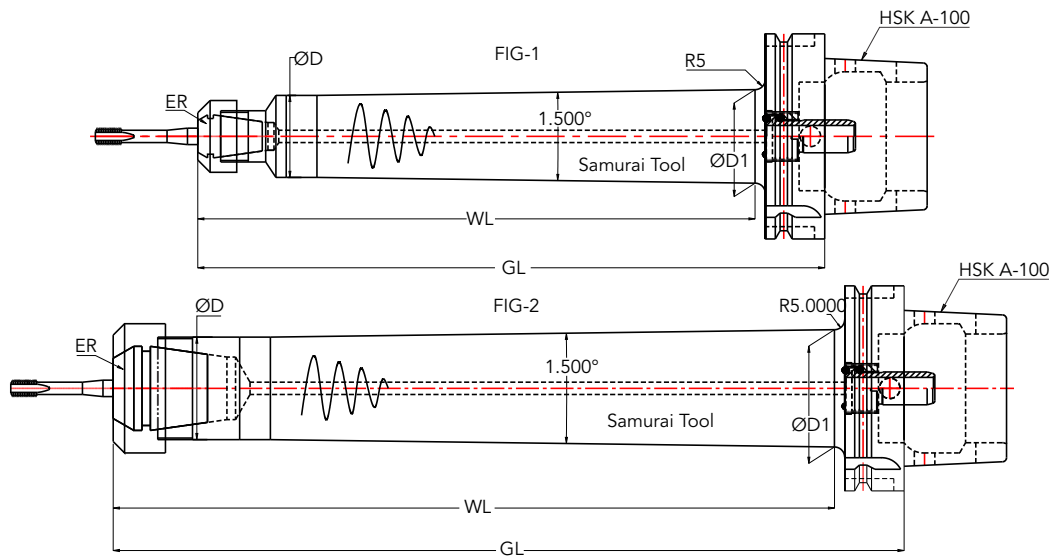


SR. NO.	PART CODE	ER	D	D1	WL	GL	FIG.
01	ABB12-TER20-SK50-430	ER20	40	50	430	454	1
02	ABB12-TER40-SK50-550	ER40	50	62.4	550	574	2

# SAMURAI Series Product

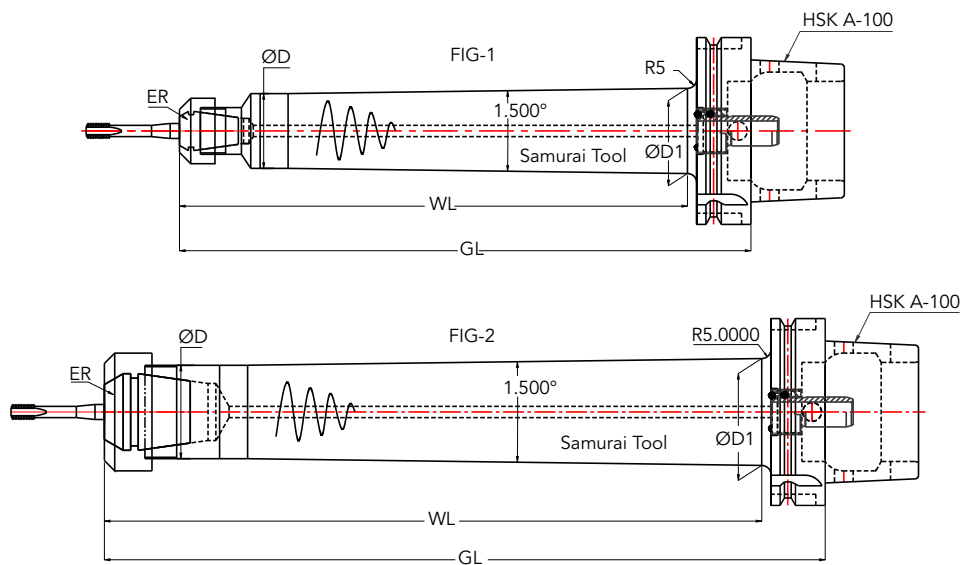
(Antivibration Tools)

## HSK A-100 L/D-8 Samurai Tap Collet Adaptor



SR. NO.	PART CODE	ER	D	D1	WL	GL	FIG.
01	ABB08-TER20-HSK100-272	ER20	40	45	272	306	1
02	ABB08-TER40-HSK100-352	ER40	50	57.2	352	386	2

## HSK A-100 L/D-12 Samurai Tap Collet Adaptor

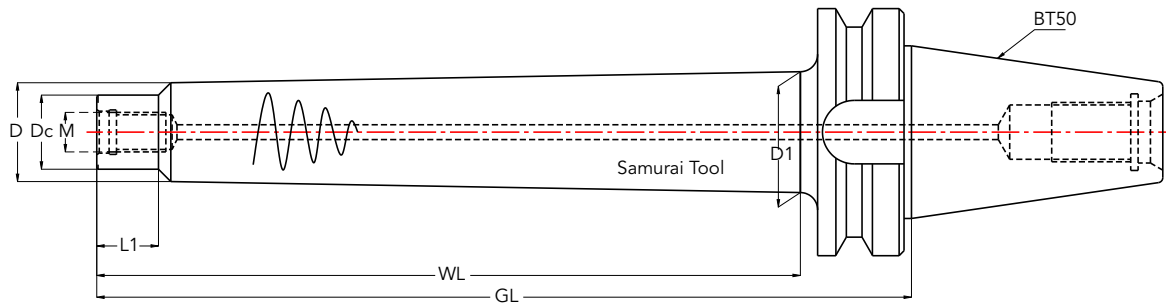


SR. NO.	PART CODE	ER	D	D1	WL	GL	FIG.
01	ABB12-TER20-HSK100-430	ER20	40	50	430	464	1
02	ABB12-TER40-HSK100-550	ER40	50	62.4	550	584	2

# SAMURAI Series Product

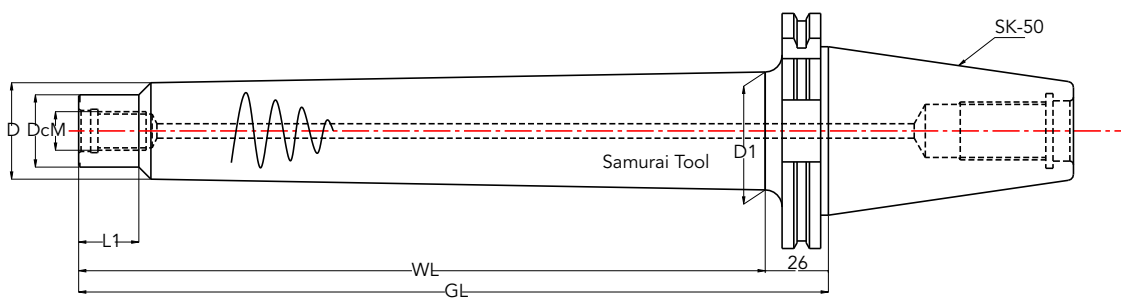
(Antivibration Tools)

BT 50 L/D-8 Samurai Thread - On Adaptor



SR. NO.	PART CODE	M	Dc	D	D1	L1	WL	GL
01	ABB08-THM12-BT50-285	M12	23	40	48.9	20	285	330
02	ABB08-THM16-BT50-285	M16	30	40	48.9	25	285	330

SK 50 L/D-8 Samurai Thread - On Adaptor

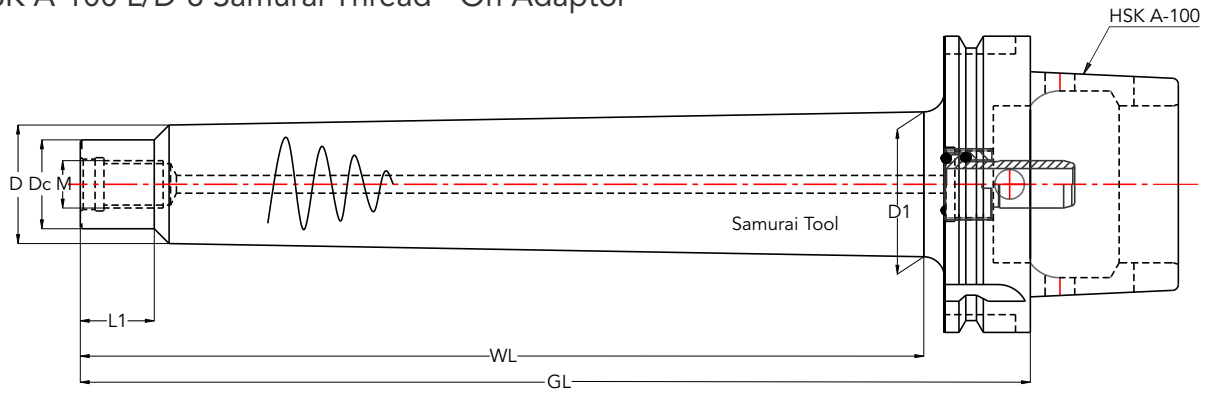


SR. NO.	PART CODE	M	Dc	D	D1	L1	WL	GL
01	ABB08-THM12-SK50-285	M12	23	40	48.9	20	285	311.2
02	ABB08-THM16-SK50-285	M16	30	40	48.9	25	285	311.2

# SAMURAI Series Product

(Antivibration Tools)

HSK A-100 L/D-8 Samurai Thread - On Adaptor



SR. NO.	PART CODE	M	Dc	D	D1	L1	WL	GL
01	ABB08-THM12-HSK100-285	M12	23	40	48.9	20	285	321
02	ABB08-THM16-HSK100-285	M16	30	40	48.9	25	285	321



Note : Special Designs and Sizes are Available on Request



# Fine Boring Units

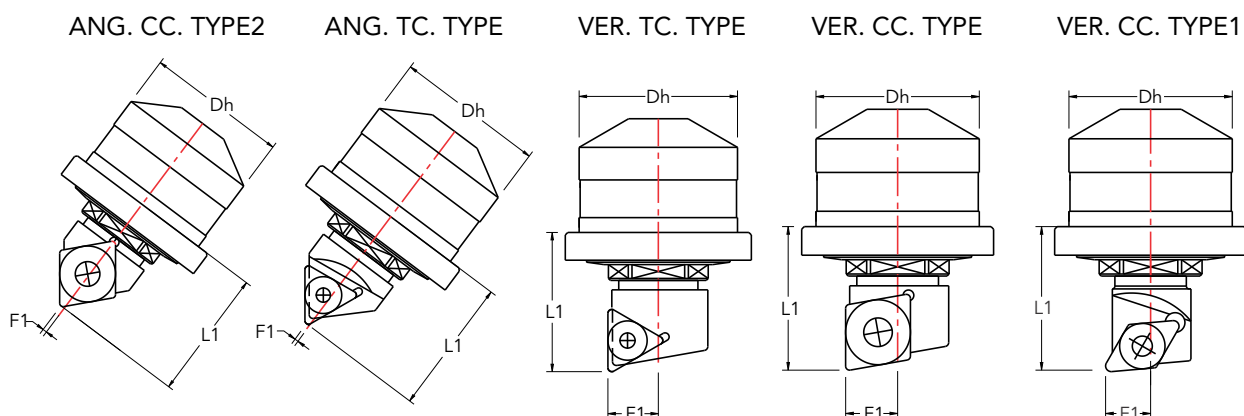
## Fine Boring Units Provides

- Least count +/- 0.001 mm radially.
- Repeatability +/- 0.002 mm.
- Preloaded sturdy and zero backlash assembly.
- Easy adjustment from top.
- No locking / unlocking of any other screw.
- Very economical and extra stock availability.
- Precision adjustment in microns in order to achieve closer tolerances. (Finish Boring)
- Clear indication on top of unit to adjust the size of boring bar in the machine itself.



# Fine Boring Units

Range of Fine Boring Units



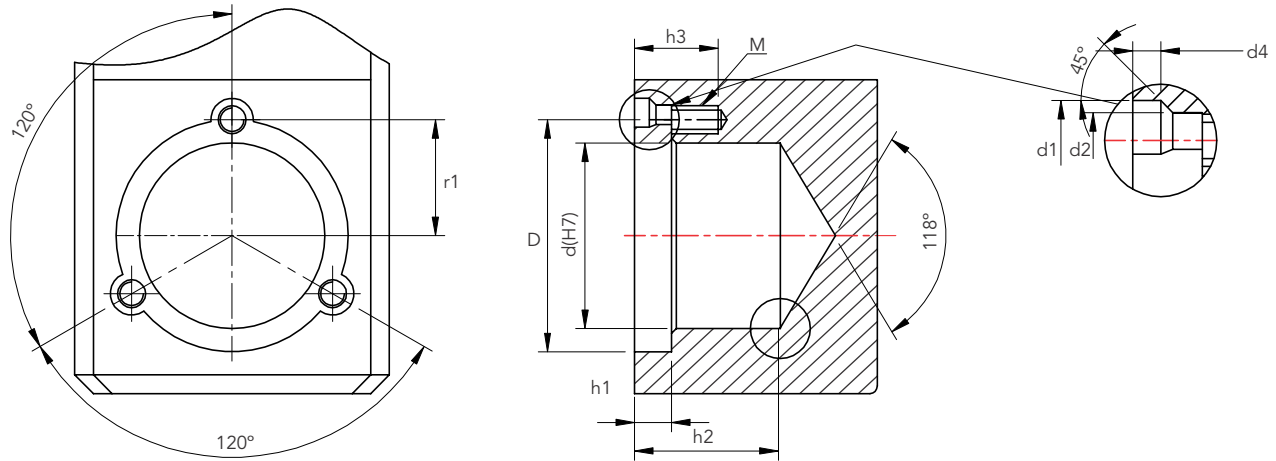
ENTRY VIEW	UNIT CODE & HAND		SUITABLE INSERT	DIMENSION			
	LH	RH		Dh	L1	F1	Dmin
	FLTA 06T1	FRTA 06T1	TC.. 06T1	16	14.3	0.2	25
	FLCA 0602	FRCA 0602	CC.. 0602	16	14.3	0.45	26
	FLTA 0902	FRTA 0902	TC.. 0902	20	19.1	1	33.1
	FLTA 1102	FRTA 1102	TC.. 1102	22	23	1.2	42.6
	FLCA 09T3	FRCA 09T3	CC.. 09T3	22	23	1.2	42.6
	FLCV 0602	FRCV 0602	CC.. 0602	16	13.3	5.1	27.6
	FLTV 0902	FRTV 0902	TC.. 0902	20	18.3	6.3	37.1
	FLTV 1102	FRTV 1102	TC.. 1102	22	22.1	7.2	49.1
	FLCV 09T3	FRCV09T3	CC.. 09T3	22	22.1	7.2	49.1
	FLDV 0702	FRDV 0702	DC.. 0702	20	18.3	6.3	37.1




## Spares List

UNIT CODE & HAND		SUITABLE INSERT	SPARES FOR UNITS				
LH	RH		INSERT SCREW	TROX	MOUNTING SCREW	TROX	SPANNER
FLTA 06T1	FRTA 06T1	TC.. 06T1	SC06T1-27	T6	SC06T1-04	T9	S10
FLCA 0602	FRCA 0602	CC.. 0602	SC0602-03	T7	SC0602-04	T9	S10
FLTA 0902	FRTA 0902	TC.. 0902	SC0902-05	T7	SC0902-04	T9	S13
FLTA 1102	FRTA 1102	TC.. 1102	SC1102-03	T7	SC1102-29	T15	S15
FLCA 09T3	FRCA 09T3	CC.. 09T3	SC09T3-09	T15	SC09T3-29	T15	S15
FLCV 0602	FRCV 0602	CC.. 0602	SC0602-03	T7	SC0602-04	T9	S10
FLTV 0902	FRTV 0902	TC.. 0902	SC0902-05	T7	SC0902-04	T9	S13
FLTV 1102	FRTV 1102	TC.. 1102	SC1102-03	T7	SC1102-29	T15	S15
FLCV 09T3	FRCV09T3	CC.. 09T3	SC09T3-09	T15	SC09T3-29	T15	S15
FLDV 0702	FRDV 0702	DC.. 0702	SC0702-03	T7	SC0702-04	T9	S13

# Fine Boring Units

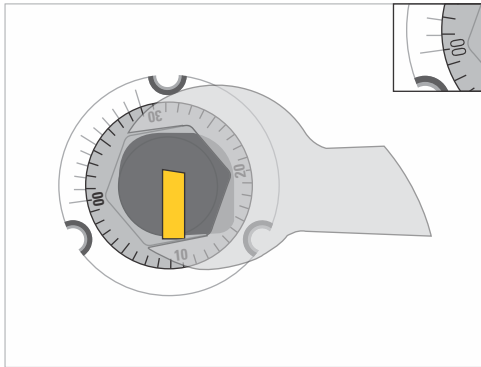
## Mounting Dimensions For Sigma-Fine Boring Units



 T	 C	 D	D	d (H7)	d1	d2	h1	h2	h3	h4	M	r1 ±0.02
06			09	16	4.6	3.2	2.8	11.5	9	1.6	M3	9.65
09			25	20	4.6	3.2	4	15.5	9	1.6	M3	12.5
11			30	22	6.5	4.3	5	24	13	1.8	M4	15.4
	06		19	16	4.6	3.2	2.8	11.5	9	1.6	M3	9.65
	09		30	22	6.5	4.3	5	24	13	1.8	M4	15.4
		07	25	20	4.6	3.2	4	15.5	9	1.6	M3	12.5

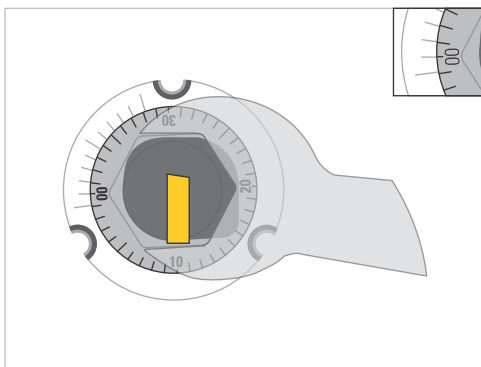
## Fine Boring Units

### Handling Instructions



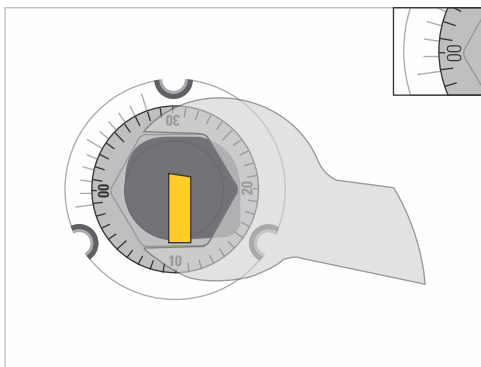
Pic-1

- Set desired diameter on tool pre-setter or with the help of dial outside machine using spanner.
- Load tool in spindle.
- Check that you are getting desired size.
- If not follow below instructions.



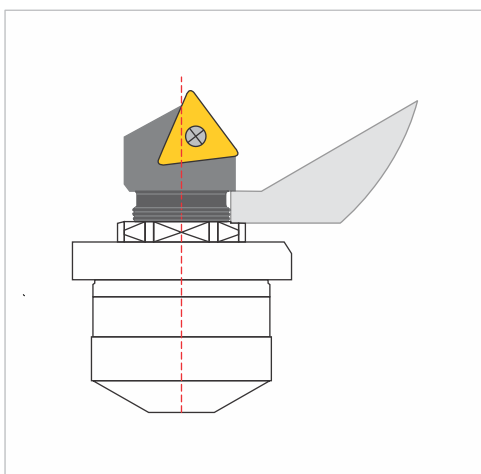
Pic-2

- Find line on the vernier scale that exactly matches with the main scale.
- To increase the diameter by 0.02mm, rotate the spanner clockwise and match the line with next adjacent line.



Pic-3

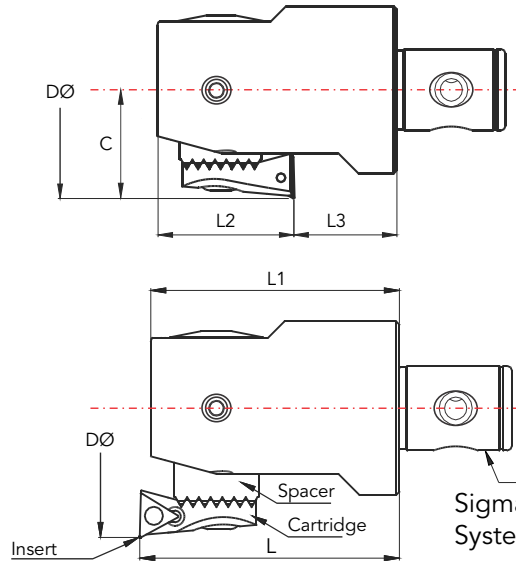
- Now to increase diameter again by 0.002mm, rotate the spanner slightly until it matches with the very next adjacent line.



Pic-4

- Maximum adjustment can be checked by using spanner end.
- Do not exceed the given adjustment limit to avoid damages.

# Fine Boring Heads



Machining Range Ø25-200



Sigma Modular System No.(SMS)

ORDERING CODE	SMS NO.	CART-RIDGE	SPACER	CARTRIDGE SCREW	BORING			COUNTER - BORING				KG	TIGHTENING TORQUE
					ØD	L	L1	ØD	L2	L3	C		
SFBH22-28	0	SC0	-	SM405	22-28	42	38	26-28	12	27	11	0.1	10kgf/cm
	0	SC0	SCSOP2	SM407	26-32	42	38	26-31	12	27	11	0.1	10kgf/cm
	0	SC0	SCSOP4	SM409	30-36	42	38	30-35	12	27	11	0.1	10kgf/cm
SFBH27-35	1	SC1	-	SM406	27-35	42	38	30-35	12	27	12	0.12	15kgf/cm
	1	SC1	SCS1P3	SM409	34-42	42	38	34-42	12	27	12	0.12	15kgf/cm
	1	SC1	SCS1P6	SM412	40-47	42	38	39-47	12	27	12	0.12	15kgf/cm
SFBH34-44	2	SC2	-	SM406	34-44	46	43	36-44	18	25	15	0.22	15kgf/cm
	2	SC2	SCS2P4	SM410	42-55	46	43	42-52	18	25	15	0.22	15kgf/cm
	2	SC2	SCS2P8	SM416	50-60	46	43	50-60	18	25	15	0.22	15kgf/cm
SFBH43-55	3	SC3	-	SM508	43-55	55	53	45-55	22.5	30.5	19	0.44	25kgf/cm
	3	SC3	SCS3P5	SM512	53-66	55	53	53-66	22.5	30.5	19	0.44	25kgf/cm
	3	SC3	SCS3P10	SM517	63-76	55	53	63-76	22.5	30.5	19	0.44	25kgf/cm
SFBH54-76	4	SC4	-	SM608	54-76	60	55	57-76	24.5	38	24.5	0.8	60kgf/cm
	4	SC4	SCS4P6	SM614	66-88	60	55	66-88	24.5	38	24.5	0.8	60kgf/cm
	4	SC4	SCS4P12	SM620	78-100	60	55	78-100	24.5	38	24.5	0.8	60kgf/cm
SFBH75-105	5	SC5	-	SM810	75-105	75	70	75-105	24.5	44.5	30.5	1.7	100kgf/cm
	5	SC5	SCS5P13	SM825	101-131	75	70	101-131	24.5	44.5	30.5	1.7	100kgf/cm
	5	SC5	SCS5P25	SM835	125-155	75	70	125-155	24.5	44.5	30.5	1.7	100kgf/cm
SFBH104-150	6	SC6	-	SM810	104-150	90	85	104-150	39.5	45.5	40.5	3.5	100kgf/cm
	6	SC6	SCS5P13	SM825	130-176	90	85	130-176	39.5	45.5	40.5	3.5	100kgf/cm
	6	SC6	SCS5P25	SM835	154-200	90	85	154-200	39.5	45.5	40.5	3.5	100kgf/cm

ORDERING CODE	LOCKING SCREW	TORX FOR LOCKING SCREW	INSERT SCREW	TORX FOR INSERT SCREW	INSERT
SFBH22-28SMS0	LS505	2.5	CSTB2	T6	TP.0802
SFBH27-35SMS1	LS506	2.5	CSTB2	T6	TP.0802
SFBH34-44SMS2	LS508	2.5	CSTB2	T6	TP.0802
SFBH43-55SMS3	LS510	3	CSTB2	T8	TC..1102
SFBH54-76SMS4	LS610	4	CSTB2	T8	TC..1102
SFBH75-105SMS5	LS1015	5	CSTB2	T8	TP.0902
SFBH104-150SMS6	LS1015	5	CSTB2	T8	TP.0902

# Fine Boring Heads

Machining Range  $\varnothing$ 25-200



V MAX  
100 m/min

Least Count is 0.01

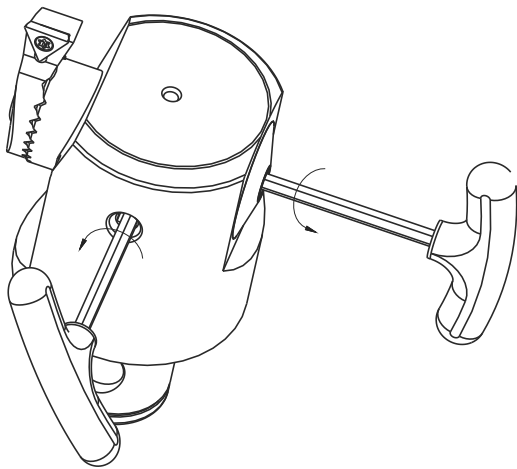
Sigma Modular System  
Makes it easy to  
adjust with Various types  
of boring holders

Spacer



By using Spacer  
Machining range  
can be increased.

## Adjustment instruction



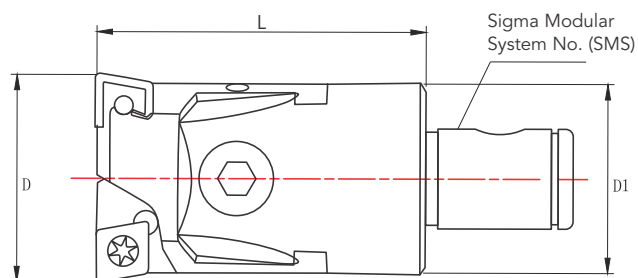
- Loosen the set screw by rotating counterclockwise.
- Turn the graduation disc counterclockwise until it reaches the diameter slightly larger than what is required for machining.
- Turn the graduation disk clockwise until it reaches the diameter you require. one graduation = 0.01mm.
- Tighten the set screw clockwise.

## Precaution

- Use only one Spacer at a time.
- Use the spacer recommended according the table only.
- Do not stack several spacer at one time.
- Please make sure that the cutter tip is in the opposite direction of the tool dismantling while putting it into spindle.

# Rough/Semifinish Boring Heads

## Standard Fine Boring Head



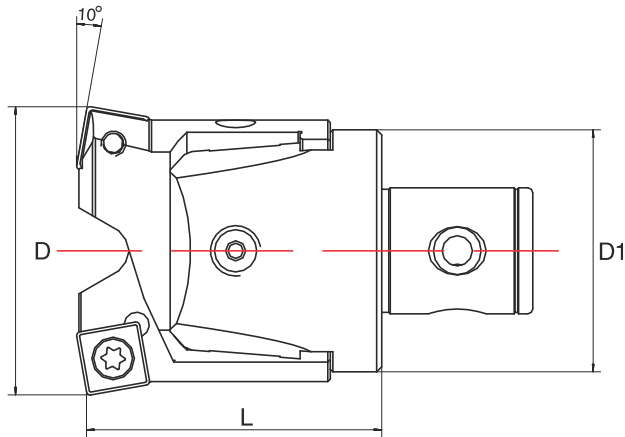
ORDER CODE	SMS	ØD1	L	ØD	INSERT TYPE	INSERT CLAMPING SCREW
SRBH22-28	0	21	40	22-28	CC..0602	CS-2.5
SRBH27-35	1	23	40	27-35	CC..0602	CS-2.5
SRBH34-44	2	29	45	34-44	CC..09T3	CS-4
SRBH43-55	3	37	55	43-55	CC..1204	CS-5
SRBH54-76	4	48	60	54-76	CC..1204	CS-5
SRBH75-105	5	60	75	75-105	CC..1204	CS-5
SRBH104-150	6	80	90	104-150	CC..1204	CS-5

## Spares Table

ORDERING CODE	CARTRIDGE	ADJUSTING SCREW	ADJUSTING WRENCH	TIGHTENING SCREW	TIGHTENING WRENCH	INSERT SCREW WRENCH
SRBH22-28	SC22-28	TM3-7L	1.5mm	CTBSM5	4mm	T8
SRBH27-35	SC27-35	TM3-8L	1.5mm	CTBSM5	4mm	T8
SRBH34-44	SC34-44	TM4-10L	2mm	CTBSM6	5mm	T15
SRBH43-55	SC43-55	TM5-12L	2.5mm	CTBSM8	6mm	T20
SRBH54-76	SC54-76	TM6-16L	3mm	CTBSM10	8mm	T20
SRBH75-105	SC75-105	TM8-20L	4mm	CTBSM12	10mm	T20
SRBH104-150	SC104-150	TM8-27L	4mm	CTBSM16	14mm	T20

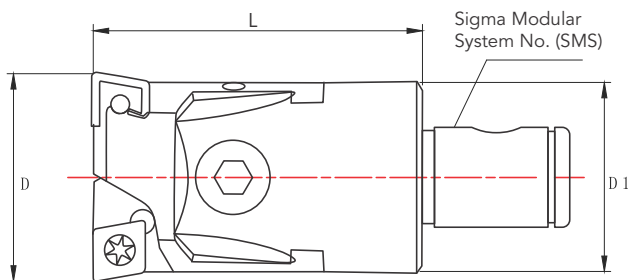
# Rough/Semifinish Boring Heads

## Through Hole Type Fine Boring Head



ORDER CODE	SMS	ØD1	L	ØD	INSERT TYPE	INSERT CLAMPING SCREW
SRBH22-28 H	0	21	38	22-28	SC..0702	CS-2.5
SRBH27-35 H	1	23	38	27-35	SC..0702	CS-2.5
SRBH34-44 H	2	29	43	34-44	SC..09T3	CS-4
SRBH43-55 H	3	37	53	43-55	SC..1204	CS-5
SRBH54-76 H	4	48	58	54-76	SC..1204	CS-5
SRBH75-105 H	5	60	73	75-105	SC..1204	CS-5
SRBH104-150 H	6	80	88	104-150	SC..1204	CS-5

## 2-Stepped Fine Boring Head



ORDER CODE	SMS	ØD1	L	ØD	INSERT TYPE	INSERT CLAMPING SCREW
SRBH22-28 S	0	21	40	22-28	CC..0602	CSTB-2.5
SRBH27-35 S	1	23	40	27-35	CC..0602	CSTB-2.5
SRBH34-44 S	2	29	45	34-44	CC..09T3	CSTB-4
SRBH43-55 S	3	37	55	43-55	CC..1204	CSTB-5
SRBH54-76 S	4	48	60	54-76	CC..1204	CSTB-5
SRBH75-105 S	5	60	75	75-105	CC..1204	CSTB-5
SRBH104-150 S	6	80	90	104-150	CC..1204	CSTB-5



# Trepanning Tools

Trepanning tool is used for machining larger holes diameters by removing the material in the form of chips from the periphery and eventually leaving a metal core at the center of the hole, hence this method is for through-hole applications. The power consumed by trepanning tool is relatively less as compared to solid drills.

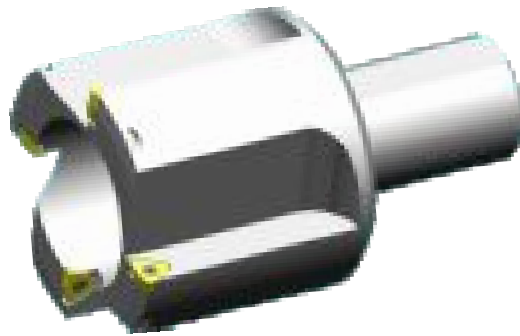
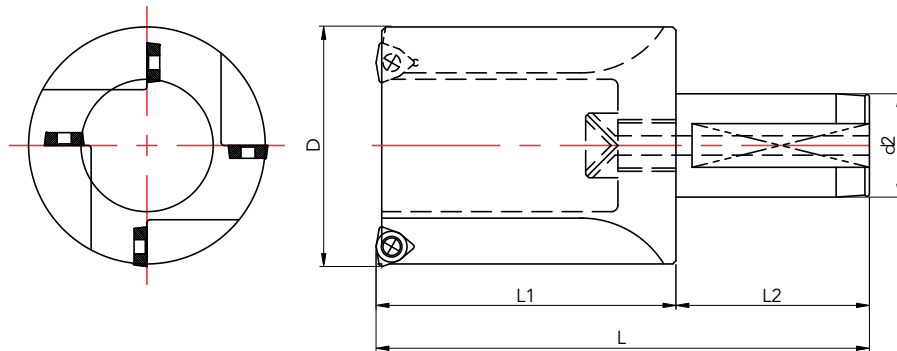
Trepanning tool provides you more efficient and faster machining as compared to indexable drill. They can be used on all the machines such as horizontal mills, boring machines, turret lathes, radial drills VMC, CNC, HMC etc.

The advantage of trepanning tool is that you can remove and reuse the left out metal core, thus reducing material cost.



TREPPANNING TOOL

## Trepanning Tools



SR. NO.	CODE NO.	D	L1	L	d2	L2	CARTRIDGE	INSERT	SCREW	DRIVER
1	STT-04032D	40	100	210	32	70	—	WC..0503	TSB-30070	TXL-8
2	STT-04532D	45	100	210						
3	STT-05032D	50	120	230						
4	STT-05532D	55	120	230						
5	STT-06040D	60	150	270	40	80	TDC-W0503	WC..0503	TSB-30070	TXL-8
6	STT-06540D	65	150	270						
7	STT-07040D	70	170	290						
8	STT-07540D	75	170	290						
9	STT-08040D	80	190	310	50	100	TDC-W06T3	WC..06T3	TSB-35090	TXL-15
10	STT-08550D	85	190	330						
11	STT-09050D	90	210	350						
12	STT-09550D	95	210	350						
13	STT-10050D	100	250	390						
14	STT-11050D	110	250	390						

Note : Special Designs and Sizes are Available on Request

# Ring Grooving Tools

Ring Grooving Tools (API)

API Ring Grooving Tools is commonly used in oil & gas, valve machining industries.

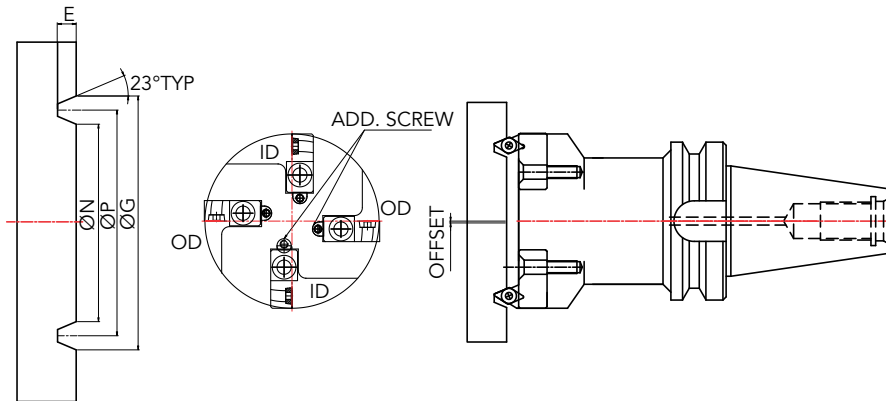
With this tool we can generate groove on machining center. We designed this cutter in wedge type, so that we can set axial & radial run out very easily & precisely. We have our own ground & high positive insert for this application.



RING GROOVING TOOLS

# Ring Grooving Tools

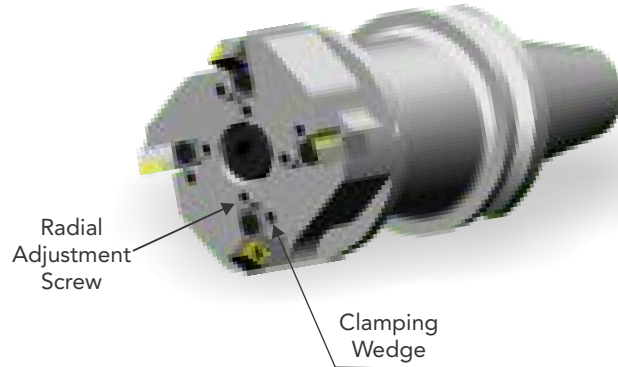
## API Ring Groovers



SR. NO.	RING GROOVE CODE	PART CODE		OFFSET		BODY	PITCH	
		BT50	HSK 100	INCH	MM		INCH	MM
01	BX-150	SRG/BX-150/BT50	SRG/BX-150/HSK100	0.061	1.549	RG-3		
02	BX-150-R	SRG/BX-150-R/BT50	SRG/BX-150-R/HSK100	0.097	2.464	RG-3		
03	BX-151	SRG/BX-151/BT50	SRG/BX-151/HSK100	0.065	1.651	RG-1		
04	BX-151-R	SRG/BX-151-R/BT50	SRG/BX-151-R/HSK100	0.097	2.464	RG-1		
05	BX-152	SRG/BX-152/BT50	SRG/BX-152/HSK100	0.069	1.753	RG-1		
06	BX-152-R	SRG/BX-152-R/BT50	SRG/BX-152-R/HSK100	0.091	2.311	RG-1		
07	BX-153	SRG/BX-153/BT50	SRG/BX-153/HSK100	0.077	1.956	RG-1		
08	BX-153-R	SRG/BX-153-R/BT50	SRG/BX-153-R/HSK100	0.110	2.794	RG-1		
09	BX-154	SRG/BX-154/BT50	SRG/BX-154/HSK100	0.083	2.108	RG-1		
10	BX-154-R	SRG/BX-154-R/BT50	SRG/BX-154-R/HSK100	0.112	2.845	RG-1		
11	BX-155	SRG/BX-155/BT50	SRG/BX-155/HSK100	0.100	2.540	RG-2		
12	BX-155-R	SRG/BX-155-R/BT50	SRG/BX-155-R/HSK100	0.223	5.664	RG-2		
13	BX-156	SRG/BX-156/BT50	SRG/BX-156/HSK100	0.132	3.353	RG-4		
14	BX-156-R	SRG/BX-156-R/BT50	SRG/BX-156-R/HSK100	0.166	4.216	RG-4		
15	BX-169	SRG/BX-169/BT50	SRG/BX-169/HSK100	0.081	2.057	RG-2		
16	R-16	SRG/R-16/BT50	SRG/R-16/HSK100	0.026	0.660	RG-3	2.000	50.800
17	R-18	SRG/R-18/BT50	SRG/R-18/HSK100	0.026	0.660	RG-3	2.375	60.325
18	R-19	SRG/R-19/BT50	SRG/R-19/HSK100	0.026	0.660	RG-3	2.563	65.100
19	R-20	SRG/R-20/BT50	SRG/R-20/HSK100	0.026	0.660	RG-3	2.688	68.275
20	R-23	SRG/R-23/BT50	SRG/R-23/HSK100	0.046	1.168	RG-1	3.250	82.550
21	R-23-R	SRG/R-23-R/BT50	SRG/R-23-R/HSK100	0.081	2.057	RG-1	3.300	83.820
22	R-24	SRG/R-24/BT50	SRG/R-24/HSK100	0.046	1.168	RG-1	3.750	95.250
23	R-24-R	SRG/R-24-R/BT50	SRG/R-24-R/HSK100	0.077	1.956	RG-1	3.800	96.520
24	R-26	SRG/R-26/BT50	SRG/R-26/HSK100	0.046	1.168	RG-1	4.000	101.600
25	R-27	SRG/R-27/BT50	SRG/R-27/HSK100	0.046	1.168	RG-1	4.250	107.950
26	R-31	SRG/R-31/BT50	SRG/R-31/HSK100	0.044	1.118	RG-2	4.875	123.825
27	R-31-R	SRG/R-31-R/BT50	SRG/R-31-R/HSK100	0.072	1.829	RG-2	4.920	124.968
28	R-35	SRG/R-35/BT50	SRG/R-35/HSK100	0.046	1.168	RG-2	5.375	136.525
29	R-35-R	SRG/R-35-R/BT50	SRG/R-35-R/HSK100	0.081	2.057	RG-2	5.420	137.668
30	R-37	SRG/R-37/BT50	SRG/R-37/HSK100	0.046	1.168	RG-2	5.875	149.225
31	R-39	SRG/R-39/BT50	SRG/R-39/HSK100	0.046	1.168	RG-2	6.375	161.925
32	R-39-R	SRG/R-39-R/BT50	SRG/R-39-R/HSK100	0.081	2.057	RG-2	6.420	163.068
33	R-41	SRG/R-41/BT50	SRG/R-41/HSK100	0.046	1.168	RG-2	7.125	180.975
34	R-44	SRG/R-44/BT50	SRG/R-44/HSK100	0.046	1.168	RG-2	7.625	193.675
35	R-44-R	SRG/R-44-R/BT50	SRG/R-44-R/HSK100	0.071	1.803	RG-2	7.670	194.818
36	R-45	SRG/R-45/BT50	SRG/R-45/HSK100	0.046	1.168	RG-2	8.313	211.150
37	R-46	SRG/R-46/BT50	SRG/R-46/HSK100	0.048	1.219	RG-2	8.313	211.150
38	R-46-R	SRG/R-46-R/BT50	SRG/R-46-R/HSK100	0.082	2.083	RG-2	8.360	212.344
39	1-13/16	SRG/1-13/16/BT50	SRG/1-13/16/HSK100	0.034	0.864	RG-1		
40	2-1/16-10K	SRG/2-1/16-10K/BT50	SRG/2-1/16-10K/HSK100	0.034	0.864	RG-1		
41	2-9/16-10K	SRG/2-9/16-10K/BT50	SRG/2-9/16-10K/HSK100	0.034	0.864	RG-2		
42	3-1/16-10K	SRG/3-1/16-10K/BT50	SRG/3-1/16-10K/HSK100	0.034	0.864	RG-2		
43	4-1/16-10K	SRG/4-1/16-10K/BT50	SRG/4-1/16-10K/HSK100	0.034	0.864	RG-2		
44	5-1/8-10K	SRG/5-1/8-10K/BT50	SRG/5-1/8-10K/HSK100	0.034	0.864	RG-2		

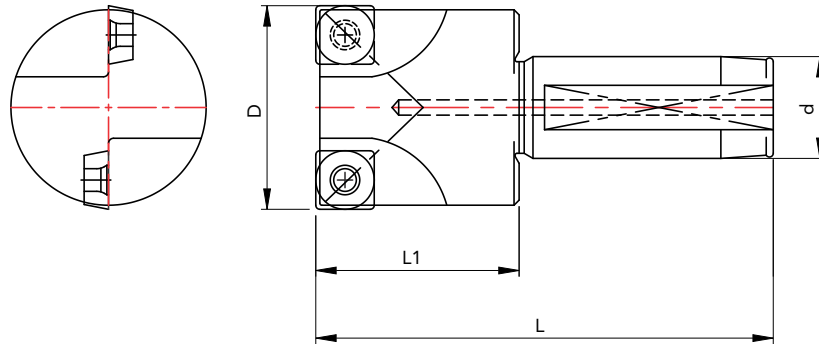
# Ring Grooving Tools

## API Ring Groovers



OD - G		WIDTH - N		DEPTH - E		INSERT	SCREW	EFFECTIVE FLUTES	OD @ DEPTH	ID @ DEPTH	MOUNTING BOLT/CART.
INCH	MM	INCH	MM	INCH	MM						
2.893	73.482	0.450	11.430	0.220	5.588	DOGT 11T308	SCR-02	2	2.771	2.115	1
3.341	84.861	0.841	21.361	0.485	12.319	DOGT 11T308	SCR-02	1	3.147	1.853	1
3.062	77.775	0.466	11.836	0.220	5.588	DOGT 11T308	SCR-02	2	2.932	2.260	1
3.496	88.798	0.846	21.488	0.485	12.319	DOGT 11T308	SCR-02	1	3.302	1.998	1
3.395	86.233	0.498	12.649	0.230	5.842	DOGT 11T308	SCR-02	2	3.257	2.537	1
3.826	97.180	0.876	22.250	0.505	12.827	DOGT 11T308	SCR-02	1	3.644	2.256	1
4.046	102.768	0.554	14.072	0.270	6.858	DOGT 11T308	SCR-02	2	3.892	3.092	1
4.486	113.944	0.936	23.774	0.535	13.589	DOGT 11T308	SCR-02	1	4.266	2.834	1
4.685	118.999	0.606	15.392	0.300	7.620	DOGT 11T308	SCR-02	2	4.519	3.639	1
5.116	129.946	0.971	24.663	0.570	14.478	DOGT 11T308	SCR-02	1	4.892	3.398	1
5.930	150.622	0.698	17.729	0.330	8.382	DOGT 11T308	SCR-02	2	5.730	4.734	1
6.366	161.696	1.076	27.330	0.595	15.113	DOGT 11T308	SCR-02	1	5.920	4.660	2
9.521	241.833	0.921	23.393	0.440	11.176	VOGT 160408	SCR-02	2	9.257	7.943	2
9.956	252.882	1.306	33.172	0.710	18.034	VOGT 160408	SCR-02	1	9.624	7.676	2
6.955	176.657	0.666	16.916	0.380	9.652	VOGT 160408	SCR-02	2	6.793	5.785	1
		0.344	8.738	0.250	6.350	VOGT 160408	SCR-01	2	2.292	1.708	1
		0.344	8.738	0.250	6.350	VOGT 160408	SCR-01	2	2.667	2.083	1
		0.344	8.738	0.250	6.350	VOGT 160408	SCR-01	2	2.855	2.271	1
		0.344	8.738	0.250	6.350	VOGT 160408	SCR-01	2	2.980	2.396	1
		0.469	11.913	0.310	7.874	DOGT 11T308	SCR-02	2	3.627	2.873	1
		0.871	22.123	0.575	14.605	VOGT 160408	SCR-02	1	3.994	2.606	1
		0.469	11.913	0.310	7.874	DOGT 11T308	SCR-02	2	4.127	3.373	1
		0.469	11.913	0.590	14.986	VOGT 160408	SCR-02	1	4.517	3.083	1
		0.469	11.913	0.310	7.874	DOGT 11T308	SCR-02	2	4.377	3.623	1
		0.856	21.742	0.310	7.874	DOGT 11T308	SCR-02	2	4.627	3.873	1
		0.469	11.913	0.310	7.874	DOGT 11T308	SCR-02	2	5.256	4.494	1
		0.856	21.742	0.575	14.605	VOGT 160408	SCR-02	1	5.632	4.208	1
		0.469	11.913	0.310	7.874	DOGT 11T308	SCR-02	2	5.752	4.998	1
		0.856	21.742	0.575	14.605	VOGT 160408	SCR-02	1	6.114	4.726	1
		0.469	11.913	0.310	7.874	DOGT 11T308	SCR-02	2	6.252	5.498	1
		0.469	11.913	0.310	7.874	DOGT 11T308	SCR-02	2	6.752	5.998	1
		0.856	21.742	0.575	14.605	VOGT 160408	SCR-02	1	7.114	5.726	1
		0.469	11.913	0.310	7.874	DOGT 11T308	SCR-02	2	7.502	6.748	2
		0.469	11.913	0.310	7.874	DOGT 11T308	SCR-02	2	8.002	7.248	2
		0.856	21.742	0.575	14.605	VOGT 160408	SCR-02	1	8.384	6.956	2
		0.469	11.913	0.310	7.874	DOGT 11T308	SCR-02	2	8.690	7.936	2
		0.531	13.487	0.380	9.652	VOGT 160408	SCR-02	2	8.748	7.878	2
		0.916	23.266	0.645	16.383	VOGT 160408	SCR-02	1	9.112	7.608	2
4.373	111.074	0.377	9.576	0.258	6.553	VOGT 160408	SCR-01	2	4.305	3.687	1
4.623	117.424	0.377	9.576	0.258	6.553	VOGT 160408	SCR-01	2	4.555	3.937	1
5.873	149.174	0.377	9.576	0.258	6.553	VOGT 160408	SCR-01	2	5.805	5.187	1
5.748	145.999	0.377	9.576	0.258	6.553	VOGT 160408	SCR-01	2	5.680	5.062	1
7.123	180.924	0.377	9.576	0.258	6.553	VOGT 160408	SCR-01	2	7.055	6.437	2
8.748	222.199	0.377	9.576	0.258	6.553	VOGT 160408	SCR-01	2	8.680	8.062	2

# Counter Bore Tools



SR. NO.	DESIGNATION	INSERT	NO OF INSERTS	DIMENSION (MM)				MAX DRILLING DEPTH	END MILLING DEPTH
				D	d	L	L1		
1	CBT-112-W16-06	XOMT 060204	1	12	16	80	20	12	5.6
2	CBT-216-W20-06	XOMT 060204	2	16	20	90	25	16	5.6
3	CBT-218-W20-06	XOMT 060204	2	18	20	90	25	16	5.6
4	CBT-220-W25-06	XOMT 060204	2	20	25	100	40	20	5.6
5	CBT-222-W25-06	XOMT 060204	2	22	25	110	47	25	5.6
6	CBT-225-W25-09	SPMG 090408	2	25	25	110	50	30	9.0
7	CBT-228-W32-09	SPMT 090408	2	28	32	125	60	38	9.0
8	CBT-232-W32-11	SPMG 110408	2	32	32	125	60	38	10.7
9	CBT-240-W32-11	SPMT 110408	2	40	32	125	60	38	10.7
10	CBT-245-W32-14	SPMG 140508	2	45	32	130	66	40	13.4
11	CBT-250-W32-14	SPMT 140508	2	50	32	150	66	40	13.4

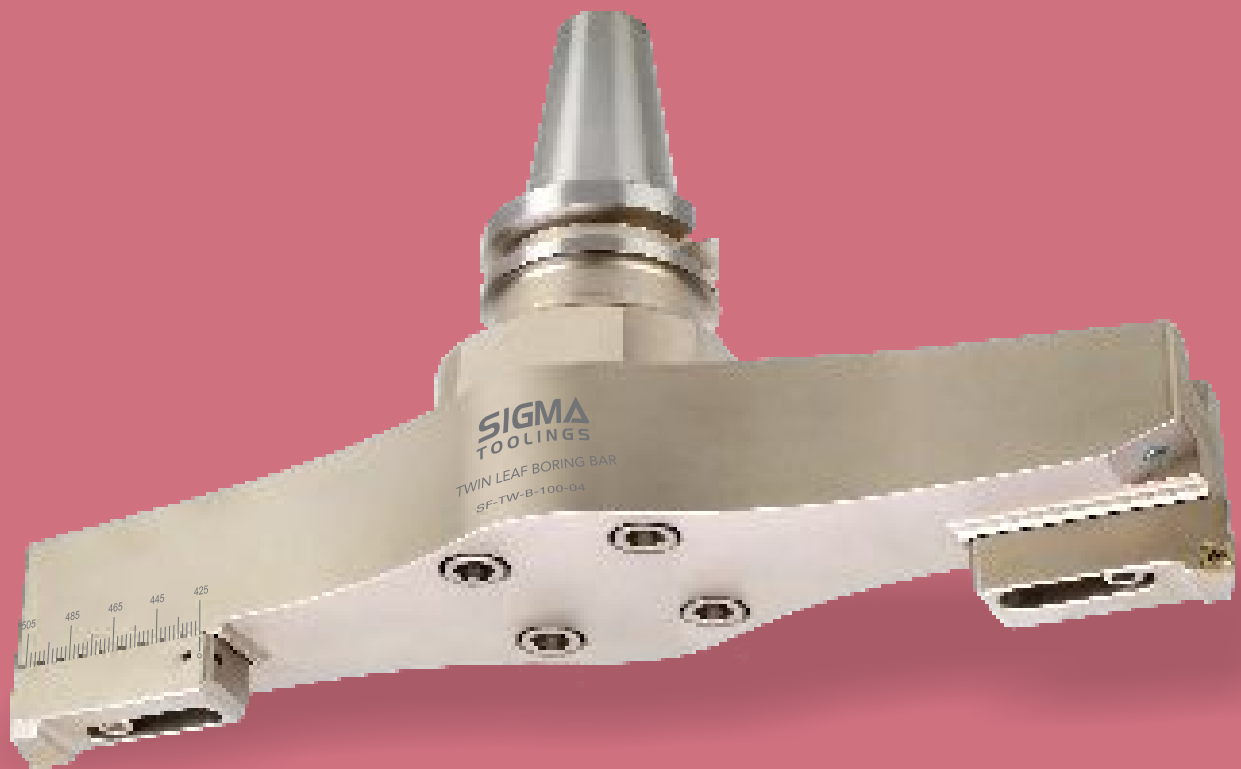
Note : Special Designs and Sizes are Available on Request  
The Tools will Be with through coolant

# Twin Leaf Boring Bars

Twin Leaf Rough and Semi Finish Boring Bars

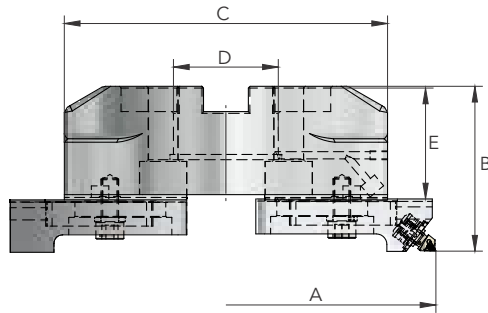
Twin Leaf Boring Bar is a versatile boring tool that can be used for any operations likes through boring, step boring & blind boring operation.

Serration design allows maximum adjustment of diameter. Cartridge replacement is easy and because of modular clamping system it gives interchangeability with adaption system.

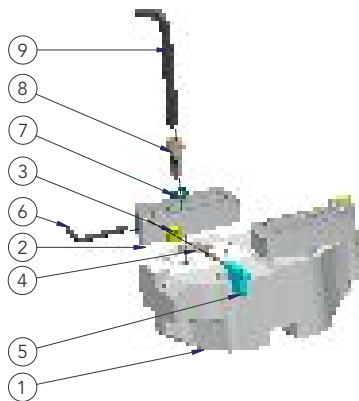


TWIN LEAF BORING BAR

# Twin Leaf Boring Bars



ORDERING CODE		BORING RANGE		DIAMENSIONS								WEIGHT Kgs
		A		B		C		D		E		
MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	
SF-TW-B-100-01	SF-TW-B-200-01	200-280	7.87-11.02	98.8	3.89	185	7.28	60	2.36	70.0	2.76	3.40
SF-TW-B-100-02	SF-TW-B-200-02	275-355	10.83-13.98	98.8	3.89	265	10.43	60	2.36	70.0	2.76	4.17
SF-TW-B-100-03	SF-TW-B-200-03	350-430	13.78-16.93	98.8	3.89	340	13.39	60	2.36	70.0	2.76	5.07
SF-TW-B-100-04	SF-TW-B-200-04	425-505	16.73-19.88	98.8	3.89	415	16.34	60	2.36	70.0	2.76	5.64
SF-TW-B-100-05	SF-TW-B-200-05	500-580	19.69-22.83	98.8	3.89	490	19.29	60	2.36	70.0	2.76	6.90
SF-TW-B-100-06	SF-TW-B-200-06	575-655	22.64-25.79	98.8	3.89	565	22.24	60	2.36	70.0	2.76	7.90
SF-TW-B-100-07	SF-TW-B-200-07	650-730	25.59-28.74	98.8	3.89	640	25.20	60	2.36	70.0	2.76	8.70
SF-TW-B-100-08	SF-TW-B-200-08	725-805	28.54-31.69	123.8	4.87	715	28.15	60	2.36	95.0	3.74	15.30
SF-TW-B-100-09	SF-TW-B-200-09	800-880	31.50-34.65	123.8	4.87	790	31.10	60	2.36	95.0	3.74	16.80
SF-TW-B-100-10	SF-TW-B-200-10	875-955	34.45-37.60	123.8	4.87	865	34.06	60	2.36	95.0	3.74	18.10
SF-TW-B-100-11	SF-TW-B-200-11	950-1030	37.40-40.55	123.8	4.87	940	37.00	60	2.36	95.0	3.74	19.90



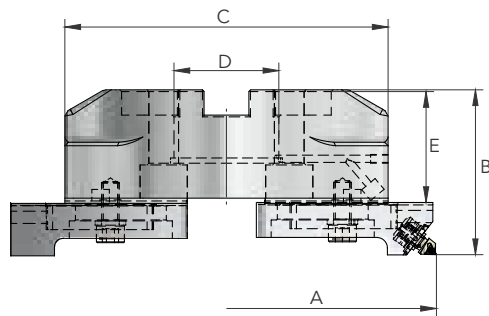
## Spares For Twin Leaf - Semi Finish Boring Bar

- 1 Tool Body
- 2 Spl Cartridge
- 3 Insert
- 4 Insert Clamping Screw
- 5 Torx
- 6 Diameter Adjustment Key
- 7 Spring Washer
- 8 Cart. Clamping Screw
- 9 Cart. Clamping Bolt Key

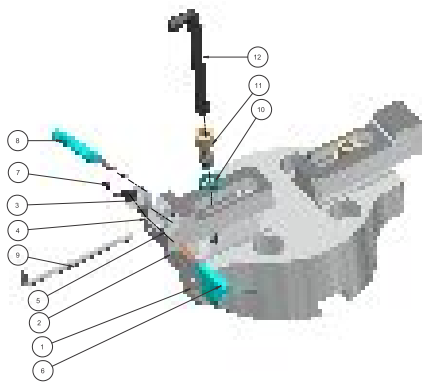
ORDERING CODE		BORING RANGE		ALUMINIUM BRIDGE		SERRATION CARTRIDGE		INSERT	INSERT SCREW	TORX	ALLEN KEY	SPRING WASHER	ALLEN BOLT	ALLEN KEY
		A		ORDER CODE NO-1		ORDER CODE NO-2		3	4	5	6	7	8	9
MM	INCH	MM	INCH	MM	INCH	MM	INCH							
SF-TW-B-100-01	SF-TW-B-200-01	200-280	7.87-11.02	100-01A	200-01A	100-01B	200-01B	CCMT 1204..	S-CI-4.5-10.5	TK-15	AK-6	SW-10	AB-10-35	AK-8
SF-TW-B-100-02	SF-TW-B-200-02	275-355	10.83-13.98	100-02A	200-02A	100-02B	200-02B	CCMT 1204..	S-CI-4.5-10.5	TK-15	AK-6	SW-10	AB-10-35	AK-8
SF-TW-B-100-03	SF-TW-B-200-03	350-430	13.78-16.93	100-03A	200-03A	100-03B	200-03B	CCMT 1204..	S-CI-4.5-10.5	TK-15	AK-6	SW-10	AB-10-35	AK-8
SF-TW-B-100-04	SF-TW-B-200-04	425-505	16.73-19.88	100-04A	200-04A	100-04B	200-04B	CCMT 1204..	S-CI-4.5-10.5	TK-15	AK-6	SW-10	AB-10-35	AK-8
SF-TW-B-100-05	SF-TW-B-200-05	500-580	19.69-22.83	100-05A	200-05A	100-05B	200-05B	CCMT 1204..	S-CI-4.5-10.5	TK-15	AK-6	SW-10	AB-10-35	AK-8
SF-TW-B-100-06	SF-TW-B-200-06	575-655	22.64-25.79	100-06A	200-06A	100-06B	200-06B	CCMT 1204..	S-CI-4.5-10.5	TK-15	AK-6	SW-10	AB-10-35	AK-8
SF-TW-B-100-07	SF-TW-B-200-07	650-730	25.59-28.74	100-07A	200-07A	100-07B	200-07B	CCMT 1204..	S-CI-4.5-10.5	TK-15	AK-6	SW-10	AB-10-35	AK-8
SF-TW-B-100-08	SF-TW-B-200-08	725-805	28.54-31.69	100-08A	200-08A	100-08B	200-08B	CCMT 1204..	S-CI-4.5-10.5	TK-15	AK-6	SW-10	AB-10-35	AK-8
SF-TW-B-100-09	SF-TW-B-200-09	800-880	31.50-34.65	100-09A	200-09A	100-09B	200-09B	CCMT 1204..	S-CI-4.5-10.5	TK-15	AK-6	SW-10	AB-10-35	AK-8
SF-TW-B-100-10	SF-TW-B-200-10	875-955	34.45-37.60	100-10A	200-10A	100-10B	200-10B	CCMT 1204..	S-CI-4.5-10.5	TK-15	AK-6	SW-10	AB-10-35	AK-8
SF-TW-B-100-11	SF-TW-B-200-11	950-1030	37.40-40.55	100-11A	200-11A	100-11B	200-11B	CCMT 1204..	S-CI-4.5-10.5	TK-15	AK-6	SW-10	AB-10-35	AK-8



# Twin Leaf Boring Bars



ORDERING CODE		BORING RANGE		DIAMENSIONS								WEIGHT	MBU
		A		B	C		D		E				
MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	Kgs	
SF-TW-B-300-01	SF-TW-B-400-01	200-280	7.87-11.02	111.6	4.39	185	7.28	60	2.36	70	2.76	4.9	FLTA-1102
SF-TW-B-300-02	SF-TW-B-400-02	275-355	10.83-13.98	111.6	4.39	260	10.24	60	2.36	70	2.76	5.4	FLTA-1102
SF-TW-B-300-03	SF-TW-B-400-03	350-430	13.78-16.93	111.6	4.39	335	13.19	60	2.36	70	2.76	6.0	FLTA-1102
SF-TW-B-300-04	SF-TW-B-400-04	425-505	16.73-19.88	111.6	4.39	410	16.14	60	2.36	70	2.76	7.5	FLTA-1102
SF-TW-B-300-05	SF-TW-B-400-05	500-580	19.69-22.83	111.6	4.39	485	19.09	60	2.36	70	2.76	8.4	FLTA-1102
SF-TW-B-300-06	SF-TW-B-400-06	575-655	22.64-25.79	111.6	4.39	560	22.05	60	2.36	70	2.76	9.0	FLTA-1102
SF-TW-B-300-07	SF-TW-B-400-07	650-730	25.59-28.74	111.6	4.39	635	25.00	60	2.36	70	2.76	9.9	FLTA-1102
SF-TW-B-300-08	SF-TW-B-400-08	725-805	28.54-31.69	136.6	5.58	710	27.95	60	2.36	95	3.74	17.3	FLTA-1102
SF-TW-B-300-09	SF-TW-B-400-09	800-880	31.50-34.65	136.6	5.58	785	30.91	60	2.36	95	3.74	18.3	FLTA-1102
SF-TW-B-300-10	SF-TW-B-400-10	875-955	34.45-37.60	136.6	5.58	860	33.86	60	2.36	95	3.74	19.4	FLTA-1102
SF-TW-B-300-11	SF-TW-B-400-11	950-1030	37.40-40.55	136.6	5.58	935	36.81	60	2.36	95	3.74	20.5	FLTA-1102



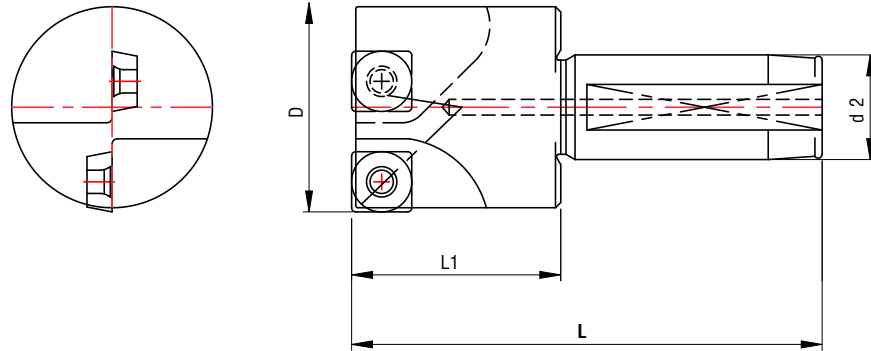
## Spares For Finish Boring Bar

- 1 Tool Body
- 2 Spl Cartridge
- 3 Fine Boring Unit
- 4 Insert
- 5 Insert Clamping Screw
- 6 Torx
- 7 Fine Boring Unit Clamping Screw
- 8 Torx
- 9 Diameter Adjustment Key
- 10 Spring Washer
- 11 Cart. Clamping Screw
- 12 Cart. Clamping Bolt Key

ORDERING CODE		BORING RANGE		ALUMINIUM BRIDGE		SERRATION CARTRIDGE		MBU	INSERT	INSERT SCREW	TORX	MBU CLAMP SCREW	TORX	ALLEN KEY	SPRING WASER	ALLEN BOLT	ALLEN KEY
		A		ORDER CODE NO-1	ORDER CODE NO-2	3	4										
MM	INCH	MM	INCH	MM	INCH	MM	INCH										
SF-TW-B-300-01	SF-TW-B-400-01	200-280	7.87-11.02	300-01A	400-01A	300-01B	400-01B	FLTA-1102	TC.. 1102..	ST 1102-03	SIG-T7	ST 1102-29	SIG-T15	AK-5	SW-10	AM-10-35	AK-8
SF-TW-B-300-02	SF-TW-B-400-02	275-355	10.83-13.98	300-02A	400-02A	300-02B	400-02B	FLTA-1102	TC.. 1102..	ST 1102-03	SIG-T7	ST 1102-29	SIG-T15	AK-5	SW-10	AM-10-35	AK-8
SF-TW-B-300-03	SF-TW-B-400-03	350-430	13.78-16.93	300-03A	400-03A	300-03B	400-03B	FLTA-1102	TC.. 1102..	ST 1102-03	SIG-T7	ST 1102-29	SIG-T15	AK-5	SW-10	AM-10-35	AK-8
SF-TW-B-300-04	SF-TW-B-400-04	425-505	16.73-19.88	300-04A	400-04A	300-04B	400-04B	FLTA-1102	TC.. 1102..	ST 1102-03	SIG-T7	ST 1102-29	SIG-T15	AK-5	SW-10	AM-10-35	AK-8
SF-TW-B-300-05	SF-TW-B-400-05	500-580	19.69-22.83	300-05A	400-05A	300-05B	400-05B	FLTA-1102	TC.. 1102..	ST 1102-03	SIG-T7	ST 1102-29	SIG-T15	AK-5	SW-10	AM-10-35	AK-8
SF-TW-B-300-06	SF-TW-B-400-06	575-655	22.64-25.79	300-06A	400-06A	300-06B	400-06B	FLTA-1102	TC.. 1102..	ST 1102-03	SIG-T7	ST 1102-29	SIG-T15	AK-5	SW-10	AM-10-35	AK-8
SF-TW-B-300-07	SF-TW-B-400-07	650-730	25.59-28.74	300-07A	400-07A	300-07B	400-07B	FLTA-1102	TC.. 1102..	ST 1102-03	SIG-T7	ST 1102-29	SIG-T15	AK-5	SW-10	AM-10-35	AK-8
SF-TW-B-300-08	SF-TW-B-400-08	725-805	28.54-31.69	300-08A	400-08A	300-08B	400-08B	FLTA-1102	TC.. 1102..	ST 1102-03	SIG-T7	ST 1102-29	SIG-T15	AK-5	SW-10	AM-10-35	AK-8
SF-TW-B-300-09	SF-TW-B-400-09	800-880	31.50-34.65	300-09A	400-09A	300-09B	400-09B	FLTA-1102	TC.. 1102..	ST 1102-03	SIG-T7	ST 1102-29	SIG-T15	AK-5	SW-10	AM-10-35	AK-8
SF-TW-B-300-10	SF-TW-B-400-10	875-955	34.45-37.60	300-10A	400-10A	300-10B	400-10B	FLTA-1102	TC.. 1102..	ST 1102-03	SIG-T7	ST 1102-29	SIG-T15	AK-5	SW-10	AM-10-35	AK-8
SF-TW-B-300-11	SF-TW-B-400-11	950-1030	37.40-40.55	300-11A	400-11A	300-11B	400-11B	FLTA-1102	TC.. 1102..	ST 1102-03	SIG-T7	ST 1102-29	SIG-T15	AK-5	SW-10	AM-10-35	AK-8

Note : Special Designs and Sizes are Available on Request

# Center Cutting Spot Face Tools



SR. NO.	DESIGNATION	INSERT	NO OF INSERTS	DIMENSION (MM)				MAX DRILLING DEPTH	END MILLING DEPTH
				D	d2	L	L1		
1	CCSF-112-W16-06	XOMT 060204	1	12	16	80	27	18	5.6
2	CCSF-216-W20-06	XOMT 060204	2	16	20	90	27	18	5.6
3	CCSF-320-W20-06	XOMT 060204	3	20	20	100	25	18	5.6
4	CCSF-222-W25-06	SPMG 090408	2	22	25	100	40	28	9
5	CCSF-225-W25-09	SPMT 090408	2	25	25	100	40	28	9
6	CCSF-332-W32-11	SPMG 110408	3	32	32	115	50	39	10.7
7	CCSF-440-W32-11	SPMT 110408	4	40	32	125	55	39	10.7
8	CCSF-445-W32-14	SPMG 140508	4	45	32	130	70	50	13.4
9	CCSF-450-W32-14	SPMT 140508	4	50	32	140	80	60	13.4

Note : Special Designs and Sizes are Available on Request  
The Tools will Be with through coolant

# Indexable Drills

Our wide range of drilling tools with preheated & high torsion resistance can support higher feed rate & longer life. Unique surface coating treatment & large flute with proper helix angle controls chip flow.

The Drilling Inserts are made from ultra fine grain carbide with high hardness & toughness. It has PVD coating, sharp cutting edge which offers best economy in drilling operations.

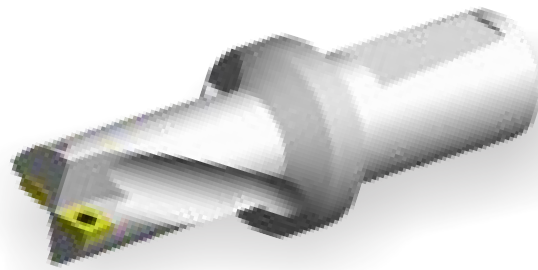
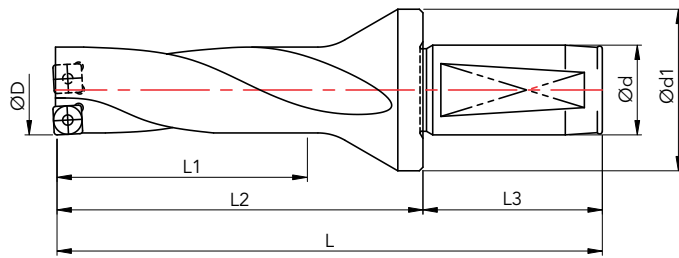
We also manufacture customized drills as per requirement.



INDEXABLE DRILLS

# Indexable Drills

## Indexable Drill (L/D-2)

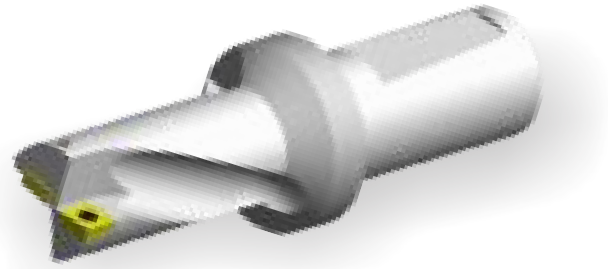
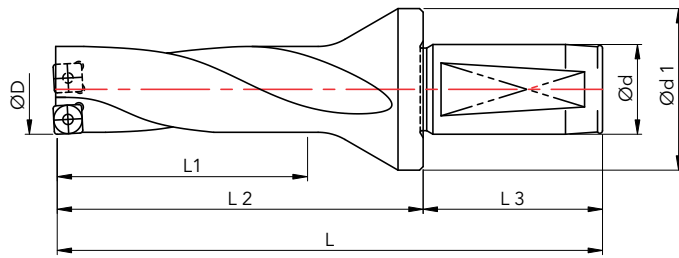


## Drilling Diameter Depth (L/D-2)

Sr. No.	SIGMA ITEM CODE	ØD	Ød	Ød1	L3	L2	L1	L	INSERT
1	S-2DR125-20SH-05	12.50	20.00	25.00	50.00	44.00	26.00	94.00	SOGX 05024
2	S-2DR130-20SH-05	13.00				44.00	26.00	94.00	
3	S-2DR135-20SH-05	13.50				46.00	28.00	96.00	
4	S-2DR140-20SH-05	14.00				46.00	28.00	96.00	
5	S-2DR145-20SH-05	14.50				49.00	30.00	99.00	
6	S-2DR150-20SH-05	15.00				48.00	30.00	99.00	
7	S-2DR155-25SH-06	15.50	25.00	32.00	56.00	52.00	32.00	108.00	SOGX 06024
8	S-2DR160-25SH-06	16.00				52.00	32.00	108.00	
9	S-2DR165-25SH-06	16.50				54.00	34.00	110.00	
10	S-2DR170-25SH-06	17.00				54.00	34.00	110.00	
11	S-2DR175-25SH-06	17.50				57.00	36.00	113.00	
12	S-2DR180-25SH-06	18.00				57.00	36.00	113.00	
13	S-2DR185-25SH-06	18.50				59.00	38.00	115.00	
14	S-2DR190-25SH-06	19.00				59.00	38.00	115.00	
15	S-2DR195-25SH-06	19.50				63.00	40.00	119.00	
16	S-2DR200-25SH-06	20.00				63.00	40.00	119.00	
17	S-2DR205-25SH-06	20.50				65.00	42.00	121.00	
18	S-2DR210-25SH-06	21.00				65.00	42.00	121.00	
19	S-2DR215-25SH-06	21.50				67.00	44.00	123.00	
20	S-2DR220-25SH-07	22.00				67.00	44.00	123.00	
21	S-2DR225-25SH-07	22.50	45.00	56.00	71.00	46.00	127.00	SOGX 07T308	
22	S-2DR230-25SH-07	23.00			56.00	71.00	46.00		127.00
23	S-2DR235-32SH-07	23.50			60.00	71.00	46.00		131.00
24	S-2DR240-25SH-07	24.00			56.00	74.00	48.00		130.00
25	S-2DR245-32SH-07	24.50			60.00	74.00	48.00		134.00
26	S-2DR250-25SH-07	25.00			56.00	77.00	50.00		133.00
27	S-2DR255-32SH-07	25.50			60.00	77.00	50.00		137.00
28	S-2DR260-25SH-07	26.00			56.00	79.00	52.00		135.00
29	S-2DR265-32SH-07	26.50			60.00	79.00	52.00		139.00
30	S-2DR270-25SH-07	27.00			56.00	81.00	54.00		137.00
31	S-2DR275-32SH-07	27.50			60.00	81.00	54.00		141.00
32	S-2DR280-25SH-09	28.00	55	60.00	84.00	56.00	140.00	SOGX 090408	
33	S-2DR285-32SH-09	28.50			60.00	84.00	56.00		144.00
34	S-2DR290-25SH-09	29.00			56.00	86.00	58.00		142.00
35	S-2DR295-32SH-09	29.50			60.00	86.00	58.00		146.00
36	S-2DR300-32SH-09	30.00			60.00	91.00	60.00		151.00
37	S-2DR305-40SH-09	30.50			70.00	91.00	60.00		161.00
38	S-2DR310-32SH-09	31.00			60.00	94.00	62.00		154.00
39	S-2DR315-40SH-09	31.50			70.00	94.00	62.00		164.00
40	S-2DR320-32SH-09	32.00			60.00	96.00	64.00		156.00
41	S-2DR325-40SH-09	32.50			70.00	96.00	64.00		166.00
42	S-2DR330-32SH-09	33.00			60.00	99.00	66.00		159.00
43	S-2DR335-40SH-09	33.50	70.00	99.00	66.00				

# Indexable Drills

## Indexable Drill (L/D-2)



### Drilling Diameter Depth (L/D-2)

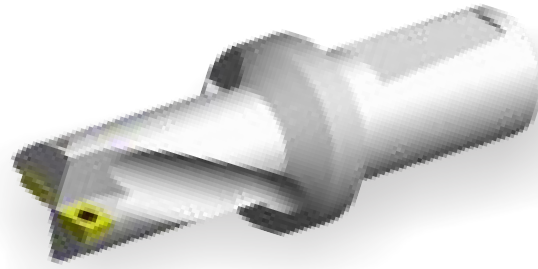
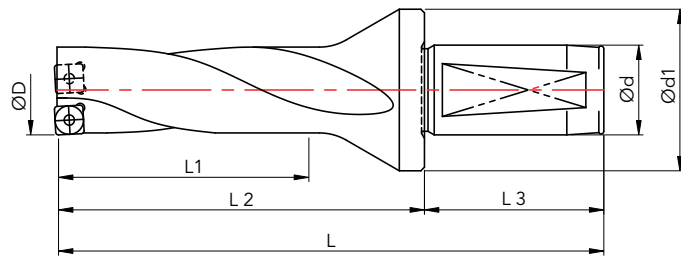
Sr. No.	SIGMA ITEM CODE	ØD	Ød	Ød1	L3	L2	L1	L	INSERT		
44	S-2DR340-32SH-11	34.00	32.00	55.00	60.00	101.00	68.00	161.00	SOGX 110408		
45	S-2DR345-40SH-11	34.50	40.00		70.00	101.00	68.00	171.00			
46	S-2DR350-32SH-11	35.00	32.00		60.00	104.00	70.00	164.00			
47	S-2DR355-40SH-11	35.50	40.00		70.00	104.00	70.00	174.00			
48	S-2DR360-32SH-11	36.00	32.00		60.00	107.00	72.00	167.00			
49	S-2DR365-40SH-11	36.50	40.00		70.00	107.00	72.00	177.00			
50	S-2DR370-32SH-11	37.00	32.00		60.00	110.00	74.00	170.00			
51	S-2DR375-40SH-11	37.50	40.00		70.00	110.00	74.00	180.00			
52	S-2DR380-32SH-11	38.00	32.00		60.00	113.00	76.00	173.00			
53	S-2DR385-40SH-11	38.50	40.00		70.00	113.00	76.00	183.00			
54	S-2DR390-32SH-11	39.00	32.00		60.00	115.00	78.00	175.00			
55	S-2DR395-40SH-11	39.50	40.00		70.00	115.00	78.00	185.00			
56	S-2DR400-32SH-11	40.00	32.00		60.00	60.00	118.00	80.00		178.00	SOGX 140512
57	S-2DR405-40SH-11	40.50	40.00			70.00	118.00	80.00		188.00	
58	S-2DR410-40SH-11	41.00	40.00	70.00		121.00	82.00	191.00			
59	S-2DR420-40SH-14	42.00	40.00	70.00		123.00	84.00	193.00			
60	S-2DR430-40SH-14	43.00	40.00	70.00		126.00	86.00	196.00			
61	S-2DR440-40SH-14	44.00	40.00	70.00		128.00	88.00	198.00			
62	S-2DR450-40SH-14	45.00	40.00	70.00		132.00	90.00	202.00			
63	S-2DR460-40SH-14	46.00	40.00	70.00		135.00	92.00	205.00			
64	S-2DR470-40SH-14	47.00	40.00	70.00		137.00	94.00	207.00			
65	S-2DR480-40SH-14	48.00	40.00	70.00		140.00	96.00	210.00			
66	S-2DR490-40SH-14	49.00	40.00	70.00		142.00	98.00	212.00			
67	S-2DR500-40SH-14	50.00	40.00	70.00		145.00	100.00	215.00			

\* Ex stock insert availability.

\* Special size can be ordered.

# Indexable Drills

## Indexable Drill (L/D-3)

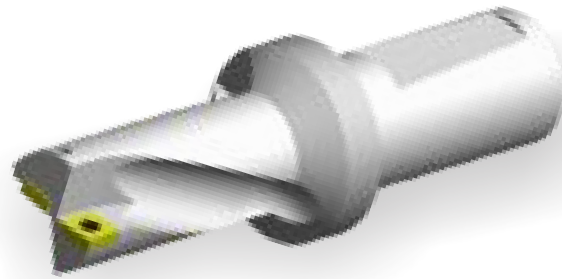
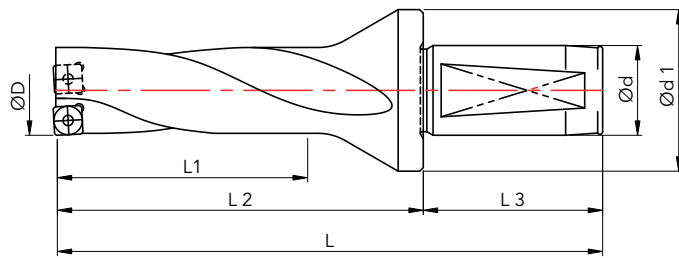


### Drilling Diameter Depth (L/D-3)

Sr. No.	SIGMA ITEM CODE	ØD	Ød	Ød1	L3	L2	L1	L	INSERT
1	S-3DR125-20SH-05	12.50	20.00	25.00	50.00	57.00	39.00	107.00	SOGX 05
2	S-3DR130-20SH-05	13.00				57.00	39.00	107.00	
3	S-3DR135-20SH-05	13.50				60.00	42.00	110.00	
4	S-3DR140-20SH-05	14.00				60.00	42.00	110.00	
5	S-3DR145-20SH-05	14.50				64.00	45.00	114.50	
6	S-3DR150-20SH-05	15.00				64.00	45.00	114.00	
7	S-3DR155-25SH-06	15.50	25.00	32.00	56.00	68.00	48.00	124.00	SOGX 06
8	S-3DR160-25SH-06	16.00				68.00	48.00	124.00	
9	S-3DR165-25SH-06	16.50				71.00	51.00	127.00	
10	S-3DR170-25SH-06	17.00				71.00	51.00	127.00	
11	S-3DR175-25SH-06	17.50				75.00	54.00	131.00	
12	S-3DR180-25SH-06	18.00				75.00	54.00	131.00	
13	S-3DR185-25SH-06	18.50				78.00	57.00	134.00	
14	S-3DR190-25SH-06	19.00				78.00	57.00	134.00	
15	S-3DR195-25SH-06	19.50				83.00	60.00	139.00	
16	S-3DR200-25SH-06	20.00				83.00	60.00	139.00	
17	S-3DR205-25SH-06	20.50				86.00	63.00	142.00	
18	S-3DR210-25SH-06	21.00				86.00	63.00	142.00	
19	S-3DR215-25SH-06	21.50				89.00	66.00	145.00	
20	S-3DR220-25SH-07	22.00				89.00	66.00	145.00	
21	S-3DR225-25SH-07	22.50	25.00	45.00	56.00	94.00	69.00	150.00	SOGX 07
22	S-3DR230-25SH-07	23.00	25.00		56.00	94.00	69.00	150.00	
23	S-3DR235-32SH-07	23.50	32.00		60.00	94.00	69.00	154.00	
24	S-3DR240-25SH-07	24.00	25.00		56.00	98.00	72.00	154.00	
25	S-3DR245-32SH-07	24.50	32.00		60.00	98.00	72.00	158.00	
26	S-3DR250-25SH-07	25.00	25.00		56.00	102.00	75.00	162.00	
27	S-3DR255-32SH-07	25.50	32.00		60.00	102.00	75.00	161.00	
28	S-3DR260-25SH-07	26.00	25.00		56.00	105.00	78.00	165.00	
29	S-3DR265-32SH-07	26.50	32.00		60.00	105.00	78.00	164.00	
30	S-3DR270-25SH-07	27.00	25.00		56.00	108.00	81.00	168.00	
31	S-3DR275-32SH-07	27.50	32.00		60.00	108.00	81.00	168.00	
32	S-3DR280-25SH-09	28.00	25.00		56.00	112.00	84.00	172.00	
33	S-3DR285-32SH-09	28.50	32.00	60.00	112.00	84.00	171.00		
34	S-3DR290-25SH-09	29.00	25.00	56.00	115.00	87.00	175.00		
35	S-3DR295-32SH-09	29.50	32.00	60.00	115.00	87.00	181.00		
36	S-3DR300-32SH-09	30.00	32.00	60.00	121.00	90.00	191.00		
37	S-3DR305-40SH-09	30.50	40.00	70.00	121.00	90.00	185.00		
38	S-3DR310-32SH-09	31.00	32.00	60.00	125.00	93.00	185.00		
39	S-3DR315-40SH-09	31.50	40.00	70.00	125.00	93.00	195.00		
40	S-3DR320-32SH-09	32.00	32.00	60.00	128.00	96.00	188.00		
41	S-3DR325-40SH-09	32.50	40.00	70.00	128.00	96.00	198.00		
42	S-3DR330-32SH-09	33.00	32.00	60.00	132.00	99.00	192.00		
43	S-3DR335-40SH-09	33.50	40.00	70.00	132.00	99.00	202.00		

# Indexable Drills

## Indexable Drill (L/D-3)



### Drilling Diameter Depth (L/D-3)

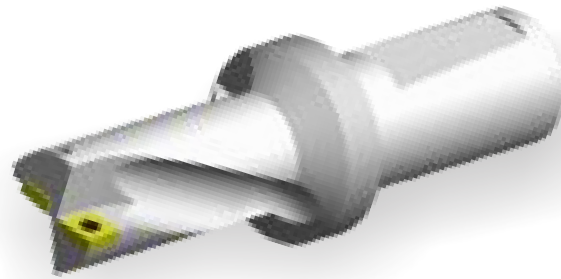
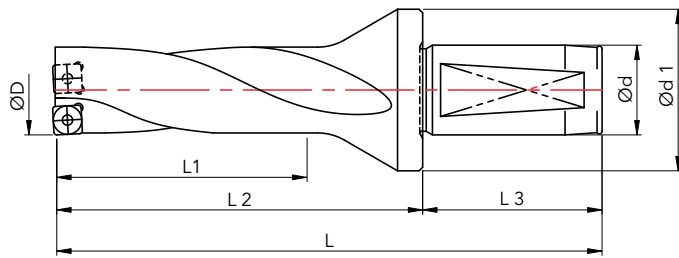
Sr. No.	SIGMA ITEM CODE	ØD	Ød	Ød1	L3	L2	L1	L	INSERT		
44	S-3DR340-32SH-11	34.00	32.00	55.00	60.00	135.00	102.00	195.00	SOGX 110408		
45	S-3DR345-40SH-11	34.50	40.00		70.00	135.00	102.00	195.00			
46	S-3DR350-32SH-11	35.00	32.00		60.00	139.00	105.00	199.00			
47	S-3DR355-40SH-11	35.50	40.00		70.00	139.00	105.00	209.00			
48	S-3DR360-32SH-11	36.00	32.00		60.00	143.00	150.00	252.00			
49	S-3DR365-40SH-11	36.50	40.00		70.00	143.00	108.00	213.00			
50	S-3DR370-32SH-11	37.00	32.00		60.00	147.00	111.00	207.00			
51	S-3DR375-40SH-11	37.50	40.00		70.00	147.00	111.00	217.00			
52	S-3DR380-32SH-11	38.00	32.00		60.00	151.00	114.00	211.00			
53	S-3DR385-40SH-11	38.50	40.00		70.00	151.00	114.00	221.00			
54	S-3DR390-32SH-11	39.00	32.00		60.00	154.00	117.00	214.00			
55	S-3DR395-40SH-11	39.50	40.00		70.00	154.00	117.00	224.00			
56	S-3DR400-32SH-11	40.00	32.00		60.00	60.00	158.00	120.00		218.00	SOGX 140512
57	S-3DR405-40SH-11	40.50	40.00			70.00	158.00	120.00		228.00	
58	S-3DR410-40SH-11	41.00	40.00	70.00		162.00	123.00	232.00			
59	S-3DR420-40SH-14	42.00	40.00	70.00		165.00	126.00	235.00			
60	S-3DR430-40SH-14	43.00	40.00	70.00		169.00	129.00	239.00			
61	S-3DR440-40SH-14	44.00	40.00	70.00		172.00	132.00	242.00			
62	S-3DR450-40SH-14	45.00	40.00	70.00		177.00	135.00	247.00			
63	S-3DR460-40SH-14	46.00	40.00	70.00		181.00	138.00	251.00			
64	S-3DR470-40SH-14	47.00	40.00	70.00		184.00	141.00	254.00			
65	S-3DR480-40SH-14	48.00	40.00	70.00		188.00	144.00	258.00			
66	S-3DR490-40SH-14	49.00	40.00	70.00		191.00	147.00	261.00			
67	S-3DR500-40SH-14	50.00	40.00	70.00		195.00	150.00	265.00			

\* Ex stock insert availability.

\* Special size can be ordered.

# Indexable Drills

## Indexable Drill (L/D-4)



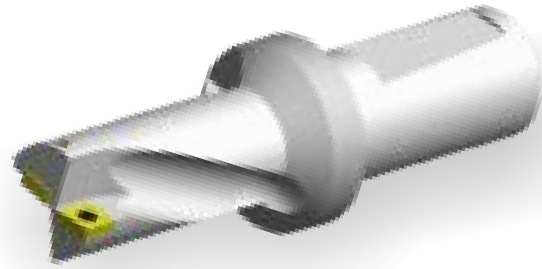
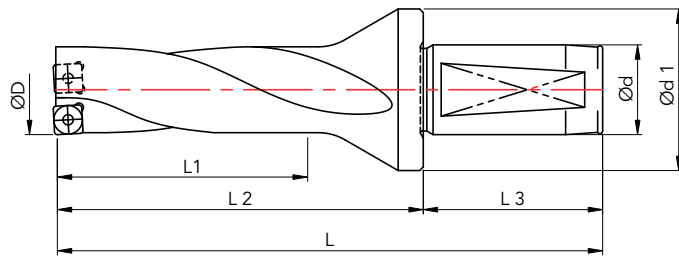
### Drilling Diameter Depth (L/D-4)

Sr. No.	SIGMA ITEM CODE	ØD	Ød	Ød1	L3	L2	L1	L	INSERT
1	S-4DR125-20SH-05	12.50	20.00	25.00	50.00	70.00	52.00	120.00	SOGX 05
2	S-4DR130-20SH-05	13.00				70.00	52.00	120.00	
3	S-4DR135-20SH-05	13.50				74.00	56.00	124.00	
4	S-4DR140-20SH-05	14.00				74.00	56.00	124.00	
5	S-4DR145-20SH-05	14.50				79.00	60.00	129.00	
6	S-4DR150-20SH-05	15.00				79.00	60.00	129.00	
7	S-4DR155-25SH-06	15.50	25.00	32.00	56.00	84.00	64.00	140.00	SOGX 06
8	S-4DR160-25SH-06	16.00				84.00	64.00	140.00	
9	S-4DR165-25SH-06	16.50				88.00	68.00	144.00	
10	S-4DR170-25SH-06	17.00				88.00	68.00	144.00	
11	S-4DR175-25SH-06	17.50				93.00	72.00	149.00	
12	S-4DR180-25SH-06	18.00				93.00	72.00	149.00	
13	S-4DR185-25SH-06	18.50				97.00	76.00	153.00	
14	S-4DR190-25SH-06	19.00				97.00	76.00	153.00	
15	S-4DR195-25SH-06	19.50				103.00	80.00	159.00	
16	S-4DR200-25SH-06	20.00				103.00	80.00	159.00	
17	S-4DR205-25SH-06	20.50				107.00	84.00	163.00	
18	S-4DR210-25SH-06	21.00				107.00	84.00	163.00	
19	S-4DR215-25SH-06	21.50				111.00	88.00	167.00	
20	S-4DR220-25SH-07	22.00				111.00	88.00	167.00	
21	S-4DR225-32SH-07	22.50	25.00	45.00	56.00	117.00	92.00	173.00	SOGX 07
22	S-4DR230-25SH-07	23.00			56.00	117.00	92.00	173.00	
23	S-4DR235-32SH-07	23.50			60.00	117.00	92.00	177.00	
24	S-4DR240-25SH-07	24.00			56.00	122.00	96.00	178.00	
25	S-4DR245-32SH-07	24.50			60.00	122.00	96.00	182.00	
26	S-4DR250-25SH-07	25.00			56.00	127.00	100.00	183.00	
27	S-4DR255-32SH-07	25.50			60.00	127.00	100.00	187.00	
28	S-4DR260-25SH-07	26.00			56.00	131.00	104.00	187.00	
29	S-4DR265-32SH-07	26.50			60.00	131.00	104.00	191.00	
30	S-4DR270-25SH-07	27.00			56.00	135.00	108.00	191.00	
31	S-4DR275-32SH-07	27.50			60.00	140.00	112.00	196.00	
32	S-4DR280-25SH-09	28.00	32.00	55	56.00	140.00	112.00	196.00	SOGX 09
33	S-4DR285-32SH-09	28.50			60.00	140.00	112.00	200.00	
34	S-4DR290-25SH-09	29.00			56.00	144.00	116.00	200.00	
35	S-4DR295-32SH-09	29.50			60.00	144.00	116.00	204.00	
36	S-4DR300-32SH-09	30.00			60.00	151.00	120.00	211.00	
37	S-4DR305-40SH-09	30.50			70.00	151.00	120.00	221.00	
38	S-4DR310-32SH-09	31.00			60.00	156.00	124.00	226.00	
39	S-4DR315-40SH-09	31.50			70.00	160.00	128.00	220.00	
40	S-4DR320-32SH-09	32.00			60.00	160.00	128.00	220.00	
41	S-4DR325-40SH-09	32.50			70.00	160.00	128.00	230.00	
42	S-4DR330-32SH-09	33.00			60.00	165.00	132.00	225.00	
43	S-4DR335-40SH-09	33.50			70.00	165.00	132.00	235.00	



# Indexable Drills

## Indexable Drill (L/D-4)



## Drilling Diameter Depth (L/D-4)

Sr. No.	SIGMA ITEM CODE	ØD	Ød	Ød1	L3	L2	L1	L	INSERT		
44	S-4DR340-32SH-11	34.00	32.00	55.00	60.00	169.00	136.00	229.00	SOGX 11		
45	S-4DR345-40SH-11	34.50	40.00		70.00	169.00	136.00	239.00			
46	S-4DR350-32SH-11	35.00	32.00		60.00	174.00	140.00	234.00			
47	S-4DR355-40SH-11	35.50	40.00		70.00	174.00	140.00	244.00			
48	S-4DR360-32SH-11	36.00	32.00		60.00	179.00	144.00	239.00			
49	S-4DR365-40SH-11	36.50	40.00		70.00	179.00	144.00	249.00			
50	S-4DR370-32SH-11	37.00	32.00		60.00	184.00	148.00	244.00			
51	S-4DR375-40SH-11	37.50	40.00		70.00	184.00	148.00	254.00			
52	S-4DR380-32SH-11	38.00	32.00		60.00	189.00	152.00	249.00			
53	S-4DR385-40SH-11	38.50	40.00		70.00	189.00	152.00	259.00			
54	S-4DR390-32SH-11	39.00	32.00		60.00	193.00	156.00	253.00			
55	S-4DR395-40SH-11	39.50	40.00		70.00	193.00	156.00	263.00			
56	S-4DR400-32SH-11	40.00	32.00		60.00	60.00	198.00	160.00		258.00	SOGX 14
57	S-4DR405-40SH-11	40.50	40.00			70.00	198.00	160.00		268.00	
58	S-4DR410-40SH-11	41.00	40.00	70.00		203.00	164.00	273.00			
59	S-4DR420-40SH-14	42.00	40.00	70.00		207.00	168.00	277.00			
60	S-4DR430-40SH-14	43.00	40.00	70.00		212.00	172.00	282.00			
61	S-4DR440-40SH-14	44.00	40.00	70.00		216.00	176.00	286.00			
62	S-4DR450-40SH-14	45.00	40.00	70.00		222.00	180.00	292.00			
63	S-4DR460-40SH-14	46.00	40.00	70.00		227.00	184.00	297.00			
64	S-4DR470-40SH-14	47.00	40.00	70.00		231.00	188.00	301.00			
65	S-4DR480-40SH-14	48.00	40.00	70.00		236.00	192.00	306.00			
66	S-4DR490-40SH-14	49.00	40.00	70.00		240.00	196.00	310.00			
67	S-4DR500-40SH-14	50.00	40.00	70.00		245.00	200.00	315.00			

\* Ex stock insert availability.

\* Special size can be ordered.

# Plunging / Milling Chamfer Tools

Sigma Chamfer tools are suitable for plunging as well as milling operations. These are compact, high feed Chamfer Tools in nature which helps in achieving higher speed and feed. It works as multi functional tool which includes chamfering, back chamfering and face milling operations.

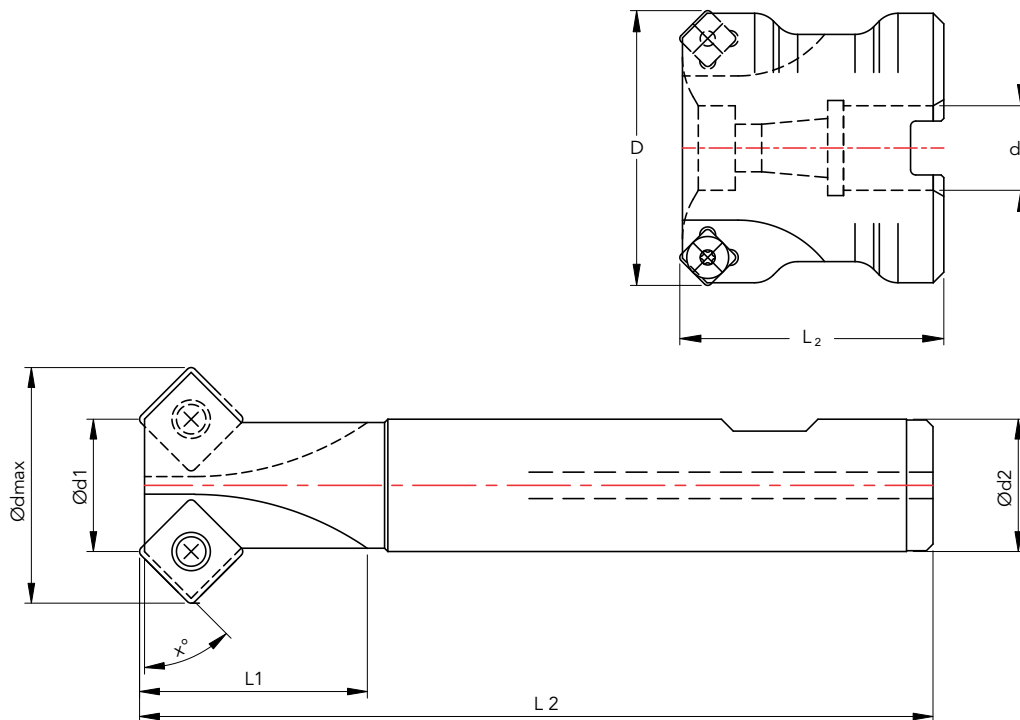
Our range of ground inserts and precise inserts avoids vibrations and chatter generated during plunging & chamfering operations.



PLUNGING / MILLING CHAMFER TOOLS

# Plunging / Milling Chamfer Tools

## Plunging Chamfer Milling Tools



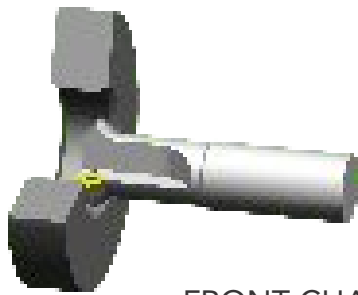
### Suitable Insert : SOGX

SIGMA ITEM CODE	DEG.	Z	MAX. TOOL DIA Ø	d1	d2	L1	L2
SCH - 0416D45	45°	1	16.00	4.00	16.00	25.00	100.00
SCH - 0622D45		1	22.00	6.00	20.00	40.00	120.00
SCH - 1531D45		2	31.00	15.00	25.00	50.00	130.00
SCH - 2743D45		3	43.00	27.00	25.00	50.00	130.00
SCH - 3652D45		4	52.00	16.00	-	-	50.00
SCH - 0419D30	30°	1	19.00	4.00	16.00	25.00	100.00
SCH - 0828D30		2	28.00	8.00	20.00	40.00	120.00
SCH - 1030D30		2	30.00	10.00	25.00	50.00	130.00
SCH - 0819D60	60°	1	19.50	8.00	16.00	25.00	100.00
SCH - 2031D60		2	31.00	20.00	25.00	40.00	120.00

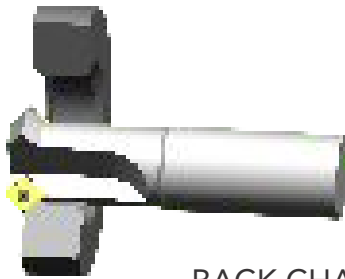
### Spares

INSERT DESCRIPTION	SCREW	TORX
SOGX - 09	SDG - 3	T9
SOGX - 11	SDG - 4	T10

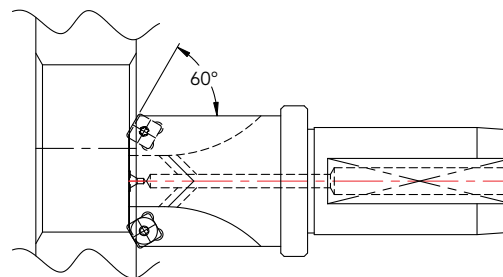
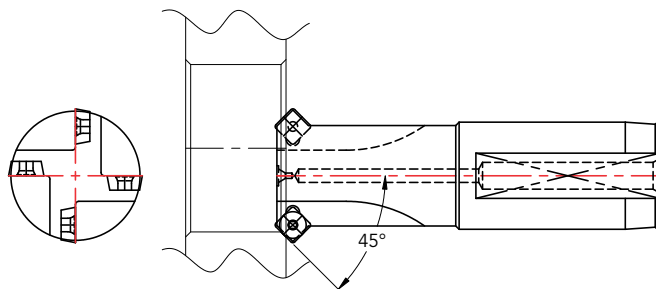
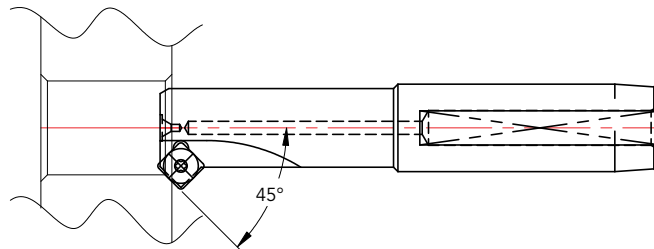
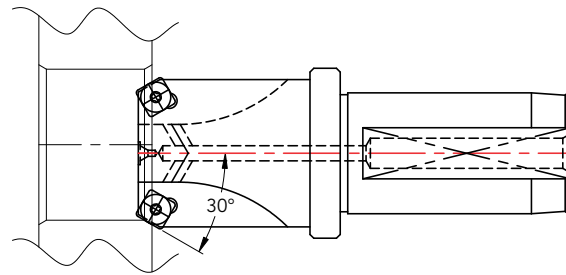
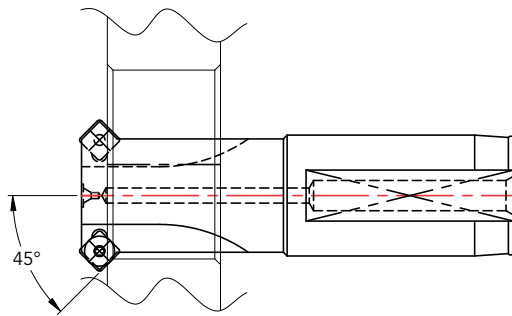
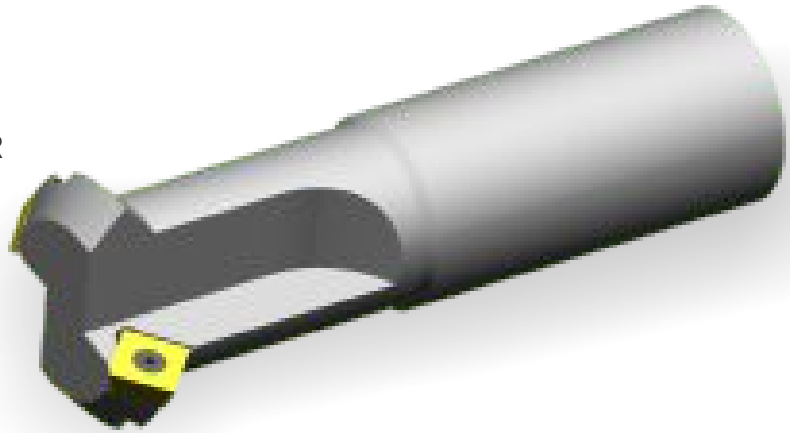
# Plunging / Milling Chamfer Tools



FRONT CHAMFER



BACK CHAMFER



Note : Special Designs and Sizes are Available on Request

# Polycrystalline Diamond (PCD) Tools

PCD Tools are very high speed and economical alternative to tungsten carbide, coated or uncoated and are designed to meet more demanding applications of non-ferrous, Copper alloys, CFRP & MMC machining.

We offer PCD Milling Cutters, PCD Turning and Milling Inserts, PCD Cartridges, Grooving Blades and Round Tools.

We can design and manufacture custom PCD Tools as per your requirement.

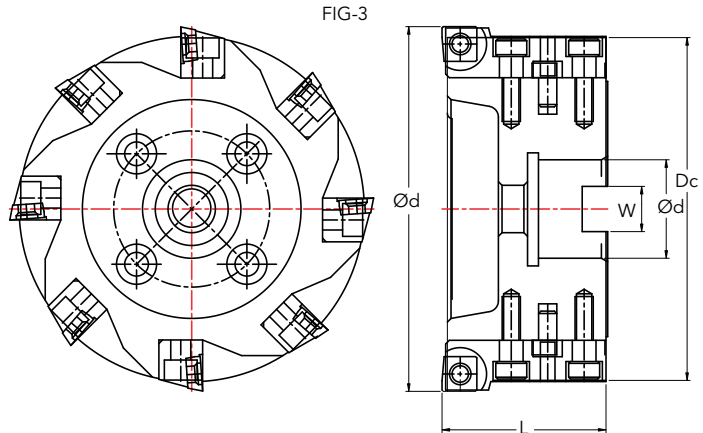
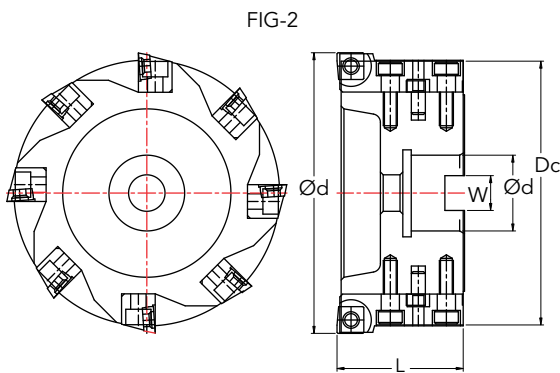
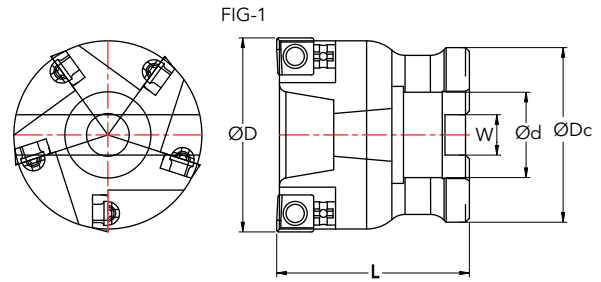


POLYCRYSTALLINE DIAMOND (PCD) TOOLS

# Polycrystalline Diamond (PCD) Tools

PCD Tools Provides :

- Adjustable radial and axial setting.
- Special high speed geometry.
- Enhanced tool life and surface finish.
- Suitable to standard adaptors.



ORDER NO	CUTTER BODY	CUTTER DIA.	NO OF INSERTS	DIMENSION (mm)				INSERT	FIG. NO.
		ØD	Z	d(H7)	W	Dc	L		
FMC-0505S	STEEL	50	5	22	10.4	45	50	SOEW 10	1
FMC-0636S	STEEL	63	6	27	12.4	55	50	SOEW 10	1
FMC-0806S	STEEL	80	6	27	12.4	55	50	SOEW 10	1
FMC-1006A	ALUMINIUM	100	8	32	14.4	95	45	SOEW 10	2
FMC-1258A	ALUMINIUM	125	10	40	16.4	120	45	SOEW 10	2
FMC-16010A	ALUMINIUM	160	12	40	16.4	155	45	SOEW 10	3

## PCD Grooving Blade

BLADE	L - LENGTH	C - CENTER HEIGHT	S - WIDTH
	55	16	2.12
	55	16	2.21
	55	16	2.38
	55	16	2.54
	55	16	3.26
	55	16	4.05
	55	16	4.45

Note : Special Designs and Sizes are Available on Request

INSERT	DISCRIPTION	DIMENSION (mm)			
		d	s	r	L
	CCMX 060202	6.35	2.38	0.20	3.10
	CCMX 060204	6.35	2.38	0.40	3.10
	CCMX 09T302	9.525	3.97	0.20	2.80
	CCMX 09T304	9.525	3.97	0.40	2.70
	CCMX 120404	12.70	4.76	0.40	2.80
	CCMX 120408	12.70	4.76	0.80	2.70
	TCMX 06T102	3.97	2.38	0.20	2.00
	TCMX 090202	5.56	2.38	0.20	2.60
	TCMX 090204	5.56	3.97	0.40	2.30
	TCMX 110202	6.35	3.97	0.20	3.60
	TCMX 110204	6.35	4.76	0.40	3.30
	TCMX 16T304	9.525	3.18	0.40	2.90
	TCMX 16T308	9.525	3.18	0.80	2.70
	VCMX 110304	6.35	3.18	0.40	3.00
	VCMX 110308	6.35	3.18	0.80	2.70
	VCMX 160404	9.525	4.76	0.40	6.50
	VCMX 160408	9.525	4.76	0.80	5.60
	DCMX 070202	6.35	2.38	0.20	2.00
	DCMX 070204	6.35	2.38	0.40	3.70
	DCMX 11T304	9.525	3.97	0.40	2.80
	DCMX 11T308	9.525	3.97	0.80	2.40

## Full Edge PCD Inserts

	TCMW 110204	6.35	3.97	0.40	
	TCMW 110208	6.35	4.76	0.80	
	TCMW 16T304	9.525	3.18	0.40	
	TCMW16T304	9.525	3.18	0.80	

# ISO Cartridges

We manufacture all range of ISO Cartridges for boring and chamfering applications.

Cartridges save your tool body from accidental damages. They are replaceable and have small radial and axial adjustment.

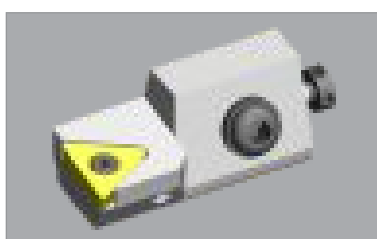
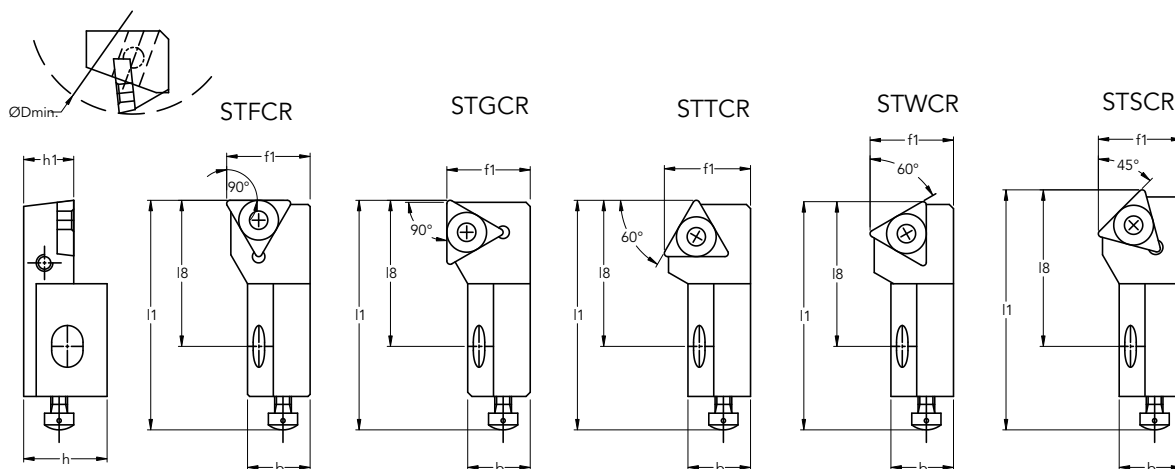


ISO CARTRIDGES

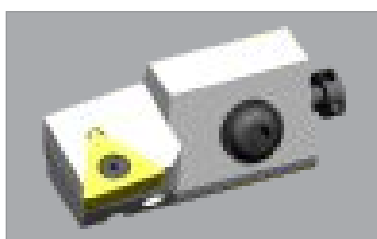


# ISO Cartridges

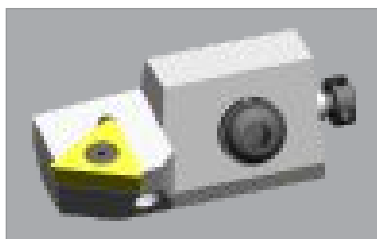
S-Style For TCMT Insert



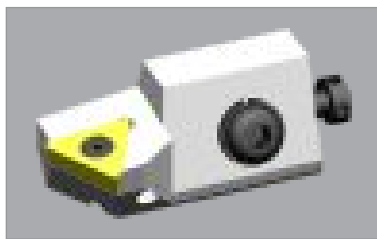
ORDER CODE	ØD min	f1	h1	b	h	l1	l8	SUITABLE INSERT
STFCR/L 06CA-06T1	20.0	8.0	6.0	6.0	8.5	25.0	13.0	TCMT 06
STFCR/L 08CA-09	25.0	10.0	8.0	8.0	10.0	32.0	15.0	TCMT 09
STFCR/L 10CA-11	40.0	14.0	10.0	11.0	15.0	50.0	30.0	TCMT 11
STFCR/L 12CA-16	50.0	20.0	12.0	15.0	20.0	55.0	35.0	TCMT 16
STFCR/L 16CA-16	55.0	25.0	16.0	20.0	21.0	63.0	38.0	TCMT 16



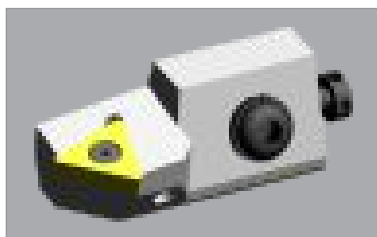
ORDER CODE	ØD min	f1	h1	b	h	l1	l8	SUITABLE INSERT
STGCR/L 06CA-06T1	30.0	8.0	6.0	6.0	8.5	25.0	13.0	TCMT 06
STGCR/L 08CA-09	37.0	10.0	8.0	8.0	10.0	32.0	15.0	TCMT 09
STGCR/L 10CA-11	55.0	14.0	10.0	11.0	15.0	50.0	30.0	TCMT 11
STGCR/L 12CA-16	75.0	20.0	12.0	15.0	20.0	55.0	35.0	TCMT 16
STGCR/L 16CA-16	85.0	25.0	16.0	20.0	21.0	63.0	38.0	TCMT 16



ORDER CODE	ØD min	f1	h1	b	h	l1	l8	SUITABLE INSERT
STTCR/L 06CA-06T1	20.0	5.0	6.0	6.0	8.5	25.0	13.0	TCMT 06
STTCR/L 08CA-09	25.0	6.0	8.0	8.0	10.0	32.0	15.0	TCMT 09
STTCR/L 10CA-11	40.0	9.0	10.0	11.0	15.0	50.0	30.0	TCMT 11
STTCR/L 12CA-16	50.0	13.0	12.0	15.0	20.0	55.0	35.0	TCMT 16
STTCR/L 16CA-16	55.0	15.0	16.0	20.0	21.0	63.0	38.0	TCMT 16



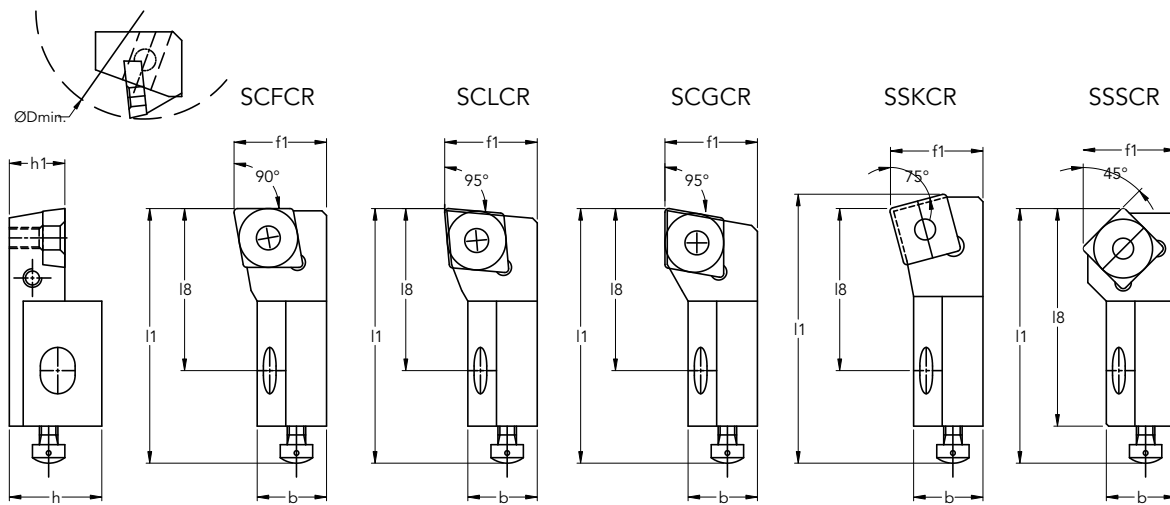
ORDER CODE	ØD min	f1	h1	b	h	l1	l8	SUITABLE INSERT
STWCR/L 06CA-06T1	20.0	5.0	6.0	6.0	8.5	24.2	13.0	TCMT 06
STWCR/L 08CA-09	25.0	6.0	8.0	8.0	10.0	32.2	15.0	TCMT 09
STWCR/L 10CA-11	40.0	9.0	10.0	11.0	15.0	49.0	30.0	TCMT 11
STWCR/L 12CA-16	50.0	13.0	12.0	15.0	20.0	54.2	35.0	TCMT 16
STWCR/L 16CA-16	55.0	15.0	16.0	20.0	21.0	63.2	38.0	TCMT 16

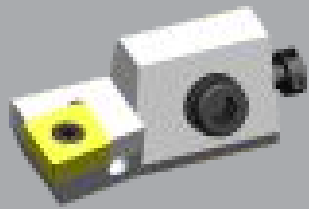


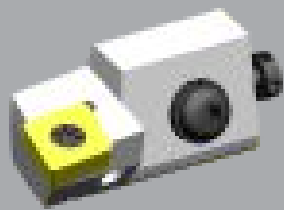
ORDER CODE	ØD min	f1	h1	b	h	l1	l8	SUITABLE INSERT
STSCR/L 06CA-06T1	20.0	8.0	6.0	6.0	8.5	25.5	13.0	TCMT 06
STSCR/L 08CA-09	25.0	10.0	8.0	8.0	10.0	34.1	15.0	TCMT 09
STSCR/L 10CA-11	40.0	14.0	10.0	11.0	15.0	51.0	30.0	TCMT 11
STSCR/L 12CA-16	50.0	20.0	12.0	15.0	20.0	57.2	35.0	TCMT 16
STSCR/L 16CA-16	55.0	25.0	16.0	20.0	21.0	63.2	38.0	TCMT 16

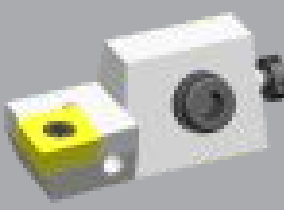
# ISO Cartridges

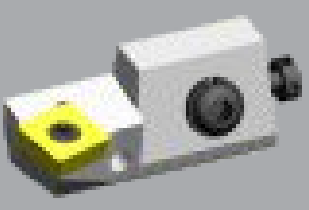
## S-Style For CCMT & SCMT Insert

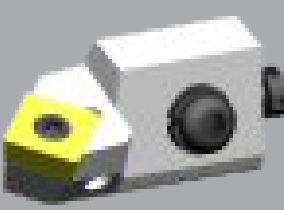


	ORDER CODE	ØD min	f1	h1	b	h	l1	l8	SUITABLE INSERT
	SCFCR/L 08CA-06	25.0	10.0	8.0	8.0	10.0	32.0	15.0	CCMT 06
SCFCR/L 10CA-09T3	40.0	14.0	10.0	11.0	15.0	50.0	30.0	CCMT 09	
SCFCR/L 12CA-12	50.0	20.0	12.0	15.0	20.0	55.0	35.0	CCMT 12	
SCFCR/L 16CA-12	55.0	25.0	16.0	20.0	25.0	63.0	39.0	CCMT 12	

	ORDER CODE	ØD min	f1	h1	b	h	l1	l8	SUITABLE INSERT
	SCLCR/L 08CA-06	25.0	10.0	8.0	8.0	10.0	32.0	15.0	CCMT 06
SCLCR/L 10CA-09T3	40.0	14.0	10.0	11.0	15.0	50.0	30.0	CCMT 09	
SCLCR/L 12CA-12	50.0	20.0	12.0	15.0	20.0	55.0	35.0	CCMT 12	

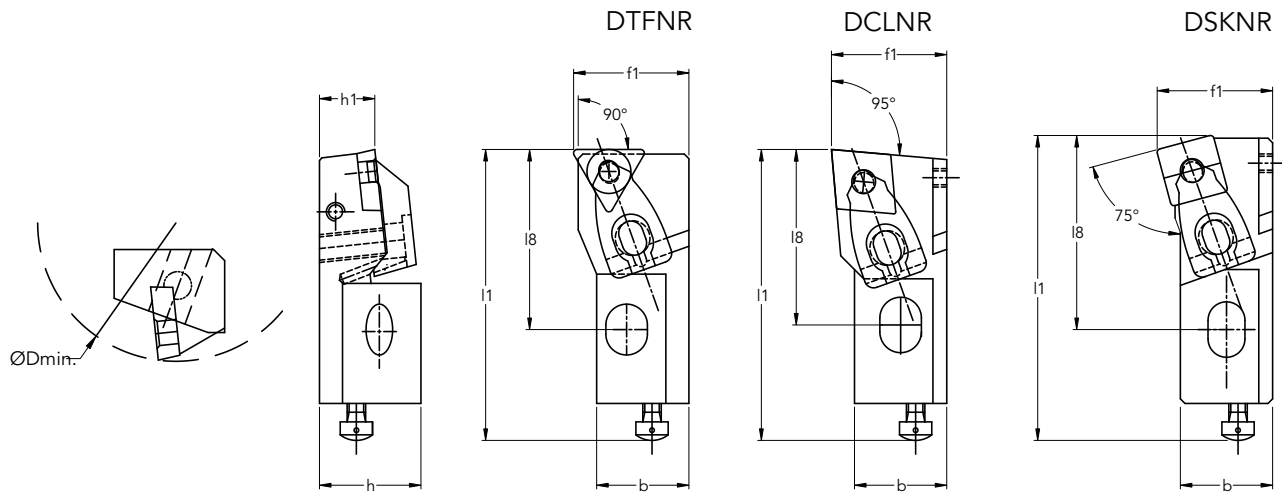
	ORDER CODE	ØD min	f1	h1	b	h	l1	l8	SUITABLE INSERT
	SCGCR/L 10CA-09T3	55.0	14.0	10.0	11.0	15.0	50.0	30.0	CCMT 09
SCGCR/L 12CA-12	75.0	20.0	12.0	15.0	20.0	55.0	35.0	CCMT 12	
SCGCR/L 16CA-12	85.0	25.0	16.0	20.0	25.0	63.0	39.0	CCMT 12	

	ORDER CODE	ØD min	f1	h1	b	h	l1	l8	SUITABLE INSERT
	SSKCR/L 10CA-09T3	40.0	14.0	10.0	11.0	15.0	50.0	30.0	SCMT 09
SSKCR/L 12CA-12	50.0	20.0	12.0	15.0	20.0	55.0	35.0	SCMT 12	

	ORDER CODE	ØD min	f1	h1	b	h	l1	l8	SUITABLE INSERT
	SSSCR/L 10CA-09T3	40.0	14.0	10.0	11.0	15.0	50.0	30.0	SCMT 09
SSSCR/L 12CA-12	50.0	20.0	12.0	15.0	20.0	55.0	35.0	SCMT 12	

# ISO Cartridges

D-Style For TNMG, CNMG & SNMG Insert



	ORDER CODE	ØD min	f1	h1	b	h	l1	l8	SUITABLE INSERT
	DTFNR/L 16CA-16	55.0	25.0	16.0	20.0	25.0	63.0	39.0	TNMG 16

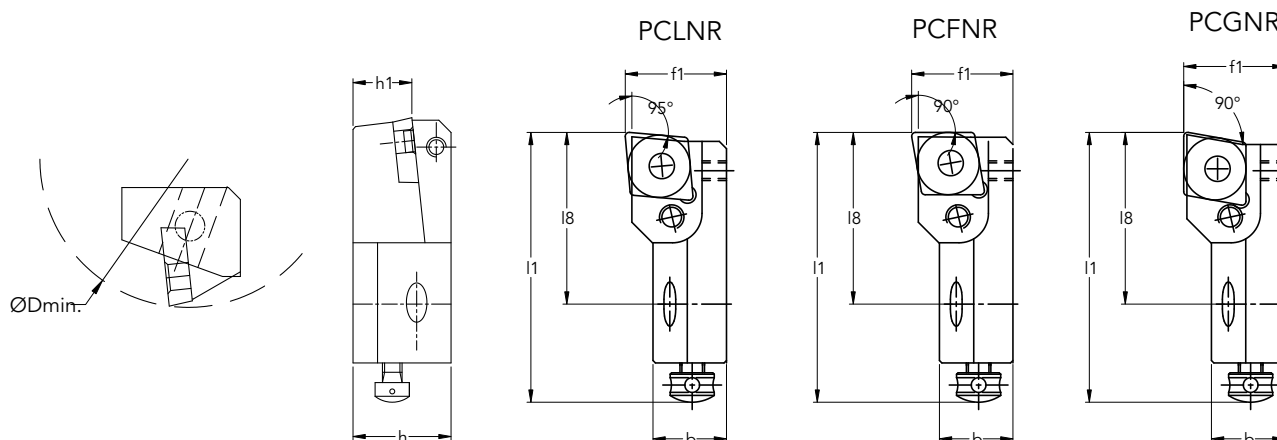
	ORDER CODE	ØD min	f1	h1	b	h	l1	l8	SUITABLE INSERT
	DCLNR/L 25CA-12	100.0	32.0	25.0	25.0	38.0	100.0	50.0	CNMG 12
	DCLNR/L 25CA-16	100.0	32.0	25.0	25.0	38.0	100.0	50.0	CNMG 16

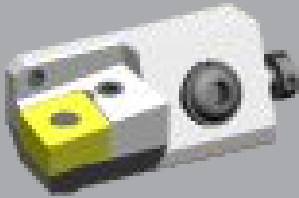
	ORDER CODE	ØD min	f1	h1	b	h	l1	l8	SUITABLE INSERT
	DSKNR/L 25CA-12	100.0	32.0	25.0	25.0	38.0	100.0	50.0	SNMG 12

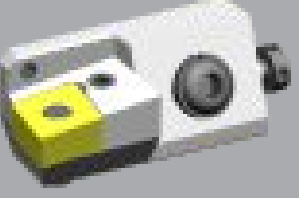
Note : Special Designs and Sizes are Available on Request

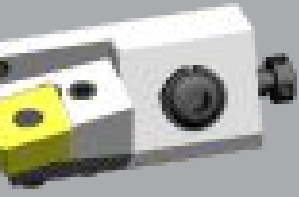
# ISO Cartridges

## P-Style For CNMG Insert



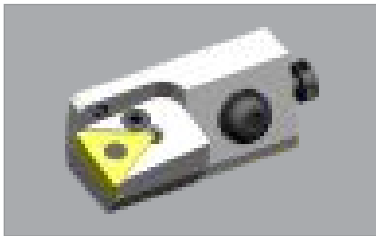
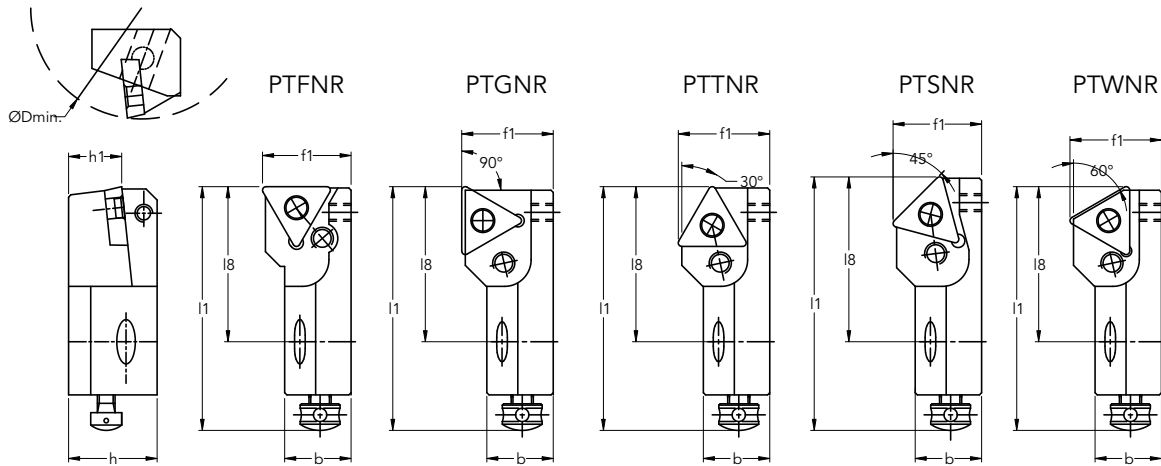
	ORDER CODE	ØD min	f1	h1	b	h	l1	l8	SUITABLE INSERT
	PCLNR/L 12CA-12	50.0	20.0	12.0	15.0	20.0	55.0	35.0	CNMG 12
	PCLNR/L 16CA-12	55.0	25.0	16.0	20.0	25.0	63.0	39.0	CNMG 12
	PCLNR/L 25CA-19	100.0	32.0	25.0	25.0	38.0	100.0	50.0	CNMG 19

	ORDER CODE	ØD min	f1	h1	b	h	l1	l8	SUITABLE INSERT
	PCFNR/L 12CA-12	50.0	20.0	12.0	15.0	20.0	55.0	35.0	CNMG 12
	PCFNR/L 16CA-12	55.0	25.0	16.0	20.0	25.0	63.0	39.0	CNMG 12

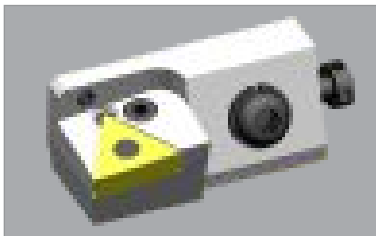
	ORDER CODE	ØD min	f1	h1	b	h	l1	l8	SUITABLE INSERT
	PCGNR/L 12CA-12	75.0	20.0	12.0	15.0	20.0	55.0	35.0	CNMG 12
	PCGNR/L 16CA-12	75.0	25.0	16.0	20.0	25.0	63.0	39.0	CNMG 12

# ISO Cartridges

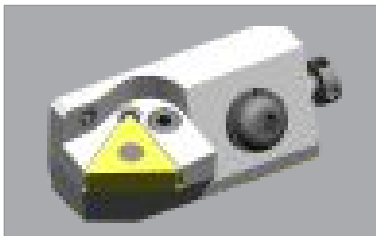
P-Style For TNMG Insert



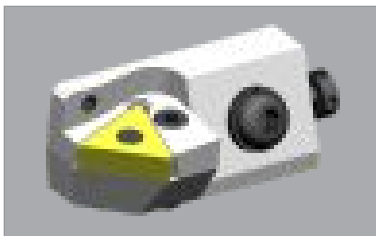
ORDER CODE	ØD min	f1	h1	b	h	l1	l8	SUITABLE INSERT
PTFNR/L 12CA-16	50.0	20.0	12.0	15.0	20.0	55.0	35.0	TNMG-16
PTFNR/L 16CA-16	55.0	25.0	16.0	20.0	25.0	63.0	39.0	TNMG-16
PTFNR/L 20CA-22	70.0	25.0	20.0	20.0	30.0	70.0	40.0	TNMG-22



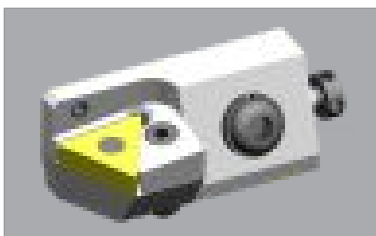
ORDER CODE	ØD min	f1	h1	b	h	l1	l8	SUITABLE INSERT
PTGNR/L 12CA-16	75.0	20.0	12.0	15.0	20.0	55.0	35.0	TNMG-16
PTGNR/L 16CA-16	75.0	25.0	16.0	20.0	25.0	63.0	39.0	TNMG-16
PTGNR/L 20CA-22	90.0	25.0	20.0	20.0	30.0	70.0	40.0	TNMG-22



ORDER CODE	ØD min	f1	h1	b	h	l1	l8	SUITABLE INSERT
PTTNR/L 12CA-16	50.0	20.0	12.0	15.0	20.0	55.0	35.0	TNMG-16
PTTNR/L 16CA-16	55.0	25.0	16.0	20.0	25.0	63.0	39.0	TNMG-16



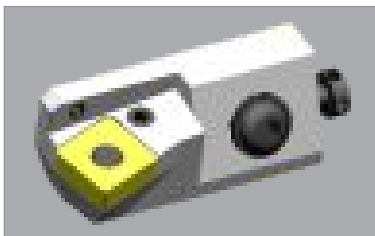
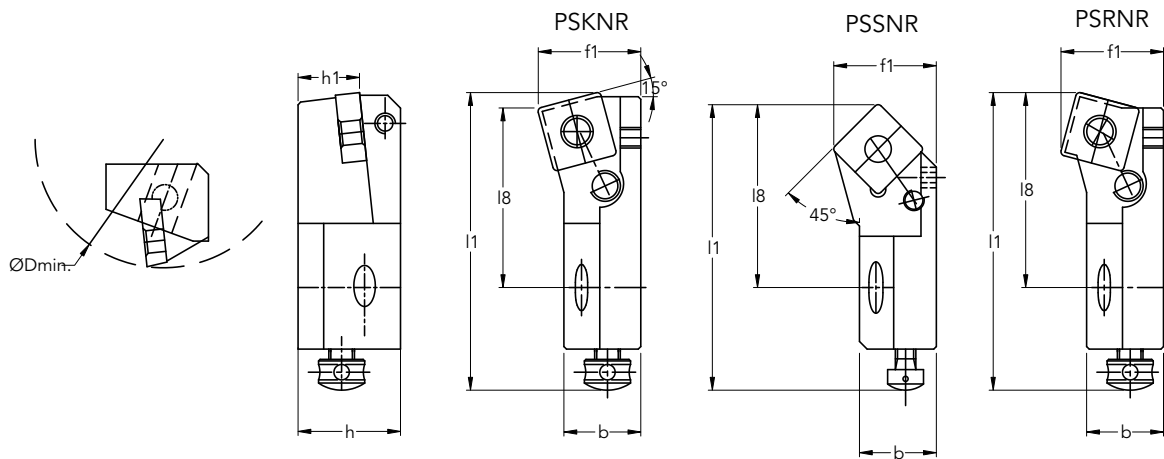
ORDER CODE	ØD min	f1	h1	b	h	l1	l8	SUITABLE INSERT
PTSNR/L 12CA-16	50.0	20.0	12.0	15.0	20.0	57.2	27.0	TNMG-16
PTSNR/L 16CA-16	55.0	25.0	16.0	20.0	25.0	63.2	29.0	TNMG-16
PTSNR/L 20CA-22	70.0	25.0	20.0	20.0	30.0	74.1	30.0	TNMG-22



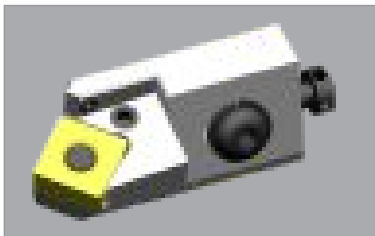
ORDER CODE	ØD min	f1	h1	b	h	l1	l8	SUITABLE INSERT
PTWNR/L 12CA-16	50.0	20.0	12.0	15.0	20.0	54.2	27.0	TNMG-16

# ISO Cartridges

## P-Style For SNMG Insert



ORDER CODE	ØD min	f1	h1	b	h	l1	l8	SUITABLE INSERT
PSKNR/L 12CA-12	50.0	20.0	12.0	15.0	20.0	55.0	35.0	SNMG 12
PSKNR/L 16CA-12	55.0	25.0	16.0	20.0	25.0	63.0	39.0	SNMG 12
PSKNR/L 20CA-15	70.0	25.0	20.0	20.0	30.0	73.7	40.0	SNMG 15
PSKNR/L 25CA-19	100.0	32.0	25.0	25.0	38.0	100.0	50.0	SNMG 19



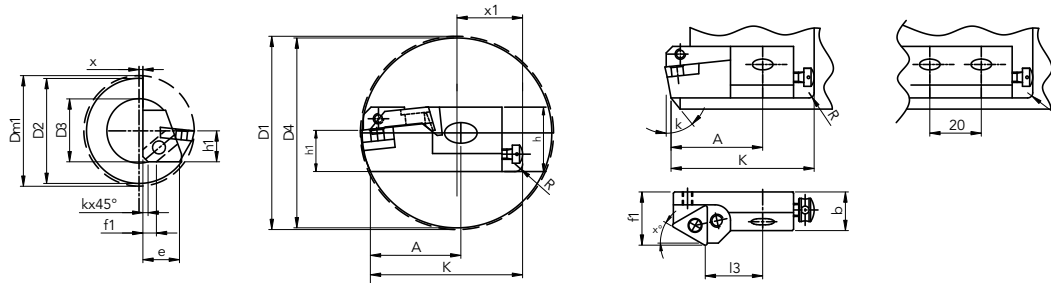
ORDER CODE	ØD min	f1	h1	b	h	l1	l8	SUITABLE INSERT
PSSNR/L 12CA-12	50.0	20.0	12.0	15.0	20.0	55.0	35.0	CNMG 12
PSSNR/L 16CA-12	55.0	25.0	16.0	20.0	25.0	63.0	39.0	CNMG 12
PSSNR/L 20CA-15	70.0	25.0	20.0	20.0	30.0	73.7	40.0	SNMG 15



ORDER CODE	ØD min	f1	h1	b	h	l1	l8	SUITABLE INSERT
PSRRR/L 16CA-12	55.0	25.0	16.0	20.0	25.0	63.0	39.0	CNMG 12
PSRRR/L 20CA-15	70.0	25.0	20.0	20.0	30.0	73.7	40.0	

# ISO Cartridges

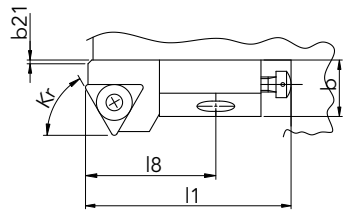
## Mounting Dimensions for P-Type & D-Type Cartridges



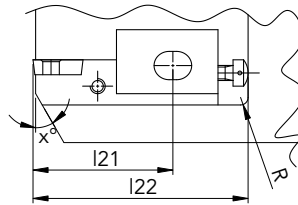
CARTRIDGE SIZE	ORDER CODE	K°	h1	D min	D1 min	e	f1	l8	K	A	R max	Ch max
<p><b>12CA</b></p>	PTFNR/L 12CA-16	90°	12.0	50.0		14.0		35.0	53.0	33.0	5.0	0.4
	PTGNR/L 12CA-16	90°			75.0		35.0	50.5	30.5			
	PTWNR/L 12CA-16	60°					3.5	27.0	50.5	30.5		
	PTTNR/L 12CA-16	60°			75.0		10.5	35.0	50.5	30.5		
	PTSNR/L 12CA-16	45°					6.5	27.0	53.5	33.5		
	PCLNR/L 12CA-12	95°						35.0	53.0	33.0		
	PCFNR/L 12CA-12	90°						35.0	53.0	33.0		
	PCGNR/L 12CA-12	90°						35.0	50.5	30.5		
	PSKNR/L 12CA-12	75°					1.0	35.0	56.5	36.5		
	PSSNR/L 12CA-12	45°						27.0	52.0	32.0		
<p><b>16CA</b></p>	PTFNR/L 16CA-16	90°	16.0	55.0		17.5		38.0	60.0	35.0	6.0	0.4
	PTGNR/L 16CA-16	90°		60.0	75.0	17.0		38.0	57.0	32.0		
	PTTNR/L 16CA-16	60°		55.0		19.0		39.0	57.0	34.5		
	PTSNR/L 16CA-16	45°		55.0		17.0	11.5	28.0	57.5	32.5		
	PCLNR/L 16CA-12	95°		55.0	75.0	17.5		38.0	57.0	32.0		
	PCFNR/L 16CA-12	90°		55.0		17.5		38.0	59.0	34.0		
	PCGNR/L 16CA-12	90°		60.0	75.0	18.5		38.0	55.5	30.5		
	PSKNR/L 16CA-12	75°		55.0		17.5	6.0	38.0	63.5	38.5		
	PSSNR/L 16CA-12	45°		55.0	75.0	17.0		28.0	56.5	31.5		
	PSRNR/L 16CA-12	75°		55.0	75.0	19.0		38.0	52.5	27.5		
DTFNR/L 16CA-16	90°			55.0		18.5		39.0	61.0	37.5		
<p><b>20CA</b></p>	PTFNR/L 20CA-22	90°	20.0	70.0			15.5		40.0	67.0	6.0	0.4
	PTGNR/L 20CA-22	90°			90.0	16.0		40.0	62.5	32.5		
	PTSNR/L 20CA-22	45°				15.5	6.9	30.0	67.0	37.0		
	PSKNR/L 20CA-15	75°				16.5	1.3	40.0	71.0	41.0		
	PSSNR/L 20CA-15	45°				15.5		30.0	65.0	35.0		
	PSRNR/L 20CA-15	75°				90.0	18.0		40.0	63.0		
<p><b>25CA</b></p>	PCLNR/L 25CA-19	95°	25.0	100.0	115.0			50.0	91.5	41.5	7.0	0.7
	PSKNR/L 25CA-19	95°					50.0	101.6	51.6			
	DCLNR/L 25CA-12	95°			115.0		50.0	91.5	43.6			
	DCLNR/L 25CA-16	95°			115.0		50.0	91.5	43.6			
	DSKNR/L 25CA-12	75°					50.0	101.6	51.6			

# ISO Cartridges

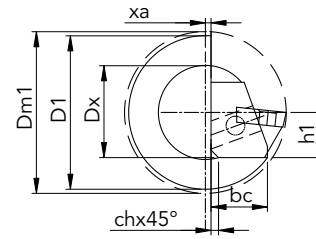
## Mounting Dimensions for S-Type Cartridges



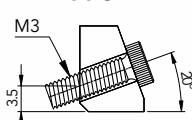
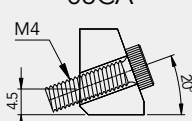
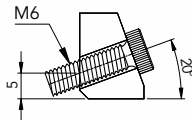
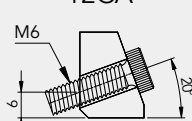
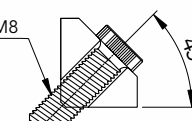
TOP VIEW



SIDE VIEW



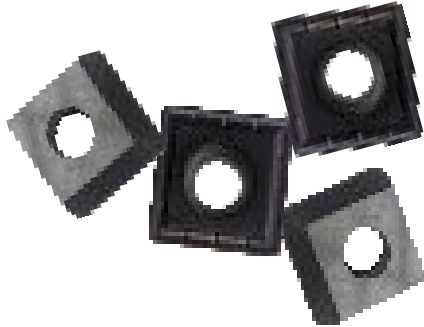
FRONT VIEW

CARTRIDGE SIZE	ORDER CODE	K°	h1	D min	D1 min	e	f1	l8	K	A	R max	Ch max	
 06CA	STFCR/L 06CA-06T1	90°	6.0	20.0		5.0		13.0	24.0	12.0	1.5	0.3	
	STGCR/L 06CA-06T1	90°			30.0		13.0	23.0	11.0				
	STTCR/L 06CA-06T1	60°			30.0		3.4	13.0	23.0	11.0			
	STSCR/L 06CA-06T1	45°					2.5	9.0	23.0	11.0			
	STWCR/L 06CA-06T1	60°					1.2	9.0	22.5	10.5			
 08CA	STFCR/L 08CA-09	90°	8.0	25.0		6.0		15.0	30.5	13.5	2.5	0.3	
	STGCR/L 08CA-09	90°			37.0		11.0	29.2	12.2				
	STTCR/L 08CA-09	60°			37.0		2.7	15.0	29.2	12.2			
	STSCR/L 08CA-09	45°					2.4	11.0	30.5	13.5			
	STWCR/L 08CA-09	60°					0.8	11.0	30.0	13.0			
	SCFCR/L 08CA-06	90°						15.0	30.5	13.5			
	SCLCR/L 08CA-06	95°					37.0	11.0	29.2	12.2			
 10CA	STFCR/L 10CA-11	90°	10.0	40.0		9.0		35.0	47.5	27.5	4.0	0.4	
	STGCR/L 10CA-11	90°			55.0		35.0	46.5	26.5				
	STTCR/L 10CA-11	60°			55.0		6.1	35.0	48.0	28.0			
	STSCR/L 10CA-11	45°					3.0	27.0	49.0	29.0			
	STWCR/L 10CA-11	60°					1.2	27.0	47.0	27.0			
	SCFCR/L 10CA-09T3	90°						35.0	47.5	27.5			
	SCLCR/L 10CA-09T3	95°						35.0	47.5	27.5			
	SSKCR/L 10CA-09T3	75°					0.9	35.0	50.5	30.5			
	SSSCR/L 10CA-09T3	45°						27.0	47.0	27.0			
 12CA	STFCR/L 12CA-16	90°	12.0	50.0		13.0		35.0	53.2	33.2	5.0	0.4	
	STGCR/L 12CA-16	90°			75.0	15.0	35.0	51.0	31.0				
	STTCR/L 12CA-16	60°			75.0	13.0	9.8	35.0	53.0	33.0			
	STSCR/L 12CA-16	45°				13.0	5.4	27.0	55.0	35.0			
	STWCR/L 12CA-16	60°				13.0	4.2	27.0	52.0	32.0			
	SCFCR/L 12CA-12	90°					13.0	35.0	53.2	33.2			
	SCLCR/L 12CA-12	95°					13.0	35.0	53.0	33.2			
	SSKCR/L 12CA-12	75°					13.5	3.1	35.0	56.0			36.0
	SSSCR/L 12CA-12	45°				75.0	13.0	27.0	51.5	31.5			
 16CA	STFCR/L 16CA-16	90°	16.0	55.0		17.0		38.0	61.0	36.0	6.0	0.4	
	STGCR/L 16CA-16	90°		60.0	75.0	18.5	38.0	57.0	32.0				
	STTCR/L 16CA-16	60°		60.0	75.0	17.5	11.5	38.0	60.5	35.5			
	STSCR/L 16CA-16	45°		55.0		16.5	7.1	28.0	60.5	35.5			
	STWCR/L 16CA-16	60°		55.0		16.5	4.9	28.0	57.5	32.5			
	SCFCR/L 16CA-12	90°		55.0		17.0		38.0	61.0	36.0			



## Advantages of Sigma Inserts

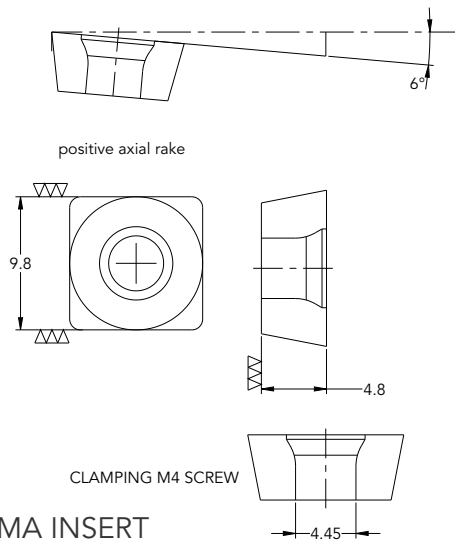
### New Age Plunge Boring Inserts over ISO Inserts



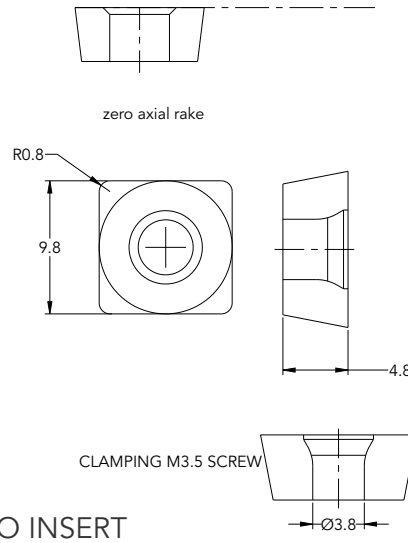
SIGMA INSERT : PLUNGE FACING GEOMETRY



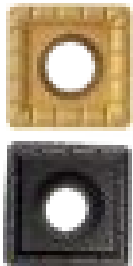
ISO INSERT : ONLY TURNING GEOMETRY



SIGMA INSERT



ISO INSERT



### Sub Micron Grain Size, Chip Splitting Groove, Plunging Geometry, 'G' Class Inserts

Sub micron grain size provides highest rigidity and stability for plunging operation. Chip splitting groove and plunging geometry further reduces chip swarf load which is very important in axial plunging. Smallest variation between cutting edges on multi cutting edge tools results in significant performance loss, which is very high with iso inserts. Sigma inserts are flat/bottom, side ground and with precise pockets. Variation between cutting edges will not be more than 0.013 mm radially which substantially increases tool life.

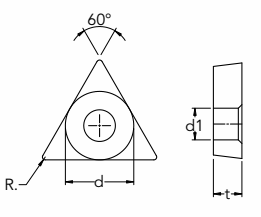
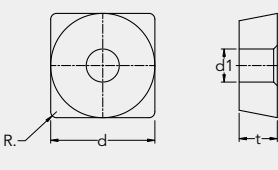
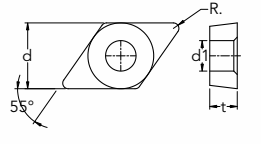
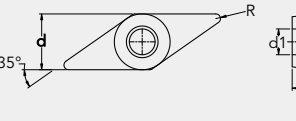
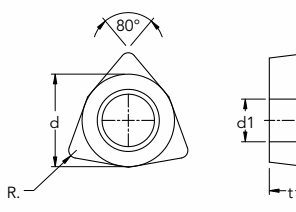


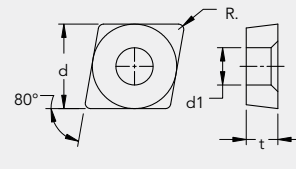
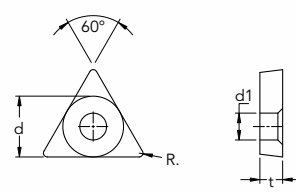
### Advantages of Positive Axial Rake

Positive axial rake of sigma tool body and insert lifts the chips away from cutting zone providing easy cutting, less spindle power, while zero or negative axial rake pushes the chips instead of lifting thereby requires more power, more heat at cutting zone due to chip clogging reduces insert life.

Positive axial rake reduces spindle load by 30-40% thereby increasing penetration rate and more components per shift.

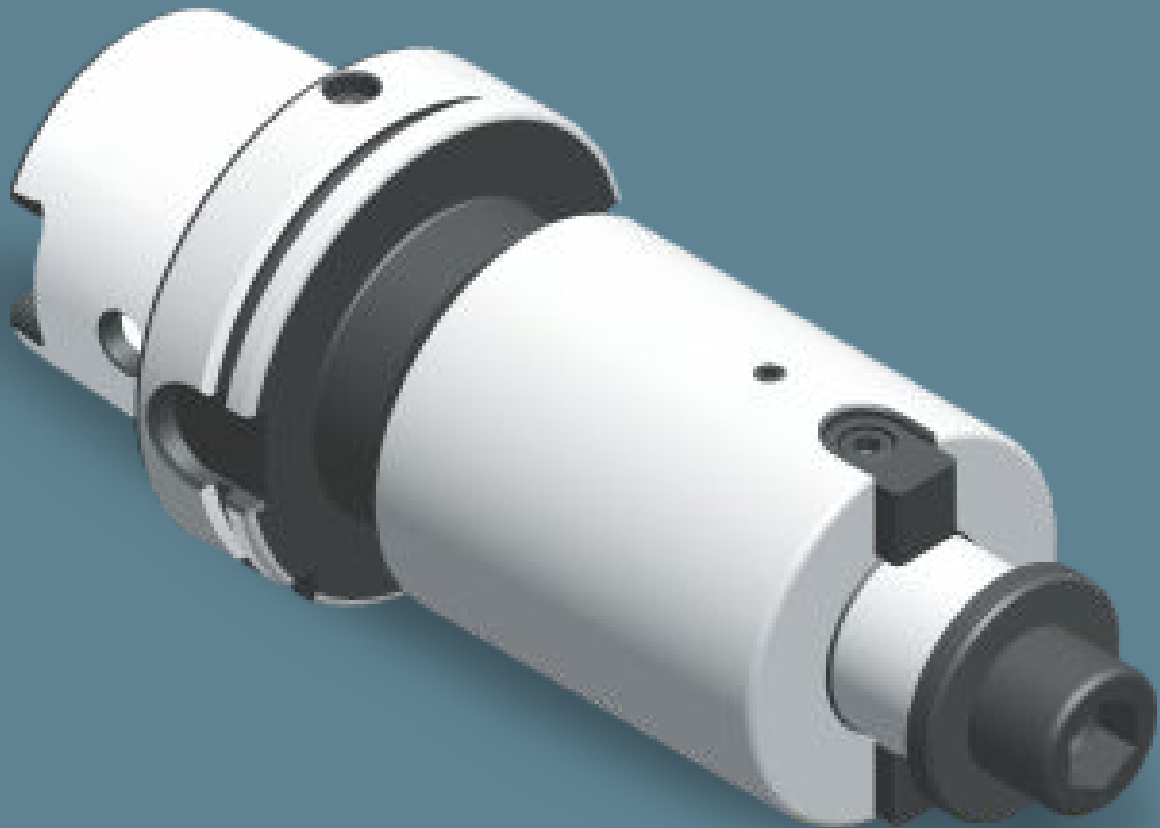
# Sigma Inserts

INSERT	DISCRIPTION	GRADE			d	t	r	d1
		STEEL	STAINLESS STEEL	CAST IRON				
	TOGX 090204	2020	2030	2040	5.56	2.38	0.40	2.50
	TOGX 110304	2020	2030	2040	6.35	3.18	0.40	2.80
	TOGX 110308	2020	2030	2040	6.35	3.18	0.80	2.80
	TOMT 16T304	2020	2030	2040	9.525	3.97	0.40	4.40
	TOMT 16T308	2020	2030	2040	9.525	3.97	0.80	4.40
	SOGX 050204	2020	2030	2040	5.00	2.38	0.40	2.25
	SOGX 060204	2020	2030	2040	6.00	2.38	0.40	2.61
	SOGX 07T308	2020	2030	2040	7.94	3.97	0.80	2.85
	SOGX 090408	2020	2030	2040	9.80	4.30	0.80	4.05
	SOGX 110408	2020	2030	2040	11.50	4.80	0.80	4.45
	DOGT 11T308	2020	2030	2040	9.525	3.97	0.80	4.40
	VOGT 160408	2020	2030	2040	9.525	4.76	0.80	4.40
	WPGX 030204	2020	2030	2040	5.56	2.38	0.40	2.50
	WPGX 040204	2020	2030	2040	6.35	2.38	0.40	2.80
	WPGX 050308	2020	2030	2040	7.94	3.18	0.80	3.40
	WPGX 06T308	2020	2030	2040	9.53	3.97	0.80	4.40
	WPGX 080408	2020	2030	2040	12.70	4.76	0.80	5.50

INSERT	DISCRIPTION	GRADE			DIMENSION (mm)			
		ALUMINIUM			d	t	r	d1
	COGT 060204	AL-20	6.35	2.38	0.40	2.80		
	TOGT 110204		AL-20		6.35	2.38	0.40	2.80
	TOGT 110204		AL-20		6.35	2.38	0.40	2.80
	TOGT 16T304		AL-20		9.52	3.97	0.4	4.4
	TOGT 16T308		AL-20		9.52	3.97	0.8	4.4

# CNC Tool Holding Systems

CNC TOOL HOLDING SYSTEM



# DIN 69893 - 1 HSK Tool Holders

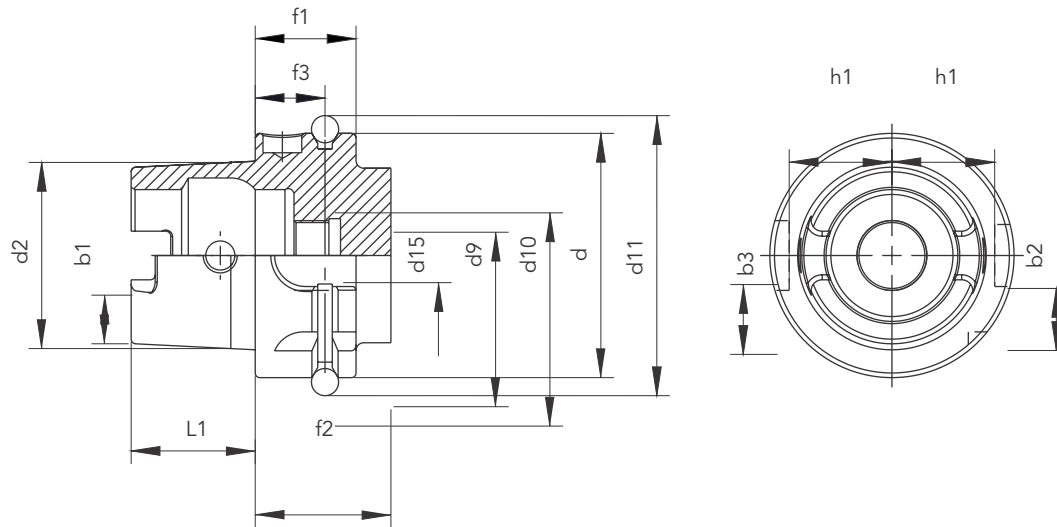
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# DIN 69893 - 1 HSK Tool Holders

## Shank Details

From - A

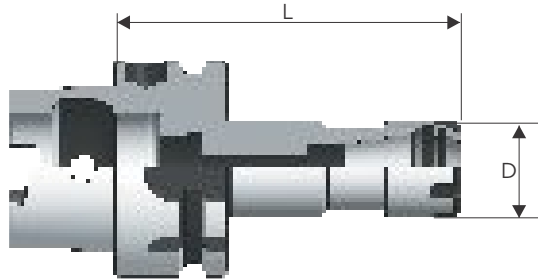


HSK - d	b1 ± 0.04	b2 H10	b3 H10	d2	d9 max	d10 - 0.1	d11 - 0.1	d15	f1 - 0.1
50	10.54	12	14	38.009	50	40	43	59.3	M16x1
63	12.54	16	18	48.010	63	50	55	72.3	M18x1
100	20.02	20	22	75.013	100	80	92	109.75	M24x1.5

HSK - d	f2 min	f3 ± 0.1	h 1 - 0.2	11 - 0.2
50	42	18	21	25
63	42	18	26.5	32
100	42	20	44	50

# DIN 69893 - 1 HSK Tool Holders

Collet Chuck Holder DIN 6499 - Standard Length



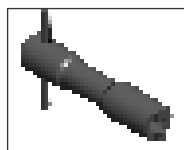
Taper	Ordering Code	L	D	Wt. in Kgs.
HSK A50	HSKA50ER11.80	19	80	0.6
	HSKA50ER16.80	28	80	0.6
	HSKA50ER20.80	34	80	0.6
	HSKA50ER25.80	42	80	0.6
	HSKA50ER32.80	50	80	0.6
	HSKA50ER40.90	63	90	1
HSK A63	HSKA63ER11.80	19	80	0.7
	HSKA63ER16.80	28	80	0.8
	HSKA63ER20.80	34	80	0.8
	HSKA63ER25.80	42	80	0.9
	HSKA63ER32.80	50	80	1
	HSKA63ER40.100	63	100	1.2
HSK A100	HSKA100ER16.100	28	100	2.2
	HSKA100ER20.100	34	100	2.4
	HSKA100ER25.100	42	100	2.5
	HSKA100ER32.100	50	100	2.7
	HSKA100ER40.100	63	100	2.8
	HSKA100ER50.100	78	100	3.3

Note : Spanner Order Separately  
 Special Designs and Size are Available on Request  
 Coolant tube and coolant tube spanner order Separately

## Accessories



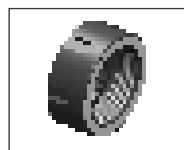
Coolant Tube  
(Pg. No.174)



Coolant tube Spanner  
(Pg. No.174)



Collet  
(Pg. No.171)



Collet Nut  
(Pg. No.173)



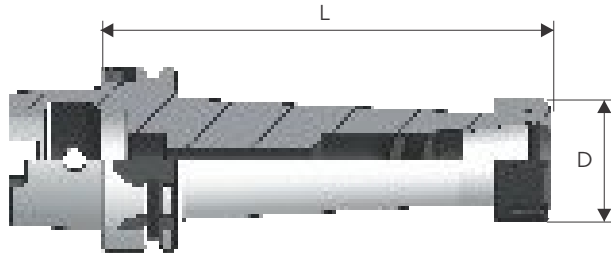
Stopper Screw  
(Pg. No. 176)



Spanner  
(Pg. No.173)

# DIN 69893 - 1 HSK Tool Holders

Collet Chuck Holder DIN 6499 - Extra Length



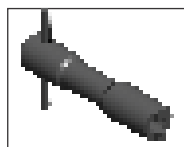
Taper	Ordering Code	D	L	Wt. in Kgs.
HSK A63	HSKA63ER16.160	28	160	1.3
	HSKA63ER20.160	34	160	1.5
	HSKA63ER25.160	42	160	1.6
	HSKA63ER32.160	50	160	1.9
	HSKA63ER40.160	63	160	2.1
HSK A100	HSKA100ER16.160	28	160	2.6
	HSKA100ER20.160	34	160	2.8
	HSKA100ER25.160	42	160	3
	HSKA100ER32.160	50	160	3.2
	HSKA100ER40.160	63	160	3.9

Note: Spanner Order Separately  
 Special Designs and Sizes are Available on Request  
 Coolant Tube and Coolant Tube Spanner order Separately

## Accessories



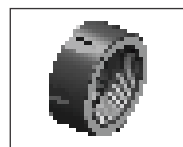
Coolant Tube  
(Pg. No.174)



Coolant tube Spanner  
(Pg. No.174)



Collet  
(Pg. No.171)



Collet Nut  
(Pg. No.173)



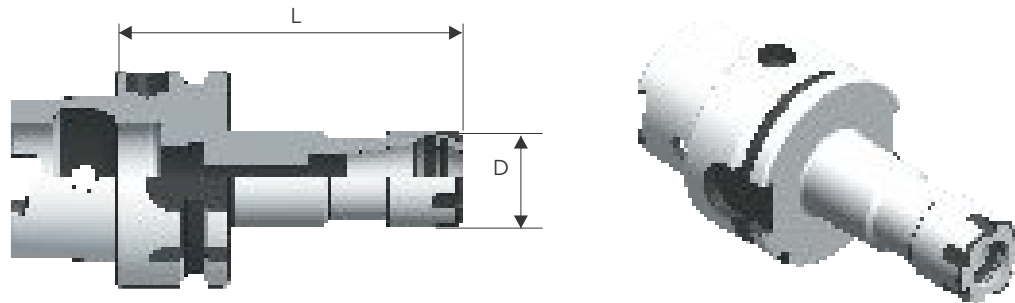
Stopper Screw  
(Pg. No. 176)



Spanner  
(Pg. No.173)

# DIN 69893 - 1 HSK Tool Holders

Collet Chuck Holder DIN 6499 - Mini Nut



Taper	Ordering Code	D	L	Wt. in Kgs.
HSK A50	HSKA050ER16.080M	22	80	0.5
	HSKA050ER20.080M	28	80	0.6
	HSKA050ER25.080M	35	80	0.6
HSK A63	HSKA063ER16.080M	22	80	0.8
	HSKA063ER20.080M	28	80	0.8
	HSKA063ER25.080M	35	80	0.9
HSK A100	HSKA100ER16.100M	22	100	2.1
	HSKA100ER20.100M	28	100	2.2
	HSKA100ER25.100M	35	100	2.4

Note: Spanner Order Separately

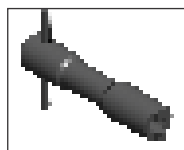
Special Designs and Sizes are Available on Request

Coolant Tube and Coolant Tube Spanner order Separately

## Accessories



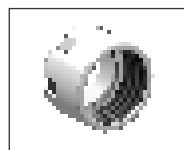
Coolant Tube  
(Pg. No.174)



Coolant tube Spanner  
(Pg. No.174)



Collet  
(Pg. No.171)



Collet Nut  
(Pg. No.173)



Stopper Screw  
(Pg. No. 176)



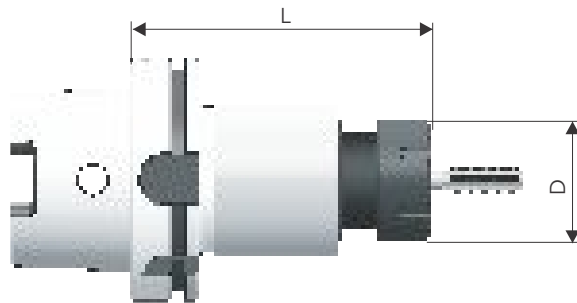
Spanner  
(Pg. No.174)



# DIN 69893 - 1 HSK Tool Holders

Tapping Collet Chuck Holder - DIN 6499

From - AD



Rigid Tapping Machines Only

Taper	Ordering Code	D	L	Wt. in Kgs.
HSK A63	HSKA63ER32TCCH.140	50	140	2.4
HSK A100	HSKA100ER32TCCH.125	50	125	3

Note : Spanner Order Separately

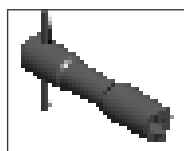
Special Designs and Size are Available on Request

Coolant tube and coolant tube spanner order Separately

## Accessories



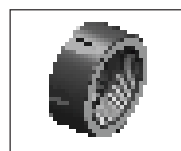
Coolant Tube  
(Pg. No.174)



Coolant tube Spanner  
(Pg. No.174)



Collet  
(Pg. No.171)



Collet Nut  
(Pg. No.173)



Stud - LH & RH  
(Pg. No. 177)



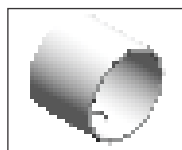
Grub Screw  
(Pg. No.177)



Sliding Ring - RH  
(Pg. No.177)



Sliding Ring - LHR  
(Pg. No.177)



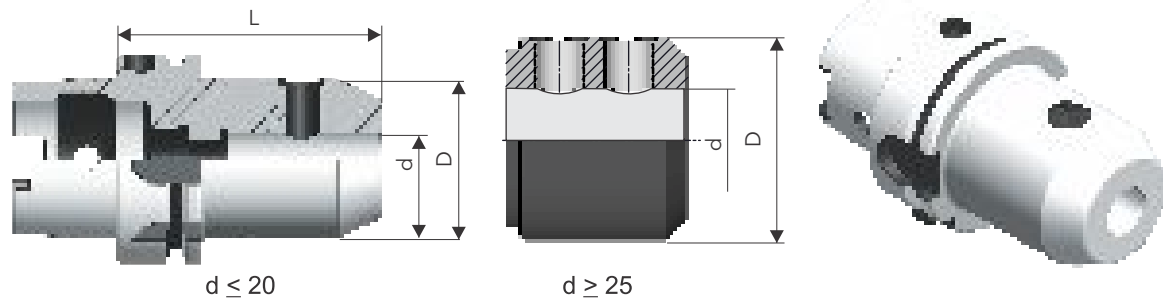
Outer Bush  
(Pg. No.177)



Spanner  
(Pg. No.177)

# DIN 69893 - 1 HSK Tool Holders

## Side Lock Holder - Standard Length



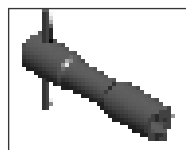
Taper	Ordering Code	d	D	L	Wt. in Kgs.
HSK A50	HSKA50SLH08.65	8	28	65	0.6
	HSKA50SLH10.65	10	35	65	0.6
	HSKA50SLH12.80	12	42	80	0.9
	HSKA50SLH16.80	16	48	80	1
	HSKA50SLH20.80	20	52	80	1
	HSKA50SLH25.110	25	65	110	1.8
	HSKA50SLH32.110	32	72	110	1.9
HSK A63	HSKA63SLH08.65	8	28	65	0.8
	HSKA63SLH10.65	10	35	65	0.9
	HSKA63SLH12.80	12	42	80	1.2
	HSKA63SLH16.80	16	48	80	1.3
	HSKA63SLH20.80	20	52	80	1.3
	HSKA63SLH25.110	25	65	110	2.3
	HSKA63SLH32.110	32	72	110	2.5
	HSKA63SLH40.120	40	80	120	3.1
HSK A100	HSKA100SLH08.80	8	28	80	2.2
	HSKA100SLH10.80	10	35	80	2.2
	HSKA100SLH12.80	12	42	80	2.3
	HSKA100SLH16.100	16	48	100	2.8
	HSKA100SLH20.100	20	52	100	3
	HSKA100SLH25.100	25	65	100	3.6
	HSKA100SLH32.100	32	72	100	3.8
	HSKA100SLH40.120	40	80	120	4.7
	HSKA100SLH50.130	50	100	130	6.2

Note: Special Designs and Sizes or Available on Request Coolant Tube and Coolant Tube Spanner order Separately

### Accessories



Coolant Tube  
(Pg. No.174)



Coolant tube Spanner  
(Pg. No.174)



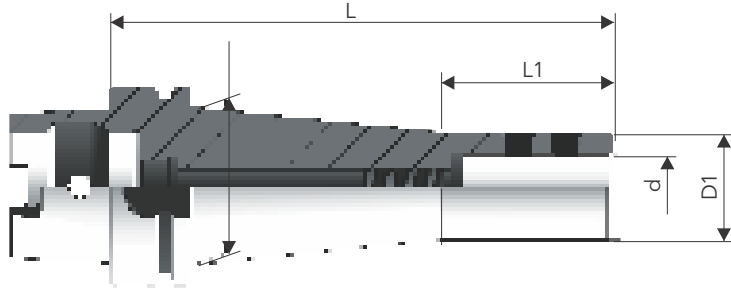
Grub Screw  
(Pg. No.178)



Stopper Screw  
(Pg. No.178)

# DIN 69893 - 1 HSK Tool Holders

Side Lock Holder - Extra Length



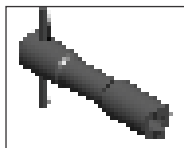
Taper	Ordering Code	d	D1	D2	L	L1	Wt. in Kgs.
HSKA63	HSKA63SLH08.160	08	24	34	160	40	1.2
	HSKA63SLH10.160	10	27	38	160	45	1.3
	HSKA63SLH12.160	12	32	42	160	50	1.4
	HSKA63SLH16.160	16	36	44	160	55	1.7
	HSKA63SLH20.160	20	45	50	160	55	1.7
	HSKA63SLH25.160	25	65	65	160	-	3.3
HSK A100	HSKA100SLH08.160	08	24	34	160	40	2.5
	HSKA100SLH10.160	10	27	38	160	45	2.7
	HSKA100SLH12.160	12	32	42	160	50	2.9
	HSKA100SLH16.160	16	36	44	160	55	2.8
	HSKA100SLH20.160	20	45	50	160	55	3
	HSKA100SLH25.160	25	56	65	160	60	5
	HSKA100SLH32.160	32	72	72	160	-	5.6
	HSKA100SLH40.160	40	80	80	160	-	6.3

Note: Spanner Order Separately Special Designs and Sizes are Available on Request Coolant Tube and Coolant Tube Spanner order Separately

## Accessories



Coolant Tube  
(Pg. No.174)



Coolant tube Spanner  
(Pg. No.174)



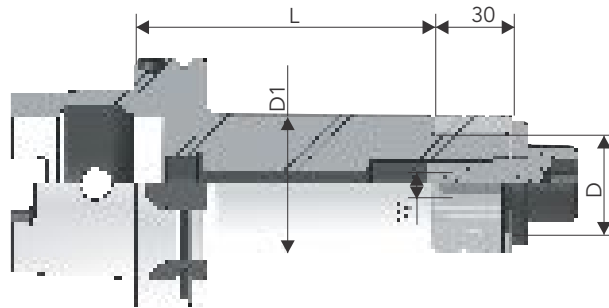
Grub Screw  
(Pg. No.178)



Stopper Screw  
(Pg. No.178)

# DIN 69893 - 1 HSK Tool Holders

## Side & Face Cutter Arbor



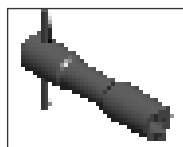
Taper	Ordering Code	D	L	D1	W	Wt. in Kgs.
HSK A50	HSKA50SFCA16.50	16	50	26	4	0.6
	HSKA50SFCA22.60	22	60	34	6	0.8
	HSKA50SFCA27.60	27	60	40	7	0.9
HSK A63	HSKA63SFCA16.50	16	50	26	4	0.9
	HSKA63SFCA22.50	22	50	34	6	1
	HSKA63SFCA27.60	27	60	40	7	1.1
	HSKA63SFCA32.60	32	60	46	8	1.3
	HSKA63SFCA40.60	40	60	55	10	1.4
HSK A100	HSKA100SFCA16.50	16	50	26	4	2.3
	HSKA100SFCA22.50	22	50	34	6	2.4
	HSKA100SFCA27.50	27	50	40	7	2.5
	HSKA100SFCA32.60	32	60	46	8	2.7
	HSKA100SFCA40.60	40	60	55	10	3

Note: Special Designs and Sizes are Available on Request Coolant Tube and Coolant Tube Spanner order Separately

### Accessories



Coolant Tube  
(Pg. No.174)



Coolant tube Spanner  
(Pg. No.174)



Parallel Key  
(Pg. No.184)



Spacer  
(Pg. No.184)



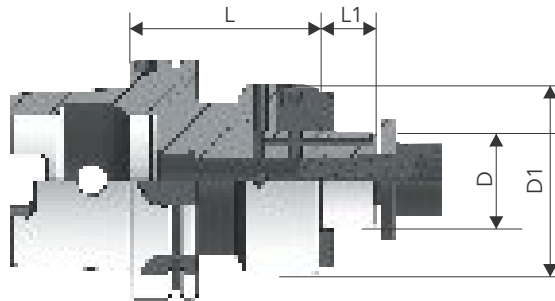
Washer  
(Pg. No. 184)



Allen Screw  
(Pg. No.184)

# DIN 69893 - 1 HSK Tool Holders

Face Mill Holder - Through Coolant



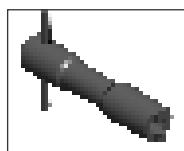
Taper	Ordering Code	D	D1	L	L1	Wt. in Kgs.
HSK A50	HSKA50FMH16.60TC	16	34	60	14	0.6
	HSKA50FMH22.70TC	22	48	70	16	1
	HSKA50FMH27.70TC	27	60	70	18	1.2
HSK A63	HSKA63FMH16.60TC	16	34	60	14	0.9
	HSKA63FMH22.60TC	22	48	60	16	1.2
	HSKA63FMH27.70TC	27	60	70	18	1.5
	HSKA63FMH32.70TC	32	68	70	20	1.7
	HSKA63FMH40.70TC	40	80	70	23	2
HSK A100	HSKA100FMH16.70TC	16	34	70	14	2.2
	HSKA100FMH22.70TC	22	48	70	16	2.6
	HSKA100FMH27.70TC	27	60	70	18	2.9
	HSKA100FMH32.70TC	32	70	70	20	3.3
	HSKA100FMH40.70TC	40	80	70	23	3.9

Note: Special Designs and Sizes are Available on Request Coolant Tube and Coolant Tube Spanner order Separately

## Accessories



Coolant Tube  
(Pg. No.174)



Coolant tube Spanner  
(Pg. No.174)



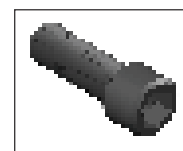
Driving Key  
(Pg. No.182)



Allen Screw  
(Pg. No.182)



Washer  
(Pg. No.182)



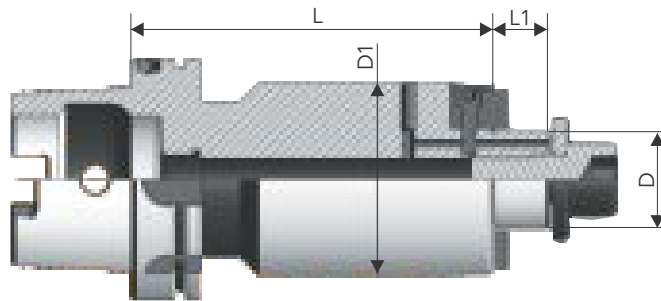
Allen Screw  
(Pg. No.182)



Grub Screw  
(Pg. No.182)

# DIN 69893 - 1 HSK Tool Holders

## Face Mill Holder Extra Length - Through Coolant



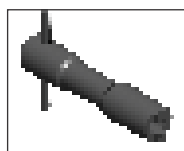
Taper	Ordering Code	D	D1	L	L1	Wt. in Kgs.
HSK A63	HSKA63FMH16.100TC	16	34	100	14	1.3
	HSKA63FMH22.100TC	22	48	100	16	1.8
	HSKA63FMH27.100TC	27	60	100	18	2.2
	HSKA63FMH32.100TC	32	68	100	20	2.6
	HSKA63FMH40.100TC	40	80	100	23	3.3
HSK A100	HSKA100FMH16.100TC	16	34	100	14	2.9
	HSKA100FMH22.100TC	22	48	100	16	3.3
	HSKA100FMH27.100TC	27	60	100	18	3.6
	HSKA100FMH32.100TC	32	70	100	20	4.2
	HSKA100FMH40.100TC	40	80	100	23	6.6

Note: Special Designs and Sizes are Available on Request Coolant Tube and Coolant Tube Spanner order Separately

### Accessories



Coolant Tube  
(Pg. No.174)



Coolant tube Spanner  
(Pg. No.174)



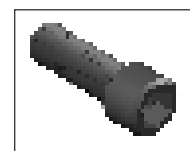
Driving Key  
(Pg. No.182)



Allen Screw  
(Pg. No.182)



Washer  
(Pg. No.182)



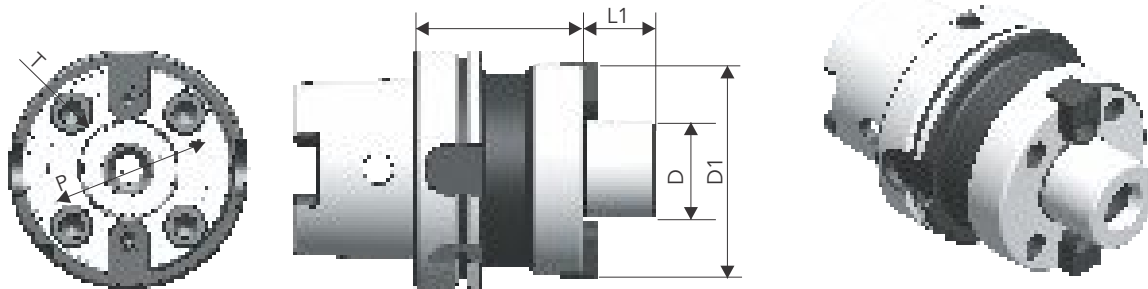
Allen Screw  
(Pg. No.182)



Grub Screw  
(Pg. No.182)

# DIN 69893 - 1 HSK Tool Holders

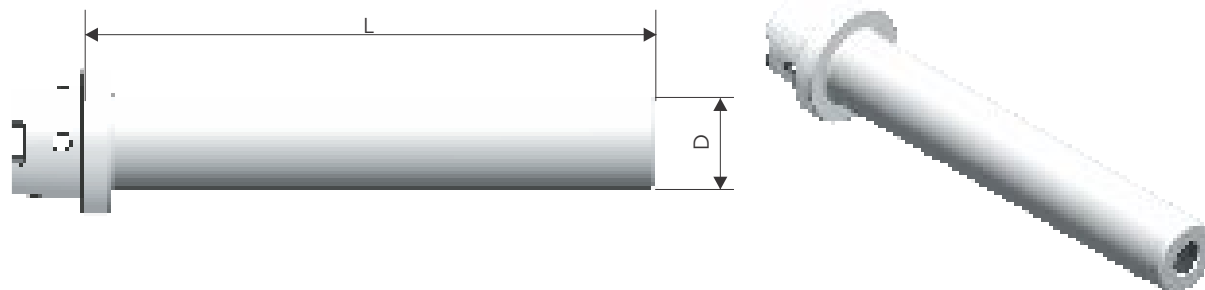
Face Mill Arbor - Flange Type



Taper	Ordering Code	D	D1	L	L1	P	T	Wt. in Kgs.
HSK A100	HSKA100FMA40.70FT	40	88	70	30	66.7	M12	3.9
	HSKA100FMA60.70FT	60	128	70	40	101.6	M16	6.2

## DIN-69893-1 HSK

Test Bar



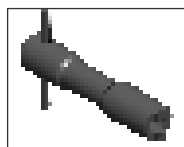
Taper	Ordering Code	L	D	Wt. in Kgs.
HSK 50	TEST BAR HSK 50	32	346	1.4
HSK 63	TEST BAR HSK 63	40	346	3.2
HSK 100	TEST BAR HSK 100	50	300	4.6

Note: Special Designs and Sizes are Available on Request Coolant Tube and Coolant Tube Spanner order Separately

### Accessories



Coolant Tube  
(Pg. No.174)



Coolant tube Spanner  
(Pg. No.174)



Driving Key  
(Pg. No.183)



Allen Screw  
(Pg. No.183)



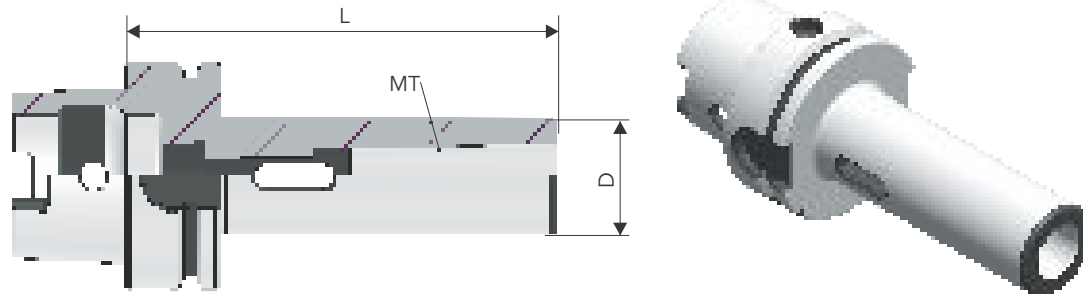
Washer  
(Pg. No.183)



Allen Screw  
(Pg. No.183)

# DIN 69893 - 1 HSK Tool Holders

Morse Taper Adaptor - Tanged End



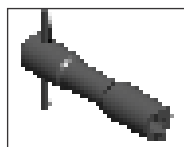
Taper	Ordering Code	MT No.	L	D	Wt. in Kgs.
HSKA50	HSKA50MT1.100	1	100	25	0.6
	HSKA50MT2.120	2	120	32	0.9
	HSKA50MT3.140	3	140	40	1.2
HSK A63	HSKA63MT1.100	1	100	25	0.9
	HSKA63MT2.120	2	120	32	1.1
	HSKA63MT3.140	3	140	40	1.5
	HSKA63MT4.160	4	160	50	1.9
HSK A100	HSKA100MT1.110	1	110	25	2.2
	HSKA100MT2.120	2	120	32	2.4
	HSKA100MT3.150	3	150	40	2.9
	HSKA100MT4.170	4	170	50	3.3
	HSKA100MT5.200	5	200	70	4.5

Note: Special Designs and Sizes are Available on Request Coolant Tube and Coolant Tube Spanner order Separately

## Accessories



Coolant Tube  
(Pg. No.174)

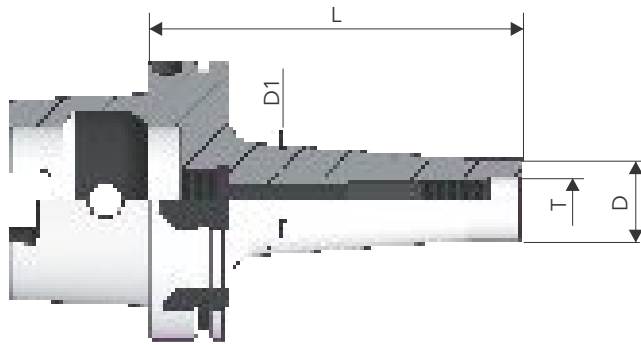


Coolant tube Spanner  
(Pg. No.174)



# DIN 69893 - 1 HSK Tool Holders

## Thread Coupling Milling Holder



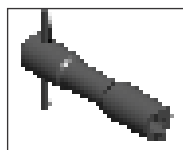
Taper	Ordering Code	D	D1	T	L	Wt. in Kgs.
HSK A63	HSKA63TCMH08.84	13	20	M8	84	0.7
	HSKA63TCMH08.134	13	25	M8	134	0.8
	HSKA63TCMH10.84	18	24	M10	84	0.8
	HSKA63TCMH10.134	18	32	M10	134	0.9
	HSKA63TCMH12.134	21	36	M12	134	0.9
	HSKA63TCMH16.84	29	34	M16	84	0.9
	HSKA63TCMH16.134	29	41	M16	134	1.1
HSK A100	HSKA100TCMH08.84	13	20	M8	84	2.1
	HSKA100TCMH08.134	13	25	M8	134	2.3
	HSKA100TCMH10.84	18	24	M10	84	2.1
	HSKA100TCMH10.134	18	32	M10	134	2.4
	HSKA100TCMH12.134	21	36	M12	134	2.4
	HSKA100TCMH16.84	29	34	M16	84	2.2
	HSKA100TCMH16.134	29	41	M16	134	2.6

Note: Special Designs and Sizes are Available on Request Coolant Tube and Coolant Tube Spanner order Separately

### Accessories



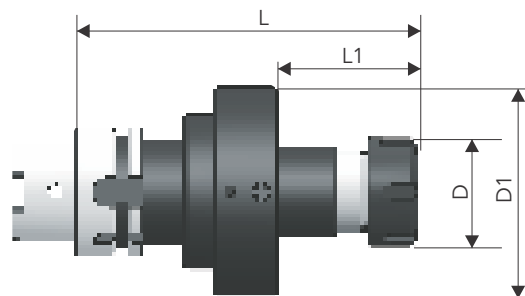
Coolant Tube  
(Pg. No.174)



Coolant tube Spanner  
(Pg. No.174)

# DIN 69893 - 1 HSK Tool Holders

## Runout Adjustable Holder - Collet Chuck



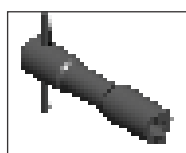
Taper	Ordering Code	Suitable Collet	Clamping Range	D	D1	L	L1	Wt. in Kgs.
HSK A50	HSKA50RAHER25.135	ER-25	1-16	42	81	135	55	1.9
HSK A63	HSKA63RAHER25.135	ER-25	1-16	42	81	135	55	2.3
HSK A100	HSKA100RAHER25.145	ER-25	1-16	42	81	145	55	3.7

Note: Special Designs and Sizes are Available on Request Coolant Tube and Coolant Tube Spanner order Separately

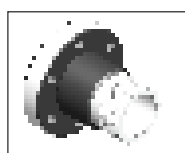
### Accessories



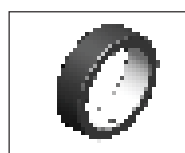
Coolant Tube  
(Pg. No.174)



Coolant tube Spanner  
(Pg. No.174)



Collet Chuck Adaptor  
(Pg. No.187)



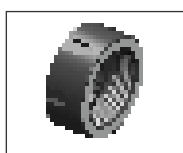
Adjusting Ring  
(Pg. No.187)



Allen Screw  
(Pg. No. 187)



Set Screw  
(Pg. No.187)



Collet Nut  
(Pg. No.173)



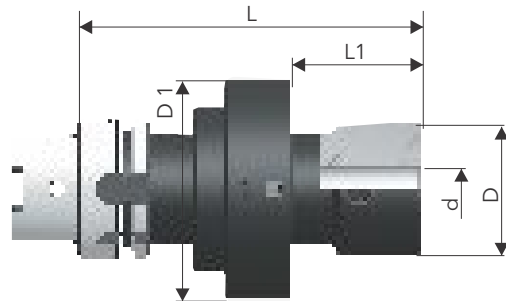
Spanner  
(Pg. No.173)



Stopper Screw  
(Pg. No.187)

# DIN 69893 - 1 HSK Tool Holders

Runout Adjustable Holder - Weldon



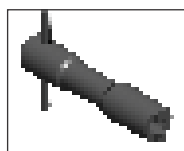
Taper ISO	Ordering Code	d	D1	D2	L	L1	Wt. in Kgs.
HSKA50	HSKA50RAH12.125	12	35	81	125	48	2
	HSKA50RAH16.125	16	40	81	125	48	2
	HSKA50RAH20.125	20	50	81	125	48	2.1
	HSKA50RAH25.135	25	50	81	135	58	2.1
HSKA63	HSKA63RAH12.125	12	35	81	125	48	2.2
	HSKA63RAH16.125	16	40	81	125	48	2.3
	HSKA63RAH20.125	20	50	81	125	48	2.4
	HSKA63RAH25.135	25	50	81	135	58	2.4
HSK A100	HSKA100RAH12.135	12	35	81	135	48	3.7
	HSKA100RAH16.135	16	40	81	135	48	3.8
	HSKA100RAH20.135	20	50	81	135	48	3.9
	HSKA100RAH25.145	25	50	81	145	58	3.9
	HSKA100RAH32.150	32	60	115	150	55	7

Note: Special Designs and Sizes are Available on Request Coolant Tube and Coolant Tube Spanner order Separately

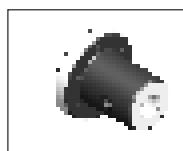
## Accessories



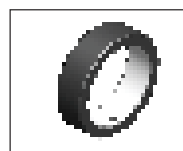
Coolant Tube  
(Pg. No.174)



Coolant tube Spanner  
(Pg. No.174)



End Mill Adaptor  
(Pg. No.186)



Adjusting Ring  
(Pg. No.186)



Allen Screw  
(Pg. No. 186)



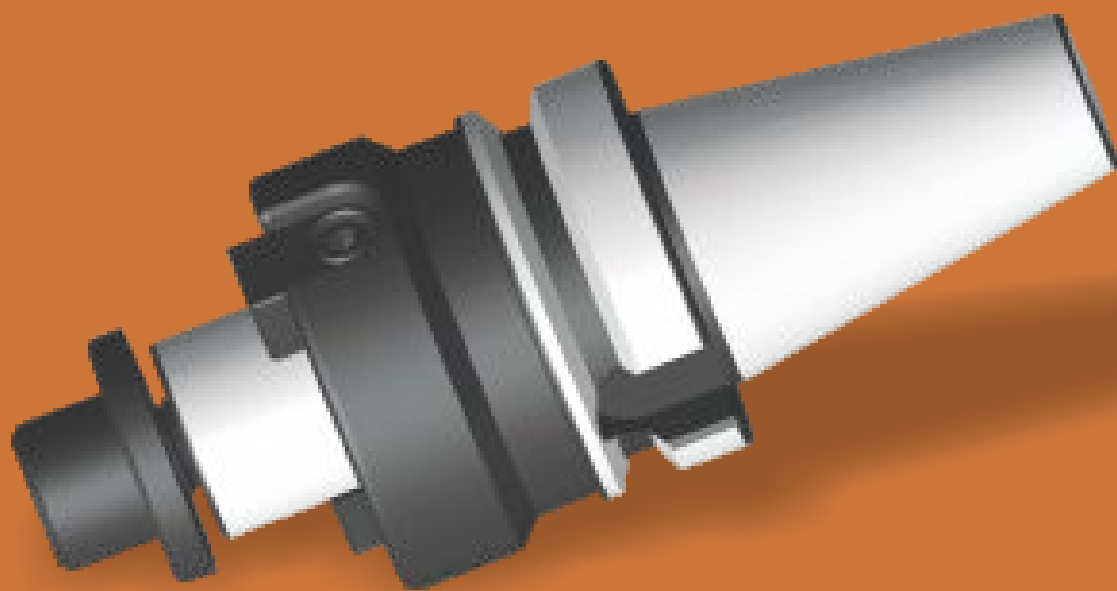
Set Screw  
(Pg. No.186)



Grub Screw  
(Pg. No.186)

# BT MAS 403 (JIS B 6363) Tool Holders

BT MAS 403 (JIS B 6363) TOOL HOLDERS



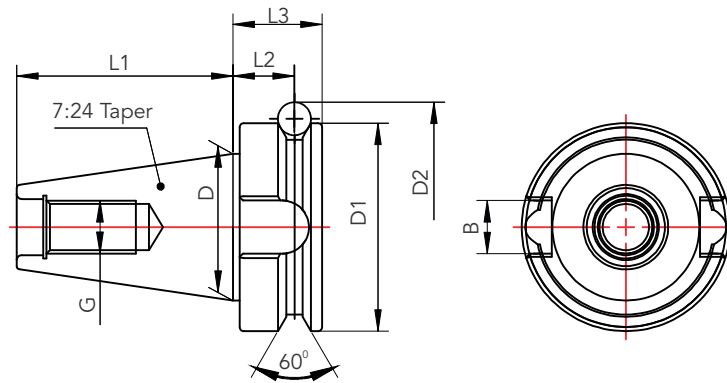
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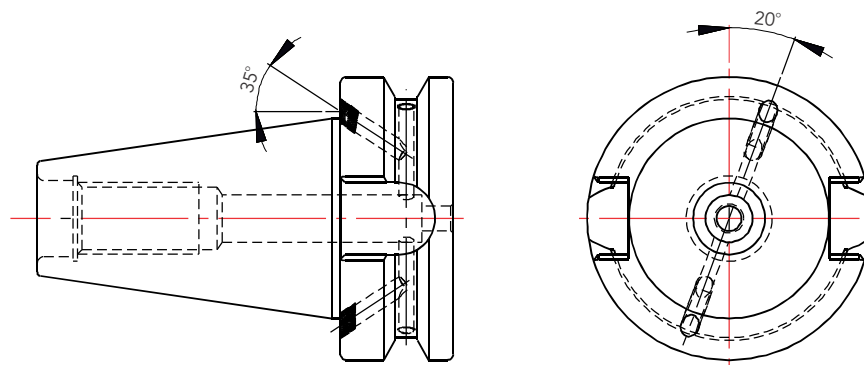
# BT MAS 403 (JIS B 6363) Tool Holders

## Shank Details

From - A



From - AD + B

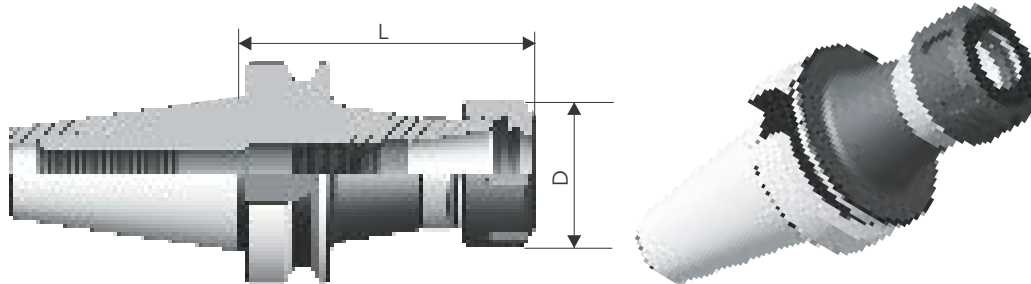


Taper	D	D1	D2	L1	L2	L3	B	G
30	31.75	46.0	56.14	48.4	13.6	22	16.1	M12
35	38.1	53.0	61.97	56.4	14.6	24	16.1	M12
40	44.45	63.0	75.68	65.4	16.6	27	16.1	M16
50	69.85	100.0	119.02	101.8	23.2	38	25.7	M24

# BT MAS 403 (JIS B 6363) Tool Holders

Collet Chuck Holder DIN 6499 - Standard Length

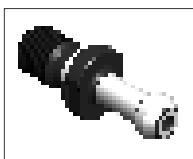
From - AD



Taper	Ordering Code	Suitable Collet	Clamping Range	L	D	Spanner	Wt. in Kgs.
30	BT30ER16.70AD	ER 16	1-10	70	28	SSN.11	0.5
	BT30ER20.70AD	ER 20	1-13	70	34	SSN.20	0.6
	BT30ER25.70AD	ER 25	1-16	70	42	SSN.25	0.7
	BT30ER32.70AD	ER 32	2-20	70	50	SSN.32	0.7
35	BT35ER16.70AD	ER 16	1-10	70	28	SSN.16	0.7
	BT35ER20.70AD	ER 20	1-13	70	34	SSN.20	0.7
	BT35ER25.70AD	ER 25	1-16	70	42	SSN.25	0.8
	BT35ER32.70AD	ER 32	2-20	70	50	SSN.32	0.9
40	BT40ER11.70AD	ER 11	1-7	70	19	SSN.11	1
	BT40ER16.70AD	ER 16	1-10	70	28	SSN.16	1.1
	BT40ER20.70AD	ER 20	1-13	70	34	SSN.20	1.1
	BT40ER25.70AD	ER 25	1-16	70	42	SSN.25	1.2
	BT40ER32.70AD	ER 32	2-20	70	50	SSN.32	1.2
	BT40ER40.70AD	ER 40	3-26	70	63	SSN.40	1.3
	BT40ER50.100AD	ER 50	10-34	100	78	SSN.50	2.1
50	BT50ER16.80M	ER 16	1-10	80	28	SSN.16	3.7
	BT50ER20.80M	ER 20	1-13	80	34	SSN.20	3.7
	BT50ER25.80M	ER 25	1-16	80	42	SSN.25	3.8
	BT50ER32.80M	ER 32	2-20	80	50	SSN.32	3.7
	BT50ER40.80M	ER 40	3-26	80	63	SSN.40	3.8
	BT50ER50.100M	ER 50	10-34	100	78	SSN.50	4.4

Note : Spanner Order Separately Special Designs and Size are Available on Request.

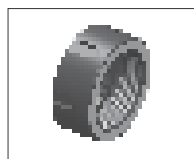
## Accessories



Pull Stud  
(Pg. No.175)



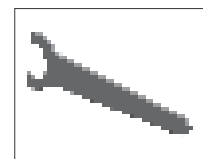
Collet  
(Pg. No.171)



Collet Nut  
(Pg. No.176)



Stopper Screw  
(Pg. No. 176)

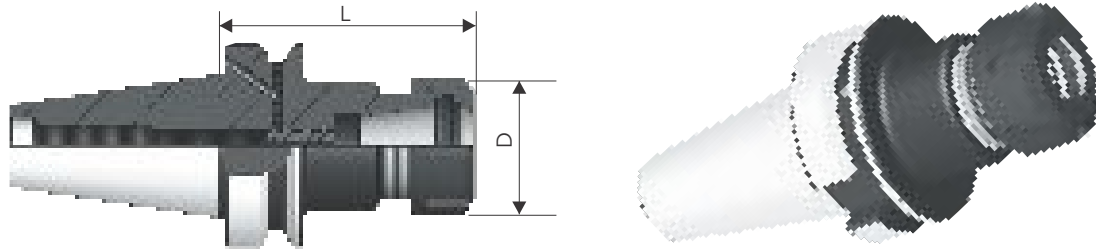


Spanner  
(Pg. No.176)

# BT MAS 403 (JIS B 6363) Tool Holders

Collet Chuck Holder - DIN 6499 Flange Through Coolant

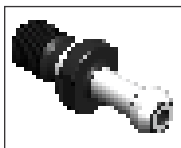
From - AD+B



Taper	Ordering Code	Suitable Collet	Clamping Range	L	D	Spanner	Wt. in Kgs.
40	BT40ER16.105FTC	Er16	1-10	105	28	SSN.16	1.2
	BT40ER20.105FTC	ER20	1-13	105	34	SSN.20	1.2
	BT40ER25.105FTC	ER25	1-16	105	42	SSN.25	1.4
	BT40ER32.100FTC	ER32	2-20	100	50	SSN.32	1.5
	BT40ER40.100FTC	ER40	3-26	100	63	SSN.40	1.8
50	BT50ER16.135FTC	ER16	1-10	135	28	SSN.16	4
	BT50ER16.150FTC	ER16	1-10	150	28	SSN.16	3.8
	BT50ER20.135FTC	ER20	1-13	135	34	SSN.20	4.2
	BT50ER20.150FTC	ER20	1-13	150	34	SSN.20	4
	BT50ER25.135FTC	ER25	1-16	135	42	SSN.25	4.1
	BT50ER25.150FTC	ER25	1-16	150	42	SSN.25	4.4
	BT50ER32.135FTC	ER32	3-20	135	50	SSN.32	4.3
	BT50ER40.135FTC	ER40	4-26	135	63	SSN.40	4.6

Note : Spanner Order Separately Special Designs and Size are Available on Request.

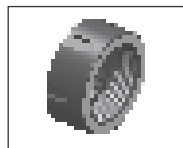
## Accessories



Pull Stud  
(Pg. No.175)



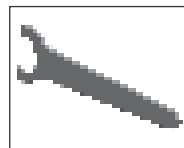
Collet  
(Pg. No.171)



Collet Nut  
(Pg. No.173)



Stopper Screw  
(Pg. No.177)



Spanner  
(Pg. No. 177)



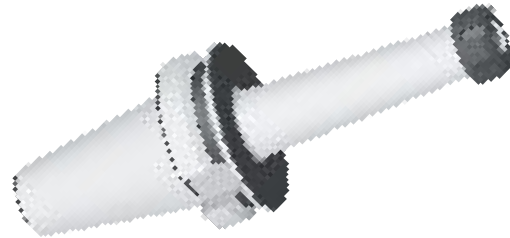
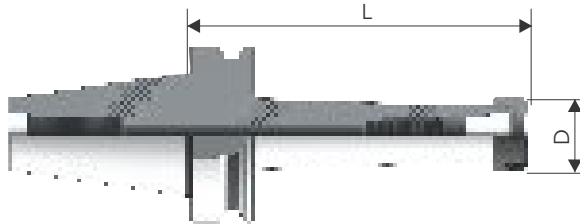
Grub Screw  
(Pg. No.177)



# BT MAS 403 (JIS B 6363) Tool Holders

Collet Chuck Holder - DIN 6499 Extra Length

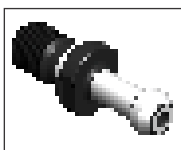
From - AD



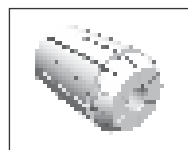
Taper	Ordering Code	Suitable Collet	Clamping Range	L	D	Spanner	Wt. in Kgs.
40	BT40ER16.105AD	ER16	1-10	105	28	SSN.16	1.2
	BT40ER16.150AD	ER16	1-10	150	28	SSN.16	1.3
	BT40ER20.105AD	ER20	1-13	105	34	SSN.20	1.2
	BT40ER20.150AD	ER20	1-13	150	34	SSN.20	1.4
	BT40ER25.105AD	ER25	1-16	105	42	SSN.25	1.4
	BT40ER25.150AD	ER25	1-16	150	42	SSN.25	1.7
	BT40ER32.100AD	ER32	3-20	100	50	SSN.32	1.5
	BT40ER40.100AD	ER40	4-26	100	63	SSN.40	1.8
50	BT50ER16.135AD	ER16	1-10	135	28	SSN.16	4
	BT50ER16.150AD	ER16	1-10	150	28	SSN.16	3.8
	BT50ER20.135AD	ER20	1-13	135	34	SSN.20	4.2
	BT50ER20.150AD	ER20	1-13	150	34	SSN.20	4
	BT50ER25.135AD	ER25	1-16	135	42	SSN.25	4.1
	BT50ER25.150AD	ER25	1-16	150	42	SSN.25	4.4
	BT50ER32.135AD	ER32	3-20	135	50	SSN.32	4.3
	BT50ER40.135AD	ER40	4-26	135	63	SSN.40	4.6

Note : Spanner Order Separately Special Designs and Size are Available on Request.

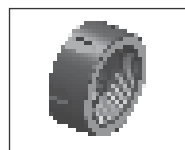
## Accessories



Pull Stud  
(Pg. No.175)



Collet  
(Pg. No.171)



Collet Nut  
(Pg. No.176)



Stopper Screw  
(Pg. No. 176)

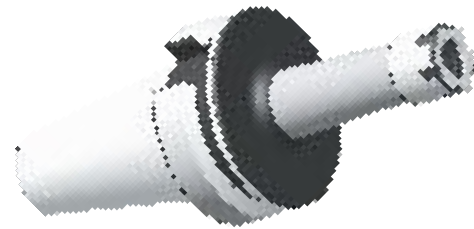
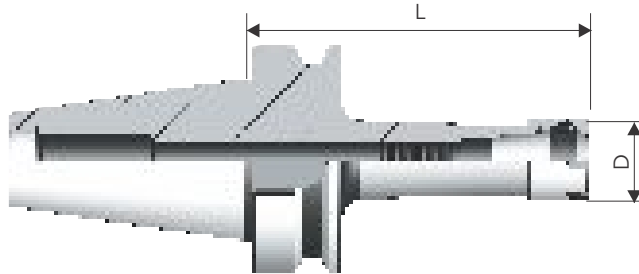


Spanner  
(Pg. No.176)

# BT MAS 403 (JIS B 6363) Tool Holders

Collet Chuck Holder - DIN 6499 Mini Nut

From - AD



Taper	Ordering Code	Suitable Collet	Clamping Range	L	D	Spanner	Wt. in Kgs.
40	BT40ER16.70M	ER16	1-10	70	22	SMN.16	1
	BT40ER16.150M	ER16	1-10	150	22	SMN.16	1.2
	BT40ER20.70M	ER20	1-13	70	28	SMN.20	1
	BT40ER20.150M	ER20	1-13	150	28	SMN.20	1.3
	BT40ER25.70M	ER25	1-16	70	35	SMN.25	1.1
	BT40ER25.150M	ER25	1-16	150	35	SMN.25	1.6
50	BT50ER16.100M	ER16	1-10	100	22	SMN.16	3.7
	BT50ER16.150M	ER16	1-10	150	22	SMN.16	3.6
	BT50ER20.100M	ER20	1-13	100	28	SMN.20	3.8
	BT50ER20.150M	ER20	1-13	150	28	SMN.20	3.9
	BT50ER25.100M	ER25	1-16	100	35	SMN.25	3.9
	BT50ER25.150M	ER25	1-16	150	35	SMN.25	4

Note: Spanner Order Separately Special Designs and Sizes are Available on Request

## Accessories



Pull Stud  
(Pg. No.175)



Collet  
(Pg. No.171)



Collet Nut  
(Pg. No.173)



Stopper Screw  
(Pg. No. 176)

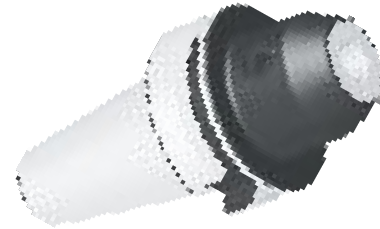
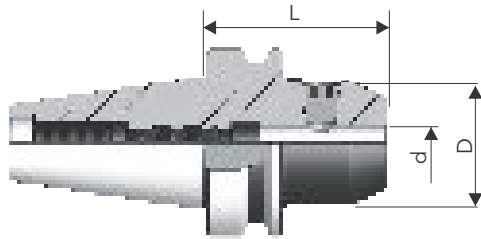


Spanner  
(Pg. No.174)

# BT MAS 403 (JIS B 6363) Tool Holders

Side Lock Holder - Standard Length

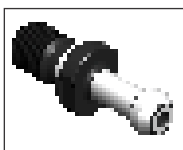
From - AD



Taper	Ordering Code	d	D	L	Wt. in Kgs.
30	BT30SLH08.65AD	8	24	65	0.5
	BT30SLH10.65AD	10	30	65	0.6
	BT30SLH12.65AD	12	35	65	0.6
	BT30SLH16.65AD	16	40	65	0.7
	BT30SLH20.90AD	20	50	90	1.2
	BT30SLH25.90AD	25	50	90	1.1
40	BT40SLH08.65AD	8	24	65	1
	BT40SLH10.65AD	10	30	65	1.2
	BT40SLH12.65AD	12	35	65	1.2
	BT40SLH16.65AD	16	40	65	1.3
	BT40SLH20.90AD	20	50	90	1.4
	BT40SLH25.90AD	25	50	90	2.4
	BT40SLH32.90AD	32	60	90	2.6
	BT40SLH40.90AD	40	53	90	3.1
50	BT50SLH08.70AD	8	28	70	3.7
	BT50SLH10.70AD	10	35	70	3.8
	BT50SLH12.80AD	12	42	80	4
	BT50SLH16.80AD	16	48	80	4
	BT50SLH20.80AD	20	52	80	4.1
	BT50SLH25.105AD	25	65	105	4.9
	BT50SLH32.105AD	32	72	105	5.1
	BT50SLH40.120AD	40	80	120	5.8
	BT50SLH50.125AD	50	125	125	7

## Accessories

Note : Special Designs and Size are Available on Request.



Pull Stud  
(Pg. No.175)



Grub Screw  
(Pg. No.178)

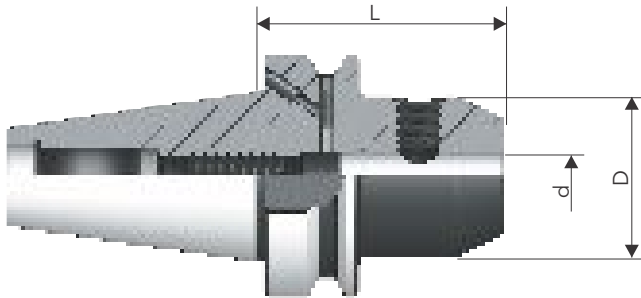


Stopper Screw  
(Pg. No.178 & 180)

# BT MAS 403 (JIS B 6363) Tool Holders

Side Lock Holder - Flange Through Coolant

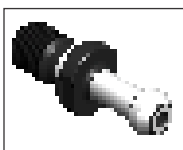
From - AD+B



Taper	Ordering Code	d	D	L	Wt. in Kgs.
40	BT40SLH16.65FTC	16	40	65	1.3
	BT40SLH20.90FTC	20	50	90	1.4
	BT40SLH25.90FTC	25	50	90	2.4
	BT40SLH32.90FTC	32	60	90	2.6
	BT40SLH40.90FTC	40	63	90	3.1
50	BT50SLH08.70FTC	8	28	70	3.7
	BT50SLH10.70FTC	10	35	70	3.8
	BT50SLH12.80FTC	12	42	80	4
	BT50SLH16.80FTC	16	48	80	4
	BT50SLH20.80FTC	20	52	80	4.1
	BT50SLH25.105FTC	25	65	105	4.9
	BT50SLH32.105FTC	32	72	105	5.1
	BT50SLH40.120FTC	40	80	120	5.8
	BT50SLH50.125FTC	50	100	125	7

Note : Special Designs and Size are Available on Request.

## Accessories



Pull Stud  
(Pg. No.175)



Grub Screw  
(Pg. No.180)



Stopper Screw  
(Pg. No.180)

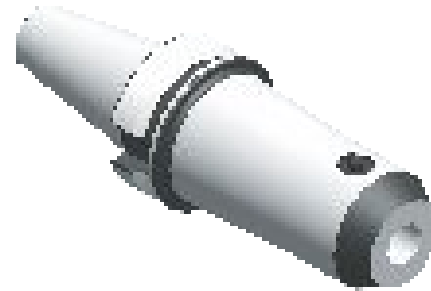
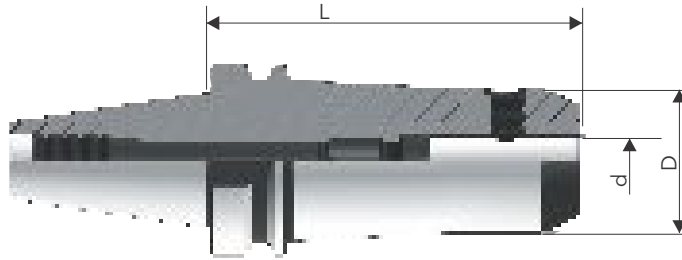


Grub Screw  
(Pg. No. 180)

# BT MAS 403 (JIS B 6363) Tool Holders

Side Lock Holder - Extra Length

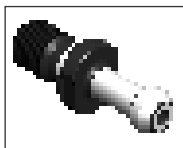
From - AD



Taper	Ordering Code	d	D	L	Wt. in Kgs.
40	BT40SLH08.125AD	8	24	125	1.4
	BT40SLH10.125AD	10	27	125	1.7
	BT40SLH12.125AD	12	32	125	2
	BT40SLH16.125AD	16	36	125	2.1
	BT40SLH20.125AD	20	45	125	2.3
	BT40SLH25.125AD	25	45	125	3
	BT40SLH32.125AD	32	54	125	3.15
	BT40SLH40.125AD	40	60	125	3.5
50	BT50SLH08.150AD	8	24	150	4.2
	BT50SLH10.150AD	10	27	150	4.5
	BT50SLH12.150AD	12	32	150	4.9
	BT50SLH16.150AD	16	30	150	5.1
	BT50SLH20.160AD	20	36	160	5.53
	BT50SLH25.160AD	25	45	160	6.5
	BT50SLH32.160AD	32	45	160	7
	BT50SLH40.160AD	40	65	160	7.4

Note : Special Designs and Size are Available on Request.

## Accessories



Pull Stud  
(Pg. No.175)



Grub Screw  
(Pg. No.179)

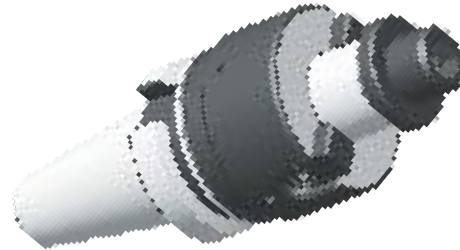
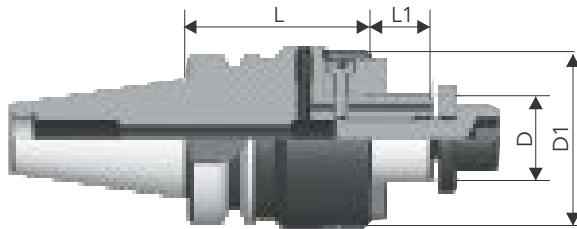


Stopper Screw  
(Pg. No.179)

# BT MAS 403 (JIS B 6363) Tool Holders

Face Mill Holder - Through Coolant

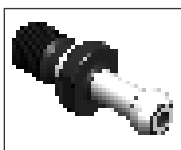
From - AD



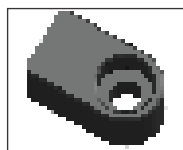
Taper	Ordering Code	D	L	L1	D1	Cutter Dia	Wt. in Kgs.
40	BT40FMH16.060AD	16	60	14	34	40	1.2
	BT40FMH16.120AD	16	120	14	34	40	1.7
	BT40FMH22.060AD	22	60	16	48	50 & 63	1.5
	BT40FMH22.090AD	22	90	16	48	50 & 63	1.9
	BT40FMH22.120AD	22	120	16	48	50 & 63	2.3
	BT40FMH27.045AD	27	45	18	60	80	1.4
	BT40FMH27.090AD	27	90	18	60	80	2.4
	BT40FMH27.105AD	27	105	18	60	80	2.7
	BT40FMH32.060AD	32	60	20	70	100	2
	BT40FMH32.090AD	32	90	20	70	100	2.7
	BT40FMH40.060AD	40	60	23	80	125	2.5
	BT40FMH40.075AD	40	75	23	80	125	2.8
50	BT50FMH22.075AD	22	75	16	48	50 & 63	4.2
	BT50FMH22.120AD	22	120	16	48	50 & 63	4.9
	BT50FMH27.060AD	27	60	18	60	80	4.2
	BT50FMH27.105AD	27	105	18	60	80	5.2
	BT50FMH32.060AD	32	60	20	70	100	4.4
	BT50FMH32.090AD	32	90	20	70	100	5.3
	BT50FMH40.060AD	40	60	23	80	125	4.8
	BT50FMH40.105AD	40	105	23	80	125	6.6

Note : Spanner Order Separately Special Designs and Size are Available on Request.

## Accessories



Pull Stud  
(Pg. No.175)



Driving Key  
(Pg. No.182)



Allen Screw  
(Pg. No.182)



Washer  
(Pg. No.182)



Allen Screw  
(Pg. No. 182)

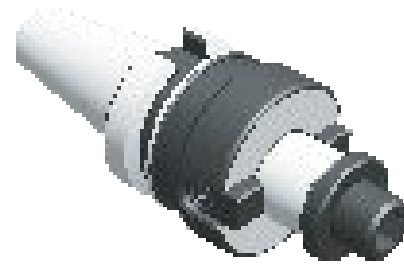
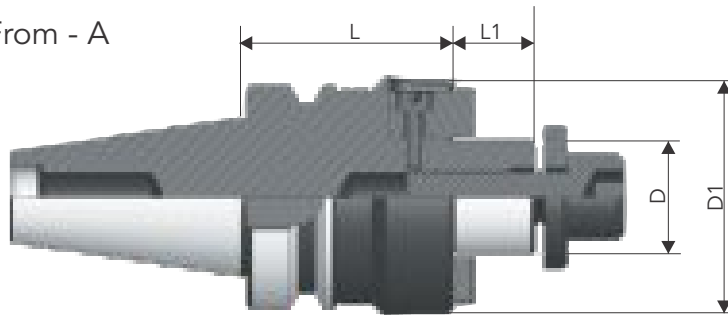


Grub Screw  
(Pg. No.182)

# BT MAS 403 (JIS B 6363) Tool Holders

## Face Mill Holder

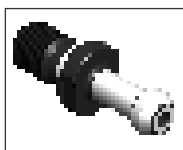
From - A



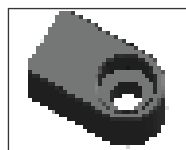
Taper	Ordering Code	D	L	L1	D1	Cutter Dia	Wt. in Kgs.
30	BT30FMH16.050A	16	50	14	34	40	0.6
	BT30FMH22.050A	22	50	16	48	50 & 63	0.8
	BT30FMH27.050A	27	50	18	60	80	1
35	BT35FMH16.050A	16	50	14	34	40	0.8
	BT35FMH22.050A	22	50	16	48	50 & 63	1
	BT35FMH27.050A	27	50	18	60	80	1.2
40	BT40FMH16.060A	16	60	14	34	40	1.2
	BT40FMH16.120A	16	120	14	34	40	1.7
	BT40FMH22.060A	22	60	16	48	50 & 63	1.5
	BT40FMH22.090A	22	90	16	48	50 & 63	1.9
	BT40FMH22.120A	22	120	16	48	50 & 63	2.3
	BT40FMH27.045A	27	45	18	60	80	1.4
	BT40FMH27.090A	27	90	18	60	80	2.4
	BT40FMH27.105A	27	105	18	60	80	2.7
	BT40FMH32.060A	32	60	20	70	100	2
	BT40FMH32.090A	32	90	20	70	100	2.7
	BT40FMH40.060A	40	60	23	80	125	2.5
	BT40FMH40.075A	40	75	23	80	125	2.8
50	BT50FMH22.075A	22	75	16	48	50 & 63	4.2
	BT50FMH22.120A	22	120	16	48	50 & 63	4.9
	BT50FMH27.060A	27	60	18	60	80	4.2
	BT50FMH27.105A	27	105	18	60	80	5.2
	BT50FMH32.060A	32	60	20	70	100	4.4
	BT50FMH32.090A	32	90	20	70	100	5.3
	BT50FMH40.060A	40	60	23	80	125	4.8
	BT50FMH40.105A	40	105	23	80	125	6.6

### Accessories

Note : Special Designs and Size are Available on Request.



Pull Stud  
(Pg. No.175)



Driving Key  
(Pg. No.181)



Allen Screw  
(Pg. No.181)



Washer  
(Pg. No. 181)

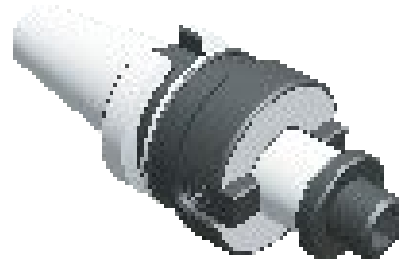
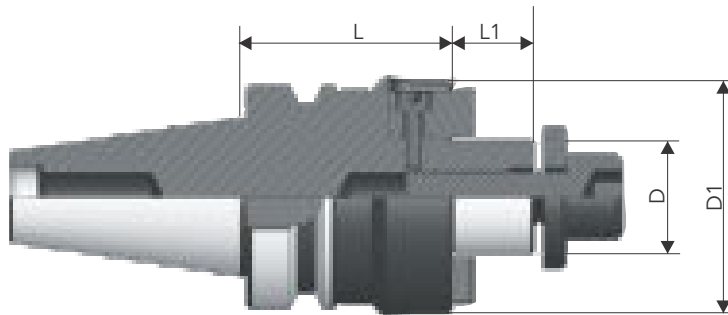


Allen Screw  
(Pg. No.181)

# BT MAS 403 (JIS B 6363) Tool Holders

Face Mill Holder - Inch

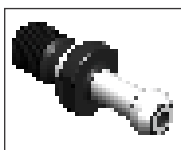
From - A



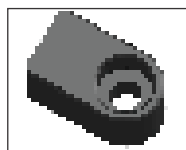
Taper	Ordering Code	D	L	L1	D1	Cutter Dia	Wt. in Kgs.
40	BT40FMH1905.60	19.05	60	17.3	44.5	2"	1.4
	BT40FMH254.60	25.4	60	17.3	57.2	3"	1.7
	BT40FMH3175.60	31.75	60	17.3	69.9	4"	2
	BT40FMH381.60	38.1	60	24	80	5"	2.8
50	BT50FMH1905.75	19.05	75	17.3	44.5	2"	4.2
	BT50FMH254.75	25.4	75	17.3	57.2	3"	4.2
	BT50FMH3175.75	31.75	75	17.3	69.9	4"	5.2
	BT50FMH381.75	38.1	75	24	80	5"	4.4

Note : Special Designs and Size are Available on Request.

## Accessories



Pull Stud  
(Pg. No.175)



Driving Key  
(Pg. No.182)



Allen Screw  
(Pg. No.182)



Washer  
(Pg. No. 182)



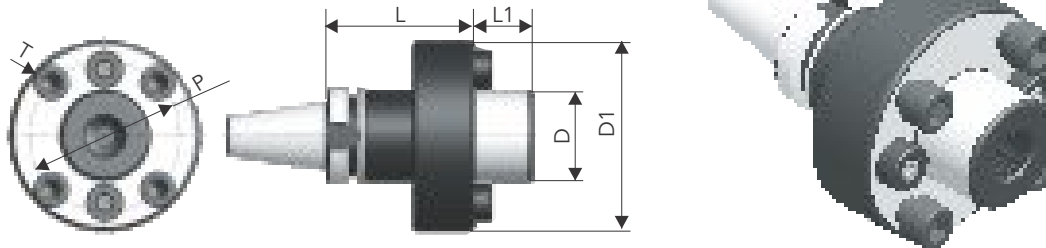
Allen Screw  
(Pg. No.182)



# BT MAS 403 (JIS B 6363) Tool Holders

Face Mill Holder - Flange Type

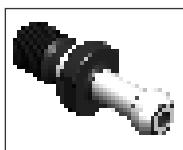
From - AD



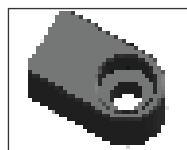
Taper	Ordering Code	D	D1	L	L1	T	P	Cutter Dia	Wt. in Kgs.
40	BT40FMH40.60FT	40	88	60	30	M 12	66.7	160	2.6
50	BT50FMH40.75FT	40	88	75	30	M 12	66.7	160	5.7
	BT50FMH60.75FT	60	128	75	40	M 16	101.6	200-500	7.6

Note : Special Designs and Size are Available on Request.

## Accessories



Pull Stud  
(Pg. No.175)



Driving Key  
(Pg. No.183)



Allen Screw  
(Pg. No.183)

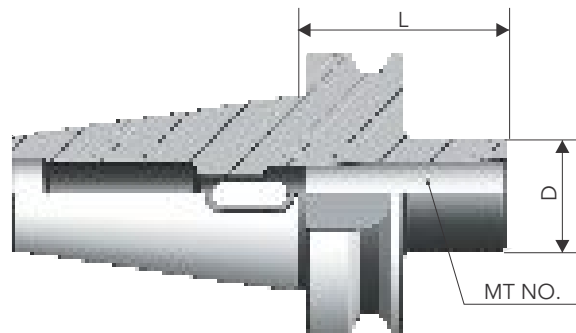


Allen Screw  
(Pg. No.183)

## BT MAS 403 (JIS B 6363) Tool Holders

Morse Taper Adaptor - Tanged End - Short Length

From - AD



Taper	Ordering Code	MT No.	L	D	Wt. in Kgs.
30	BT30MT1.50	1	50	25	0.4
	BT30MT2.62	2	62	32	0.5
	BT30MT3.80	3	80	40	0.7
40	BT40MT1.45	1	45	25	1
	BT40MT2.60	2	60	32	1
	BT40MT3.75	3	75	40	1.1
	BT40MT4.95	4	95	50	1.3
50	BT50MT1.45	1	45	25	3.5
	BT50MT2.45	2	45	32	3.4
	BT50MT3.45	3	45	40	3.4
	BT50MT4.75	4	75	50	3.5
	BT50MT5.105	5	105	70	4

Note : Special Designs and Size are Available on Request.

### Accessories

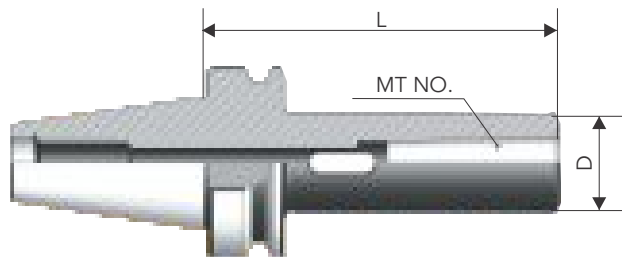


Pull Stud  
(Pg. No.175)

# BT MAS 403 (JIS B 6363) Tool Holders

Morse Taper Adaptor Tanged End - Extra Length

From - AD



Taper	Ordering Code	MT No.	L	D	Wt. in Kgs.
30	BT30MT1.120	1	120	25	0.7
	BT30MT2.120	2	120	32	0.8
	BT30MT3.135	3	135	40	1.1
40	BT40MT1.120	1	120	25	1.3
	BT40MT2.120	2	120	32	1.4
	BT40MT3.135	3	135	40	1.7
	BT40MT4.165	4	165	50	2.4
50	BT50MT1.120	1	120	25	3.9
	BT50MT1.180	1	180	25	4
	BT50MT2.135	2	135	32	4
	BT50MT2.180	2	180	32	4.3
	BT50MT3.150	3	150	40	4.3
	BT50MT3.180	3	180	40	4.7
	BT50MT4.180	4	180	50	5

Note : Special Designs and Size are Available on Request.

## Accessories

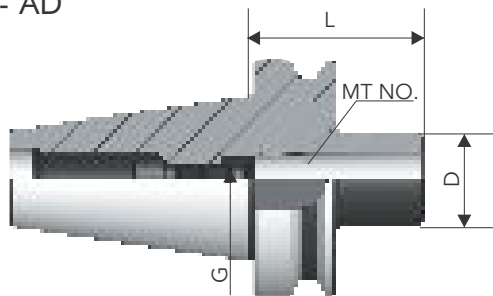


Pull Stud  
(Pg. No.175)

# BT MAS 403 (JIS B 6363) Tool Holders

Morse Taper Adaptor - Threaded End

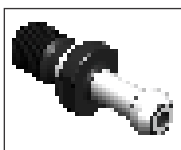
From - AD



Taper	Ordering Code	MT No.	L	D	G	Wt. in Kgs.
40	BT40MT1M06.45	1	45	25	M6	1
	BT40MT2M10.60	2	60	32	M10	1
	BT40MT3M12.75	3	75	40	M12	1.2
	BT40MT4M16.95	4	95	50	M16	1.4
50	BT50MT1M06.45	1	45	25	M6	3.5
	BT50MT2M10.45	2	45	32	M10	3.4
	BT50MT3M12.60	3	60	40	M12	3.4
	BT50MT4M16.75	4	75	50	M16	3.5

Note : Special Designs and Size are Available on Request.

## Accessories



Pull Stud  
(Pg. No.175)

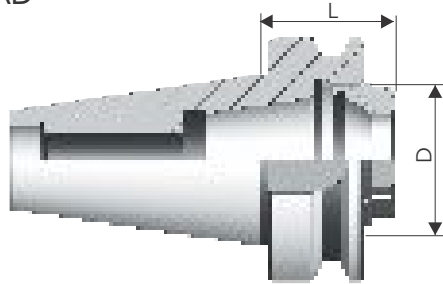


Allen Screw  
(Pg. No.182)

# BT MAS 403 (JIS B 6363) Tool Holders

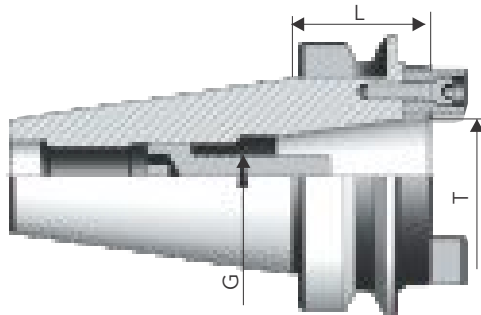
## Short Collet Chuck Holder

From - AD



Taper	Ordering Code	Suitable Collet	Clamping Range	L	D	Spanner	Wt. in Kgs.
30	BT30ER20CCH.29	ER20	1-13	29	M28x1.5	SSC.20	0.4
40	BT40ER32CCH.35	ER32	2-20	35	M40x1.5	SSC.32	0.8
50	BT50ER40CCH.45	ER40	3-26	45	M50x1.5	SSC.40	3.2

## Reduction Adaptor



Taper	Ordering Code	T	L	G	Wt. in Kgs.
40	BT40 RA BT30	BT30	60	M12	1.5
50	BT50 RA BT30	BT30	50	M12	3.9
	BT50 RA BT40	BT40	50	M16	2.7

Note : Spanner Order Separately  
Special Designs and Size are Available on Request.

## Accessories



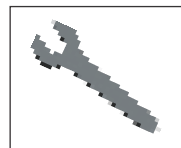
Pull Stud  
(Pg. No.175)



Collet  
(Pg. No.171)



Collet Nut  
(Pg. No.181)



Spanner  
(Pg. No.181)



Allen Screw  
(Pg. No. 185)

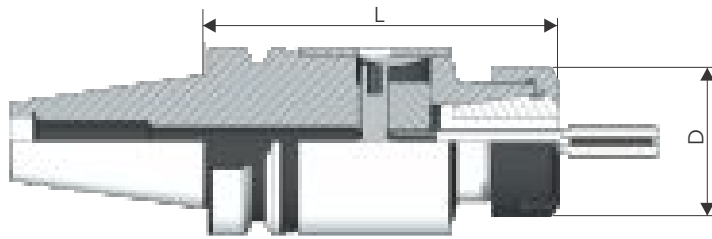


Key  
(Pg. No.185)

# BT MAS 403 (JIS B 6363) Tool Holders

Tapping Collet Chuck Holder - DIN 6499

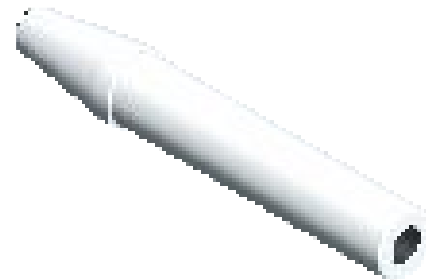
From - AD



Rigid Tapping Machines Only

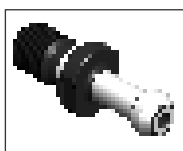
Taper	Ordering Code	Suitable Collet	Tapping Size	L	D	Spanner	Wt. in Kgs.
40	BT40ER32TCCH.125	ER32	M5 - M30	125	50	SSN.32	2.4
50	BT50ER32TCCH.135	ER32	M5 - M30	135	50	SSN.32	5

Test Bar

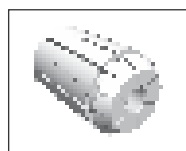


Taper	Ordering Code	D	L	Wt. in Kgs.
30	TEST BAR BT30	30	250	1.2
40	TEST BAR BT40	40	300	2.7
50	TEST BAR BT50	50	350	6.2

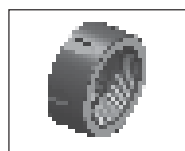
Accessories



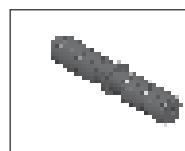
Pull Stud  
(Pg. No.175)



Collet  
(Pg. No.171)



Collet Nut  
(Pg. No.177)



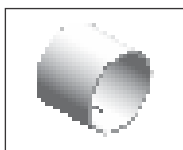
Stud-LH & RH  
(Pg. No.177)



Sliding Ring-RH  
(Pg. No.177)



Sliding Ring - LH  
(Pg. No.177)



Outer Bush  
(Pg. No.177)



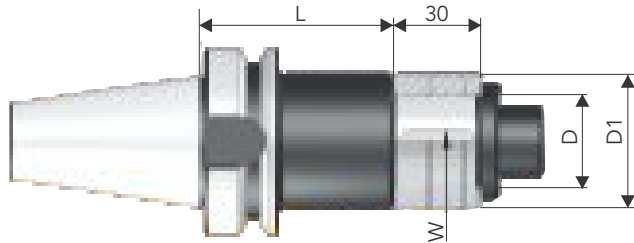
Spanner  
(Pg. No.177)



Grub Screw  
(Pg. No.177)

# BT MAS 403 (JIS B 6363) Tool Holders

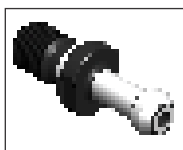
Side & Face Cutter Arbor



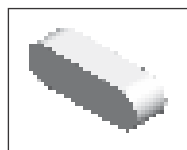
Taper	Ordering Code	D	L	D1	W	Wt. in Kgs.
40	BT40SFCA16.075	16	75	26	4	1.3
	BT40SFCA16.105	16	105	26	4	1.4
	BT40SFCA22.075	22	75	34	6	1.6
	BT40SFCA22.120	22	120	34	6	1.9
	BT40SFCA27.075	27	75	40	7	1.7
	BT40SFCA27.120	27	120	40	7	2.2
	BT40SFCA32.090	32	90	46	8	2
50	BT50SFCA16.090	16	90	26	4	4
	BT50SFCA16.120	16	120	26	4	4.1
	BT50SFCA22.090	22	90	34	6	4.2
	BT50SFCA22.135	22	135	34	6	4.6
	BT50SFCA27.090	27	90	40	7	4.4
	BT50SFCA27.135	27	135	40	7	4.9
	BT50SFCA32.090	32	90	46	8	4.7
	BT50SFCA32.135	32	135	46	8	5.4
	BT50SFCA40.090	40	90	55	10	5.3
	BT50SFCA40.135	40	135	55	10	6.1

Note : Special Designs and Size are Available on Request.

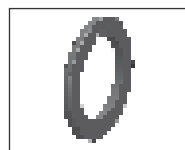
## Accessories



Pull Stud  
(Pg. No.175)



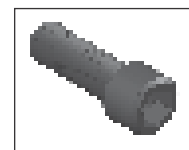
Parallel Key  
(Pg. No.184)



Spacer  
(Pg. No.184)



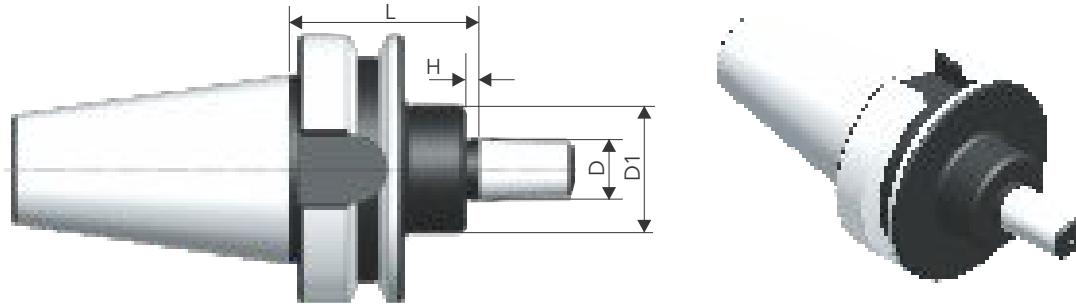
Washer  
(Pg. No. 184)



Allen Screw  
(Pg. No.184)

## BT MAS 403 (JIS B 6363) Tool Holders

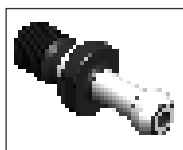
### Drill Chuck Holder



Taper	Ordering Code	Keyless Chuck Clamping Range	Taper No	L	D	D1	H	Wt. in Kgs.
40	BT40DCH1.45	0-3	JTA1	45	9.754	30	3	1
	BT40DCH2.45	0-6	JTA2	45	14.199	30	4	1
	BT40DCH6.45	0.8-13	JTA6	45	17.170	30	4	1.1
	BT40DCH12.45	0-6	B12	45	12.065	30	3	1.1
	BT40DCH16.45	0.8-13	B16	45	15.733	30	4	1.1
50	BT50DCH1.45	0-3	JTA1	45	9.754	30	3	3.7
	BT50DCH2.45	0-6	JTA2	45	14.199	30	4	3.7
	BT50DCH6.45	0.8-13	JTA6	45	17.170	30	4	3.7
	BT50DCH12.45	0-6	B12	45	12.065	30	3	3.7
	BT50DCH16.45	0.8-13	B16	45	15.733	30	4	3.7

Note : Special Designs and Size are Available on Request.

#### Accessories



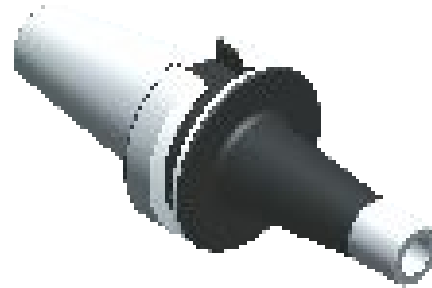
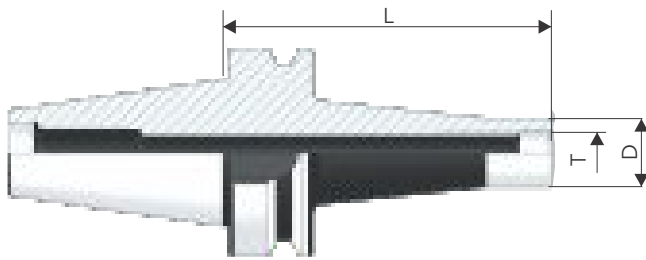
Pull Stud  
(Pg. No.175)



# BT MAS 403 (JIS B 6363) Tool Holders

Threaded Coupling Milling Holder

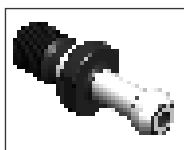
From - AD



Taper	Ordering Code	T	L	D	Wt. in Kgs.
40	BT40TCMH08.60	M8	13	60	1
	BT40TCMH08.90	M8	13	90	1
	BT40TCMH10.60	M10	18	60	1
	BT40TCMH10.100	M10	18	100	1.1
	BT40TCMH12.90	M12	21	90	1
	BT40TCMH12.100	M12	21	100	1.2
	BT40TCMH16.90	M16	29	90	1
	BT40TCMH16.100	M16	29	100	1.2
50	BT50TCMH08.90	M8	13	90	3.7
	BT50TCMH10.90	M10	18	90	3.7
	BT50TCMH12.90	M12	21	90	3.8
	BT50TCMH16.90	M16	29	90	4

Note : Special Designs and Size are Available on Request.

## Accessories

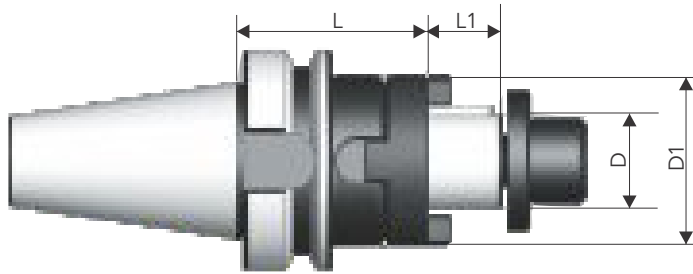


Pull Stud  
(Pg. No.175)

# BT MAS 403 (JIS B 6363) Tool Holders

Combi Shell Mill Holder

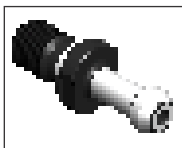
From - AD



Taper	Ordering Code	D	D1	L	L1	Wt. in Kgs.
40	BT40CSMH16.55	16	32	55	27	1.2
	BT40CSMH22.55	22	40	55	31	1.3
	BT40CSMH27.55	27	48	55	33	1.4
	BT40CSMH32.60	32	58	60	38	1.7
	BT40CSMH40.70	40	70	70	41	2.6
50	BT50CSMH16.70	16	32	70	27	3.8
	BT50CSMH22.70	22	40	70	31	4
	BT50CSMH27.70	27	48	70	33	4.1
	BT50CSMH32.70	32	58	70	38	4.4
	BT50CSMH40.70	40	70	70	41	5

Note : Special Designs and Size are Available on Request.

## Accessories



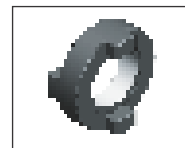
Pull Stud  
(Pg. No.175)



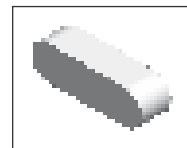
Washer  
(Pg. No.183)



Allen Screw  
(Pg. No.183)



Drive Ring  
(Pg. No.183)

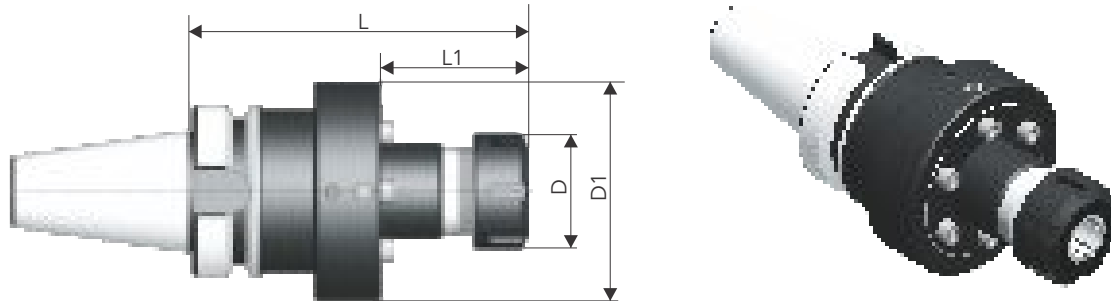


Parallel Key  
(Pg. No.183)

# BT MAS 403 (JIS B 6363) Tool Holders

Runout Adjustable Holder - Collect Chuck

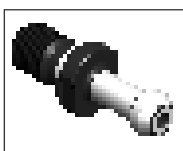
From - AD



Taper	Ordering Code	Suitable Collet	Clamping Range	D	D1	L	L1	Wt. in Kgs.
40	BT40RAHER25.125	ER-25	1-16	42	63	125	55	1.8
	BT40RAHER25.125	ER-25	1-16	42	81	125	55	2.5
50	BT50RAHER25.130	ER-25	1-16	42	81	130	55	4.5

Note : Spanner Order Separately  
Special Designs and Size are Available on Request.

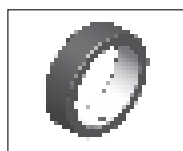
## Accessories



Pull Stud  
(Pg. No.175)



Collet Chuck Adaptor  
(Pg. No.187)



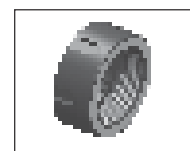
Adjusting Ring  
(Pg. No.187)



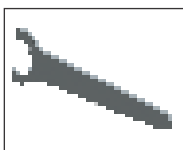
Allen Screw  
(Pg. No.187)



Set Screw  
(Pg. No. 187)



Collet Nut  
(Pg. No.187)



Spanner  
(Pg. No.187)

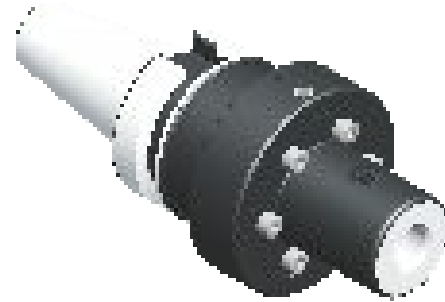
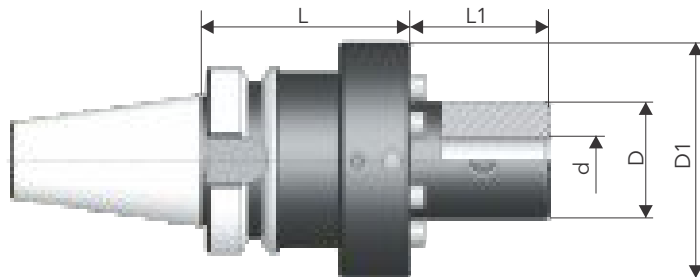


Stopper Screw  
(Pg. No.187)

# BT MAS 403 (JIS B 6363) Tool Holders

Runout Adjustable Holder - Weldon

From - AD



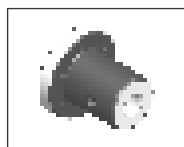
Taper	Ordering Code	d	D	D1	L	L1	Wt. in Kgs.
40	BT40RAH12.120	12	35	81	120	48	2.5
	BT40RAH16.120	16	40	81	120	48	2.5
	BT40RAH20.120	20	50	81	120	48	2.7
	BT40RAH25.130	25	50	81	130	58	2.7
50	BT50RAH12.130	12	35	81	130	48	4.7
	BT50RAH16.130	16	40	81	130	48	4.8
	BT50RAH20.130	20	50	81	130	48	4.9
	BT50RAH25.140	25	50	81	140	58	4.9
	BT50RAH32.150	32	60	115	150	55	7.4
	BT50RAH40.160	40	70	115	160	65	7.7

Note : Special Designs and Size are Available on Request.

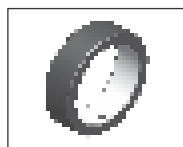
## Accessories



Pull Stud  
(Pg. No.175)



End Mill Adaptor  
(Pg. No.186)



Adjusting Ring  
(Pg. No.186)



Allen Screw  
(Pg. No.186)



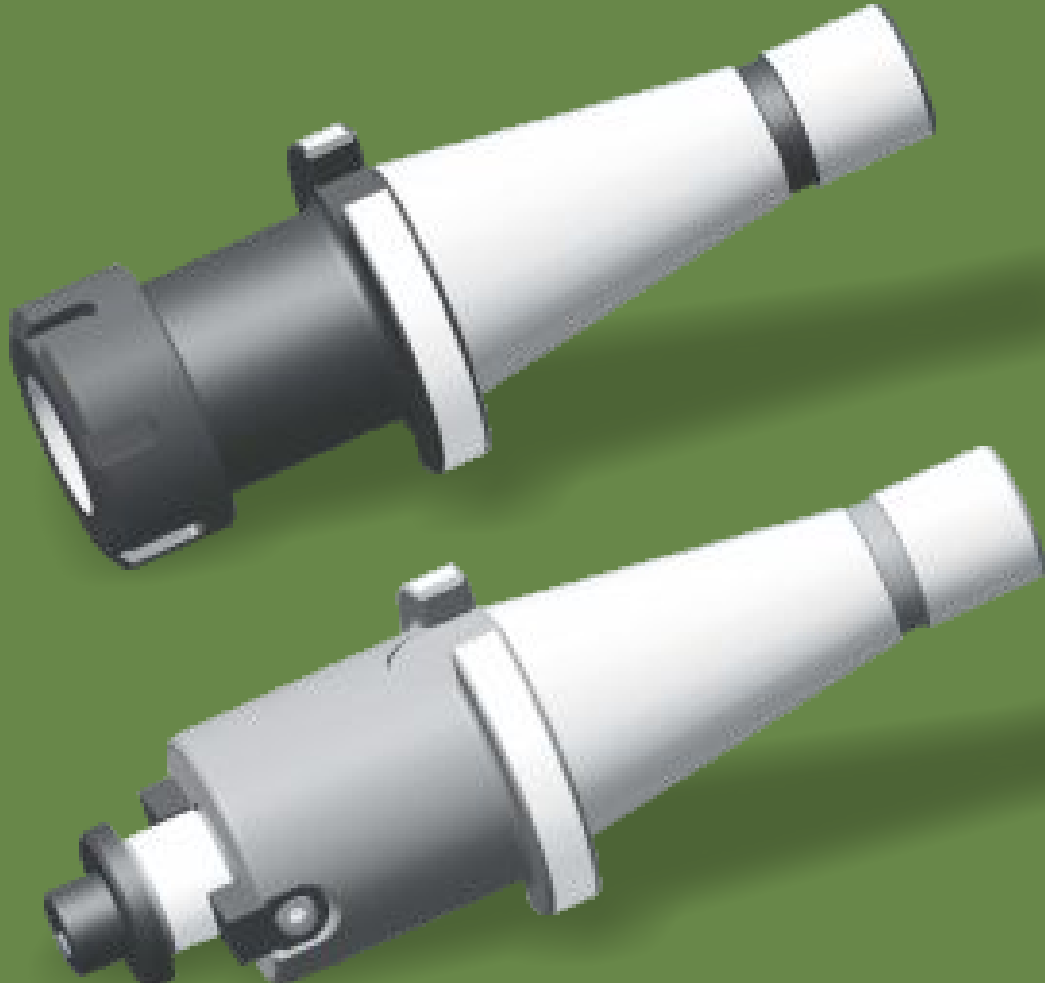
Set Screw  
(Pg. No.186)



Grub Screw  
(Pg. No.186)

# Din - 2080 Tool Holders

DIN - 2080 TOOL HOLDERS



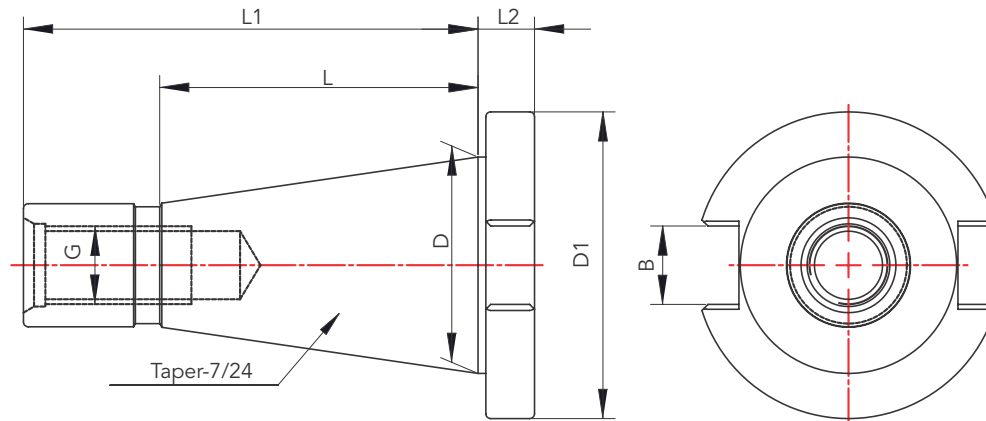
# Din - 2080 Tool Holders

## Contents

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# Din - 2080 Tool Holders

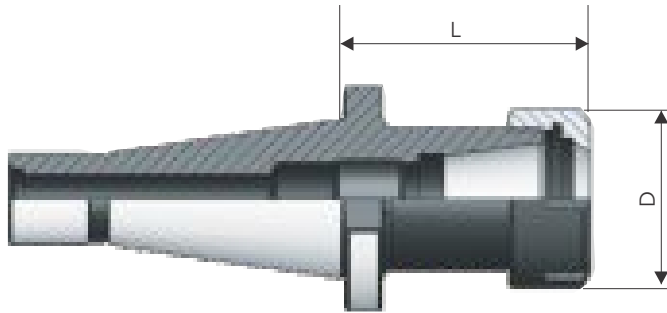
## Shank Details



Taper ISO	D	D1	L	L1	L2	B	C
30	31.75	50	48.4	68.4	9.6	16.1	M12
40	44.45	63	65.4	93.4	11.6	16.1	M16
50	69.85	100	103.0	128.0	15.2	25.7	M24

## Din - 2080 Tool Holders

### Collet Chuck Holder - DIN 6499



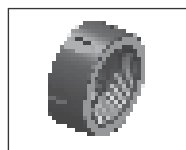
Taper	Ordering Code	Suitable Collet	Clamping Range	L	D	Spanner	Wt. in Kgs.
30	ISO30ER32.70	ER32	2-20	70	50	SSN.32	0.8
40	ISO40ER32.70	ER32	2-20	70	50	SSN.32	1.3
	ISO40ER40.70	ER40	3-26	70	63	SSN.40	1.3
50	ISO50ER32.80	ER32	2-20	80	50	SSN.32	3.1
	ISO50ER40.80	ER40	3-26	80	63	SSN.40	3.2

Note: Spanner Order Separately  
Special Designs and Sizes are Available on Request

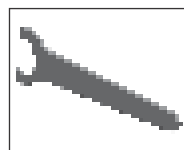
#### Accessories



Collet  
(Pg. No.171)



Collet Nut  
(Pg. No.177)



Spanner  
(Pg. No.177)



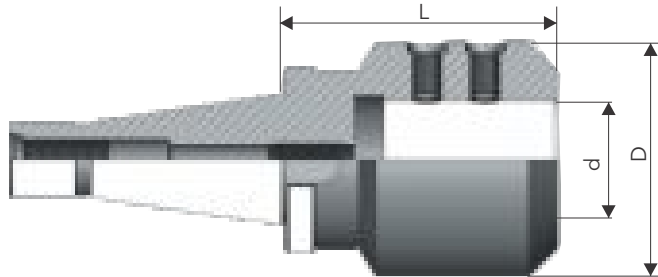
Stopper Screw  
(Pg. No.187)



# Din - 2080 Tool Holders

DIN-2080

Side Lock Holder



Taper ISO	Ordering Code	d	D	L	Wt. in Kgs.
40	ISO40SLH08.45	8	24	45	1.0
	ISO40SLH10.45	10	30	45	1.0
	ISO40SLH12.45	12	35	45	1.0
	ISO40SLH16.50	16	40	50	1.2
	ISO40SLH20.50	20	50	50	1.2
	ISO40SLH25.75	25	50	75	2
	ISO40SLH32.90	32	60	90	2.6
50	ISO50SLH08.50	8	24	50	2.9
	ISO50SLH10.50	10	30	50	2.9
	ISO50SLH12.50	12	35	50	2.9
	ISO50SLH16.50	16	40	50	3.0
	ISO50SLH20.63	20	50	63	3.2
	ISO50SLH25.80	25	50	80	3.9
	ISO50SLH32.80	32	60	80	4.1
	ISO50SLH40.90	40	63	90	4.6

Note: Special Designs and Sizes are Available on Request

## Accessories



Stopper Screw  
(Pg. No.187)

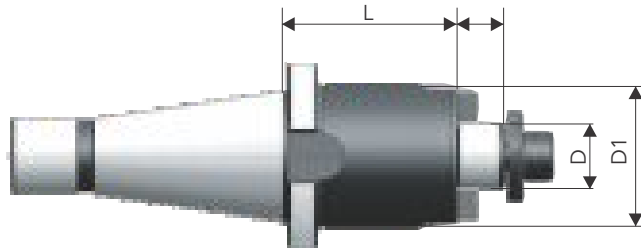


Grub Screw  
(Pg. No.177)

# Din - 2080 Tool Holders

DIN-2080

Face Mill Holder



Taper ISO	Ordering Code	D	L	L1	D1	Cutter Dia	Wt. in Kgs.
30	ISO30FMH22.45	22	45	16	48	50 & 63	1.0
	ISO30FMH27.45	27	45	18	60	80	1.1
40	ISO40FMH22.45	22	45	16	48	50 & 63	1.3
	ISO40FMH27.45	27	45	18	60	80	1.6
	ISO40FMH32.45	32	45	20	70	100	1.9
50	ISO40FMH40.45	40	45	23	80	125	2.3
	ISO50FMH22.60	22	60	16	48	50 & 63	3.3
	ISO50FMH27.60	27	60	18	60	80	3.7
	ISO50FMH32.60	32	60	20	70	100	4.1
	ISO50FMH40.60	40	60	23	80	125	4.7

Note: Special Designs and Sizes are Available on Request

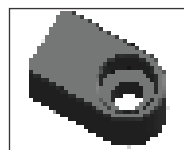
## Accessories



Washer  
(Pg. No.183)



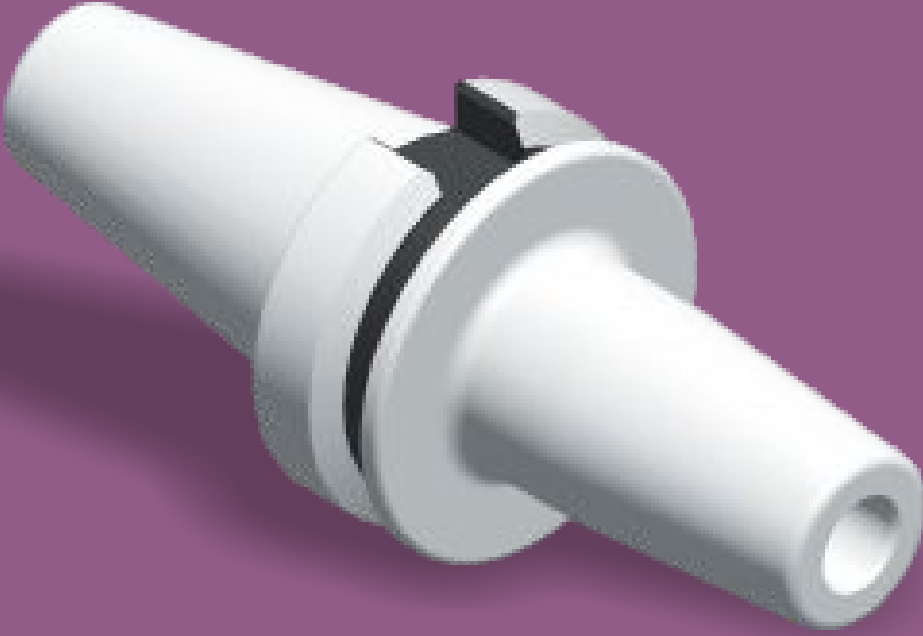
Allen Screw  
(Pg. No.183)



Driving Key  
(Pg. No.182)

# Shrink Fit Tool Holders

SHRINK FIT TOOL HOLDERS



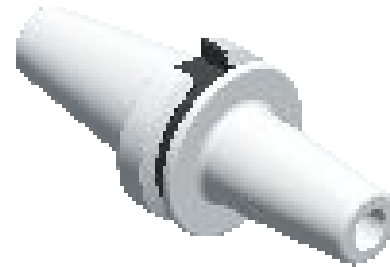
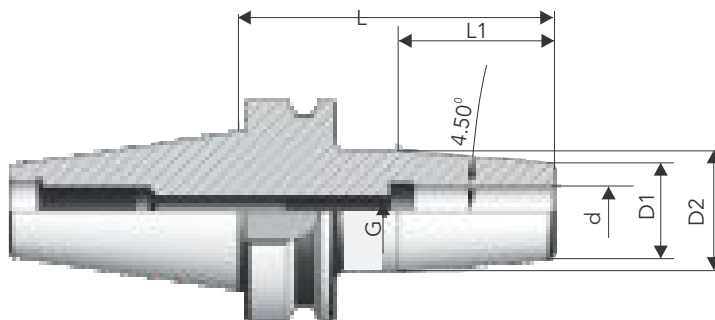
# Shrink Fit Tool Holders

## Contents

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# Shrink Fit Tool Holders

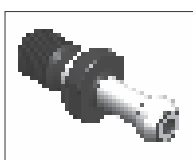
BT MAS 403 (JIS B 6339)



Taper	Ordering Code	d	D1	D2	L	L1	G	Wt. in Kgs.
40	BT40SFA06.90	6	21	27	90	36	M5	1.2
	BT40SFA06.130	6	21	27	130	36	M5	1.4
	BT40SFA08.90	8	21	27	90	36	M6	1.2
	BT40SFA08.130	8	21	27	130	36	M6	1.4
	BT40SFA10.90	10	24	32	90	42	M8	1.3
	BT40SFA10.130	10	24	32	130	42	M8	1.5
	BT40SFA12.90	12	24	32	90	47	M10	1.5
	BT40SFA12.130	12	24	32	130	47	M10	1.5
	BT40SFA14.90	14	27	34	90	47	M10	1.2
	BT40SFA14.130	14	27	34	130	47	M10	1.5
	BT40SFA16.90	16	27	34	90	50	M12	1.2
	BT40SFA16.130	16	27	34	130	50	M12	1.5
	BT40SFA20.90	20	33	42	90	52	M16	1.3
	BT40SFA20.120	20	33	42	120	52	M16	1.7
	BT40SFA25.100	25	44	53	100	58	M16	1.8
	BT40SFA25.130	25	44	53	130	58	M16	2.2

Note : Special Designs and Sizes are Available on Request

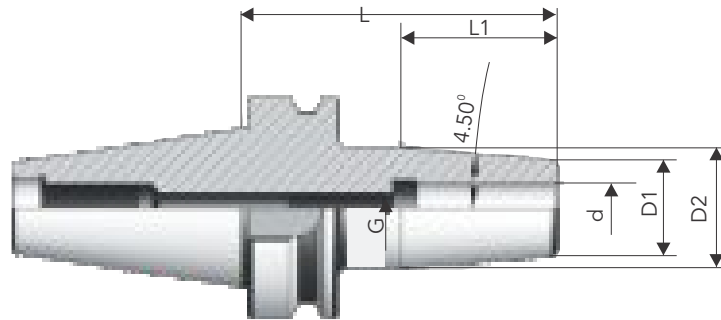
## Accessories



Pull Stud  
(Pg No. 175)

# Shrink Fit Tool Holders

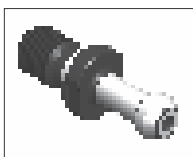
BT MAS 403 (JIS B 6339)



Taper	Ordering Code	d	D1	D2	L	L1	G	Wt. in Kgs.
50	BT50SFA06.100	6	21	27	100	36	M5	3.8
	BT50SFA06.130	6	21	27	130	36	M5	3.9
	BT50SFA08.100	8	21	27	100	36	M6	3.8
	BT50SFA08.130	8	21	27	130	36	M6	3.9
	BT50SFA10.100	10	24	32	100	42	M8	3.9
	BT50SFA10.130	10	24	32	130	42	M8	3.9
	BT50SFA12.100	12	24	32	100	47	M10	3.9
	BT50SFA12.130	12	24	32	130	47	M10	4.0
	BT50SFA14.100	14	27	34	100	47	M10	3.9
	BT50SFA14.130	14	27	34	130	47	M10	4.1
	BT50SFA16.100	16	27	34	100	50	M12	3.8
	BT50SFA16.130	16	27	34	130	50	M12	4.0
	BT50SFA20.100	20	33	42	100	52	M16	3.9
	BT50SFA20.130	20	33	42	130	52	M16	4.2
	BT50SFA25.100	25	44	53	100	58	M16	4.2
	BT50SFA25.130	25	44	53	130	58	M16	4.7
	BT50SFA32.100	32	44	53	100	58	M16	4.0
	BT50SFA32.130	32	44	53	130	58	M16	4.5

Note : Special Designs and Sizes are Available on Request

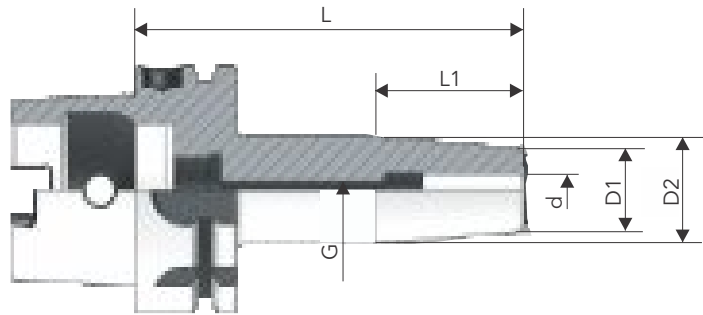
## Accessories



Pull Stud  
(Pg No. 175)

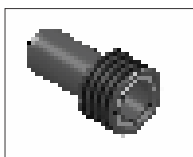
# Shrink Fit Tool Holders

DIN - 69893 HSK-A

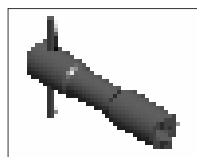


Taper	Ordering Code	d	D1	D2	L	L1	G	Wt. in Kgs.
HSKA 50	HSKA50SFA06.80	6	21	27	80	36	M5	0.6
	HSKA50SFA08.80	8	21	27	80	36	M6	0.6
	HSKA50SFA10.85	10	24	32	85	42	M8	0.64
	HSKA50SFA12.90	12	24	32	90	47	M10	0.66
	HSKA50SFA14.90	14	27	34	90	47	M10	0.68
	HSKA50SFA16.95	16	27	34	95	50	M12	0.7
	HSKA50SFA20.100	20	33	42	100	52	M16	0.9
HSKA 63	HSKA63SFA06.80	6	21	27	80	36	M5	0.83
	HSKA63SFA06.130	6	21	27	130	36	M5	1.1
	HSKA63SFA08.80	8	21	27	80	36	M6	0.83
	HSKA63SFA08.130	8	21	27	130	36	M6	1.1
	HSKA63SFA10.85	10	24	32	85	42	M8	0.92
	HSKA63SFA10.130	10	24	32	130	42	M8	1.2
	HSKA63SFA12.90	12	24	32	90	47	M10	0.92
	HSKA63SFA12.130	12	24	32	130	47	M10	1.2
	HSKA63SFA14.90	14	27	34	90	47	M10	0.93
	HSKA63SFA14.130	14	27	34	130	47	M10	1.3
	HSKA63SFA16.95	16	27	34	95	50	M12	0.96
	HSKA63SFA16.130	16	27	34	130	50	M12	1.2
	HSKA63SFA20.100	20	33	42	100	52	M16	1.18
	HSKA63SFA20.130	20	33	42	130	52	M16	1.5
	HSKA63SFA25.115	25	44	53	115	58	M16	1.75
	HSKA63SFA25.130	25	44	53	160	58	M16	2.4
	HSKA63SFA32.120	32	44	53	120	58	M16	1.8
HSKA63SFA32.160	32	44	53	160	58	M16	2.3	

## Accessories



Coolant Tube  
(Pg No. 174)

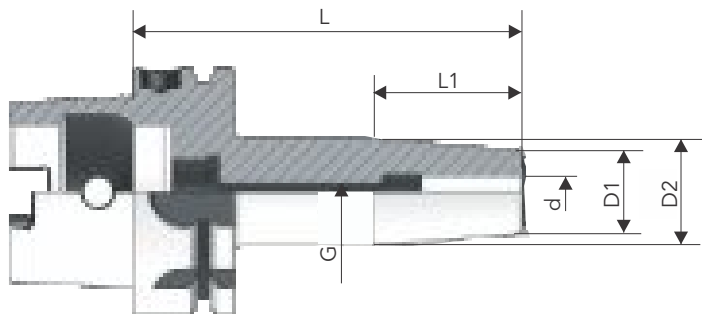


Coolant Tube Spanner  
(Pg No. 174)

Note : Special Designs and Sizes are Available on Request  
Coolant Tube and Coolant Tube Spanner order Separately

# Shrink Fit Tool Holders

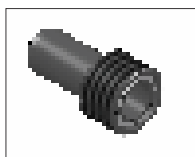
DIN - 69893 HSK-A



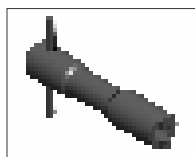
Taper	Ordering Code	d	D	D1	L	L1	G	Wt. in Kgs.
HSKA 100	HSKA100SFA06.85	6	21	27	85	36	M5	2.2
	HSKA100SFA06.130	6	21	27	130	36	M5	2.4
	HSKA100SFA08.85	8	21	27	85	36	M6	2.2
	HSKA100SFA08.130	8	21	27	130	36	M6	2.4
	HSKA100SFA10.90	10	24	32	90	42	M8	2.3
	HSKA100SFA10.130	10	24	32	130	42	M8	2.5
	HSKA100SFA12.95	12	24	32	95	47	M10	2.3
	HSKA100SFA12.130	12	24	32	130	47	M10	2.5
	HSKA100SFA14.95	14	27	34	95	47	M10	2.3
	HSKA100SFA16.100	16	27	34	100	50	M12	2.4
	HSKA100SFA16.130	16	27	34	130	50	M12	2.6
	HSKA100SFA20.105	20	33	42	105	52	M16	2.5
	HSKA100SFA20.130	20	33	42	130	52	M16	2.8
	HSKA100SFA25.115	25	44	53	115	58	M16	3
	HSKA100SFA25.160	25	44	53	160	58	M16	3.7
	HSKA100SFA32.120	32	44	53	120	58	M16	3
HSKA100SFA32.160	32	44	53	160	58	M16	3.6	

Note : Special Designs and Sizes are Available on Request  
Coolant Tube and Coolant Tube Spanner order Separately

## Accessories



Coolant Tube  
(Pg No. 174)

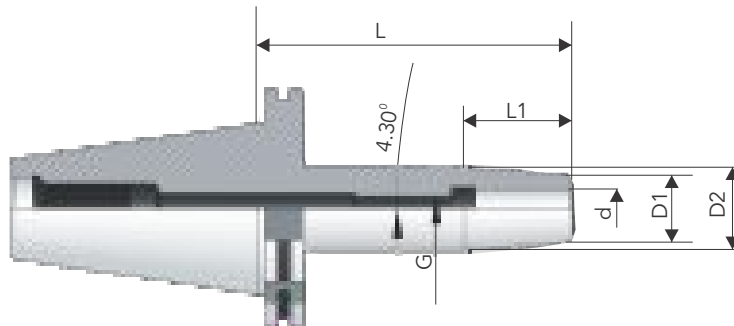


Coolant Tube Spanner  
(Pg No. 174)



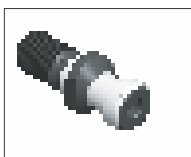
# Shrink Fit Tool Holders

SK / DIN - 69871



Taper	Ordering Code	d	D1	D2	L	L1	G	Wt. in Kgs.
SK40	SK40SFA06.80	6	21	27	80	36	M5	1.0
	SK40SFA06.130	6	21	27	130	36	M5	1.2
	SK40SFA08.80	8	21	27	80	36	M6	1.0
	SK40SFA08.130	8	21	27	130	36	M6	1.2
	SK40SFA10.80	10	24	32	80	42	M8	1.0
	SK40SFA10.130	10	24	32	130	42	M8	1.3
	SK40SFA12.80	12	24	32	80	47	M10	1.0
	SK40SFA12.130	12	24	32	130	47	M10	1.3
	SK40SFA14.80	14	27	34	80	47	M10	1.1
	SK40SFA14.130	14	27	34	130	47	M10	1.4
	SK40SFA16.80	16	27	34	80	50	M12	1.0
	SK40SFA16.130	16	27	34	130	50	M12	1.3
	SK40SFA20.80	20	33	42	80	52	M16	1.1
	SK40SFA20.130	20	33	42	130	52	M16	1.6
SK50	SK50SFA25.100	25	44	53	100	58	M16	1.7
	SK50SFA25.130	25	44	53	130	58	M16	2.2
	SK50SFA06.80	6	21	27	80	36	M5	2.8
	SK50SFA06.130	6	21	27	130	36	M5	3.0
	SK50SFA08.80	8	21	27	80	36	M6	2.8
	SK50SFA08.130	8	21	27	130	36	M6	3.0
	SK50SFA10.80	10	24	32	80	42	M8	2.8
	SK50SFA10.130	10	24	32	130	42	M8	3.1
	SK50SFA12.80	12	24	32	80	47	M10	2.8
	SK50SFA12.130	12	24	32	130	47	M10	3.0
	SK50SFA14.80	14	27	34	80	47	M10	2.8
	SK50SFA14.130	14	27	34	130	47	M10	3.2
	SK50SFA16.80	16	27	34	80	50	M12	2.8
	SK50SFA16.130	16	27	34	130	50	M12	2.4
	SK50SFA20.80	20	33	42	80	52	M16	2.9
	SK50SFA20.130	20	33	42	130	52	M16	3.3
SK50SFA25.100	25	44	53	100	58	M16	3.5	
SK50SFA25.130	25	44	53	130	58	M16	4.0	
SK50SFA32.100	32	44	53	100	58	M16	3.4	
SK50SFA32.130	32	44	53	130	58	M16	3.8	

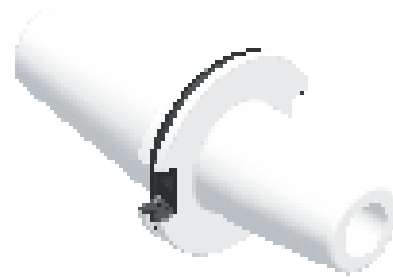
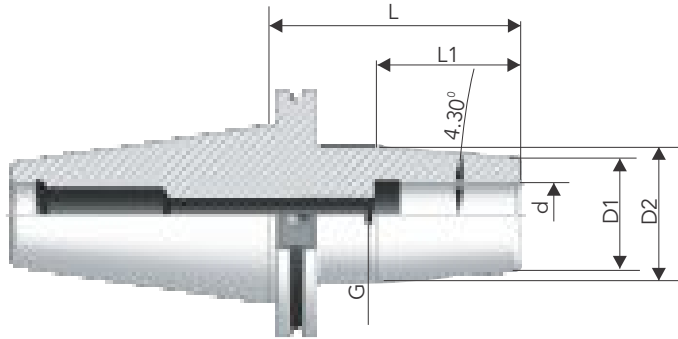
## Accessories



Pull Stud  
(Pg No. 175)

# Shrink Fit Tool Holders

CAT / ANSI B5.50



Taper	Ordering Code	d	D1	D2	L	L1	G	Wt. in Kgs.
40	CAT40SFA06.80	6	21	27	80	36	M5	1.0
	CAT40SFA06.130	6	21	27	130	36	M5	1.2
	CAT40SFA08.80	8	21	27	80	36	M6	1.0
	CAT40SFA08.130	8	21	27	130	36	M6	1.2
	CAT40SFA10.80	10	24	32	80	42	M8	1.0
	CAT40SFA10.130	10	24	32	130	42	M8	1.3
	CAT40SFA12.80	12	24	32	80	47	M10	1.0
	CAT40SFA12.130	12	24	32	130	47	M10	1.3
	CAT40SFA14.80	14	27	34	80	47	M10	1.1
	CAT40SFA14.130	14	27	34	130	47	M10	1.4
	CAT40SFA16.80	16	27	34	80	50	M12	1.0
	CAT40SFA16.130	16	27	34	130	50	M12	1.3
	CAT40SFA20.80	20	33	42	80	52	M16	1.1
	CAT40SFA20.130	20	33	42	130	52	M16	1.6
CAT40SFA25.100	25	44	53	100	58	M16	1.7	
CAT40SFA25.130	25	44	53	130	58	M16	2.2	
50	CAT50SFA06.80	6	21	27	80	36	M5	2.8
	CAT50SFA06.130	6	21	27	130	36	M5	3.0
	CAT50SFA08.80	8	21	27	80	36	M6	2.8
	CAT50SFA08.130	8	21	27	130	36	M6	3.0
	CAT50SFA10.80	10	24	32	80	42	M8	2.8
	CAT50SFA10.130	10	24	32	130	42	M8	3.1
	CAT50SFA12.80	12	24	32	80	47	M10	2.8
	CAT50SFA12.130	12	24	32	130	47	M10	3.0
	CAT50SFA14.80	14	27	34	80	47	M10	2.8
	CAT50SFA14.130	14	27	34	130	47	M10	3.2
	CAT50SFA16.80	16	27	34	80	50	M12	2.8
	CAT50SFA16.130	16	27	34	130	50	M12	2.4
	CAT50SFA20.80	20	33	42	80	52	M16	2.9
	CAT50SFA20.130	20	33	42	130	52	M16	3.3
	CAT50SFA25.100	25	44	53	100	58	M16	3.5
	CAT50SFA25.130	25	44	53	130	58	M16	4.0
CAT50SFA32.100	32	44	53	100	58	M16	3.4	
CAT50SFA32.130	32	44	53	130	58	M16	3.8	

Note : Special Designs and Sizes are Available on Request

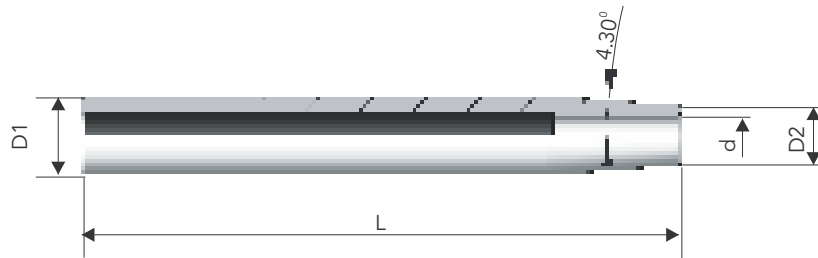
## Accessories



Pull Stud  
(Pg No. 175)

# Shrink Fit Tool Holders

## Shrink Fit - Cylindrical Extension

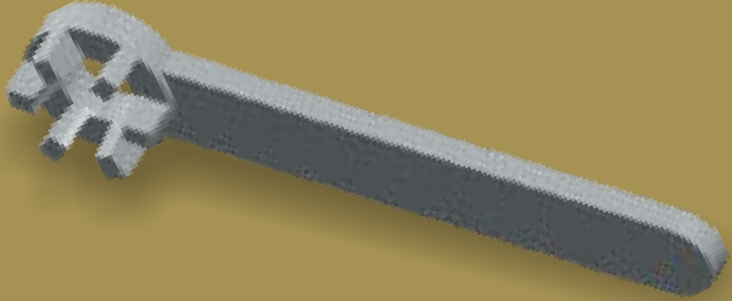
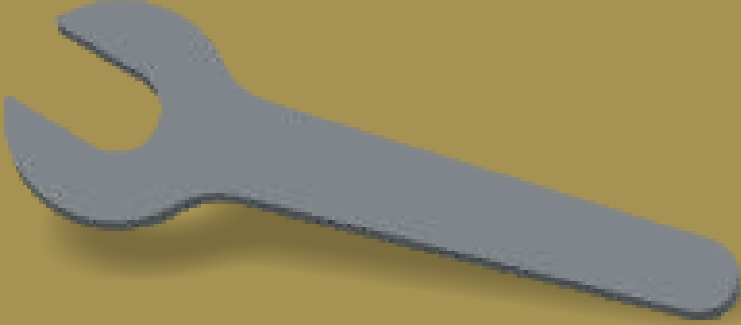
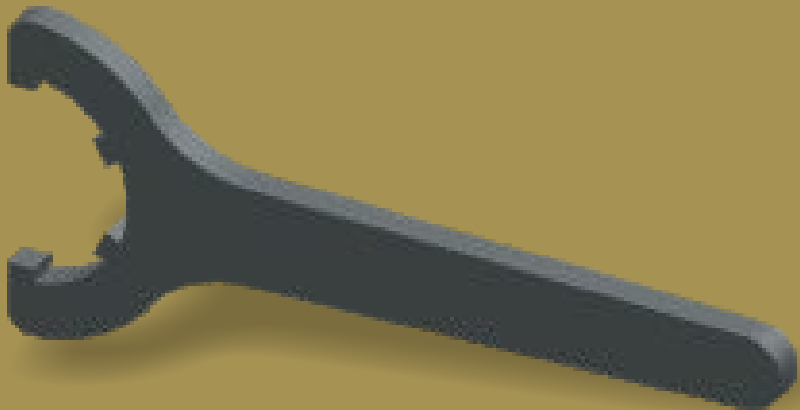


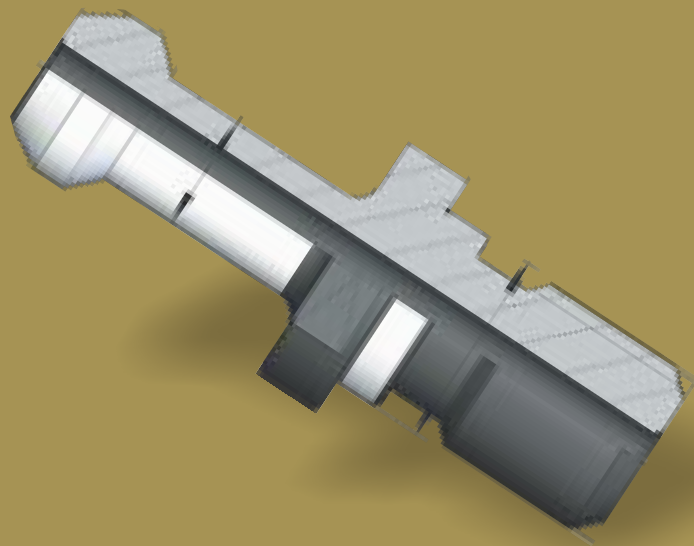
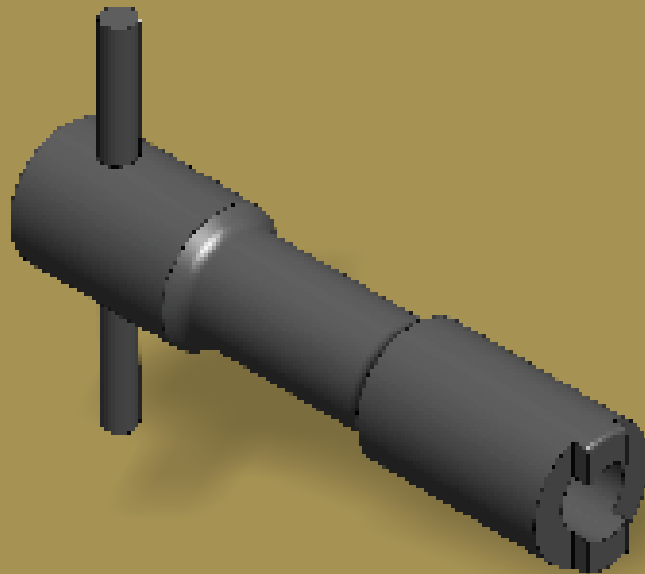
Ordering Code	d	D1	D2	L	Wt. in Kgs.
SFCE06.160	6	16	10	160	0.2
SFCE08.160	8	16	14	160	0.2
SFCE06.160	6	20	14	160	0.3
SFCE08.160	8	20	14	160	0.3
SFCE10.160	10	20	16	160	0.3
SFCE06.160	6	25	14	160	0.4
SFCE08.160	8	25	19	160	0.5
SFCE10.160	10	25	20	160	0.5
SFCE12.160	12	25	20	160	0.5
SFCE14.160	14	25	20	160	0.5
SFCE16.160	16	25	22	160	0.3
SFCE10.160	10	32	27	160	0.9
SFCE12.160	12	32	27	160	0.8
SFCE14.160	14	32	27	160	0.8
SFCE16.160	16	32	27	160	0.7
SFCE20.160	20	32	27	160	0.6

Note : Special Designs and Sizes are Available on Request

# Accessories & Spares Parts

ACCESSORIES & SPARES PARTS





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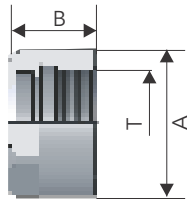
RANGE	ER 8	ER 11	ER 16	ER 20	ER 25	ER 32
1.0 - 0.5	ER.08.010	ER.11.010				
1.5 - 1.0	ER.08.015	ER.11.015				
2.0 - 1.5	ER.08.020	ER.11.020				
2.5 - 2.0	ER.08.025	ER.11.025				
3.0 - 2.5	ER.08.030	ER.11.030				
3.5 - 3.0	ER.08.035	ER.11.035				
4.0 - 3.5	ER.08.040	ER.11.040				
4.5 - 4.0	ER.08.045	ER.11.045				
5.0 - 4.5	ER.08.050	ER.11.050				
5.5 - 5.0		ER.11.055				
6.0 - 5.5		ER.11.060				
6.5 - 6.0		ER.11.065				
7.0 - 6.5		ER.11.070				
1.0 - 0.5			ER.16.010			
2 - 1			ER.16.020	ER.20.020	ER.25.020	
3 - 2			ER.16.030	ER.20.030	ER.25.030	ER.32.030
4 - 3			ER.16.040	ER.20.040	ER.25.040	ER.32.040
5 - 4			ER.16.050	ER.20.050	ER.25.050	ER.32.050
6 - 5			ER.16.060	ER.20.060	ER.25.060	ER.32.060
7 - 6			ER.16.070	ER.20.070	ER.25.070	ER.32.070
8 - 7			ER.16.080	ER.20.080	ER.25.080	ER.32.080
9-8			ER.16.090	ER.20.090	ER.25.090	ER.32.090
10 - 9			ER.16.100	ER.20.100	ER.25.100	ER.32.100
11 - 10				ER.20.110	ER.25.110	ER.32.110
12 - 11				ER.20.120	ER.25.120	ER.32.120
13 - 12				ER.20.130	ER.25.130	ER.32.130
14 - 13					ER.25.140	ER.32.140
15 - 14					ER.25.150	ER.32.150
16 - 15					ER.25.160	ER.32.160
17 - 16						ER.32.170
18 - 17						ER.32.180
19 - 18						ER.32.190
20 - 19						ER.32.200

## Collet - DIN 6499



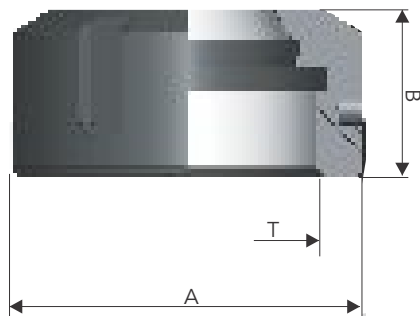
RANGE	ER 40	RANGE	RANGE
4 - 3	ER.40.040	12 - 10	ER.50.120
5-4	ER.40.050	14 - 12	ER.50.140
6-5	ER.40.060	16 - 14	ER.50.160
7 - 6	ER.40.070	18 - 16	ER.50.180
8 - 7	ER.40.080	20 - 18	ER.50.200
9-8	ER.40.090	22 - 20	ER.50.220
10 - 9	ER.40.100	24 - 22	ER.50.240
11 - 10	ER.40.110	26 - 24	ER.50.260
12 - 11	ER.40.120	28 - 26	ER.50.280
13 - 12	ER.40.130	30 - 28	ER.50.300
14 - 13	ER.40.140	32 - 30	ER.50.320
15 - 14	ER.40.150	34 - 32	ER.50.340
16 - 15	ER.40.160		
17 - 16	ER.40.170		
18 - 17	ER.40.180		
19 - 18	ER.40.190		
20 - 19	ER.40.200		
21 - 20	ER.40.210		
22 - 21	ER.40.220		
23 - 22	ER.40.230		
24 - 23	ER.40.240		
25 - 24	ER.40.250		
26 - 25	ER.40.260		





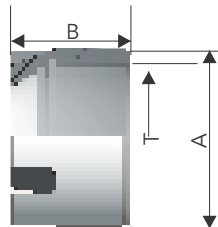
Hexagonal Nut

ORDERING CODE	A	B	T
HN.11	19	11.5	M14x0.75
HN.16	28	17.0	M22x1.50



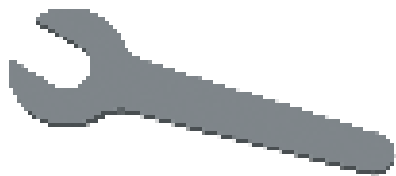
Slotted Nut

ORDERING CODE	A	B	T
SN.20	34	19.0	M25x1.50
SN.25	42	20.0	M32x1.50
SN.32	50	22.0	M40x1.50
SN.40	63	25.0	M50x1.50
SN.50	78	35.0	M64x1.50



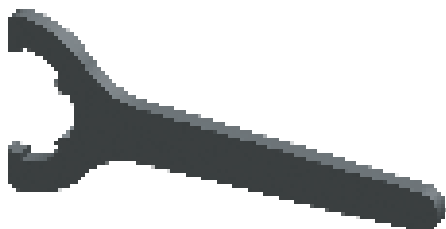
Mini Nut

ORDERING CODE	A	B	T
MN.16	22	17.0	M19x1.0
MN.20	28	19.0	M24x1.0
MN.25	35	20.0	M30x1.0



Spanner For Hexagonal Nut

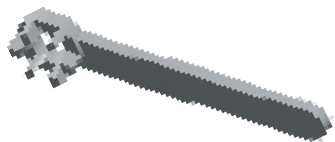
ORDERING CODE
SHN.11
SHN.16



Spanner For Slotted Nut

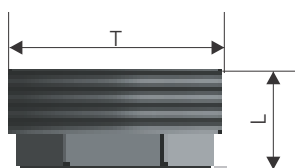
ORDERING CODE
SSN.20
SSN.25
SSN.32
SSN.40
SSN.50

## ER Collet - DIN 6499 Nut & Spanner



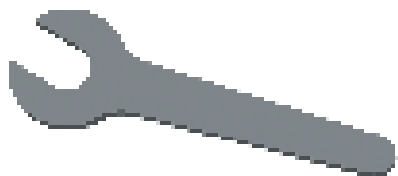
Spanner For Mini Nut

ORDERING CODE
SMN.16
SMN.20
SMN.25



Short Collet Nut & Spanner

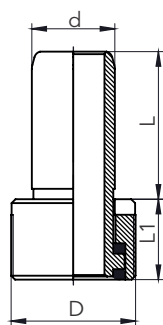
ORDERING CODE	T	L
SCN.20	M32xl.5	14.5
SCN.32	M40xl.5	16
SCN. 40	M50x 1.5	20



Short Collet Spanner

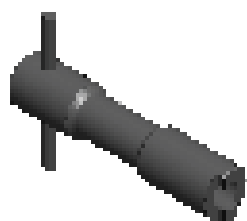
ORDERING CODE
SSC.20
SSC.32
SSC.40

## HSK Accessories



Coolant Tube

ORDERING CODE	TAPER HSK	D	d	L	L1
CT10.050	50	M16xl	10	32.9	9.6
CT12.063	63	M18xl	12	36.2	11.5
CT16.100	100	M24xl.5	16	43.6	15.7



Spanner for Coolant Tube

ORDERING CODE
SCT.050
SCT.063
SCT.100

# Pull Stud - BT MAS 403

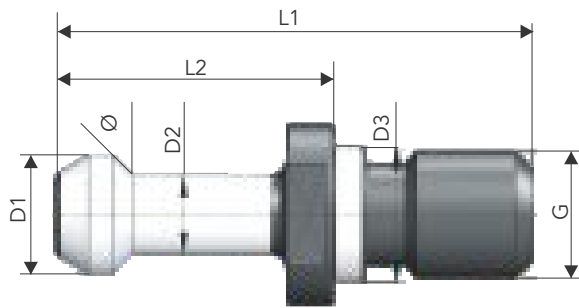


Fig-1

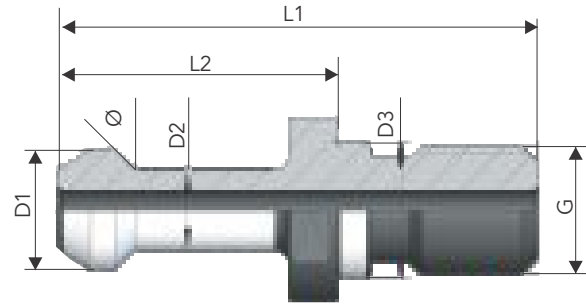
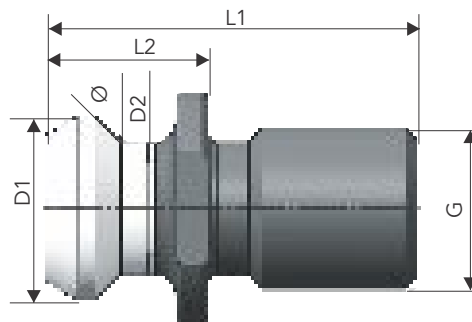


Fig-2

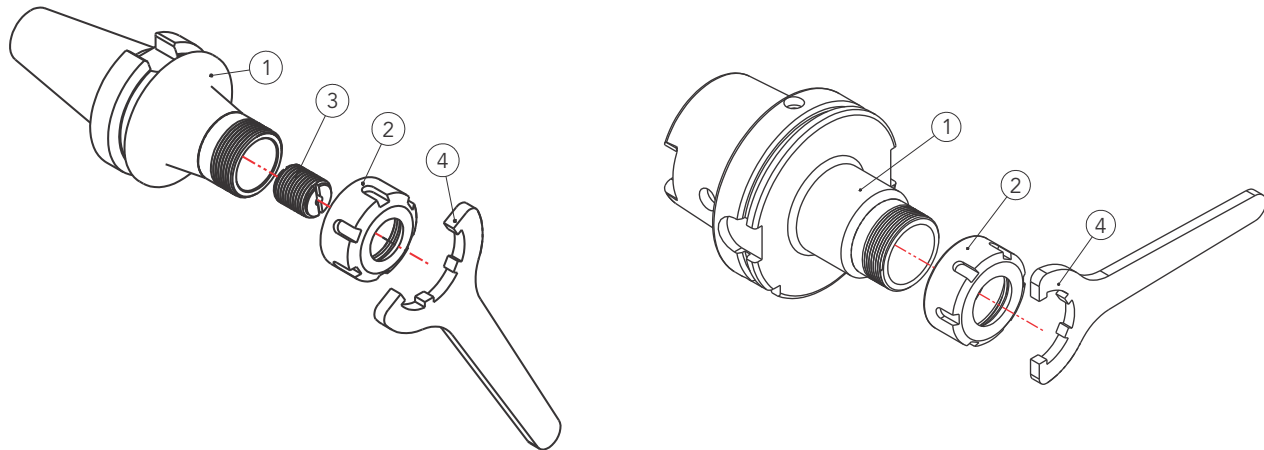
ORDERING CODE	TAPPER	G	D1	D2	D3	L2	L1	Ø	FIG
BTPS.30.45	30	M12	11	7	12.5	23	43	45	1
BTPS.30.45TC	30	M12	11	7	12.5	23	43	45	2
BTPS.30.30	30	M12	11	7	12.5	23	43	30	1
BTPS.30.30TC	30	M12	11	7	12.5	23	43	30	2
BTPS.40.45	40	M16	15	10	17	35	60	45	1
BTPS.40.45TC	40	M16	15	10	17	35	60	45	2
BTPS.40.30	40	M16	15	10	17	35	60	30	1
BTPS.40.30TC	40	M16	15	10	17	35	60	30	2
BTPS.40.0	40	M16	15	10	17	35	60	0	1
BTPS.40.0TC	40	M16	15	10	17	35	60	0	2
BTPS.50.45	50	M24	23	17	25	45	85	45	1
BTPS.50.45TC	50	M24	23	17	25	45	85	45	2
BTPS.50.30	50	M24	23	17	25	45	85	30	1
BTPS.50.30TC	50	M24	23	17	25	45	85	30	2
BTPS.50.0	50	M24	23	17	25	45	85	0	1
BTPS.50.0TC	50	M24	23	17	25	45	85	0	2

## Pull Stud - BT MAS 403



ORDERING CODE	TAPPER	G	D1	D2	L2	L1	Ø
CATPS.40.45	40	5/8-11"	0.74	0.49	0.64	1.5	45
CATPS.50.45	50	1-8"	1.14	0.82	1	2.3	45

## Collet Chuck Holder Spare Parts

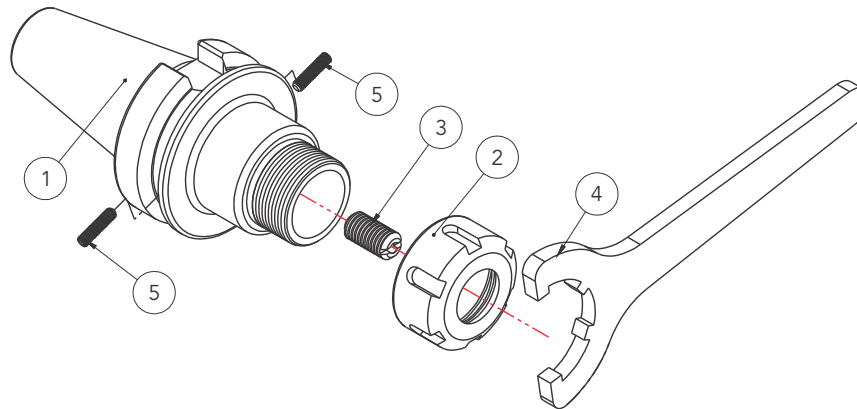


ORDERING CODE	2	3	4
	COLLECT NUT	STOPPER SCREW	SPANNER
BT/HSK..ER16..	SN.16	SS.06.14	SSN.16
BT/HSK..ER20..	SN.20	SS.06.18	SSN.20
BT/HSK..ER25..	SN.25	SS.06.22	SSN.25
BT/HSK..ER32..	SN.32	SS.06.28	SSN.32
BT/HSK..ER40..	SN.40	SS.06.28	SSN.40
BT/HSK..ER50..	SN.50	SS.06.28	SSN.50

### For Mini Collet Chuck Holder

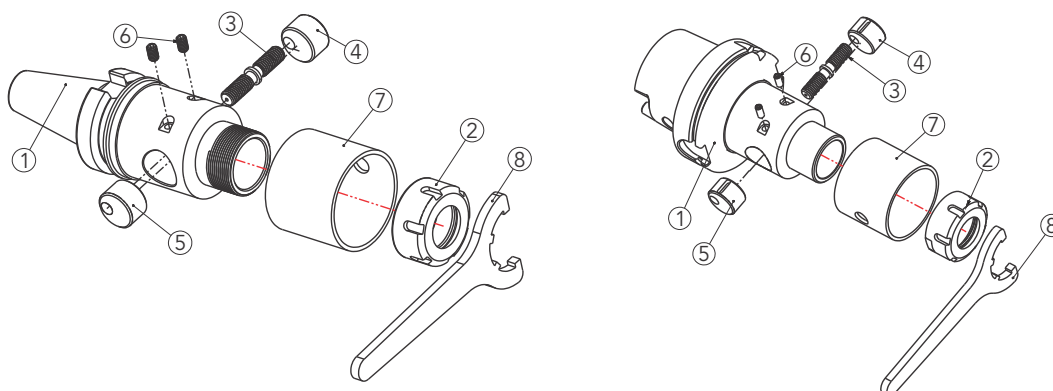
ORDERING CODE	2	3	4
	COLLECT NUT	STOPPER SCREW	SPANNER
BT/HSK..ER16..M	SN.16	SS.06.716	SSN.16
BT/HSK..ER20..M	SN.20	SS.06.14	SSN.20
BT/HSK..ER25..M	SN..25	SS.06.18	SSN.25

# Collet Chuck Holder Flange Through Coolant Spare Parts



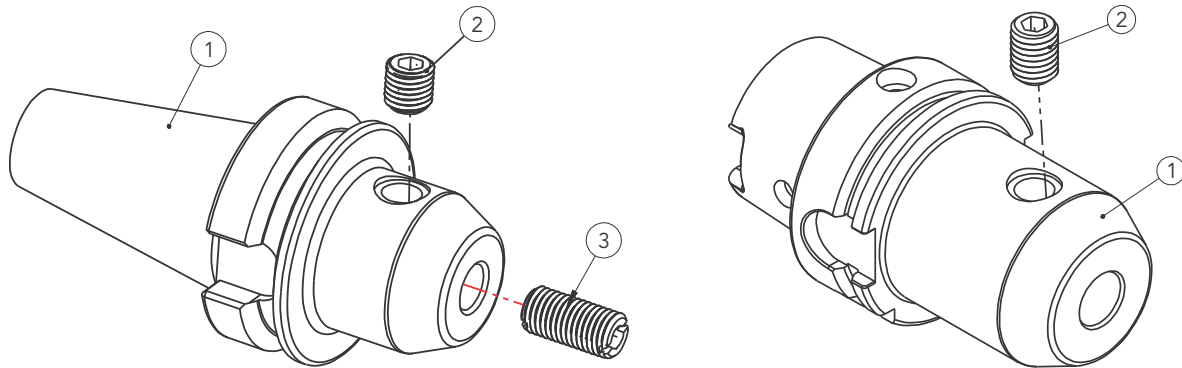
ORDERING CODE	2	3	4	5
	COLLECT NUT	STOPPER SCREW	SPANNER	GRUB SCREW
BT..ER16..FTC	SN.16	SS.06.716	SSN.16	GS.03.415
BT..ER20..FTC	SN.20	SS.06.14	SSN.20	GS.03.415
BT..ER25..FTC	SN.25	SS.06.18	SSN.25	GS.03.415
BT..ER32..FTC	SN.32	SS.06.22	SSN.32	GS.03.415
BT..ER40..FTC	SN.40	SS.06.28	SSN.40	GS.03.415
BT..ER50..FTC	SN.50	SS.06.28	SSN.50	GS.03.415
BT..ER16..FTC	SN.16	SS.06.716	SSN.16	GS.03.608
BT..ER20..FTC	SN.20	SS.06.14	SSN.20	GS.03.608
BT..ER25..FTC	SN.25	SS.06.18	SSN.25	GS.03.608
BT..ER32..FTC	SN.32	SS.06.22	SSN.32	GS.03.608
BT..ER40..FTC	SN.40	SS.06.28	SSN.40	GS.03.608
BT..ER50..FTC	SN.50	SS.06.28	SSN.50	GS.03.608

## Tapping Collet Chuck Holder



ORDERING CODE	2	3	4	5	6	7	8
	COLLECT NUT	STUD-LH&RH	SLIDING RING-RH	SLIDING RING-LH	GRUB SCREW	OUTER BUSH	SPANNER
BT/HSK..ER 32TCCH..	SN.32	STUR.R.22.10	S RING.R.24.10	S RING.L.24.10	GS.03.610	OB.23.01	SSN.32

## Side Lock Holder - Spare Parts

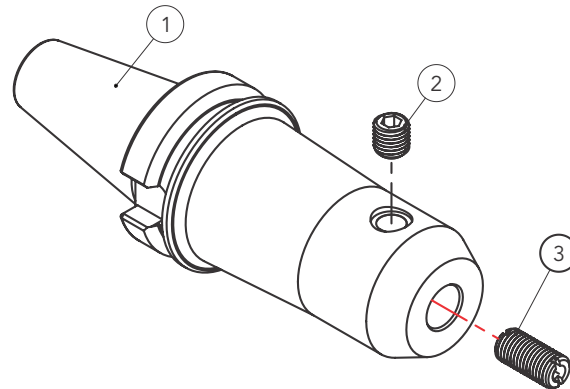


ORDERING CODE	2	3
	GRUB SCREW	STOPPER SCREW
BT..SLH08..AD	GS.03.808	-
BT..SLH10..AD	GS.03.1010	-
BT..SLH12..AD	GS.03.1212	-
BT..SLH16..AD	GS.03.1416	SS.06.12
BT..SLH20..AD	GS.03.1616	SS.06.12
BT..SLH25..AD	GS.03.1820	SS.06.12
BT..SLH32..AD	GS.03.2020	SS.06.12
BT..SLH40..AD	GS.03.2020	SS.06.12
BT..SLH50..AD	GS.03.2020	SS.06.12

### HSK Side Lock Holder - Extra Length

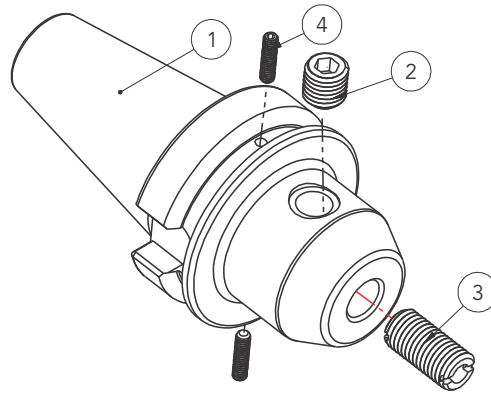
ORDERING CODE	2	3
	GRUB SCREW	STOPPER SCREW
HSK..SLH08..	GS.03.808	-
HSK..SLH10..	GS.03.810	-
HSK..SLH12..	GS.03.1010	-
HSK..SLH16..	GS.03.1010	SS.06.12
HSK..SLH20..	GS.03.1010	SS.06.12
HSK..SLH25..	GS.03.1620	SS.06.12
HSK..SLH32..	GS.03.1620	SS.06.12
HSK..SLH40..	GS.03.1620	SS.06.12
HSK..SLH50..	GS.03.1620	SS.06.12

## Side Lock Holder - Extra Length Spare Parts



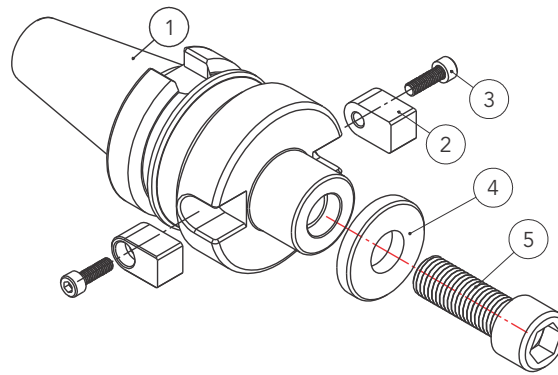
ORDERING CODE	2	3
	GRUB SCREW	STOPPER SCREW
BT40SLH08.125AD	GS.03.808	-
BT40SLH10.125AD	GS.03.808	-
BT40SLH12.125AD	GS.03.1010	-
BT40SLH16.125AD	GS.03.1010	SC.06.12
BT40SLH20.125AD	GS.03.1010	SC.06.12
BT40SLH25.125AD	GS.03.1010	SC.06.12
BT40SLH32.125AD	GS.03.1010	SC.06.12
BT40SLH40.125AD	GS.03.1212	SC.06.12
BT50SLH08.150AD	GS.03.808	-
BT50SLH10.150AD	GS.03.808	-
BT50SLH12.150AD	GS.03.1010	-
BT50SLH16.150AD	GS.03.1010	SC.06.12
BT50SLH20.160AD	GS.03.1010	SC.06.12
BT50SLH25.160AD	GS.03.1010	SC.06.12
BT50SLH32.160AD	GS.03.1010	SC.06.12
BT50SLH40.160AD	GS.03.1212	SC.06.12

## Side Lock Holder - Flange Through Coolant Spare Parts



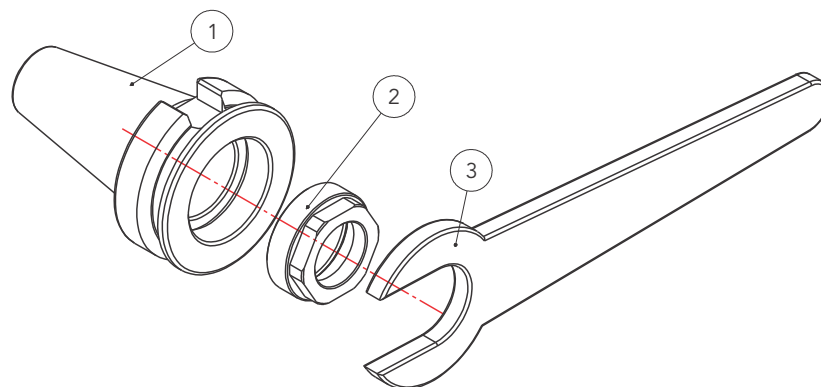
ORDERING CODE	2	3	4
	GRUB SCREW	STOPPER SCREW	GRUB SCREW
BT40SLH16.65FTC	GS.03.1012	SS.06.12	GS.03.415
BT40SLH20.90FTC	GS.03.1012	SS.06.12	GS.03.415
BT40SLH25.90FTC	GS.03.1212	SS.06.12	GS.03.415
BT40SLH32.90FTC	GS.03.1212	SS.06.12	GS.03.415
BT40SLH40.90FTC	GS.03.1212	SS.06.12	GS.03.415
BT40SLH50.90FTC	GS.03.1212	SS.06.12	GS.03.415
BT50SLH08.70FTC	GS.03.808	-	GS.03.608
BT50SLH10.70FTC	GS.03.1010	-	GS.03.608
BT50SLH12.80FTC	GS.03.1212	-	GS.03.608
BT50SLH16.80FTC	GS.03.1416	SS.06.12	GS.03.608
BT50SLH20.80FTC	GS.03.1616	SS.06.12	GS.03.608
BT50SLH25.105FTC	GS.03.1820	SS.06.12	GS.03.608
BT50SLH32.105FTC	GS.03.2020	SS.06.12	GS.03.608
BT50SLH40.120FTC	GS.03.2020	SS.06.12	GS.03.608
BT50SLH50125FTC	GS.03.2020	SS.06.12	GS.03.608





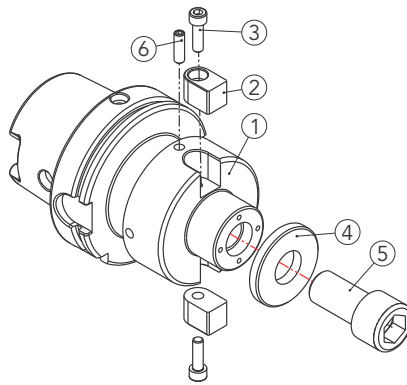
ORDERING CODE	2	3	4	5
	DRIVING KEY	ALLEN SCREW	WASHER	ALLEN SCREW
BT..FMH16..A	D KEY.16	AS.01.408	WSHR.08.16	AS.01.825
BT..FMH22..A	D KEY.22	AS.01.412	WSHR.10.22	AS.01.1025
BT..FMH27..A	D KEY.27	AS.01.412	WSHR.12.27	AS.01.1225
BT..FMH32..A	D KEY.32	AS.01.516	WSHR.16.32	AS.01.1630
BT..FMH40..A	D KEY.40	AS.01.616	WSHR.20.40	AS.01.2035

## Short Collet Chuck Holder-Spare Parts



ORDERING CODE	2	3
	SHORT COLLET NUT	SHORT COLLET SPANNER
BT30ER20CCH.29	SCN.20	SSC.20
BT40ER32CCH.35	SCN.32	SSC.32
BT50ER40CCH.45	SCN.40	SSC.40

## Face Mill Holder - Through Coolant Spare Parts

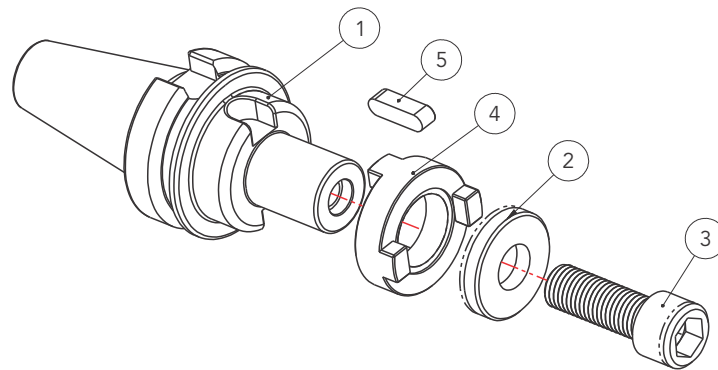


ORDERING CODE	2	3	4	5	6
	DRIVING KEY	ALLEN SCREW	WASHER	ALLEN SCREW	GRUB SCREW
HSKA..FMH16..100TC	D KEY.16	AS.01.408	WSHR.08.16	AS.01.825	GS.03.405
HSKA..FMH22..100TC	D KEY.22	AS.01.412	WSHR.10.22	AS.01.1025	GS.03.410
HSKA..FMH27..100TC	D KEY.27	AS.01.412	WSHR.12.27	AS.01.1225	GS.03.410
HSKA..FMH32..100TC	D KEY.32	AS.01.516	WSHR.16.32	AS.01.1630	GS.03.410
HSKA..FMH40..100TC	D KEY.40	AS.01.616	WSHR.20.40	AS.01.2035	GS.03.410

### Face Mill Holder - Inch

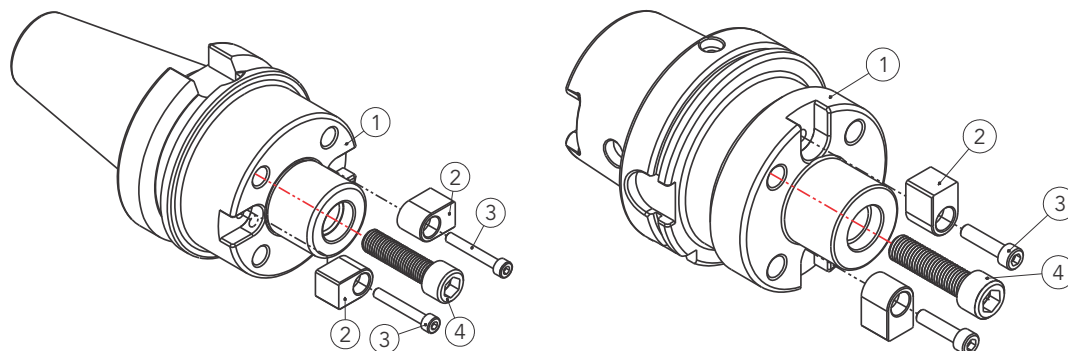
ORDERING CODE	2	3	4	5
	DRIVING KEY	ALLEN SCREW	WASHER	ALLEN SCREW
BT..FMH1905..	D KEY.1905	AS.01.412	WSHR.08.16	AS.01.1030
BT..FMH0254..	D KEY.0254	AS.01.412	WSHR.10.22	AS.01.1230
BT..FMH3175..	D KEY.3175	AS.01.512	WSHR.12.27	AS.01.1640
BT..FMH0381..	D KEY.0381	AS.01.612	WSHR.16.32	AS.01.2050

## Combi Shell Mill Holder - Spare Parts



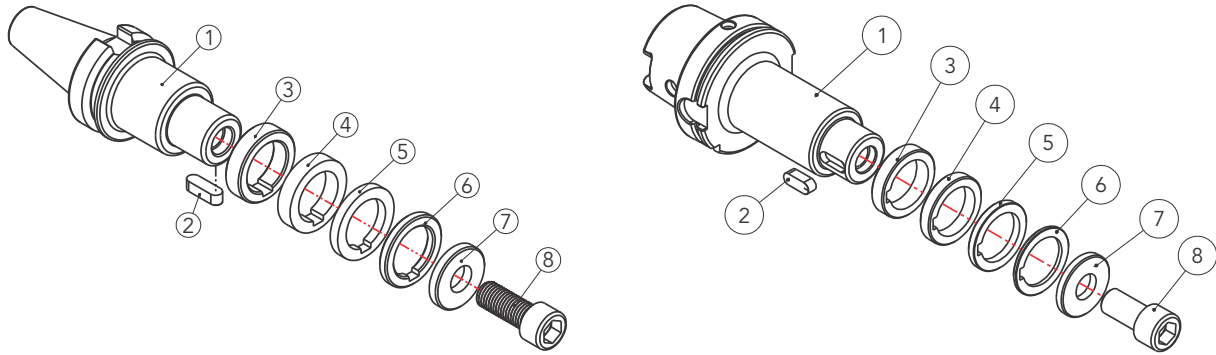
ORDERING CODE	2	3	4	5
	WASHER	ALLEN SCREW	DRIVE RING	PARALLEL KEY
BT..CSMH16..	WSHR.08.16	AS.01.825	D RING.16	P KEY.04.20
BT..CSMH22..	WSHR.10.22	AS.01.1025	D RING.22	P KEY.06.25
BT..CSMH27..	WSHR.12.27	AS.01.1225	D RING.27	P KEY.07.25
BT..CSMH32..	WSHR.16.32	AS.01.1630	D RING.32	P KEY.08.28
BT..CSMH40..	WSHR.20.40	AS.01.2035	D RING.40	P KEY.10.32

## Face Mill Holder - Flange Type Spare Parts



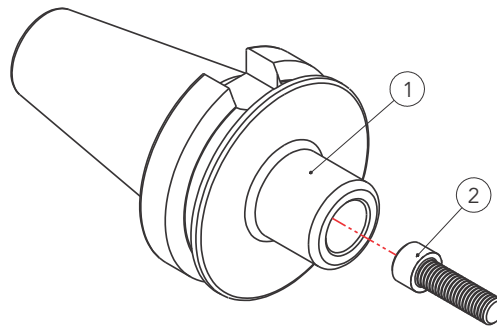
ORDERING CODE	2	3	4
	DRIVING KEY	ALLEN SCREW	ALLEN SCREW
BT/HSK..FMH40..FT	D KEY.40.11	AS.01.616	AS.01.1240
BT/HSK..FMH60..FT	D KEY.60.00	AS.01.825	AS.01.1640

## Side & Face Cutter Arbor Spare Parts



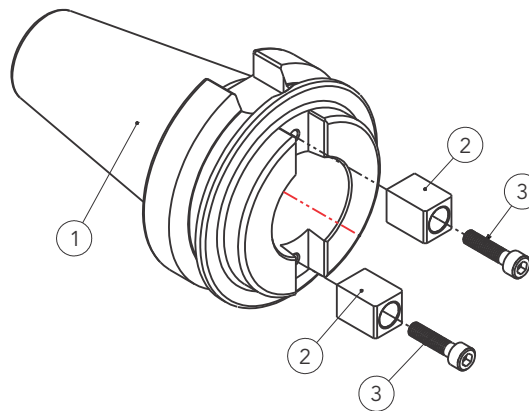
ORDERING CODE	2	3	4	5
	PARALLEL KEY	SPACER	SPACER	SPACER
BT/HSK..SFCA16..	P KEY.04.26	SPCR.16.12	SPCR.16.10	SPCR.16.06
BT/HSK..SFCA22..	P KEY.06.26	SPCR.22.12	SPCR.22.10	SPCR.22.06
BT/HSK..SFCA27..	P KEY.07.26	SPCR.27.12	SPCR.27.10	SPCR.27.06
BT/HSK..SFCA32..	P KEY.08.26	SPCR.32.12	SPCR.32.10	SPCR.32.06
BT/HSK..SFCA40..	P KEY.10.26	SPCR.40.12	SPCR.40.10	SPCR.40.06

ORDERING CODE	6	7	8
	PARALLEL KEY	WASHER	ALLEN SCREW
BT/HSK..SFCA16..	P KEY.16.03	WSHR.08.16	AS.01.825
BT/HSK..SFCA22..	P KEY.22.03	WSHR.10.22	AS.01.1025
BT/HSK..SFCA27..	P KEY.27.03	WSHR.12.27	AS.01.1225
BT/HSK..SFCA32..	P KEY.32.03	WSHR.16.32	AS.01.1630
BT/HSK..SFCA40..	P KEY.40.03	WSHR.20.40	AS.01.2035



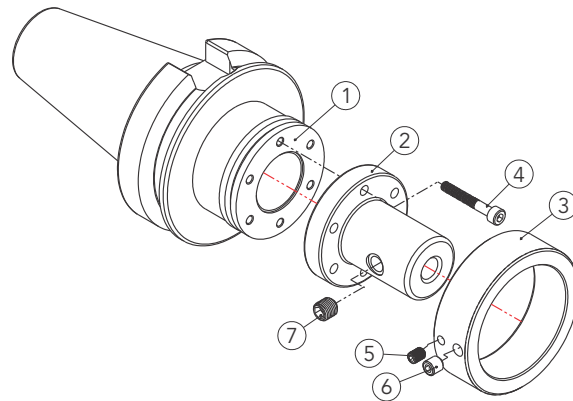
ORDERING CODE	2
	ALLEN SCREW
BT..MT1M06..	AS.01.6
BT..MT2M10..	AS.01.10
BT..MT3M12..	AS.01.12
BT..MT4M16..	AS.01.16

## Reduction Adaptor



ORDERING CODE	2	3
	KEY	ALLEN SCREW
BT..RA BT30..	KEY.34.000	AS.01.625
BT..RA BT40..	KEY.34.000	AS.01.625

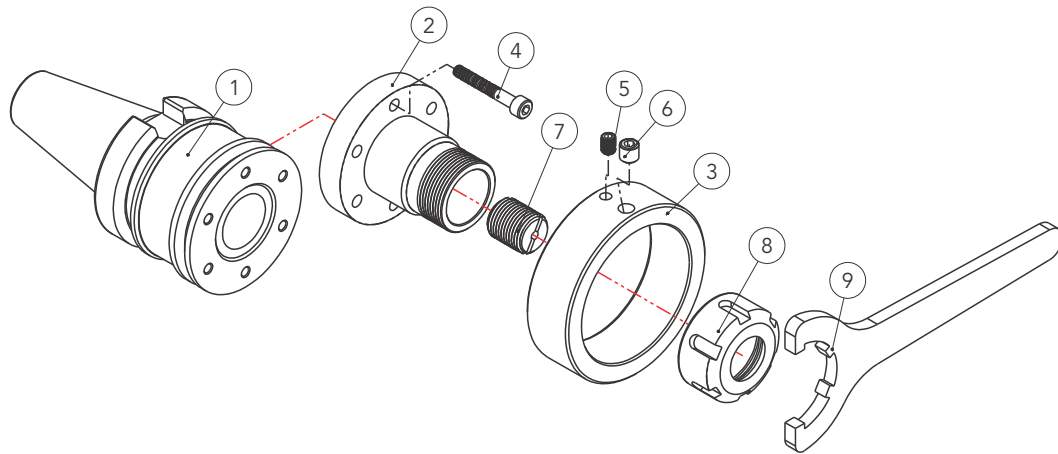
## Runout Adjustable Holder - Weldon Spare Parts



ORDERING CODE	2	3	4	5
	END MILL ADAPTOR	ADJUSTING RING	ALLEN SCREW	SET SCREW 1
BT..RAH12..	EMA.31.812	A RING.33.802	AS.01.530	SET S.03.610
BT..RAH16..	EMA.31.816	A RING.33.802	AS.01.530	SET S.03.610
BT..RAH20..	EMA.31.820	A RING.33.802	AS.01.530	SET S.03.610
BT..RAH25..	EMA.31.825	A RING.33.802	AS.01.530	SET S.03.610
BT..RAH32..	EMA.31.132	A RING.33.103	AS.01.835	SET S.03.810
BT..RAH40..	EMA.31.140	A RING.33.103	AS.01.835	SET S.03.810

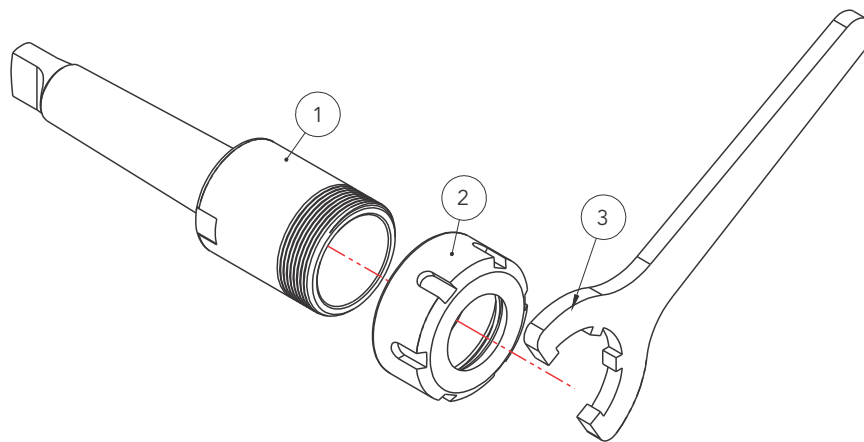
ORDERING CODE	6	7
	SET SCREW 2	GRUB SCREW
BT..RAH12..	SET S.03.808	GS.03.1012
BT..RAH16..	SET S.03.808	GS.03.1014
BT..RAH20..	SET S.03.808	GS.03.1010
BT..RAH25..	SET S.03.808	GS.03.1010
BT..RAH32..	SET S.03.810	GS.03.12.14
BT..RAH40..	SET S.03.810	GS.03.12.12

# Runout Adjustable Holder - Collet Chuck Spare Parts



ORDERING CODE	2	3	4	5
	COLLET CHUCK ADAPTOR	ADJUSTING RING	ALLEN SCREW	SET SCREW 1
BT..RAHER25.625	CCA.32.625	A RING.33.601	AS.01.525	SET.S.03.608
BT..RAHER25.825	CCA.32.825	A RING.33.802	AS.01.530	SET.S.03.610

## Morse Taper Collet Chuck Holder Tanged End



ORDERING CODE	6	7	8	9
	SEW SCREW 2	STOPPER SCREW	COLLET NUT	SPANNER
BT..RAHER25.625	CCA.03.806	SS.06.18	SN.25	SSN.25
BT..RAHER25.825	CCA.03.806	SS.06.18	SN.25	SSN.25

# Latest Manufacturing Facility













## NOTES

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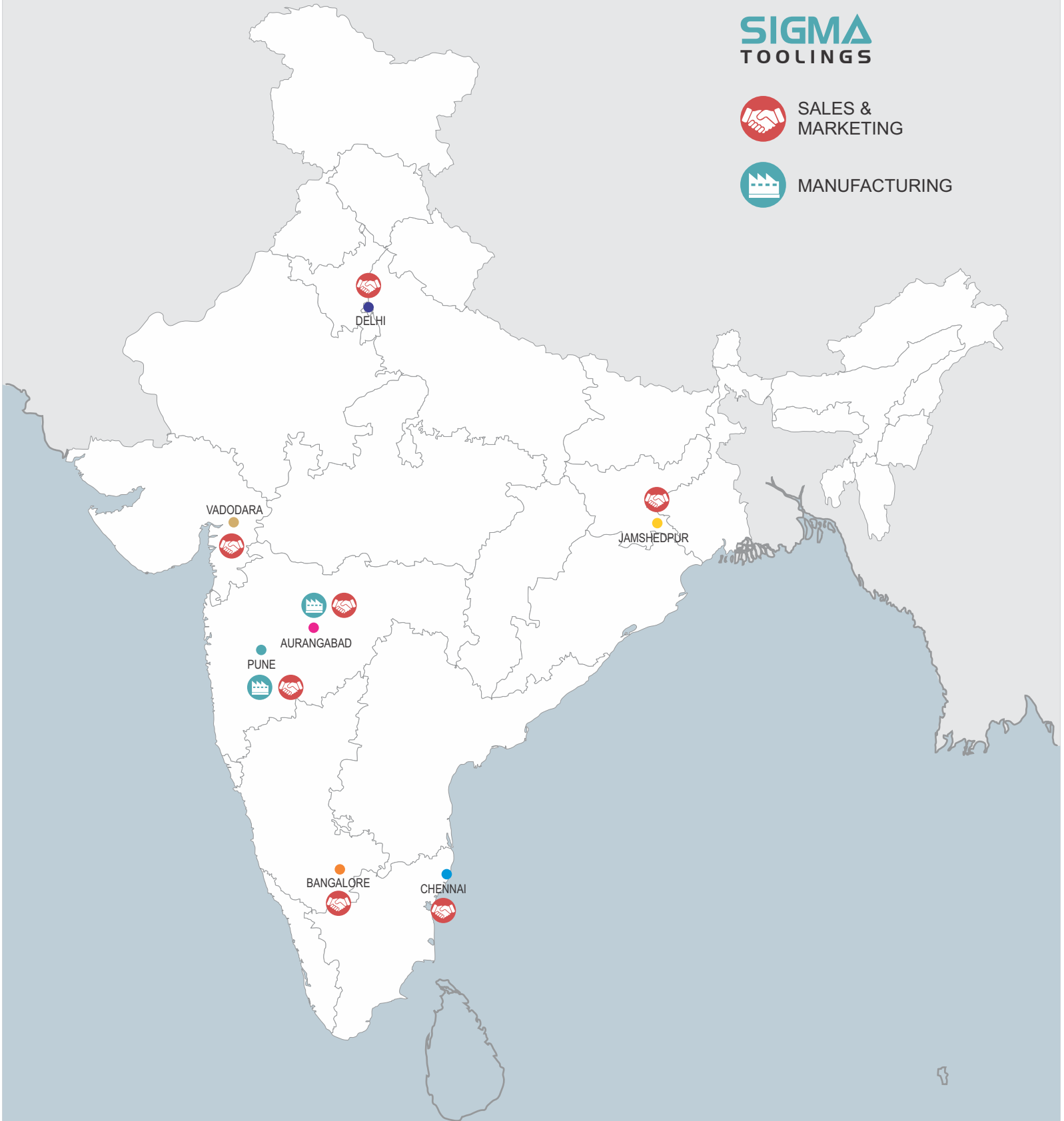
NOTES

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