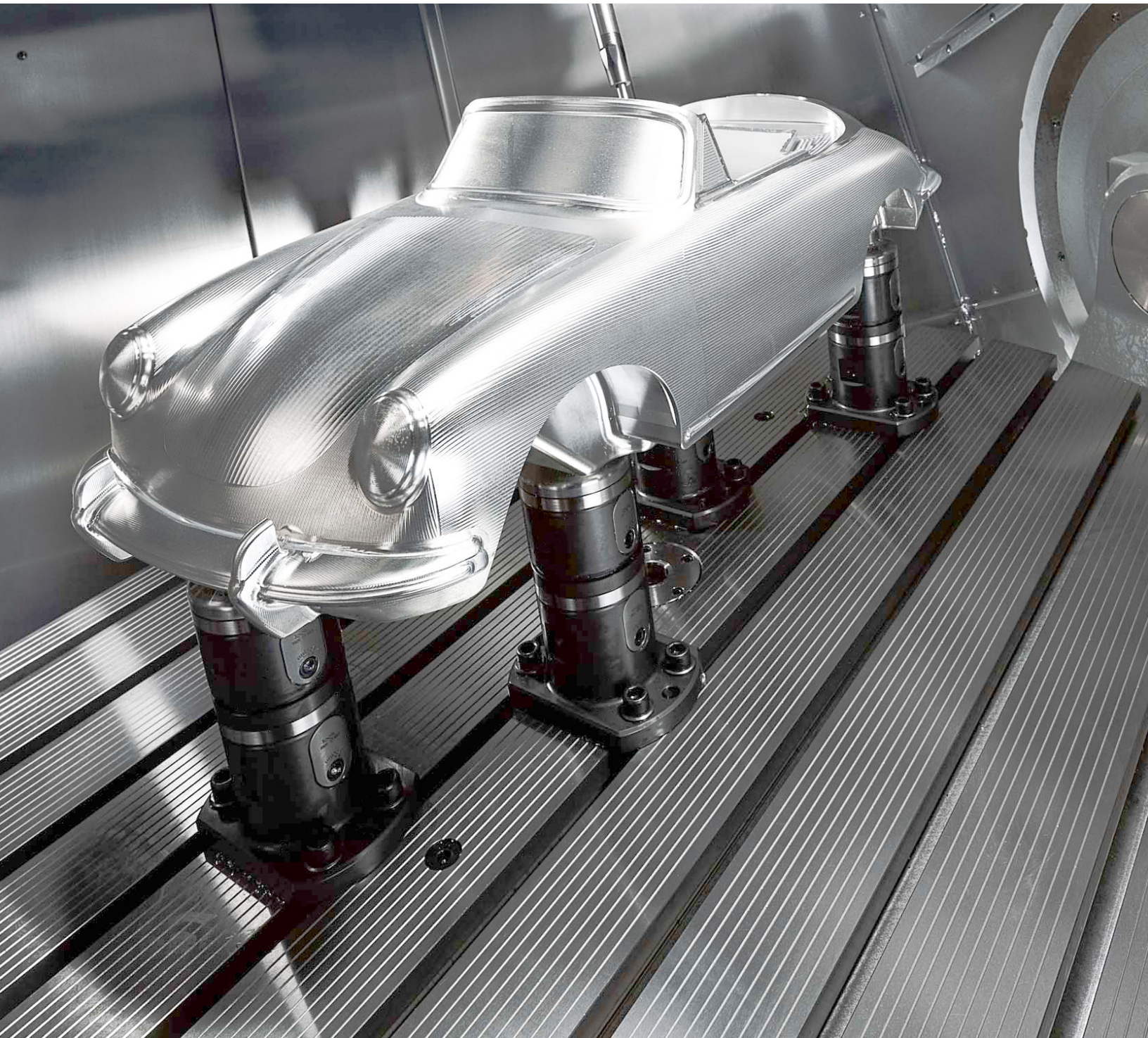
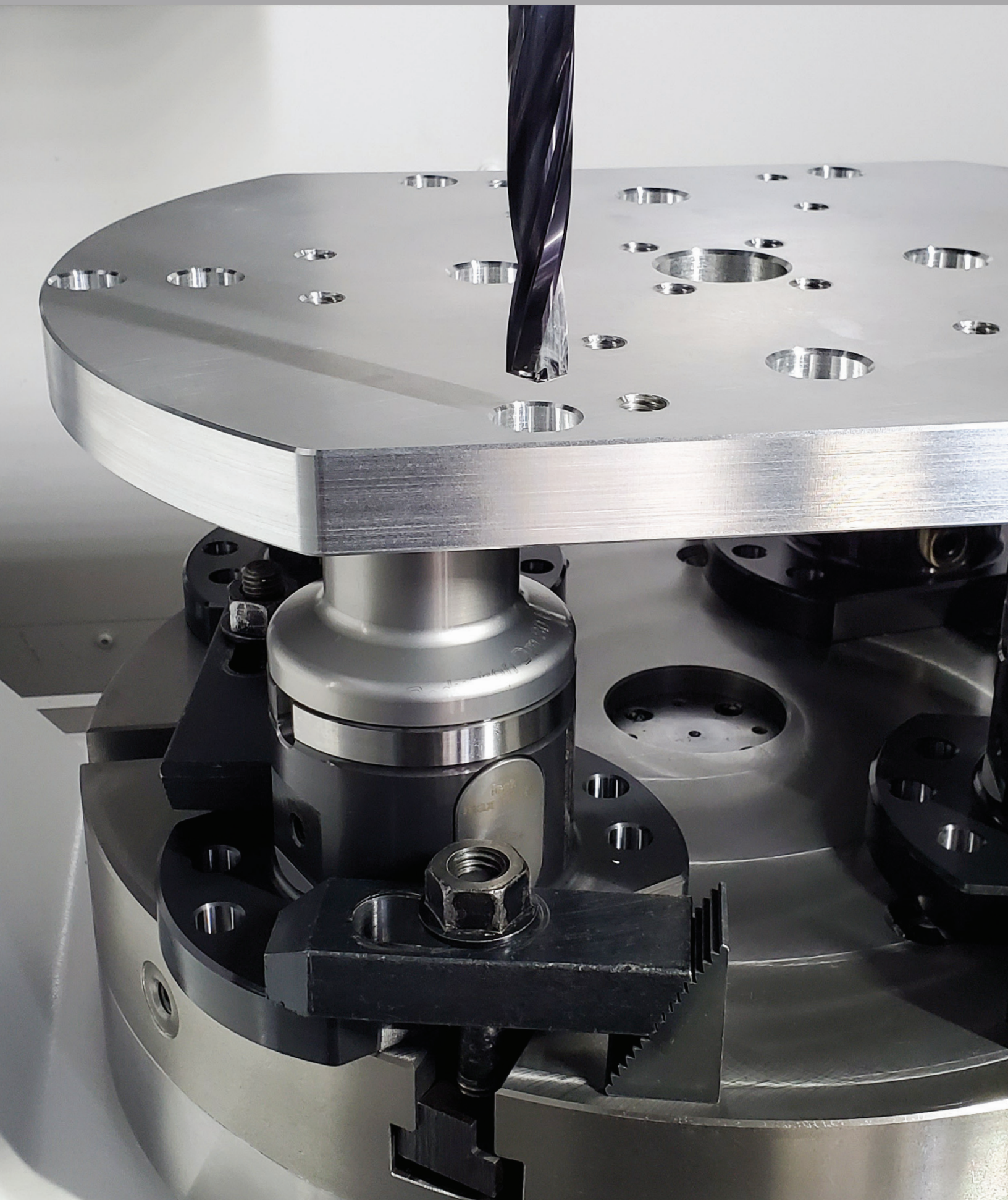


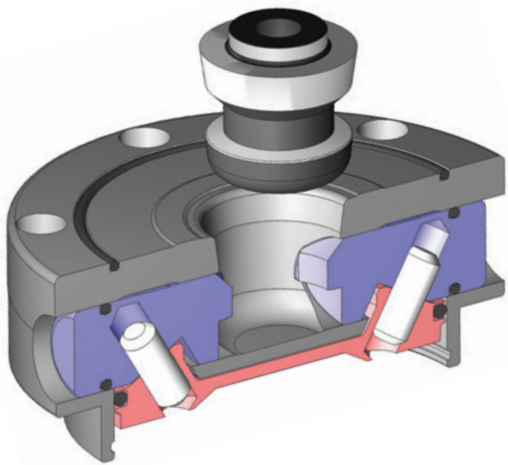
unilock
clamping system



MODULAR WORKHOLDING SYSTEM
VOL. 3



OVERVIEW & APPLICATION EXAMPLES	4-9
ROUND CHUCKS	10-25
PREASSEMBLED CHUCKS	26-37
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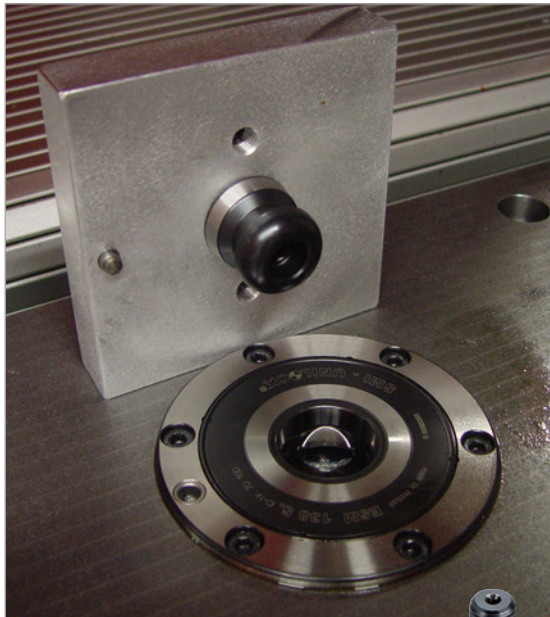


HOW IT WORKS

UNILOCK utilizes spring pressure to drive multiple clamping pins against a tapered clamping knob. Air pressure is used to compress the springs to back the clamping pins off of the clamping knob. This clamping process is achieved by bleeding the air pressure out of the chuck. To facilitate palletization, the clamping knob is attached to a base plate, fixture or directly to a workpiece. The result is quick and repeatable clamping. A hand locking version (no air required) is also available.

FEATURES

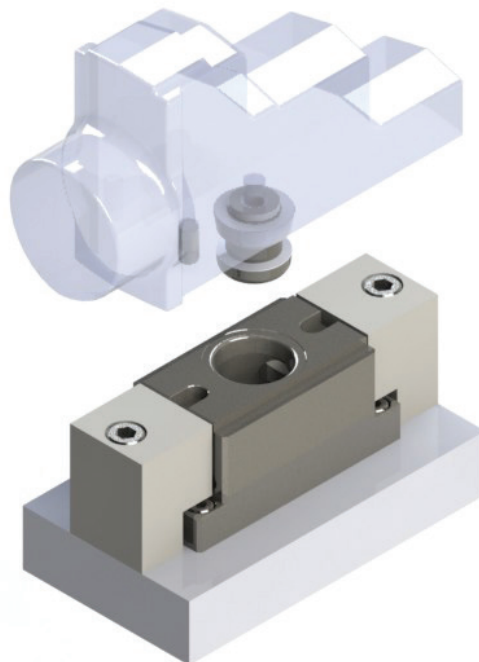
- Clamping mechanism: heavy-duty die springs
- Chuck opening: air pressure to compress springs
- Clamping stability: low profile with matching taper wedges
- Positional accuracy: adaptable to workpiece conformation
- Unlocking air pressure: 75 PSI
- Turbo assist clamping



SINGLE CHUCK APPLICATIONS

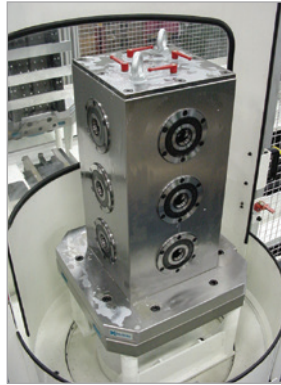
The UNILOCK clamping knob mates with the central taper in the chuck to establish the centerline location (XY reference in a cartesian coordinate system). A timing pin or key locates in a notch or bushing to orient the coordinate system relative to XY and to restrict rotation. The Z reference in this same coordinate system is established by the bottom of the fixture or workpiece contacting the top ground surfaces of the chuck. These same mating surfaces (bottom of the fixture and top of the chuck) will control axial alignment.

The clamping knob can be used for locking down a workpiece without influencing location if external features are used for positioning.



MULTIPLE CHUCK APPLICATIONS

UNILOCK is not restricted to one clamping knob. When the fixture or workpiece exceeds the work range of a single UNILOCK chuck, additional clamping knobs and chucks can be used to provide the necessary support and stability required for the process. There are only a few limiting factors as to the size of an array of chucks or in the weight of a workpiece. Undersized knobs provide clearance for large parts or out-of-position locations.



SBC KNOB DIAMETRAL CLEARANCES

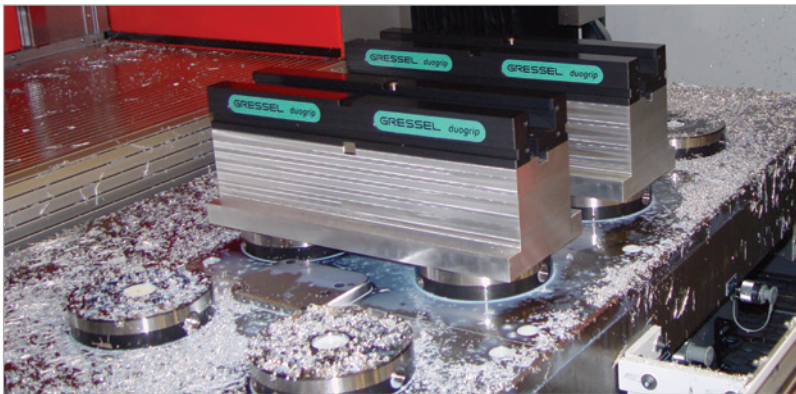
Type	Metric	Inch
SBA	.005mm	.0002
SBB	.005mm	.0002
SBC	.1mm	.004
SBCC	.3mm	.012
SBCC	.6mm	.024

SBA = Establishes centerline
SBB = Orients about centerline
SBC = Clamp only, no positioning

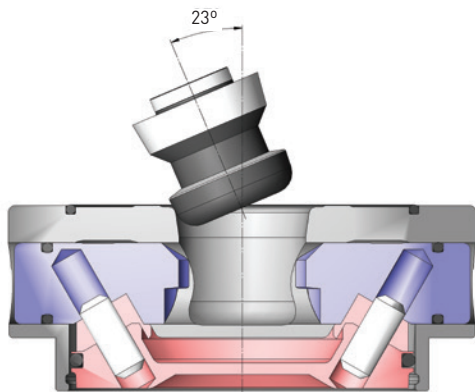
• See pg. 40 for more details on knob functions

DESIGNED FOR MANUFACTURING

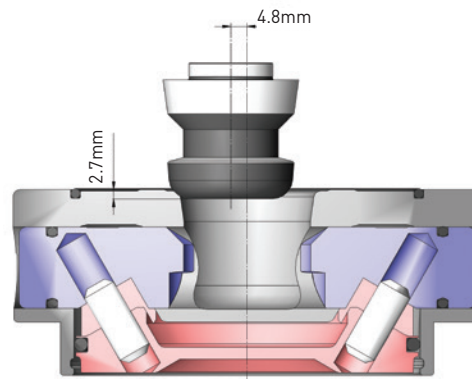
During day-to-day use, chucks can be cleaned with compressed air. The fit between the clamping rams and the chuck body will not allow air pressure to push chips inside of the chuck. If you get chips in the clamping pocket, simply blow them out with an air gun. When open, the wedges completely retract. The one-to-one length-to-diameter ratio of the pocket is easily cleaned. There is no need for a vacuum. The 40mm tall by 40mm diameter clamping knob is extremely stable and can double as a foot when moving fixtures and workpieces around the shop. You will not need protective sleeves or special shelving when storing or transporting UNILOCK palletized fixtures or workpieces. Male and female threads are available in multiple sizes.



SELF-GUIDING DESIGN



UNILOCK is designed to accept warped workpieces and fixtures. The shallow clamping pocket will allow a clamping knob to enter the chuck at an angle of up to 23 degrees. Undersized clamping knobs are also available. Standard and special UNILOCK clamping knobs will accommodate your out-of-position datums.



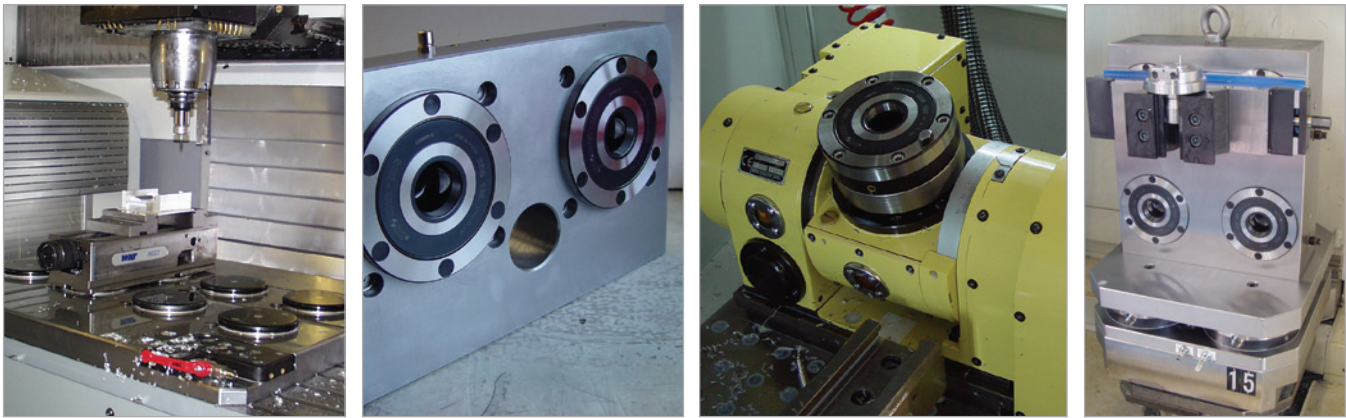
The radius on the smaller bottom diameter of the clamping knob addresses out-of-position loading conditions. When working with large workpieces that can warp, expand or contract, the knob can be used to help guide the clamping knobs to the center of the chuck.

PROCESS YOUR WAY TO SAVINGS

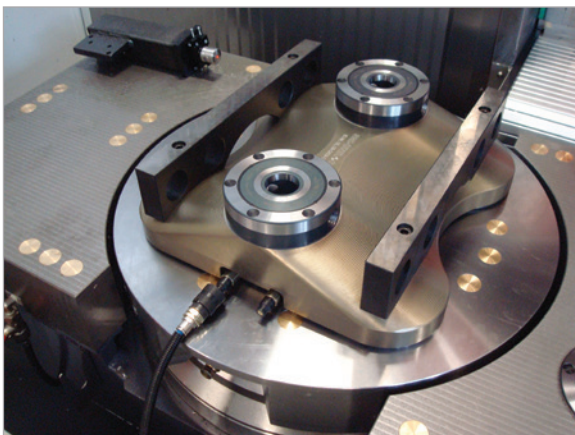
Fixtures and workpieces are easily adapted to UNILOCK clamping knobs. Tremendous savings are available if the fixture or workpiece can be reoriented or transferred to machine additional features while remaining attached to the UNILOCK clamping components. On horizontal machines with columns, fixtures can be rotated 90 degrees or moved to the top. Transferring fixtured parts through as many operations as possible eliminates additional fixtures and clamping/unclamping time. Less clamping and unclamping of parts also reduces scrap and improves feature-to-feature accuracies.

TRANSFER WORKPIECES BETWEEN PROCESSES

- Vertical machining cells
- Horizontal machining cells
- High-speed drilling and tapping centers
- Surface and cylindrical grinding cells
- Horizontal and vertical lathes
- Coordinate measuring cells



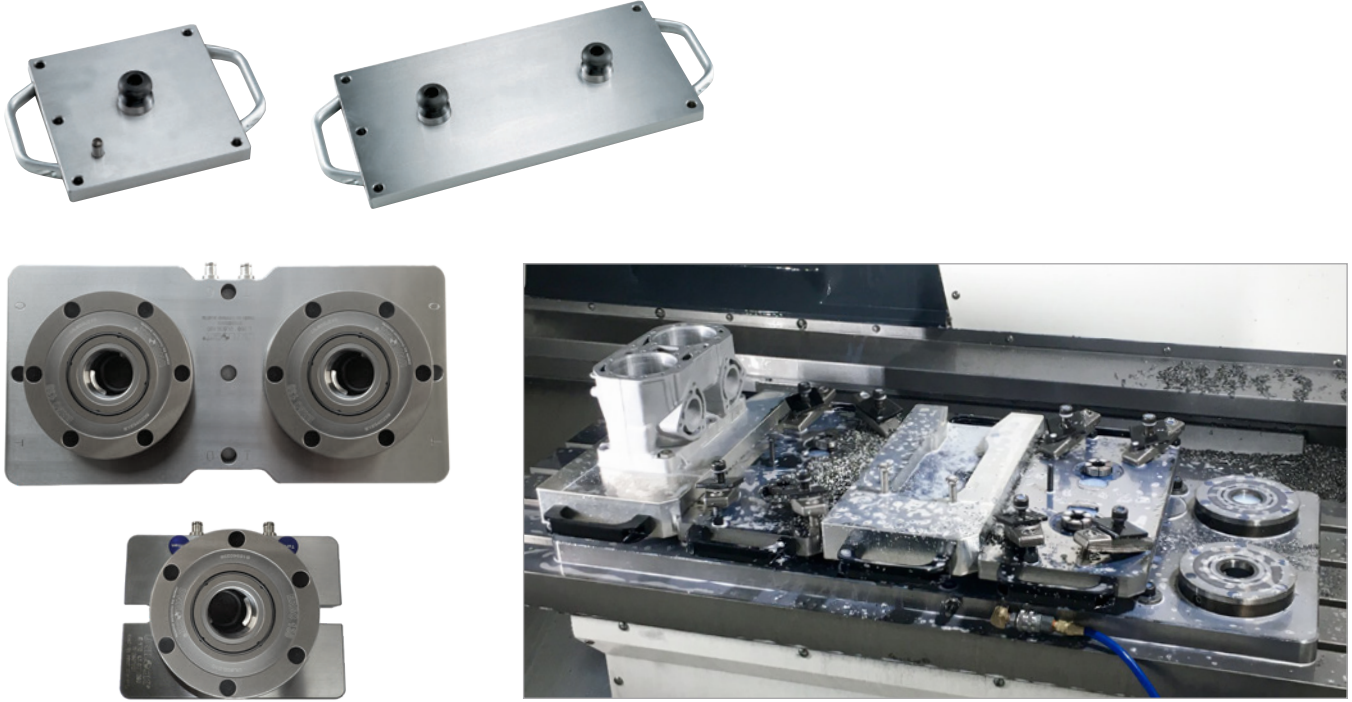
Once you grab the part, use UNILOCK to send it to as many operations as possible without removing the part from the fixture. UNILOCK positions and clamps from one face, leaving the other faces available for machining. Rotary tables, angle/sine plates and multi-sided tombstones facilitate part reorientation for subsequent operations.



The user can expand the operational envelope of any UNILOCK chuck by adding external timing features and support for the portion of the workpiece or pallet that falls outside of the top of the chuck.

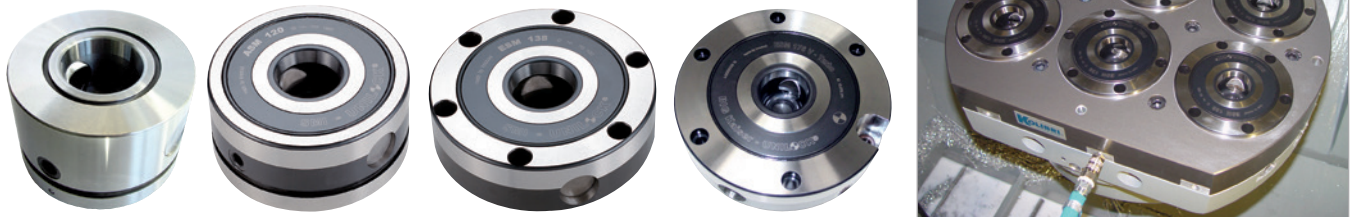
WORKING SOLUTIONS IN MINUTES

Table chucks are mounted to base plates and are ready to be clamped to your workstation. These chucks are supported by preassembled pallets. Shown below are the Mono, Duo and Quad table chucks, along with their pallets. Pneumatic kits are also available to install a working solution in minutes.



BUILD YOUR OWN CUSTOM SOLUTIONS

UNILOCK components can be purchased individually for incorporation into your own custom designs.

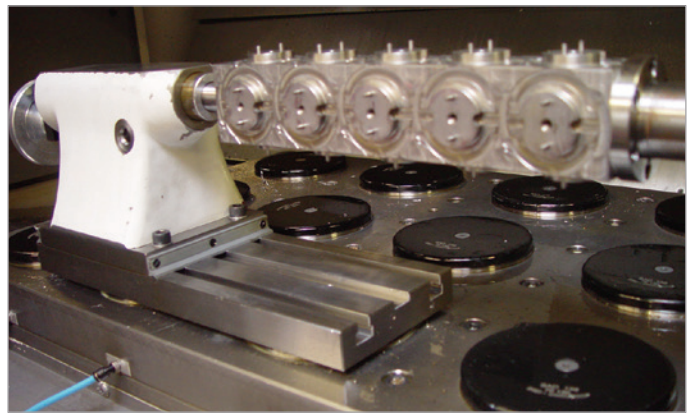
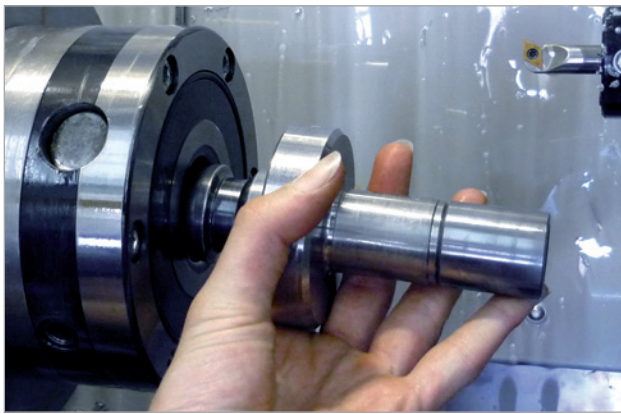
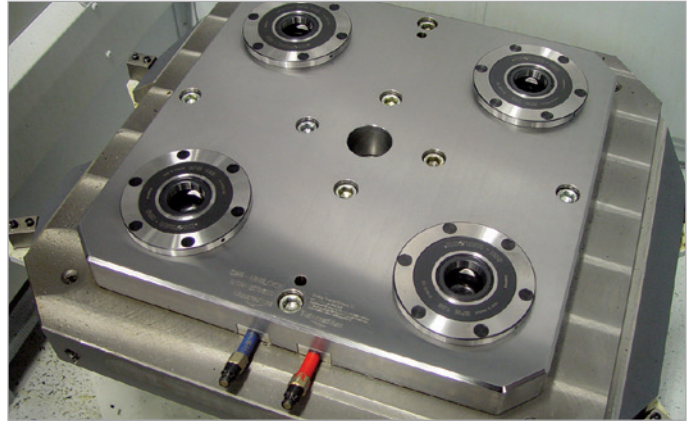


SCHEDULING FLEXIBILITY AND SETUP VERSATILITY

A Clamping System Flexible Enough to Change the Entire Table or Workpieces and Fixtures

UNILOCK establishes predefined datums on all of your machines. When you load, lock and hit cycle start, there is no wasted time. A setup should always take the same amount of time.

UNILOCK delivers scheduling flexibility and setup versatility. By using more than one chuck on a machine, you will be able to switch between multiple small parts or fewer large parts. Our predefined datums allow you to quickly and accurately convert your machining center from a headstock and tailstock setup to fixtures on the table.

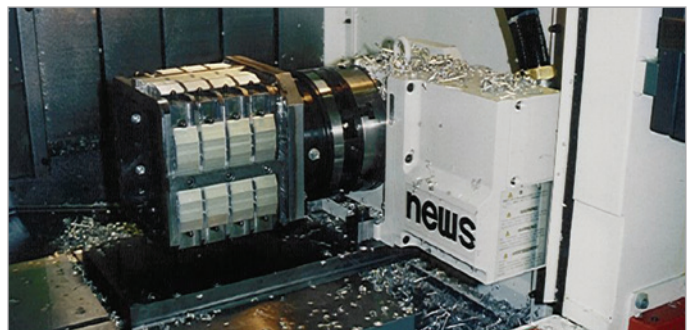
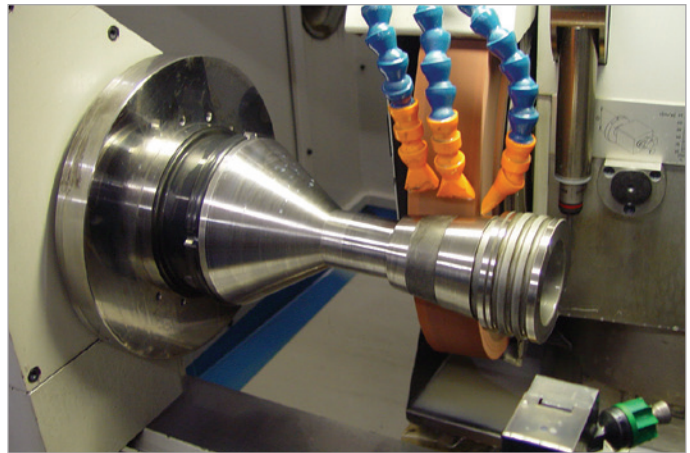


USE IN ANY CONFIGURATION AND PROCESS

Applications Are Endless – Limited Only by Your Imagination

Align all of your rotary table fixtures in seconds. As you move away from the spindle nose, UNILOCK's heavy-duty chucks will absorb the additional leverage and torque. Since individual UNILOCK components are sold separately, you can build specific solutions in-house or contact your tool and fixture provider.

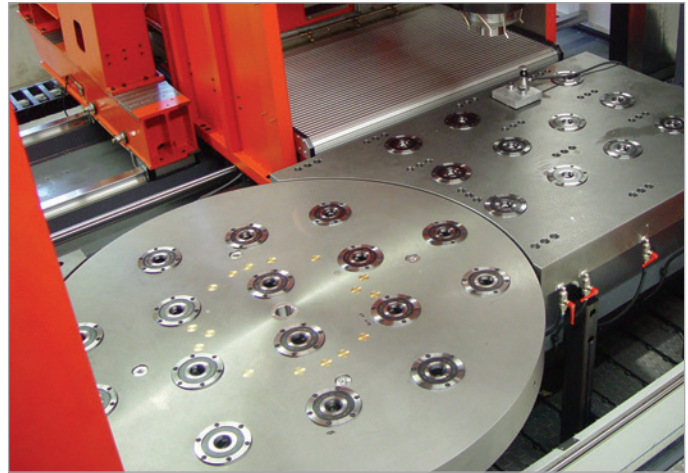
UNILOCK can be used in any configuration in almost any process. A heavy cut requiring six chucks to stabilize the part for machining can be accurately positioned on a coordinate measuring machine with two small chucks or a single chuck and a timing feature.



LARGE PARTS

Save Money on Your Next Job

UNILOCK provides undersized clamping knobs so you do not have to hold .0004" on fixture locations when your production tolerance is .005". These undersized knobs are a necessity to mount knobs directly to warped or loosely tolerated workpieces. If you do not need to, or cannot hold a tight tolerance, simply select the appropriate undersized clamping knobs to accommodate the workpiece or fixture. UNILOCK's heavy-duty clamping knobs are a necessity when you are using a hoist to load and unload your machine. With a length-to-diameter ratio of 1-to-1, UNILOCK's 40mm clamping knob can be left on fixtures and workpieces without worry of damage during loading and unloading, storage or transfer.



SBC KNOB DIAMETRAL CLEARANCES

Type	Metric	Inch
SBA	.005mm	.0002
SBB	.005mm	.0002
SBC	.1mm	.004
SBCC	.3mm	.012
SBCC	.6mm	.024

SBA = Establishes centerline

SBB = Orients about centerline

SBC = Clamp only, no positioning

- See pg. 40 for more details on knob functions



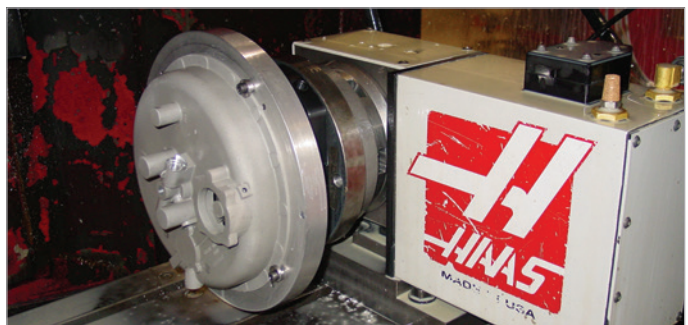
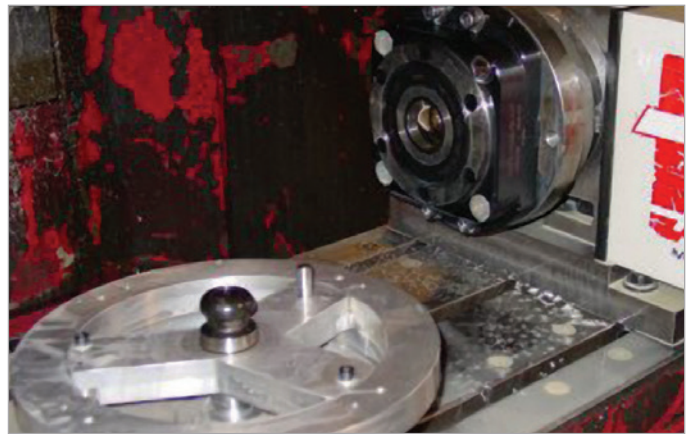
SMALL PARTS

Remove Process Time – Save More Than Just Setup Time

Before UNILOCK, three subsequent machining processes required the operator to clamp and unclamp the part three times. Now the same part is only clamped and unclamped once for these same three processes.

Even when the time spent clamping and unclamping the part is minimal, it creates unnecessary labor and a chance for errors. Use UNILOCK to immediately increase spindle uptime and decrease scrap due to part positioning and clamping errors.

If a part has to be clamped and unclamped in a different fixture for each operation, considerable process time and money can be saved by leaving the part in the same fixture for as many operations as possible. This also eliminates expensive fixtures on subsequent operations.



Operation	Before UNILOCK		After UNILOCK		
	Set Up	Production	Set Up	Production	Savings
Op-10 Lathe	3 hours	4 hours	1 hour	4 hours	2 hours
Op-20 Lathe	2 hours	10 hours	1 hour	2 hours	9 hours
Op-30 Mill	4 hours	11 hours	1 hour	8 hours	6 hours
Total	10 hours	25 hours	3 hours	14 hours	18 hours



FITS A VARIETY OF APPLICATIONS

ROUND CHUCKS

ESM 138A	12-13
ERGO 138	14-15
EFM 138A	16-17
ASM 90A	18-19
ASH 120	20-21
ISM 160	22-23
ESM 176A	24-25

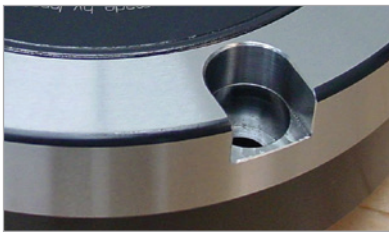
ESM 138A

Air-Assisted Clamping Turbo Chuck

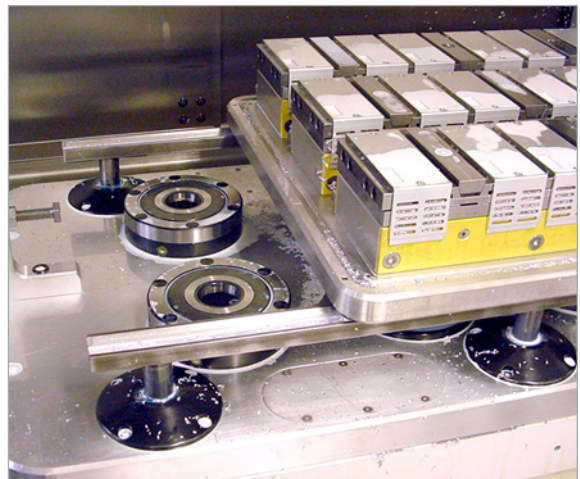
With an air assisted clamping turbo function. It also has improved retention force with a new slide wedge actuation. This is accomplished by covering the piston with a sealed cover plate.

FEATURES

- Mid-sized diameter fits most applications
- Top side mounting for ease of integration
- Choose from air connections at bottom or side
- Optional timing notch in face of chuck
- Same body and locating diameters
- Same mounting bolt hole pattern
- Same flange air port location
- Same timing notch



Available with Notches



Catalog Number	Description	Notch (Width x Qty)	Recommended Bolt Sizes					Clamping Force (lbs)		Air Connection		Weight (lbs)
			M10	M12	M16	M20†	M24†	Spring Only	Turbo Assist	Port Size	Flange	
15.270.140A	ESM 138A	—	✓	✓	✓	✓	✓	990-1,320	3,300-3,520	G1/8"	✓	9.9
15.270.147A		14 H7 x 1										

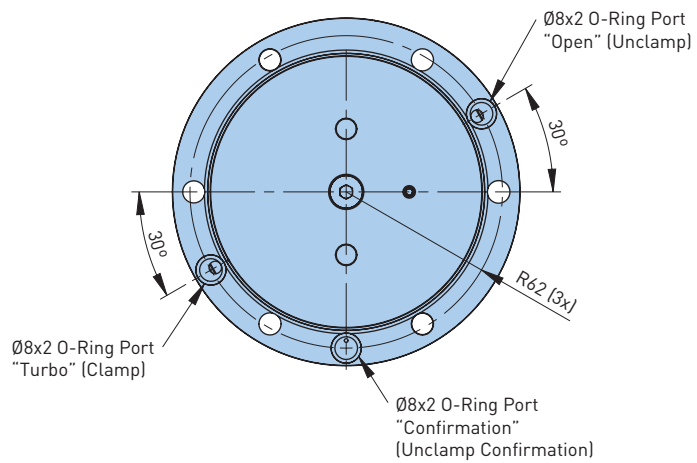
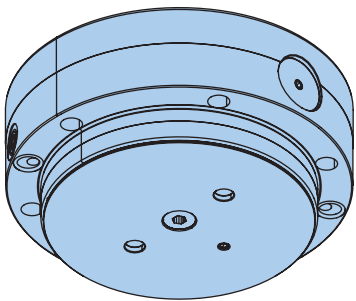
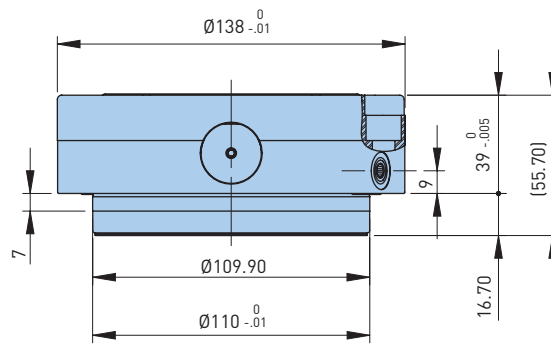
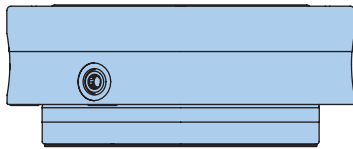
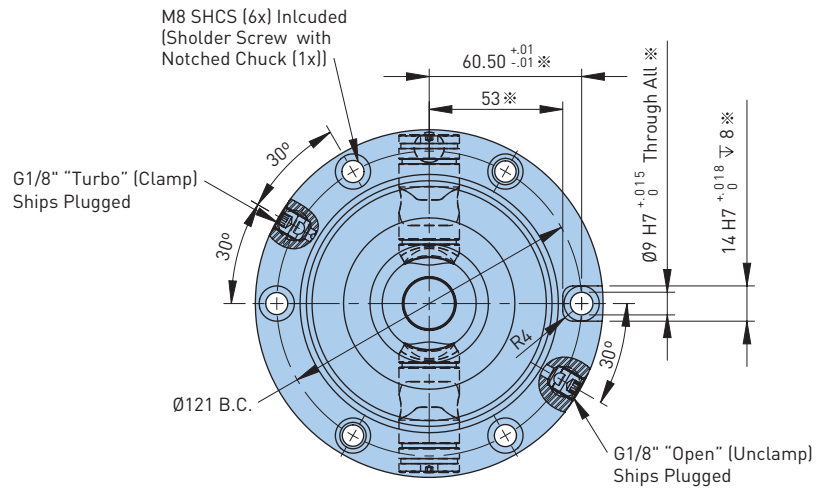
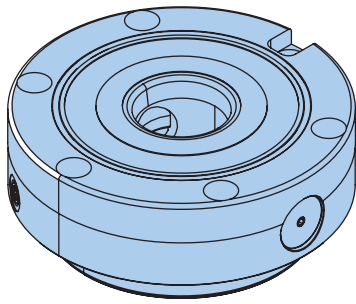
†Optional

- Screws, screw covers and O-ring included

ACCESSORIES

<p>KNOBS PG. 40</p>	<p>AIR FITTINGS PG. 104</p>	<p>DUST COVERS PG. 109</p>	<p>REPAIR PG. 110</p>
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ROUND CHUCKS



- All dimensions are in millimeters
- Dimensions marked ※ are for notch option

ERGO 138

A Space Saving Chuck

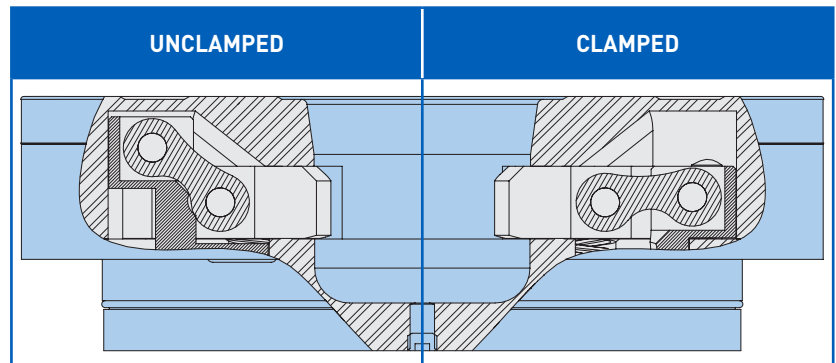
A chuck height of 28mm, a height savings of 11mm over the ESM 138 model.

FEATURES

- Mid-sized diameter fits most applications
- Top side mounting for ease of integration
- Choose from air connections at bottom or side
- Optional timing notch in face of chuck
- Same body and location diameters
- Same mounting bolt hole pattern
- Same flange air port location
- Increased inner support ring diameter
- Knee locking mechanism



Available with Notches



Catalog Number	Description	Notch (Width x Qty)	Recommended Bolt Sizes					Clamping Force (lbs)		Air Connection		Weight (lbs)
			M10	M12	M16	M20†	M24†	Spring Only	Turbo Assist	Port Size	Flange	
15.270.110	ERGO 138	—	✓	✓	✓	✓	✓	990-1,320	3,300-3,520	G1/8"	✓	9.9
15.270.117		14 H7 x 1										

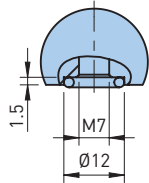
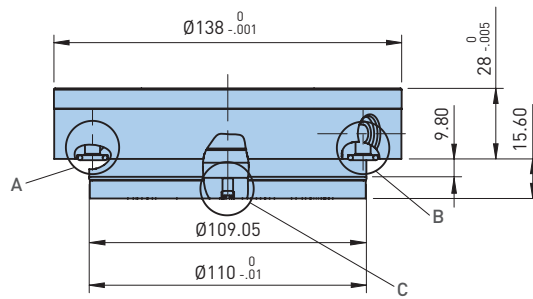
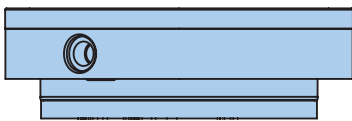
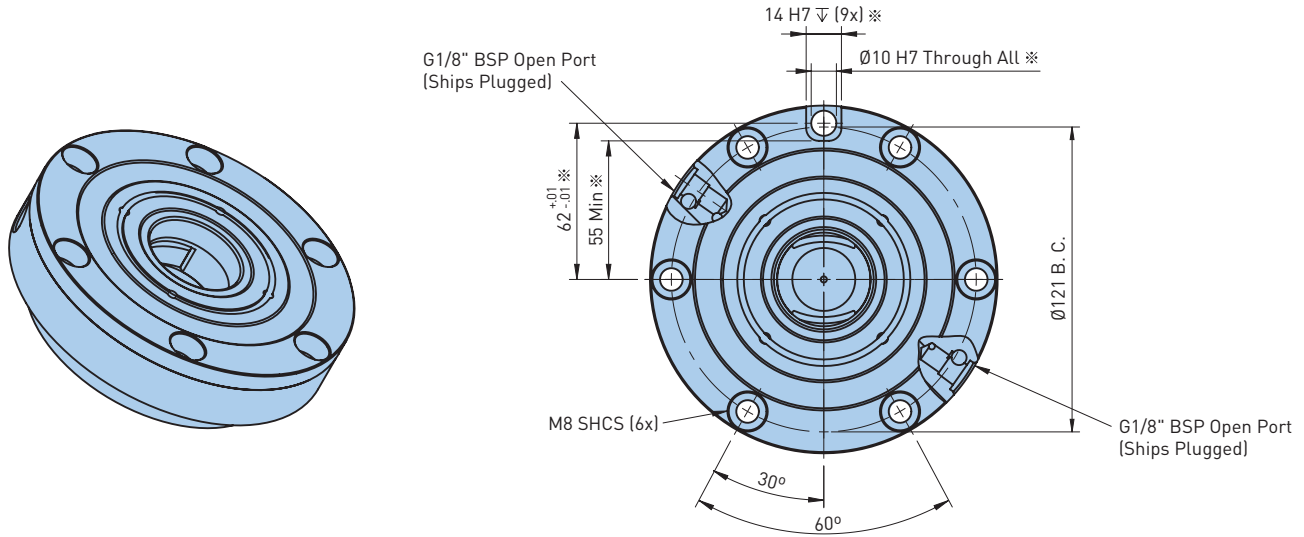
†Optional

- Screws, screw covers and O-ring included

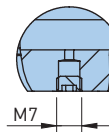
ACCESSORIES



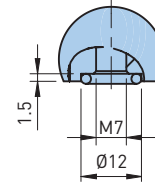
ROUND CHUCKS



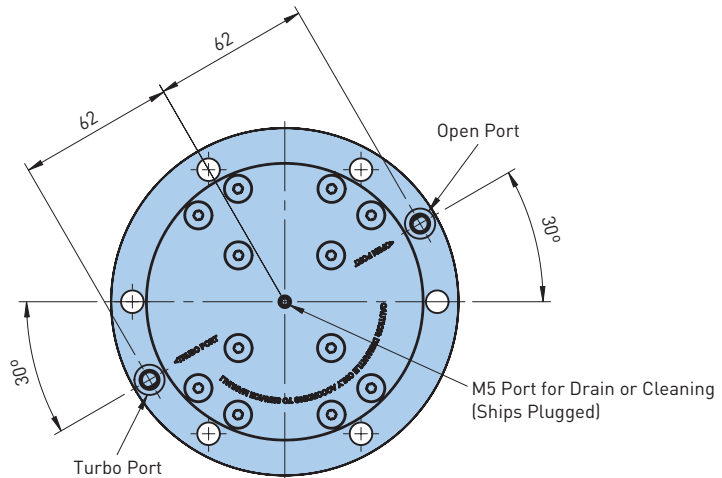
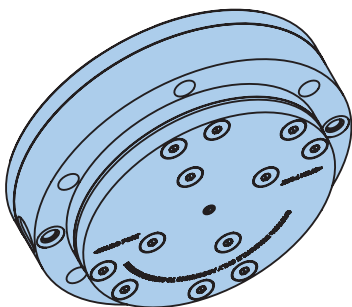
Detail A
Scale 2:3
 $\varnothing 8 \times 2$ O-Ring
(Ships Plugged)



Detail C
Scale 2:3
Air Cleaning
(Ships Plugged)



Detail B
Scale 2:3
 $\varnothing 8 \times 2$ O-Ring
(Ships Plugged)



- All dimensions are in millimeters
- Dimensions marked \ast are for notch option

EFM 138A

Suited For Thinner Walled Tombstones

Flange mount chuck is easily mounted in custom fixtures due to the reduced projection height.

FEATURES

- Mid-sized diameter fits most applications
- Top side mounting for ease of integration
- Reduced projection height by mounting in fixtures
- Optional timing notch in face of chuck



Available with Notches



Catalog Number	Description	Notch (Width x Qty)	Recommended Bolt Sizes					Clamping Force (lbs)		Air Connection		Weight (lbs)
			M10	M12	M16	M20†	M24†	Spring Only	Turbo Assist	Port Size	Flange	
15.263.100A	EFM 138A	—	✓	✓	✓	✓	✓	990-1,350	3,300-3,520	—	✓	8
15.263.107A		14 H7 x 1										

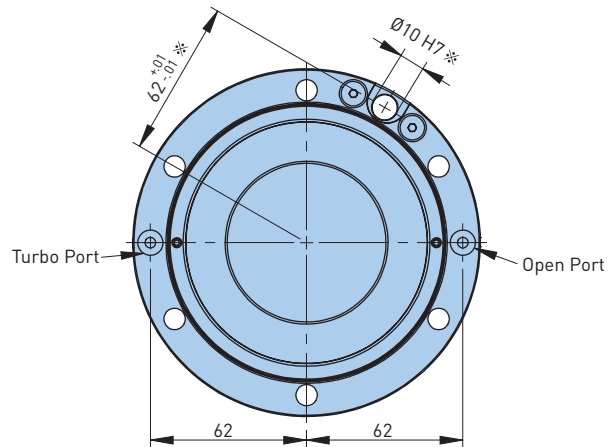
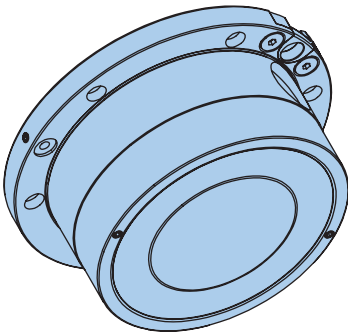
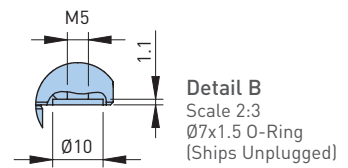
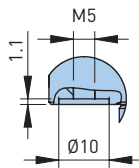
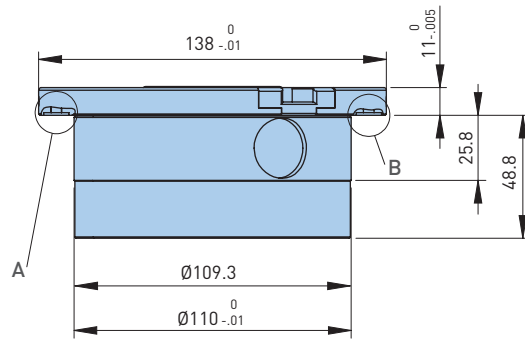
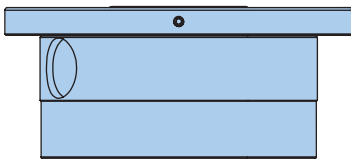
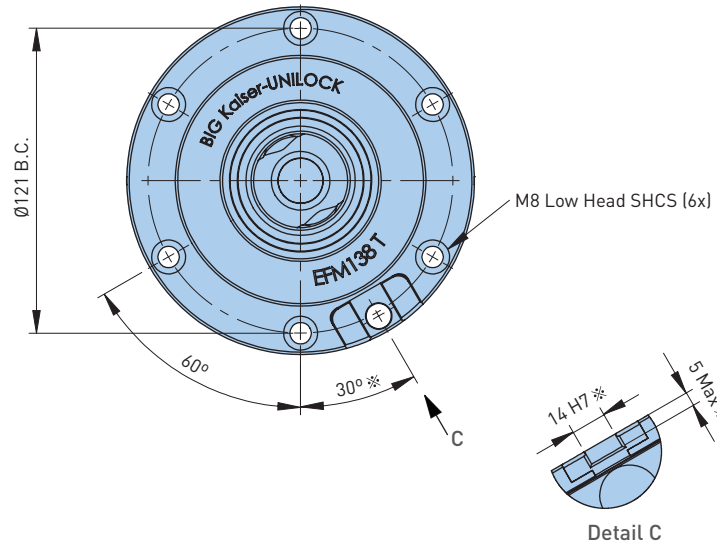
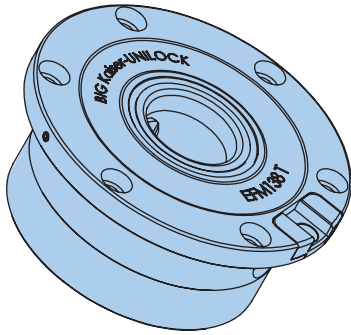
†Optional

- Screws, screw covers and O-rings included

ACCESSORIES

<p>KNOB PG. 40</p>	<p>AIR FITTINGS PG. 104</p>	<p>DUST COVERS PG. 109</p>	<p>REPAIR PG. 110</p>
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ROUND CHUCKS



- All dimensions are in millimeters
- Dimensions marked ※ are for notch option

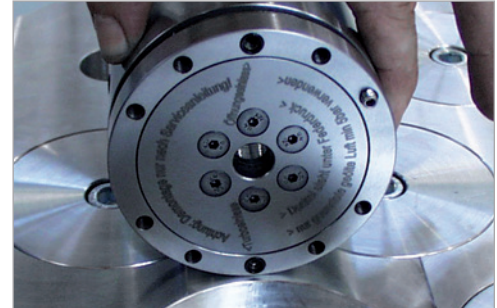
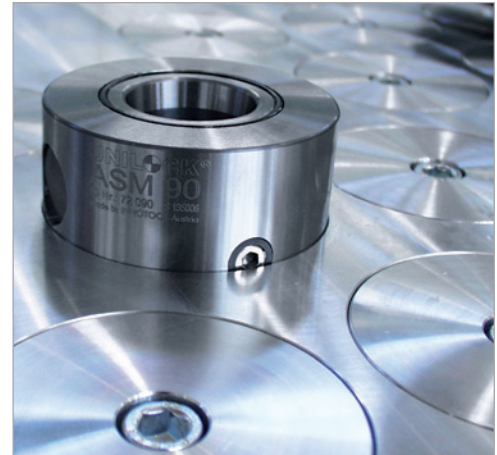
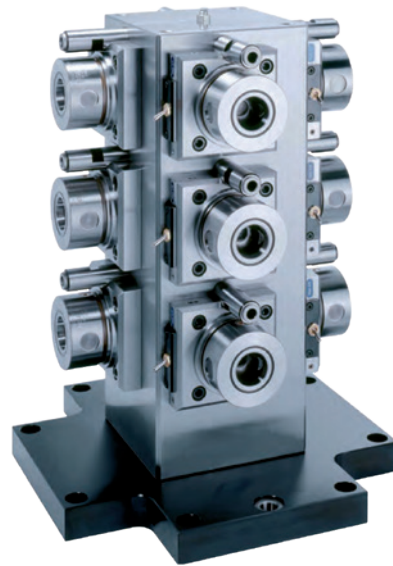
ASM 90A

For Smaller Applications

As one of the smallest chucks, the UNILOCK ASM 90A chuck is for use in small jobs without creating obstructions.

FEATURES

- Reduced diameter for small work or tight spaces
- Integrated toe clamp lip
- Turbo option for increasing holding power
- Air supply from bottom or side of chuck
- Optional reference notch in face of chuck



Optional Through Hole

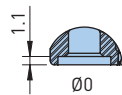
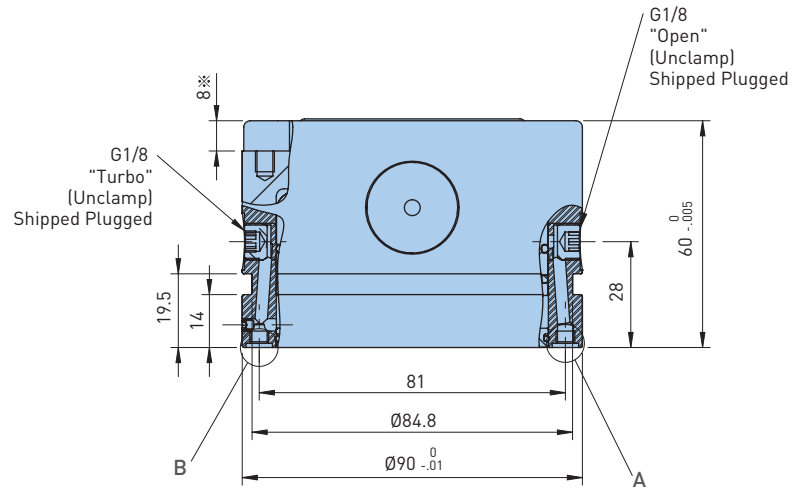
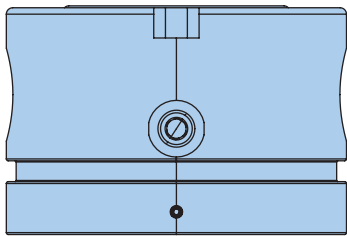
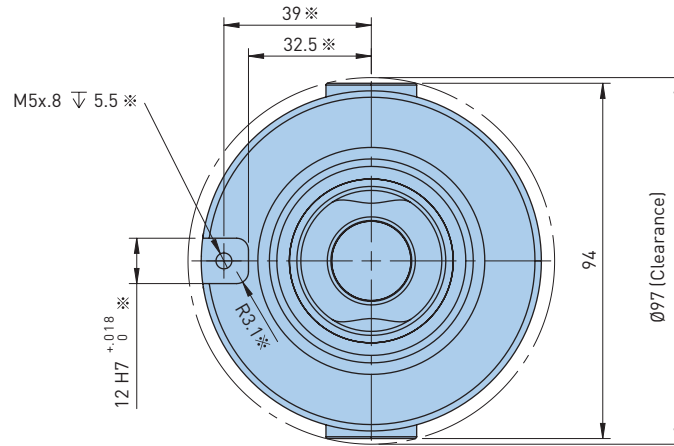
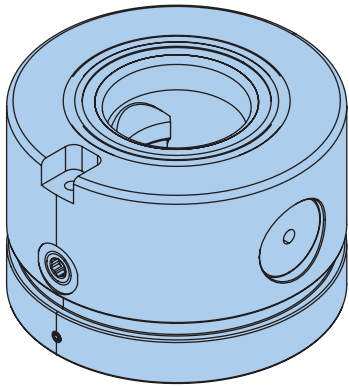
Catalog Number	Description	Notch (Width x Qty)	Recommended Bolt Sizes					Clamping Force (lbs)		Air Connection		Weight (lbs)
			M10	M12	M16	M20+	M24+	Spring Only	Turbo Assist	Port Size	Flange	
15.240.090A	ASM 90A	—	✓	✓	—	—	—	550-660	1,540-1,760	G1/8"	✓	5.1
15.240.091A		12 H7 x 1										

†Optional
• O-rings included

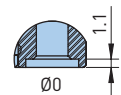
ACCESSORIES

<p>KNOBBS PG. 40</p>	<p>AIR FITTINGS PG. 104</p>	<p>DUST COVERS PG. 109</p>	<p>REPAIR PG. 110</p>
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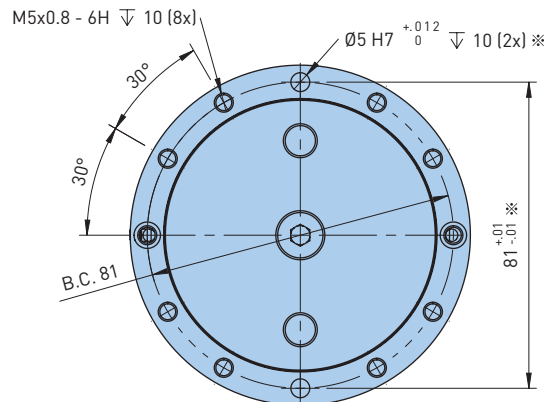
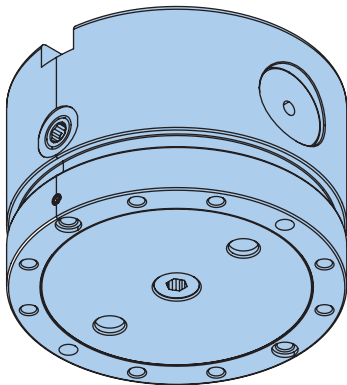
ROUND CHUCKS



Detail B
Scale 1:1
Ø4x1.5 O-Ring
(Ships Unplugged)



Detail A
Scale 1:1
Ø4x1.5 O-Ring
(Ships Unplugged)



- All dimensions are in millimeters
- Dimensions marked [※] are for notch option

ASH 120

Same Diameter and Height as the Original UNILOCK ASM120

The UNILOCK ASH 120 is the same diameter and height as the UNILOCK ASM 120 but has a new clamping actuation system. Rather than the handle rotating 180° about the axis of the pin, the wrench swings 90° about the axis of the chuck.



WRENCH

Comes with a wrench for easy opening and closing. The wrench swings 90° about the axis of the chuck.



Catalog Number	Description
15.270.170.1	Wrench (red)
15.270.170.2	Safety Wrench with Spring (blue)

Catalog Number	Description	Notch (Width x Qty)	Recommended Bolt Sizes					Clamping Force (lbs)	Weight (lbs)
			M10	M12	M16	M20†	M24†	Manual Only	
15.270.170	ASH 120	—	✓	✓	—	—	—	1,760-2,200	8.8
15.270.177		14 H7 x 1							

†Optional

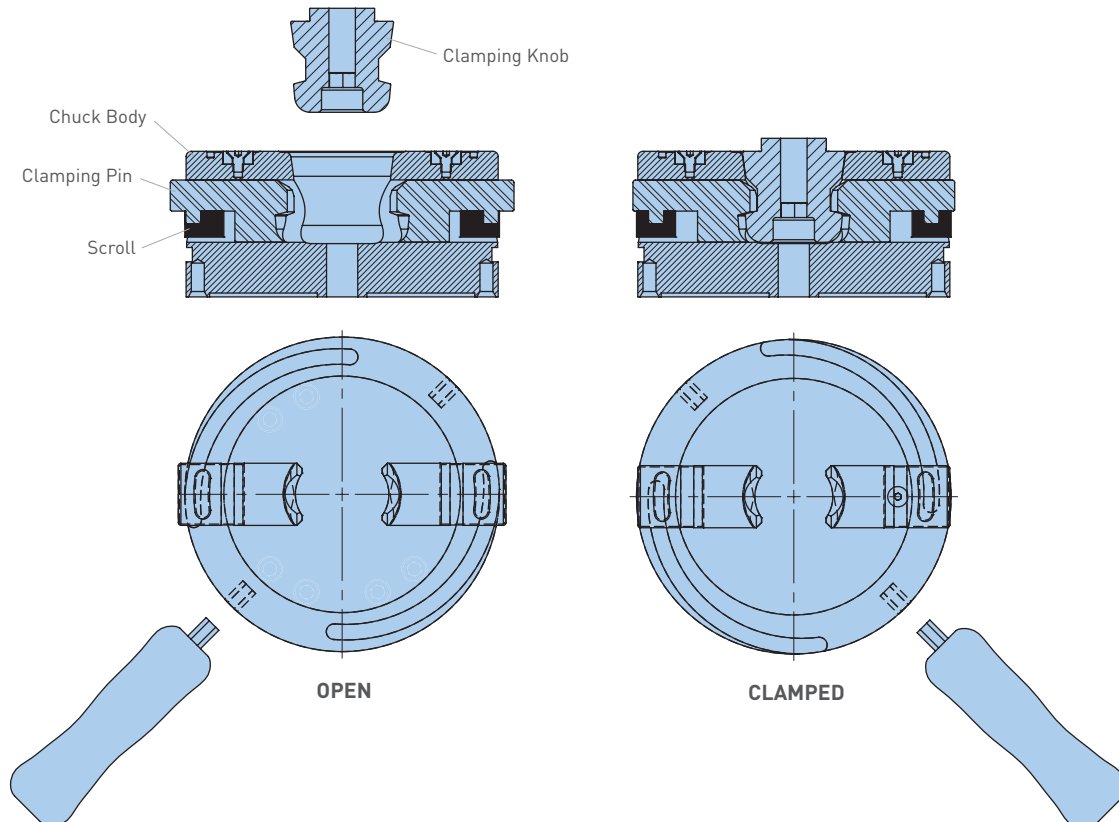
ACCESSORIES

KNOBS
PG. 40

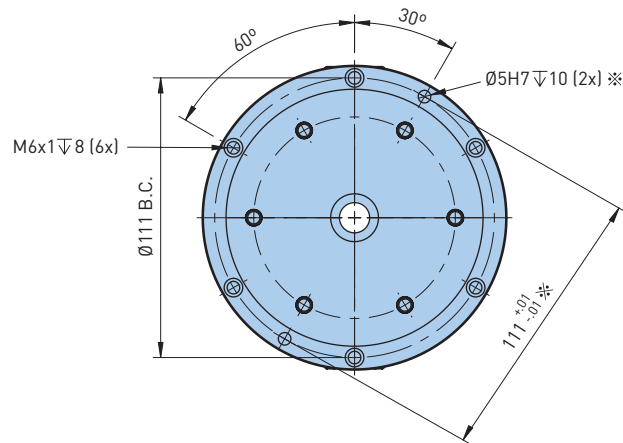
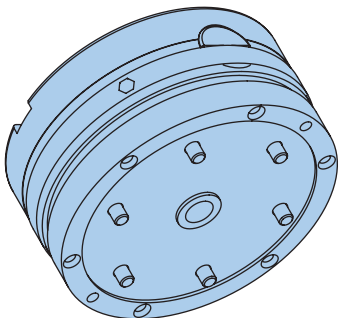
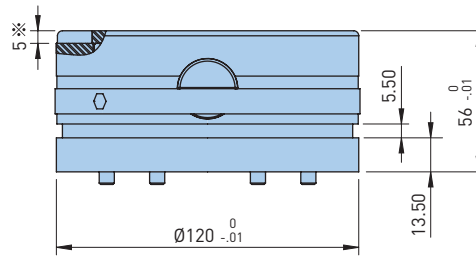
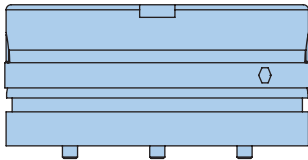
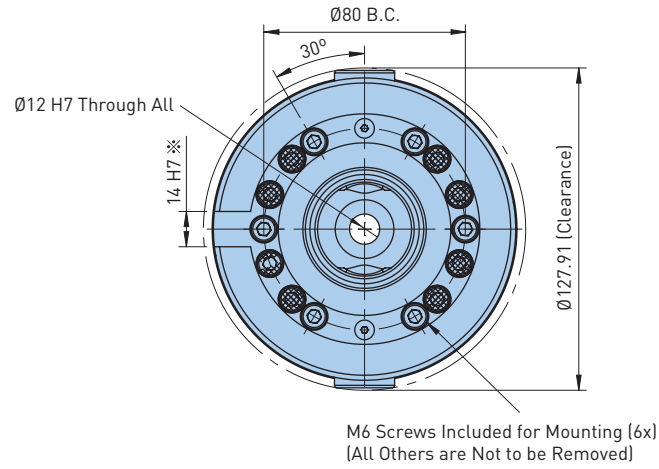
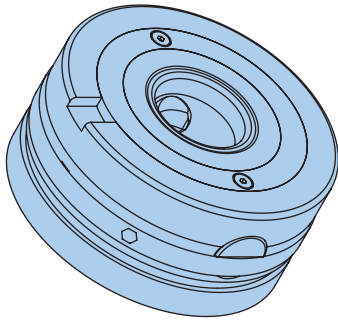
DUST COVERS
PG. 109

REPAIR
PG. 110

HOW IT WORKS



ROUND CHUCKS



- All dimensions are in millimeters
- Dimensions marked mm are for notch option

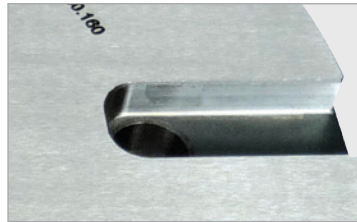
ISM 160

For the Face of 4th and 5th Axis Rotary Tables

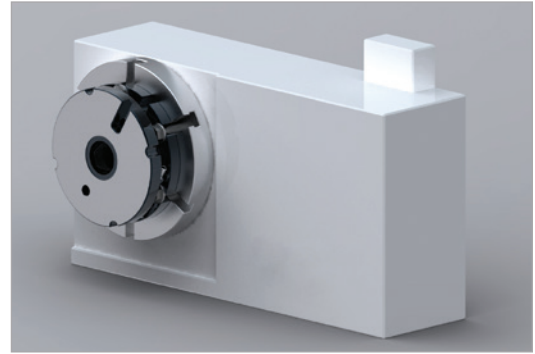
A single chuck solution for the face of 4th and 5th axis rotary tables. Exterior timing features are comparable with the UNILOCK MCM 150 & UNILOCK MSM 170 chucks. Timing pin slot allows timing pin to match non-standard pallet sizes.

FEATURES

- Simple surface mount design
- Now available with A2-6 mounting
- Dowel pins into location
- Supports 60° and 90° t-slots
- Air-assisted clamping option
- Low profile 46mm (1.811")
- Through-hole eases cleaning
- Multiple indexing options



Slot Allows for Variations in Radial Pin Location



Catalog Number	Description	Notch (Width x Qty)	Recommended Bolt Sizes					Clamping Force (lbs)		Air Connection		Weight (lbs)
			M10	M12	M16	M20†	M24†	Spring Only	Turbo Assist	Port Size	Flange	
15.260.160	ISM 160	Ø14 H7 x 1	✓	✓	✓	—	—	1,100-1,540	3,300-3,740	G1/8"	✓	12.1
		Ø12 H7 x 4										
15.300.008	ISM 160 (A2-6)	Ø12 H7 x 2										

- †Optional
 • No hardware included

ACCESSORIES

<p>KNOBBS PG. 40</p>	<p>AIR FITTINGS PG. 104</p>	<p>DUST COVERS PG. 109</p>	<p>REPAIR PG. 110</p>
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ADAPTER PLATE

For ISM 160 to HAAS 160/210 Size Indexers and Trunnions

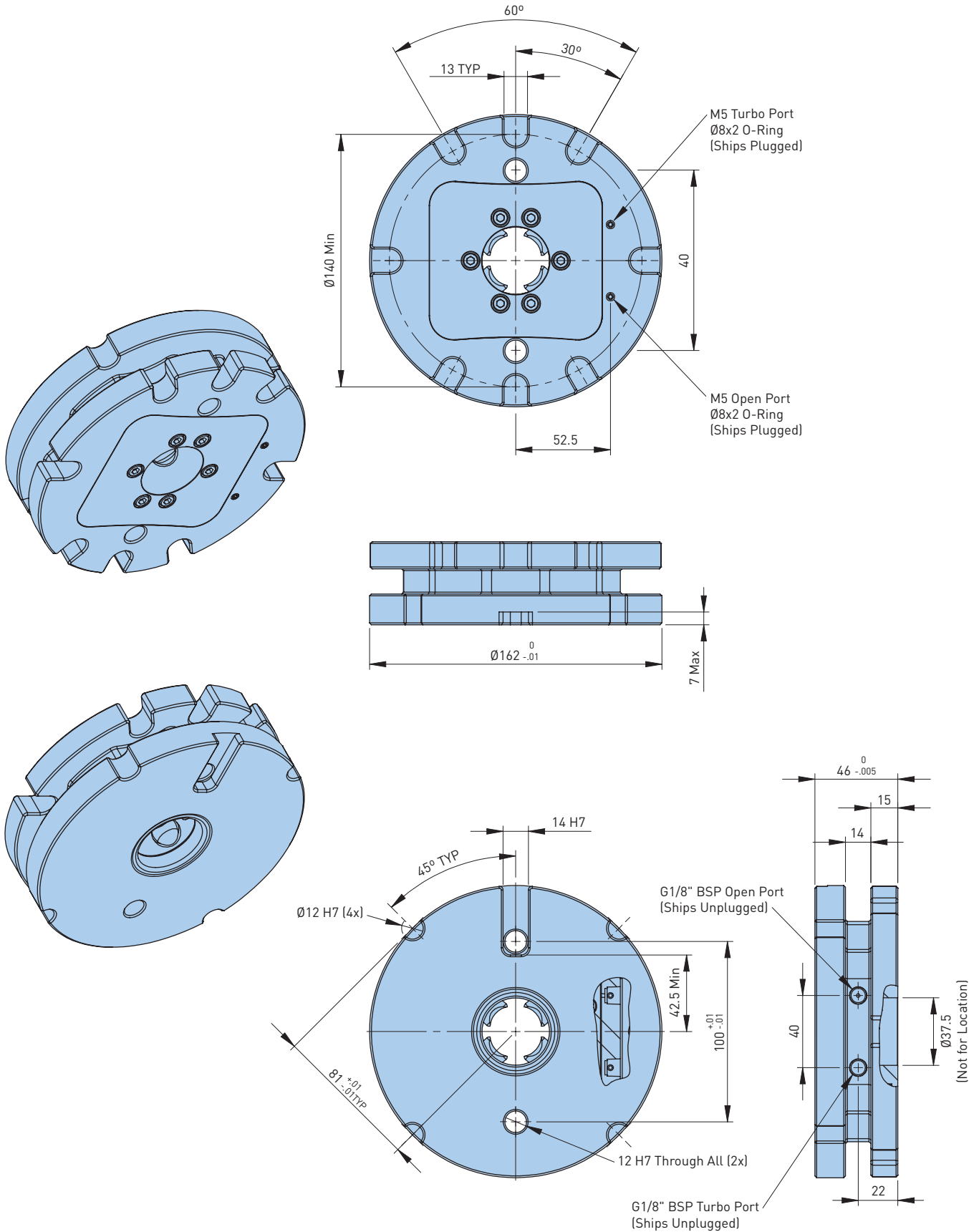
FEATURES

- Replaces t-slot platter
- Allows for both open and turbo
- Low 20mm height

Catalog Number	Description	Indexer Model
15.260.164	ISM 160	HAAS 160
15.260.166		HAAS 210

- Other sizes available upon request
 • Please contact the BIG DAISHOWA Engineering Dept. for additional information





• All dimensions are in millimeters

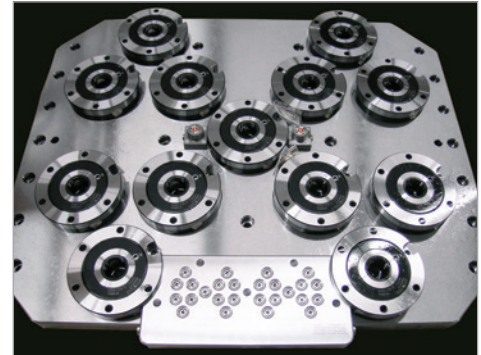
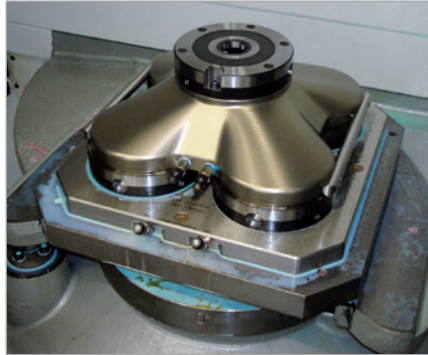
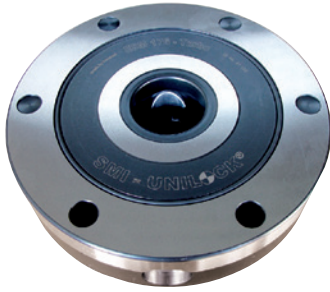
ESM 176A

For Handling Heavyweight Fixtures

Excels in handling heavyweight fixtures, due to its size and and higher retention force.

FEATURES

- Flange design for top side mounting
- Large diameter with turbo clamping for more rigidity
- Air supply from bottom or side of chuck
- Optional reference notch in face of chuck



Available with Notches

Catalog Number	Description	Notch (Width x Qty)	Recommended Bolt Sizes					Clamping Force (lbs)		Air Connection		Weight (lbs)
			M10	M12	M16	M20 †	M24†	Spring Only	Turbo Assist	Port Size	Flange	
15.272.170A	ESM 176A	—										
15.272.171A		25 H6 x 1	✓	✓	✓	✓	✓	1,540-1,760	4,180-4,840	G1/8"	✓	17.5

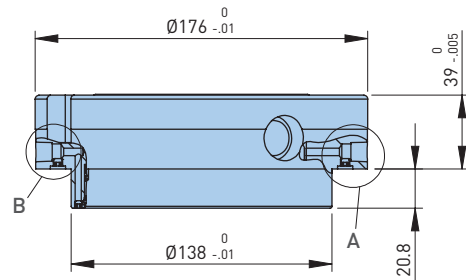
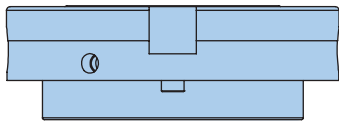
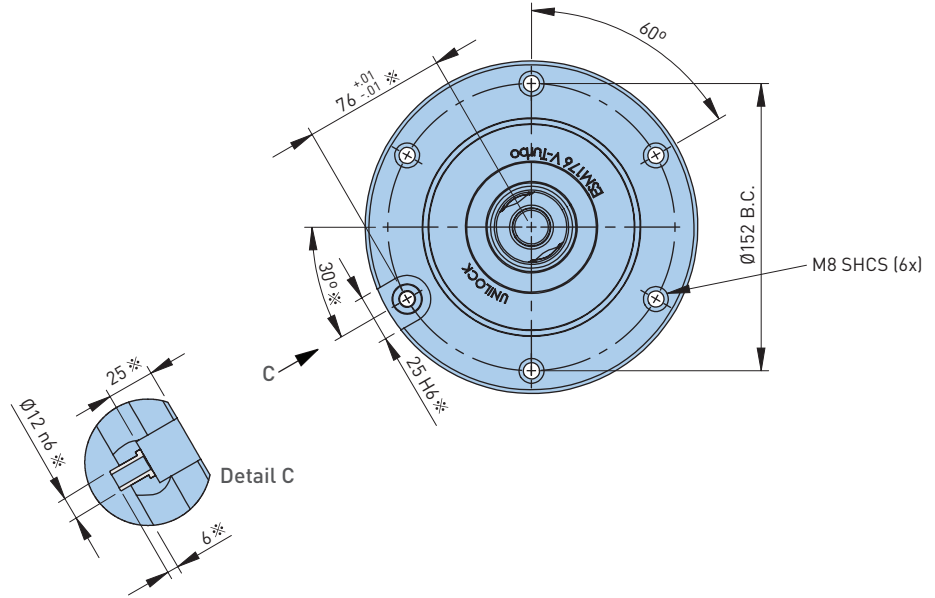
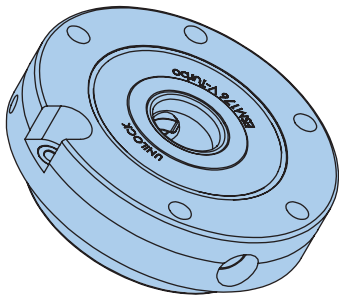
†Optional

- Screws, screw covers and O-rings included
- Notched version comes with timing bushing and all hardware listed above

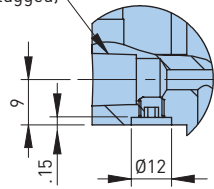
ACCESSORIES

<p>KNOBBS PG. 40</p>	<p>AIR FITTINGS PG. 104</p>	<p>DUST COVERS PG. 109</p>	<p>REPAIR PG. 110</p>
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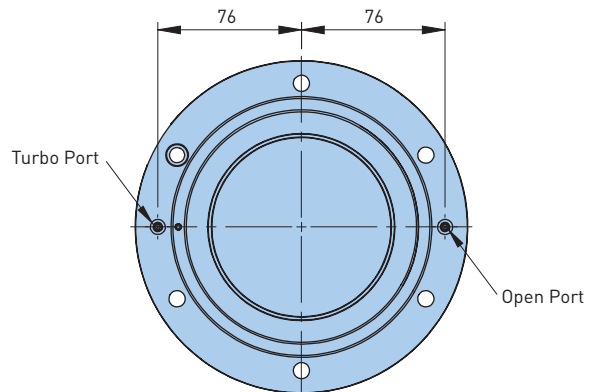
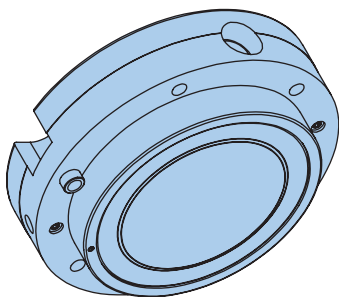
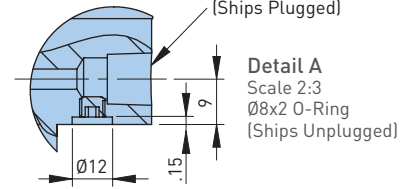
ROUND CHUCKS



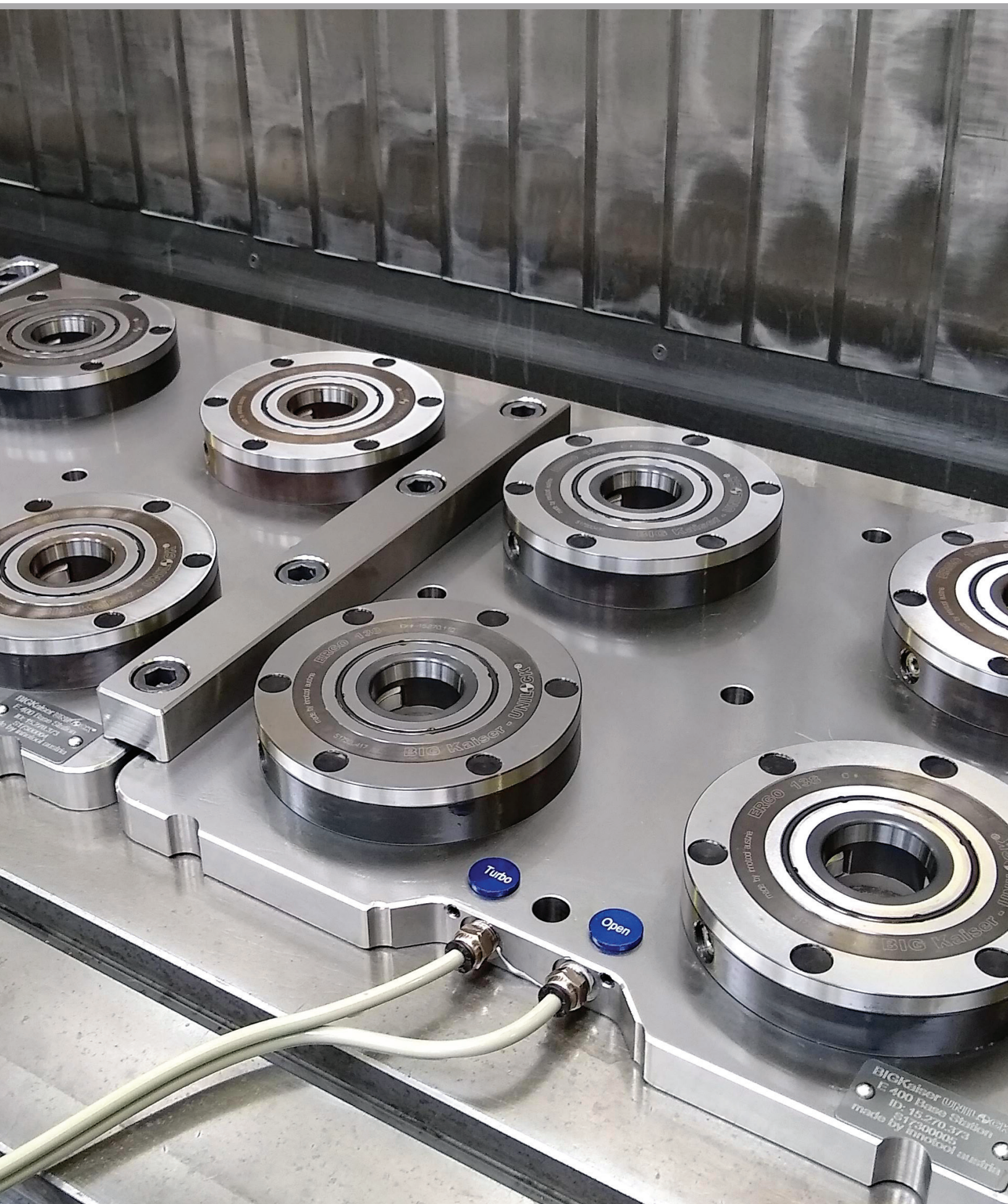
G1/8" BSP Turbo Port
(Ships Plugged)



G1/8" BSP Open Port
(Ships Plugged)



- All dimensions are in millimeters
- Dimensions marked ※ are for notch option



PROVIDES EASY MOUNTING OF THE CHUCKS

PREASSEMBLED CHUCKS

ERG0138 PREASSEMBLED BASES	28-29
E100A	30
E200A	31
E300A	32
E400A	33-34
E600A	35
E800A	36
E1000A	37

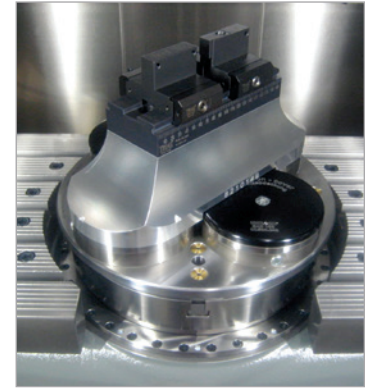
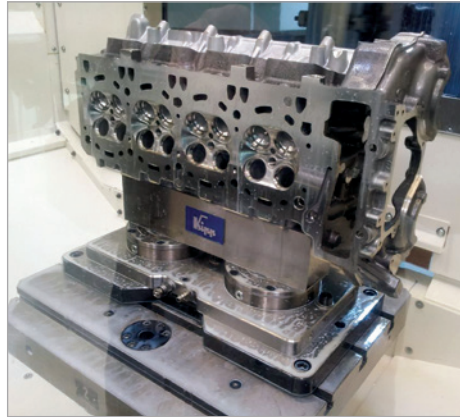
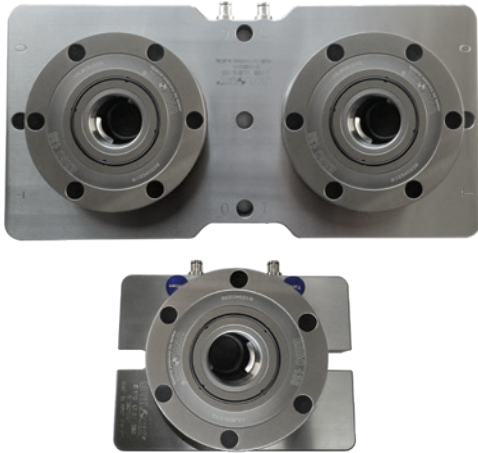
ERG0138 PREASSEMBLED BASES

Preassembled Double Table Chucks

Base stations with the ERGO 138 chuck save 11mm of height compared to ESM 138. Available with turbo out of the box.

FEATURES

- Mid-sized diameter chuck fits most operations
- Finish ground steel baseplate
- Predesigned solutions for up to 10 chucks
- Optional timing notch in face of ERGO 138 chucks

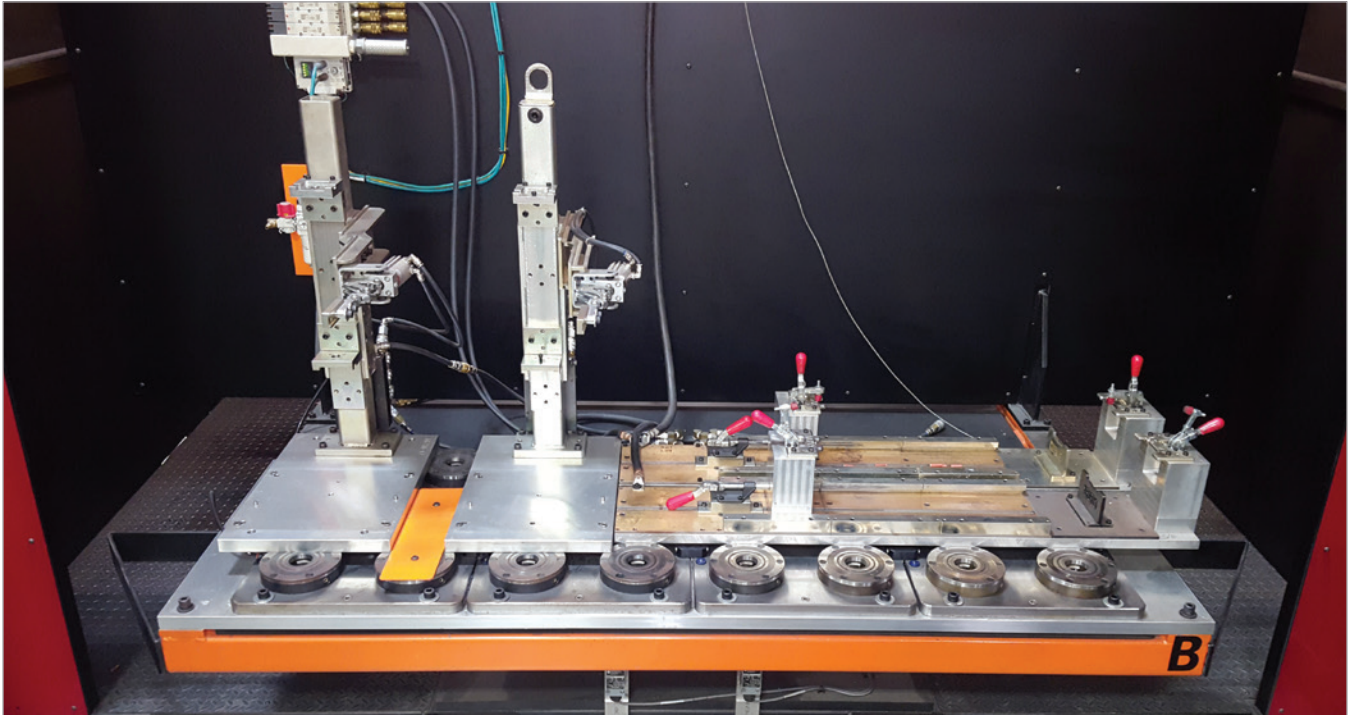


Catalog Number	Page Number	Metric (mm)			Imperial (in)			Number of Chucks
		Length	Width	Height	Length	Width	Height	
15.270.370A	6	196	149	50	7.717	5.866	1.969	1
15.270.371A	9	396	196		15.591	7.717		2
15.270.372A	10	595	195		23.425	7.677		3
15.270.373A	11	395	395		15.551	15.551		4
15.270.374A	13	596	395	60	23.465	15.551	2.362	6
15.270.375A	14	796	396		31.339	15.591		8
15.270.376A	15	996	396		39.213	15.591		10

- No hardware included
- See pg. 14 for ERGO 138 chuck specifics

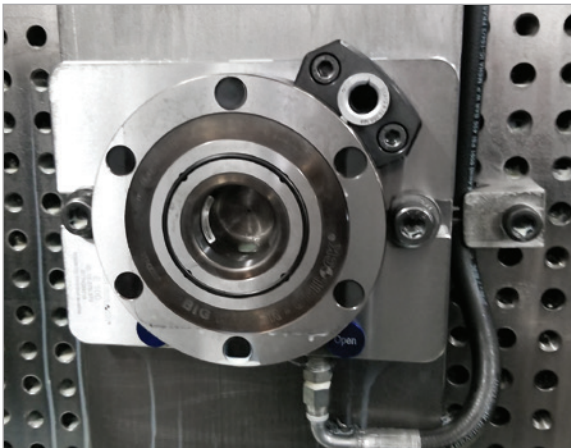
ACCESSORIES

<p>KNOB PG. 40</p>	<p>AIR FITTINGS PG. 104</p>	<p>DUST COVERS PG. 109</p>	<p>REPAIR PG. 110</p>
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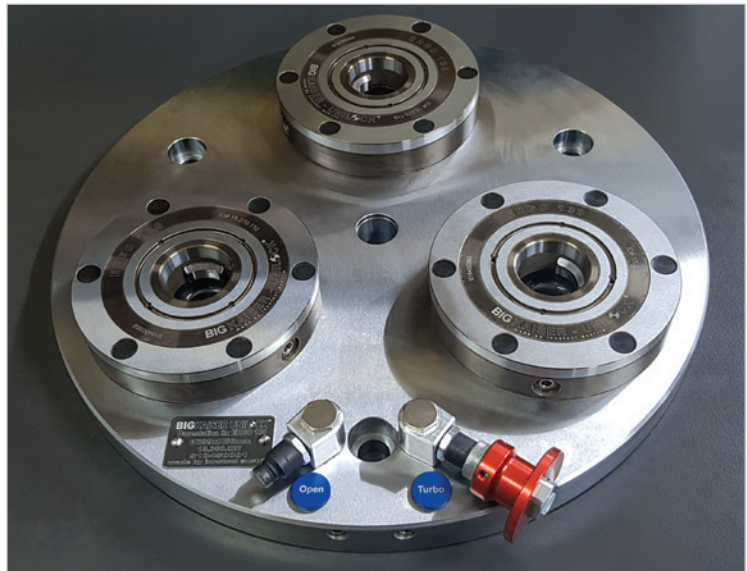
ERG0138 — WELDING

Four ERGO E600 bases are used to hold welding fixtures, allowing for the quick changeover of fixtures when the production changes from one series of parts to another. There is no need to retouch points between changes as the system repeatability of $.005 \mu\text{m}$ (.0002") is greater than needed in most welding applications.



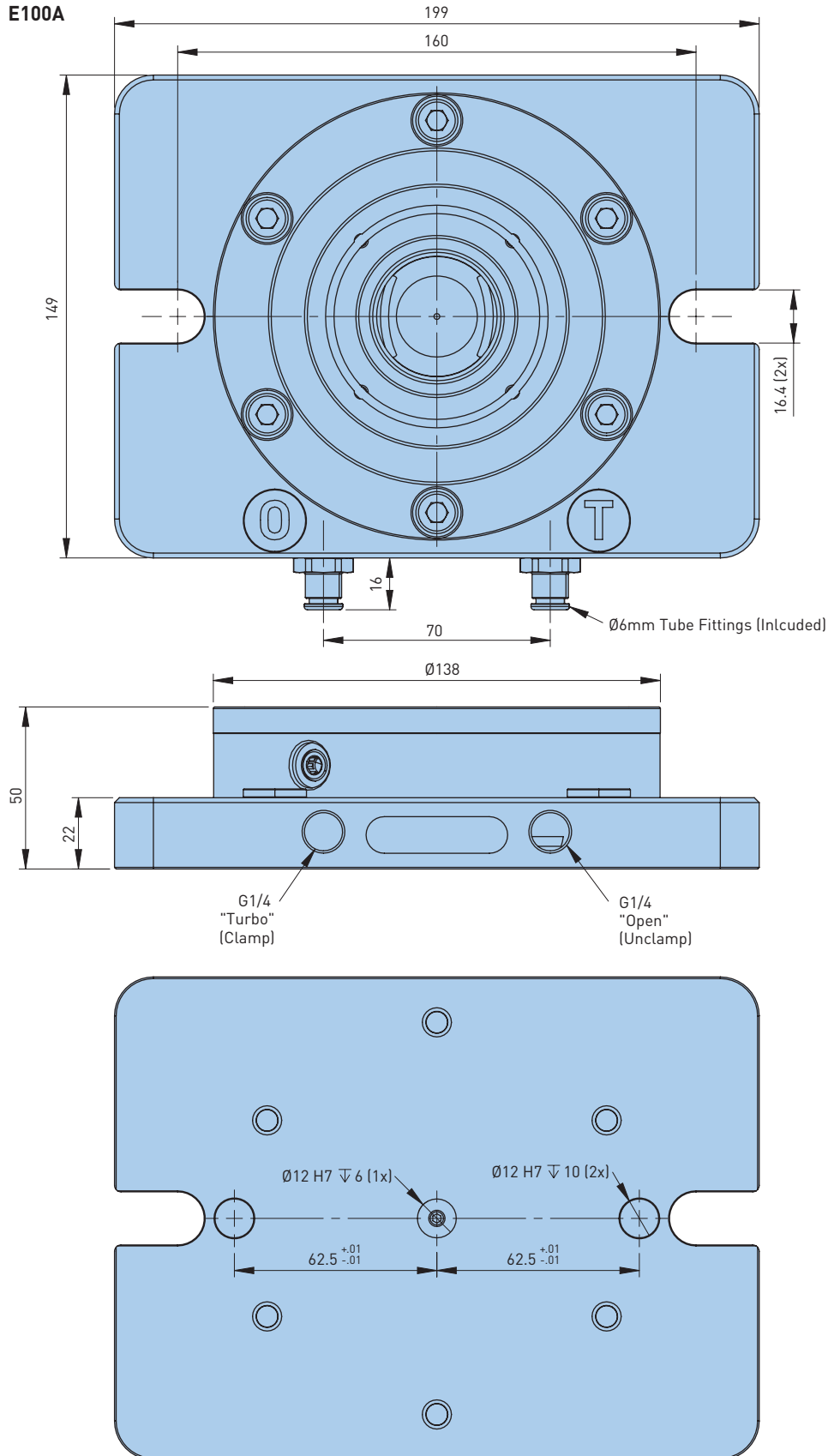
ERG0138 — TIMING BLOCK

The ERGO E100 base can be modified by the end user to accept a timing block allowing for the timing of smaller fixtures at 45° or 135°. The ERGO E100 V1 and V2 bases offers a 45° timing block mount with no modification. The V1 also has a single 14mm H7 timing notch. In all cases the block (15.270.331) is sold separately.



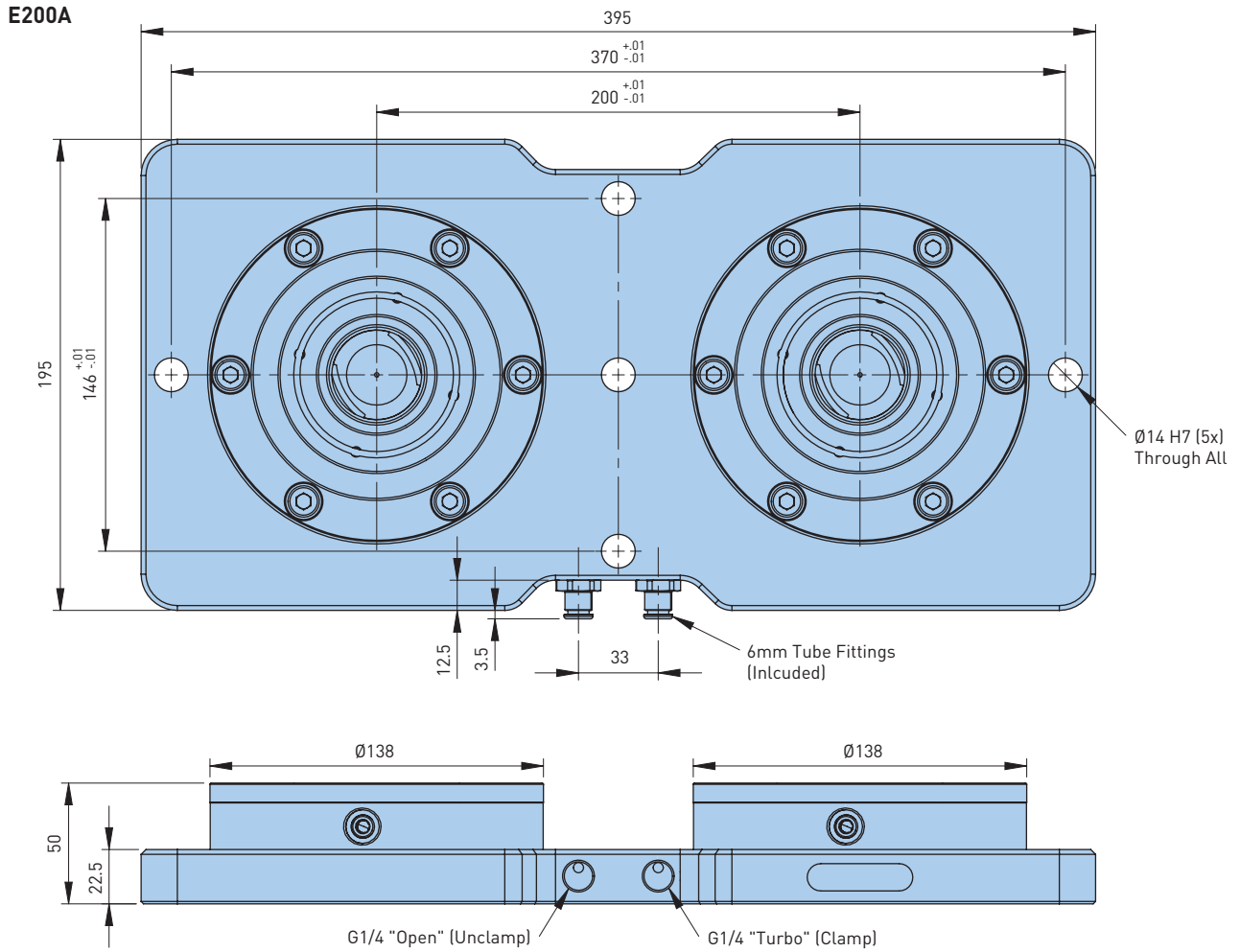
ERG0138 E300 — ROUND, SPECIAL ITEM

Special versions of round bases can be built to customer specifications. For assistance, please consult the BIG DAISHOWA Engineering Dept.



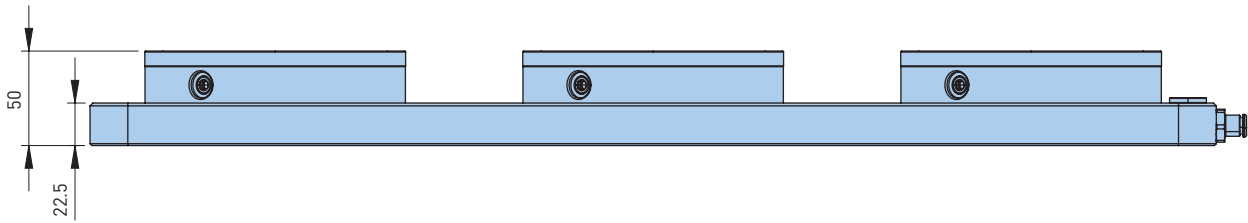
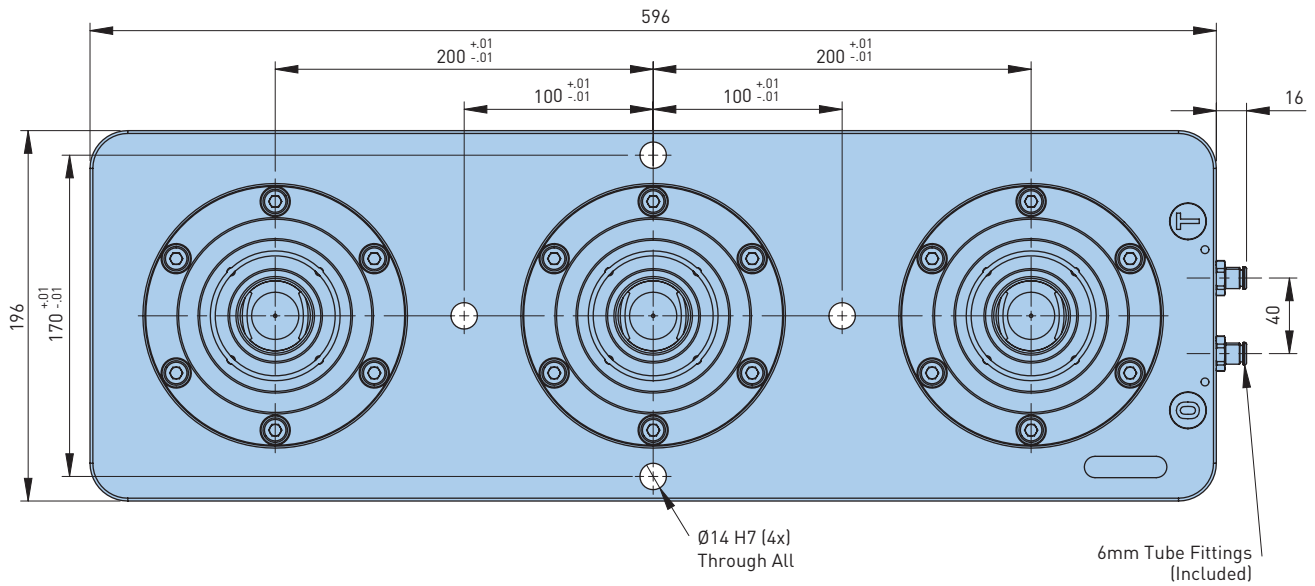
Catalog Number
15.270.370A

- All dimensions are in millimeters
- For detailed information on additional mounting hole locations, please consult the BIG DAISHOWA Engineering Dept.

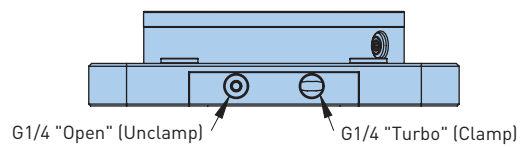


- All dimensions are in millimeters
- For detailed information on additional mounting hole locations, please consult the BIG DAISHOWA Engineering Dept.

E300A

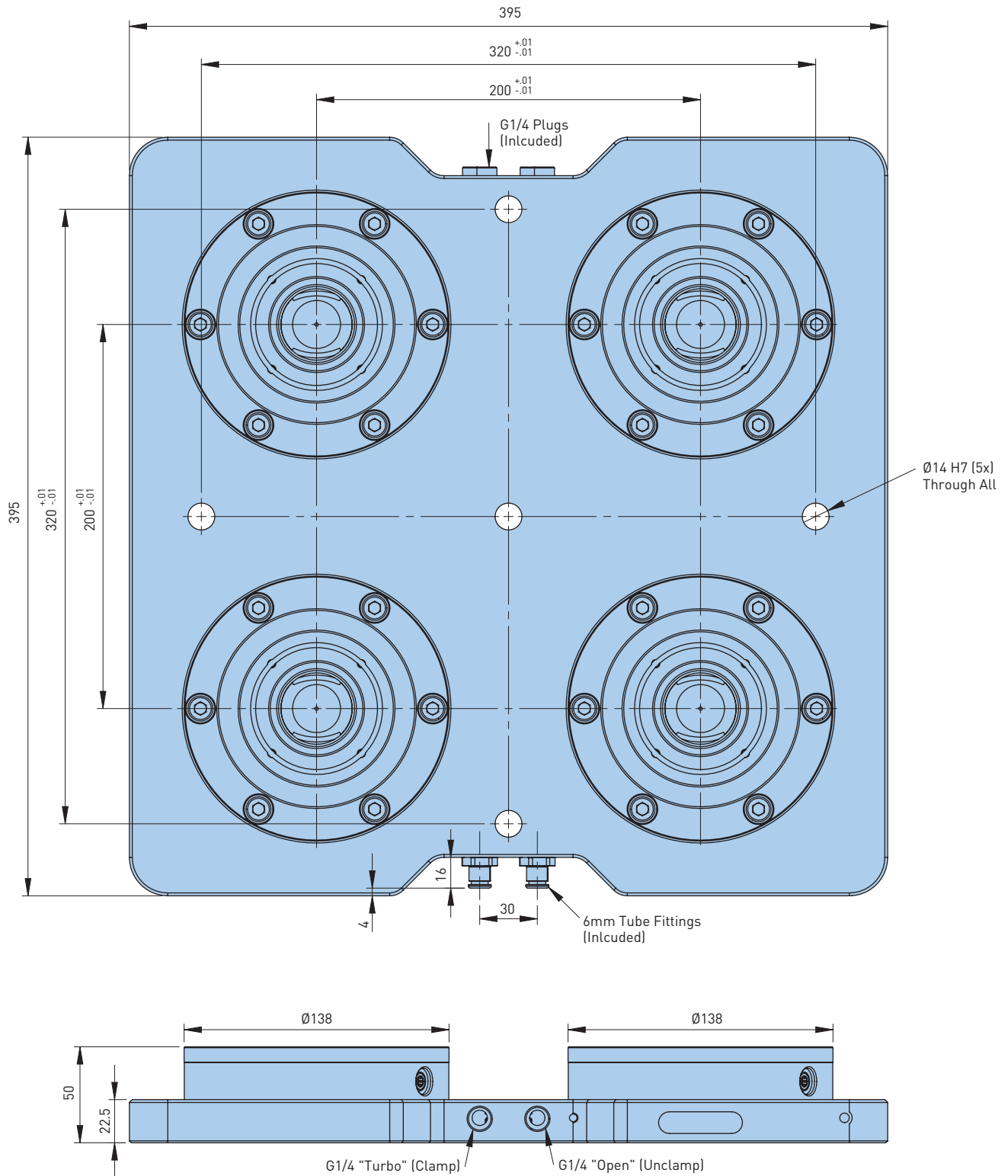


Catalog Number
15.270.372A



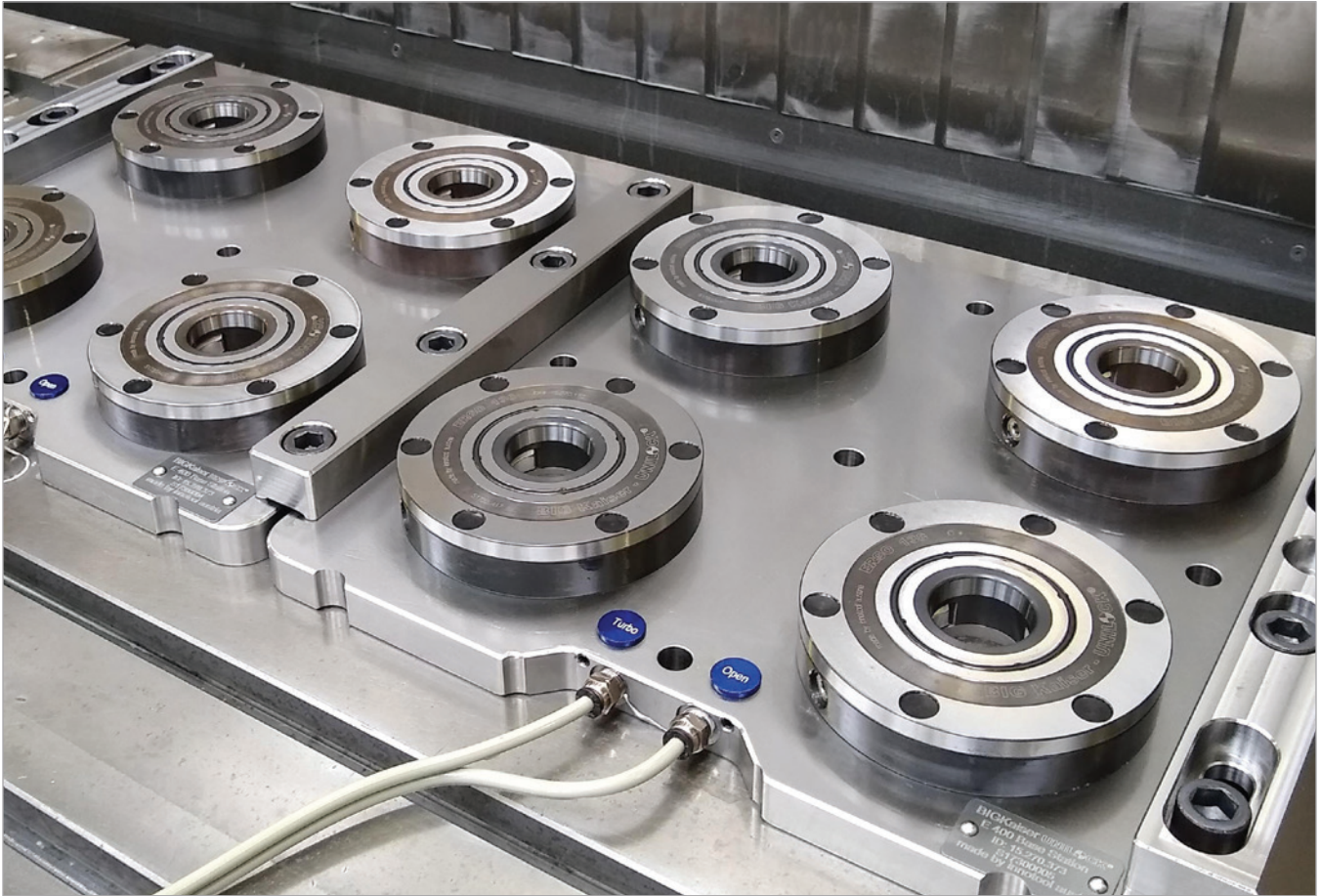
- All dimensions are in millimeters
- For detailed information on additional mounting hole locations, please consult the BIG DAISHOWA Engineering Dept.

E400A



- All dimensions are in millimeters
- For detailed information on additional mounting hole locations, please consult the BIG DAISHOWA Engineering Dept.

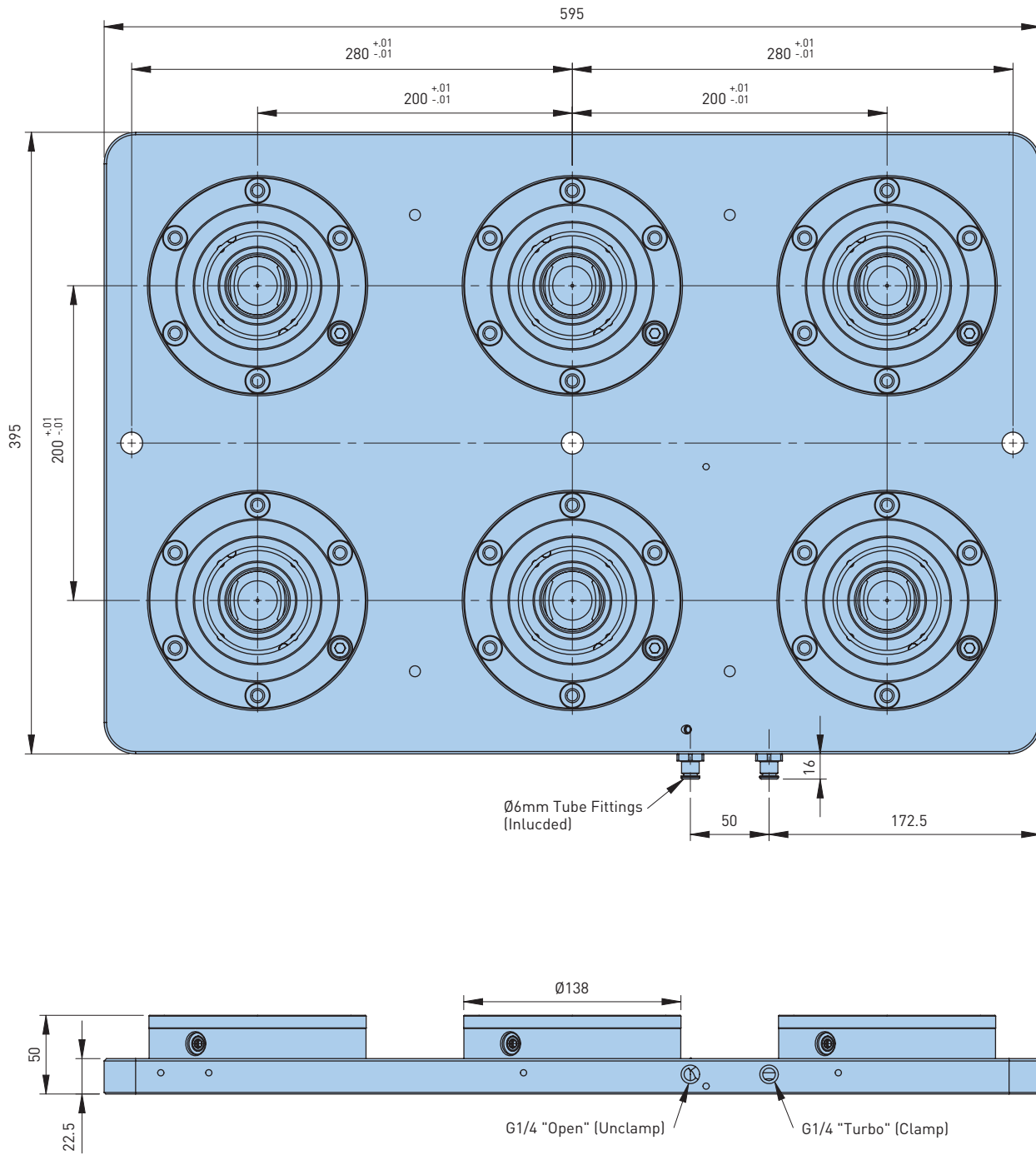
Catalog Number
15.270.373A



E400A

The ERGO E400 base stations shown above are mounted together for a master reference system on the table of the machine. They are also pneumatically linked to operate in unison. The vise plate (left bottom) and the grid plate (right bottom) are easily swapped or removed entirely. Then, when needed, replaced within .0002" (.005mm) of their original location.

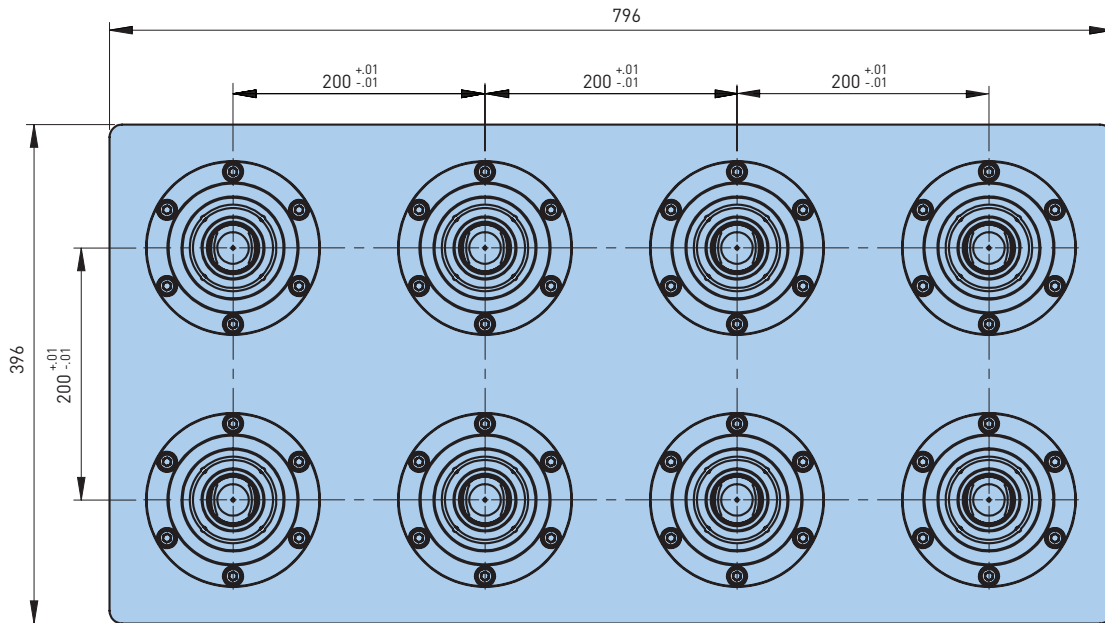
E600A



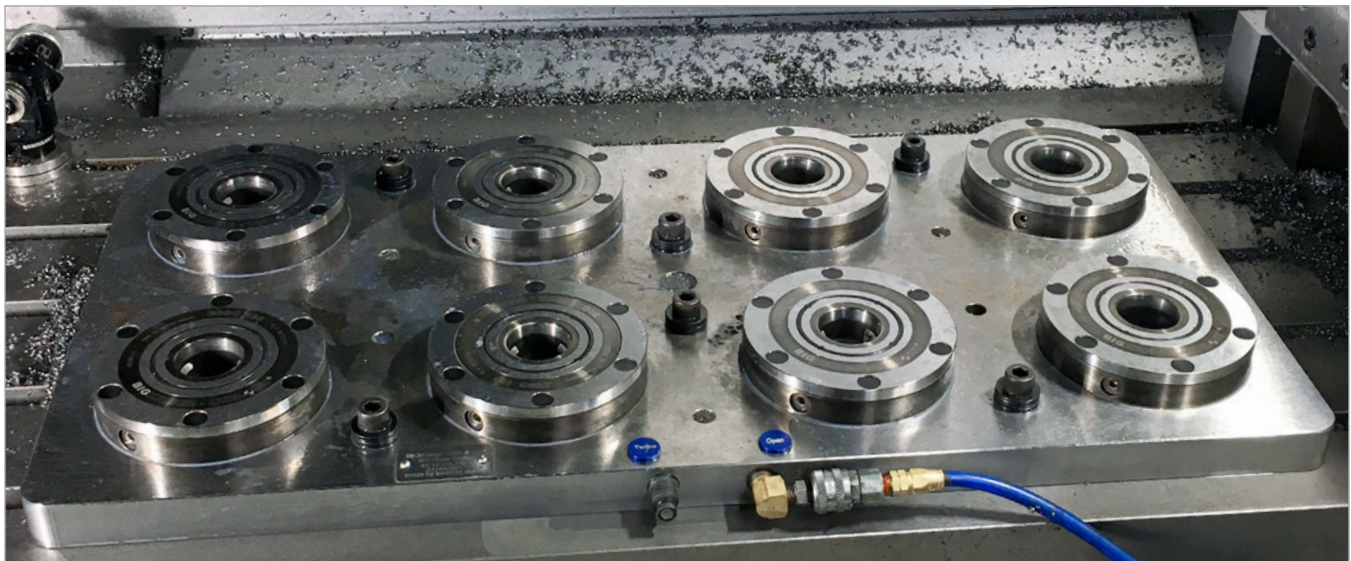
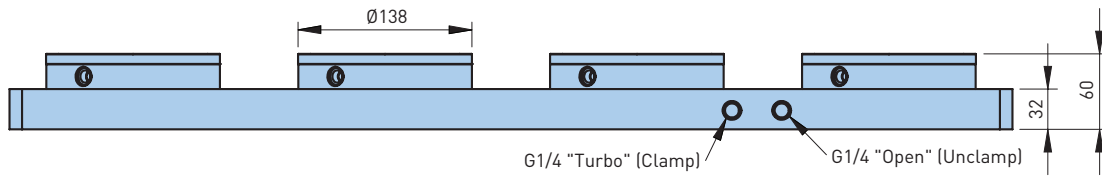
- All dimensions are in millimeters
- For detailed information on additional mounting hole locations, please consult the BIG DAISHOWA Engineering Dept.

Catalog Number
15.270.374A

E800A



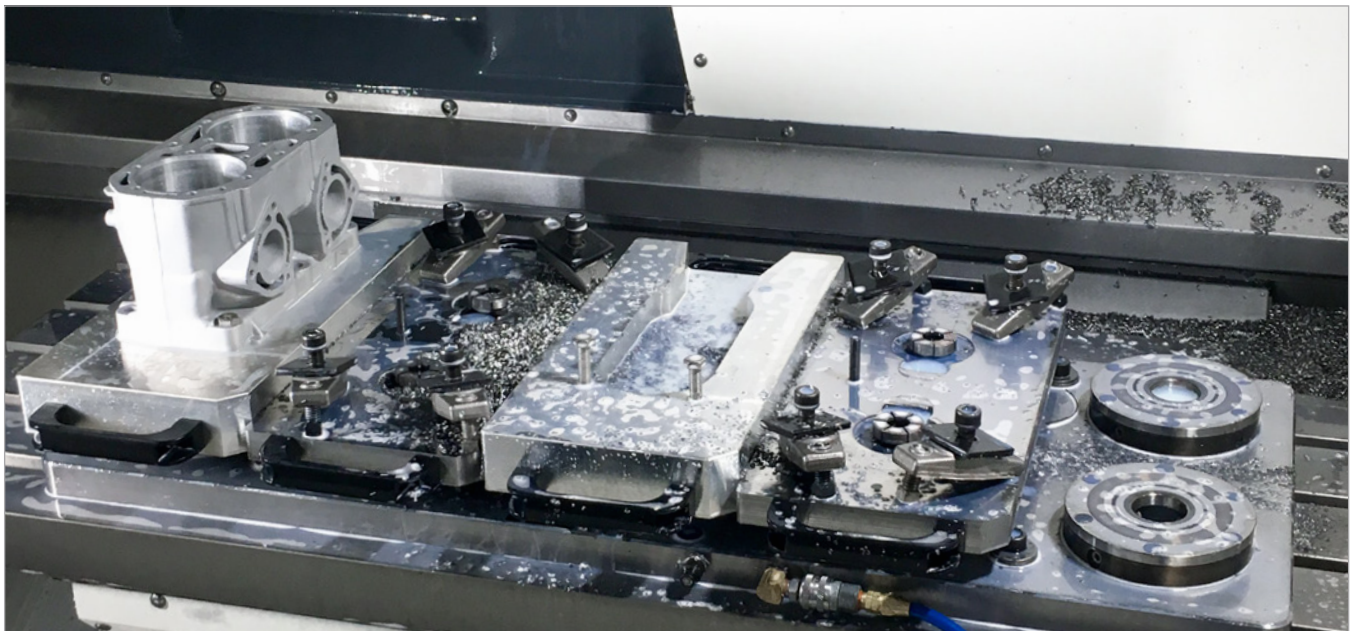
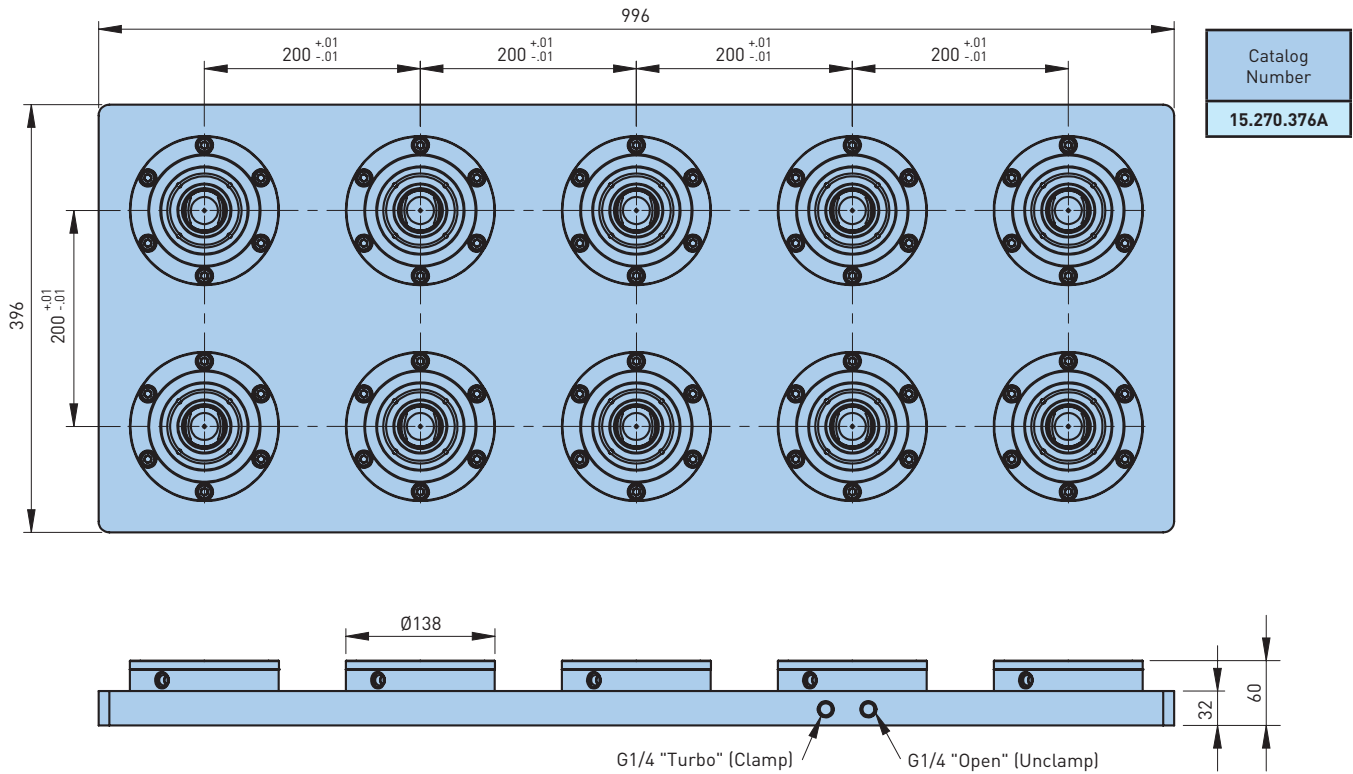
Catalog Number
15.270.375A



The ERGO E800A preassembled bases shown with custom mounting holes to match the T-slot pattern of the customer's machine.

- All dimensions are in millimeters
- For detailed information on additional mounting hole locations or base modifications, please consult the BIG DAISHOWA Engineering Dept.

E1000A



The ERGO E1000A preassembled base shown with four customer-designed fixtures. Standard fixture pallets are available in either aluminum or steel and various sizes and thickness. See pg. 49.

- All dimensions are in millimeters
- For detailed information on additional mounting hole locations, please consult the BIG DAISHOWA Engineering Dept.



PROVIDES HIGH ACCURACY LOCATION

CLAMPING KNOBS

OVERVIEW 40

SYSTEM 40 KNOBS 41-43

SYSTEM 25 KNOBS 44-45

SYSTEM 68 KNOBS 46

PROVIDES HIGH DEGREE OF FLEXIBILITY

CLAMPING BALLS

5-AXIS STABILIZER BALLS 47-48

PROVIDED FULLY ASSEMBLED

PALLETS

SYSTEM 40 PALLETS 49-51

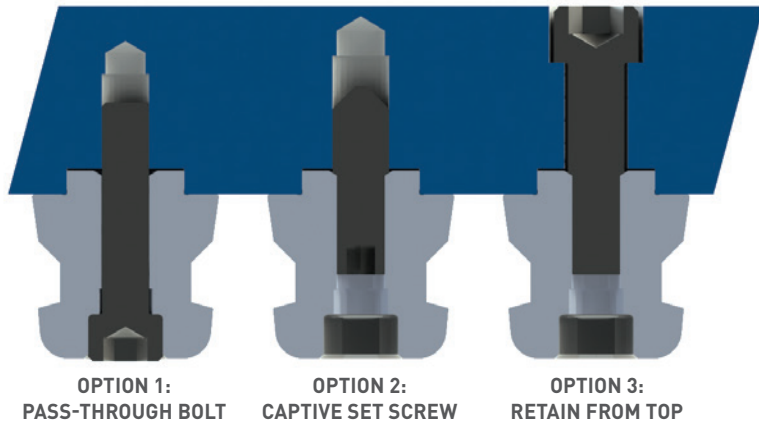
CLAMPING KNOBS

Can be attached to fixtures or directly to workpieces. Our standard knobs can be mounted in a blind hole from the bottom or pulled up from the top. Standard clamping knobs accept the following:

OPTION 1: PASS-THROUGH BOLT – The bolt is inserted past the clamping knob and threads into the workpiece or fixture.

OPTION 2: CAPTIVE SET SCREW – The set screw is captivated between the knob and the workpiece or fixture.

OPTION 3: RETAIN FROM TOP – The bolt passes through the workpiece or fixture and pulls the knob into position.



CAUTION

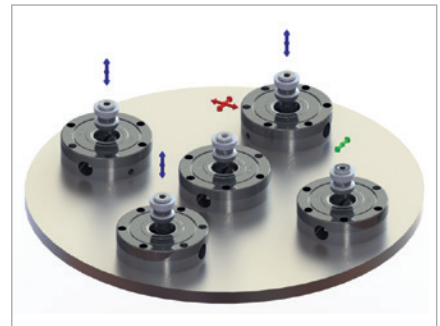
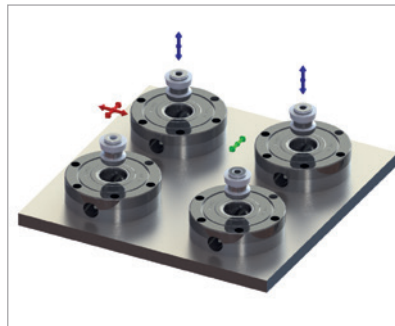
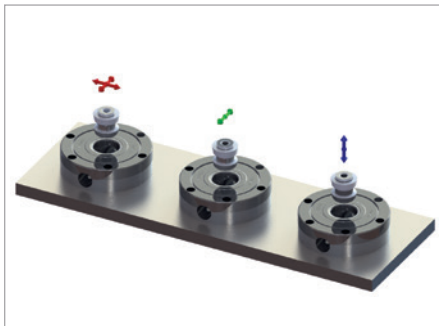
Option 2 not recommended for B Type.

Standard clamping knobs have a metric positioning boss which is $\varnothing 25\text{mm}$ and ground to a fit of h6. This boss is 5mm tall. The overall measurements of the clamping knob is $\varnothing 40\text{mm}$ by 40mm tall.

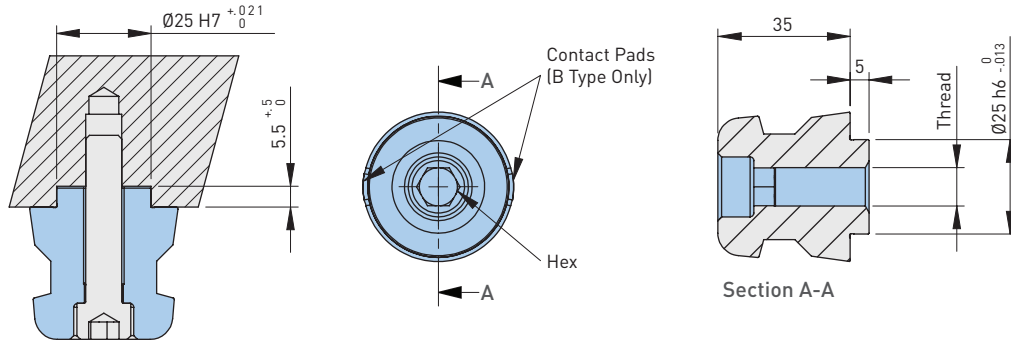
The SBA Knob is ground to fit with the center ground taper of the chuck. This fit establishes centerline location. This location will repeat to better than $\pm 0.0002"$ (.005mm).

The SBB Knob is ground like a diamond pin and orients your work relative to the centerline of the SBA Knob.

The SBC Knob is ground undersize. It will bring the bottom of the workpiece or fixture down on the top of the UNILOCK chuck.



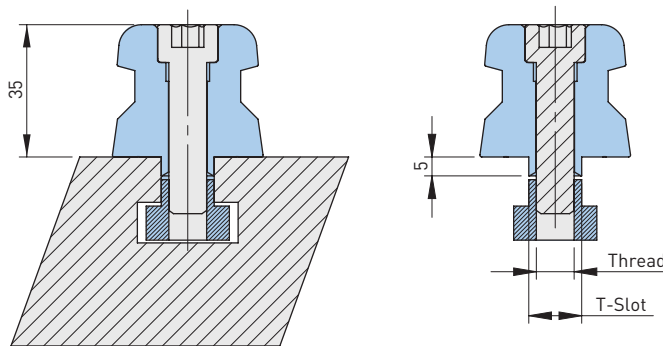
SYSTEM 40 KNOBS



Knob Type	Catalog Number	Description	Repeatability (in)	Internal Thread	Pass-Through Bolt Size	Hex
A	15.260.300	SBA—Absolute Position	.0002	M12	M10	10mm
B	15.260.301	SBB—Orientation	.0002	M12	M10	10mm
C	15.260.302	SBC—Undersized .1mm—Downward Clamping Only	.0040	M12	M10	10mm
CC	15.260.303	SBCC—Undersized .3mm—Downward Clamping Only	.0120	M12	M10	10mm
CC	15.260.304	SBCC—Undersized .6mm—Downward Clamping Only	.0240	M12	M10	10mm
A	15.260.400	SBA—Absolute Position	.0002	M16	M12	17mm
B	15.260.401	SBB—Orientation	.0002	M16	M12	17mm
C	15.260.402	SBC—Undersize .1mm	.0040	M16	M12	17mm
A	15.260.500	SBA—Absolute Position	.0002	M20	M14	17mm
A	15.260.501	SBB—Orientation	.0002	M20	M14	17mm
A	15.260.502	SBC—Undersize .1mm	.0040	M20	M14	17mm

- For inch options please consult the BIG DAISHOWA Engineering Dept.
- All dimensions are in millimeters

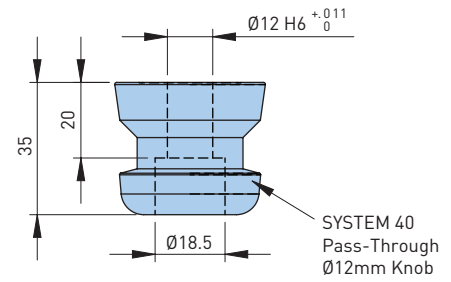
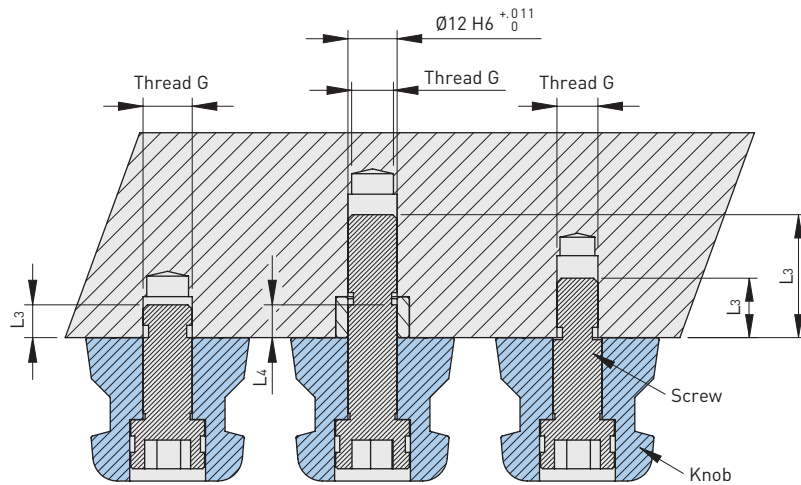
SYSTEM 40 T-SLOT KNOBS



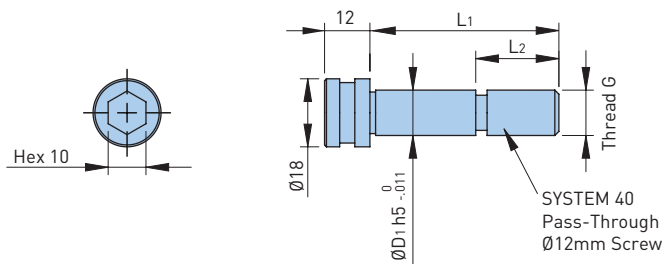
Knob Type	Catalog Number	Description	Repeatability (in)	Thread	T-Slot
A	15.250.360	SBA—Absolute Position	.0002	M10xP1.5	14mm
C	15.250.361	SBC—Undersized .3mm	.0040	M10xP1.5	14mm
A	15.250.366	SBA—Absolute Position	.0002	M12xP1.75	16mm
C	15.250.367	SBC—Undersized .3mm	.0004	M12xP1.75	16mm
A	15.250.362	SBA—Absolute Position	.0002	M12xP1.75	18mm
C	15.250.363	SBC—Undersized .3mm	.0040	M12xP1.75	18mm
A	15.250.364	SBA—Absolute Position	.0002	M12xP1.75	22mm
C	15.250.365	SBC—Undersized .3mm	.0040	M12xP1.75	20mm

- T-nuts and fasteners are included
- Inch t-slot versions available upon request
- All dimensions are in millimeters

SYSTEM 40 PASS-THROUGH Ø12MM KNOBS AND SCREWS



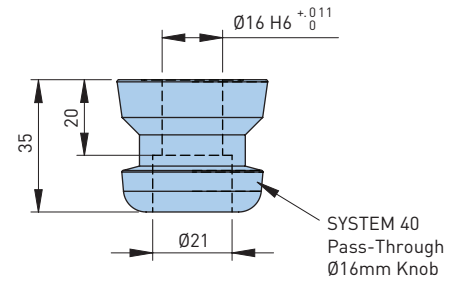
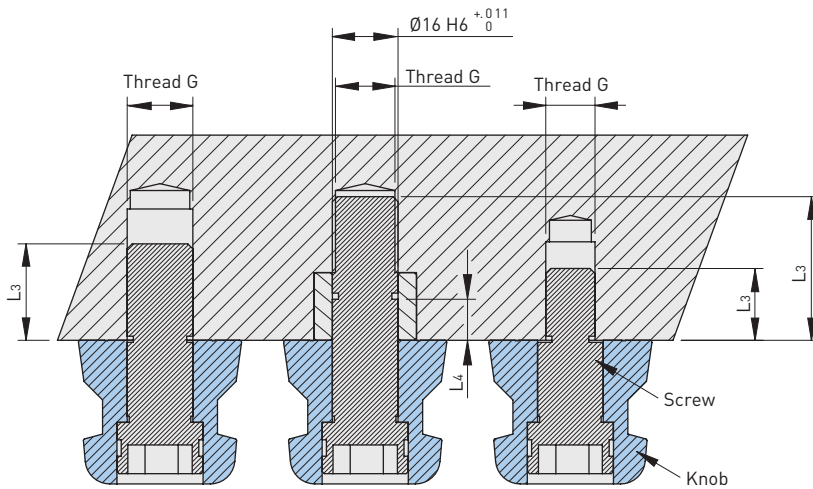
Knob Type	Knob Catalog Number
SBA	15.250.317
SBB	15.250.318
SBA	15.250.319



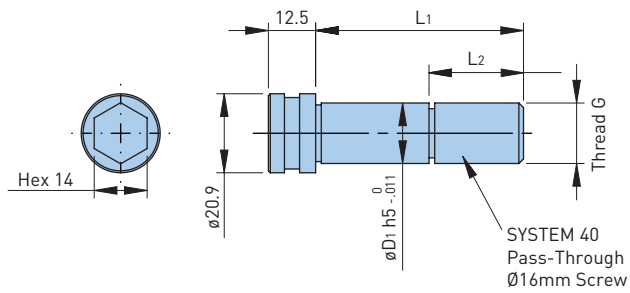
Screw Catalog Number	ØD1	Thread (G)	L1	L2	L3	L4
15.250.540	12	M12xP1.75	50.0	22.0	30.0	8.0
15.250.541	12	M12xP1.75	55.0	22.0	35.0	13.0

- All dimensions are in millimeters
- Other sizes available upon request; please consult the BIG DAISHOWA Engineering Dept.

SYSTEM 40 PASS-THROUGH Ø16MM KNOBS AND SCREWS



Knob Type	Knob Catalog Number
SBA	15.250.307
SBB	15.250.308
SBC	15.250.309



Screw Catalog Number	ØD1	Thread (G)	L1	L2	L3	L4
15.250.520	16	M16xP2	55.0	25.0	35.0	10.0
15.250.521	16	M16xP2	43.5	24.0	23.5	—
15.250.529	16	M12xP1.75	37.5	18.0	17.5	—
15.250.530	16	M12xP1.75	28.0	—	8.0	—
15.250.533	16	M10xP1.5	28.0	—	8.0	—

• All dimensions are in millimeters

SYSTEM 25 KNOBS

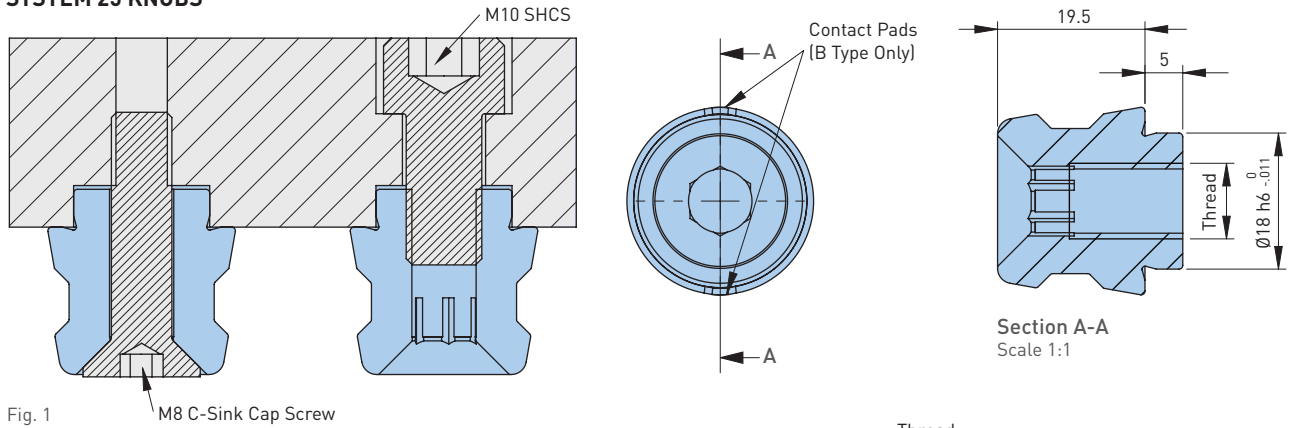


Fig. 1

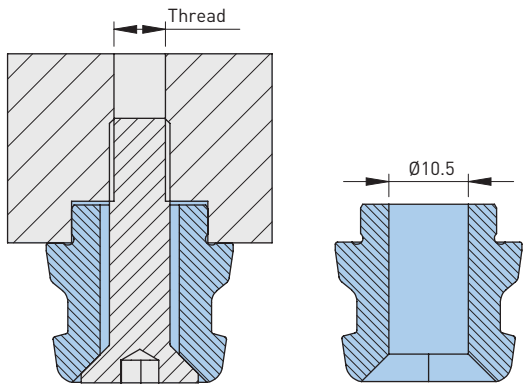


Fig. 2

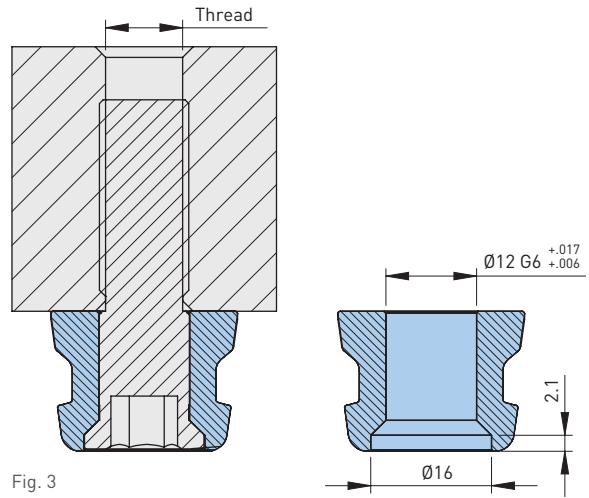
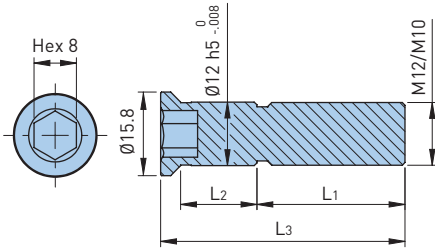


Fig. 3

Knob Type	Catalog Number	Description	Location Diameter	Internal Thread	Pass-Through Thread	Hex	Fig.	Weight (lbs)
A	15.255.400	SPA25—Absolute Position	Ø18 h6	M10	M8	8	1	.11
B	15.255.401	SPB25—Orientation						
C	15.255.402	SPC25—Undersized .1mm						
A	15.255.410	SPA25—Absolute Position	Ø18 h6	—	M8	—	2	.11
B	15.255.411	SPB25—Orientation						
C	15.255.412	SPC25—Undersized .1mm						
A	15.255.420	SPA25—Absolute Position (Thru Bore)	Ø12 G6	—	M8/M10/M12	—	3	.11
B	15.255.421	SPB25—Orientation (Thru Bore)						
C	15.255.422	SPC25—Undersized .1mm (Thru Bore)						

- All dimensions are in millimeters
- See pg. 88 for compatible chucks

SYSTEM 25 SHOULDER SCREWS



Catalog Number	Shoulder Diameter	Thread	L1	L2	L3	Weight (lbs)
15.255.425	Ø12 h5	M12xP1.75	28.0	14.4	45.7	.04
15.255.426			17.5		35.7	
15.255.427		M10xP1.5	14.5		32.7	
15.255.428		M8xP1.25	11.5		29.7	

- All dimensions are in millimeters
- Other sizes available upon request; please consult BIG DAISHOWA Engineering Dept.

SYSTEM 68 KNOBS

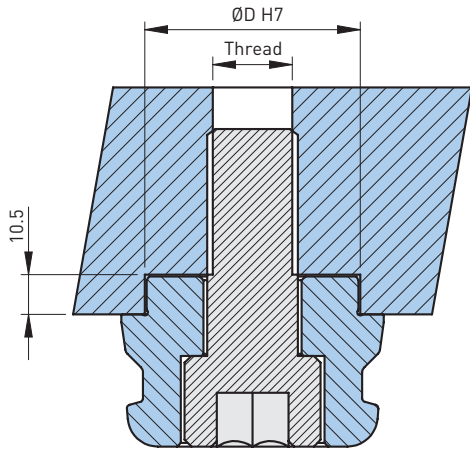


Fig. 1

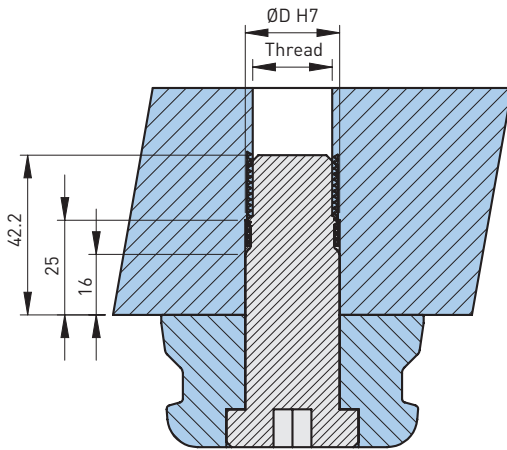
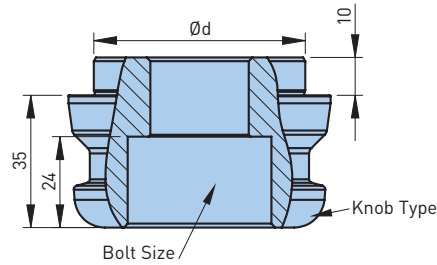
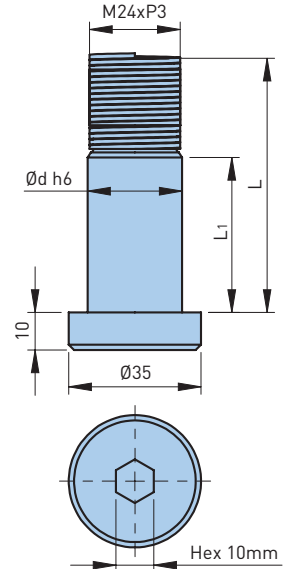
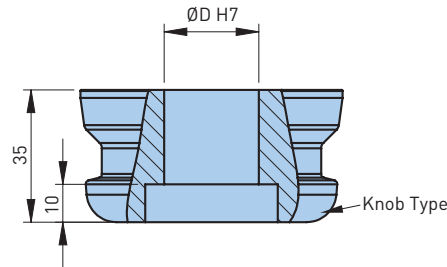


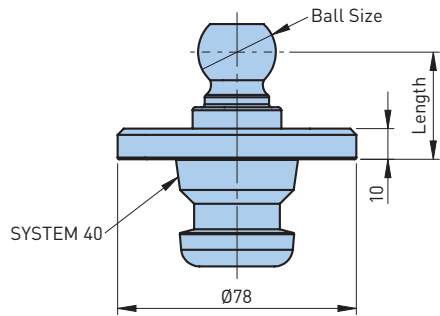
Fig. 2



Knob Type	Catalog Number	Fig.	Description	Bolt Thread	ØD/Ød
A	15.500.593	1	SBA—Absolute Position	M24	57H7/57h6
B	15.500.594	1	SBB—Orientation	M24	57H7/57h6
C	15.500.595	1	SBC—Retention Only	M24	57H7/57h6
A	15.500.596	1	SBA—Absolute Position	M30	57H7/57h6
B	15.500.597	1	SBB—Orientation	M30	57H7/57h6
C	15.500.598	1	SBC—Retention Only	M30	57H7/57h6
A	15.500.603	1	SBA—Absolute Position	M24	25H7/25h6
B	15.500.604	1	SBB—Orientation	M24	25H7/25h6
C	15.500.605	1	SBC—Retention Only	M24	25H7/25h6
A	15.500.606	2	SBA—Absolute Position	M24	25H7/25h6
B	15.500.607	2	SBB—Orientation	M24	25H7/25h6
C	15.500.608	2	SBC—Retention Only	M24	25H7/25h6

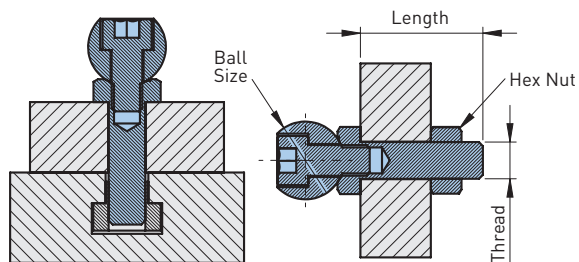
• All dimensions are in millimeters

5-AXIS STABILIZER BALL TO KNOB ADAPTOR



Catalog Number	Description	Ball Size	Length (mm)	Weight (lbs)
15.252.060	SBA40	Ø25.4	35	1.5
15.252.061	SBA40	Ø50	24	2.4

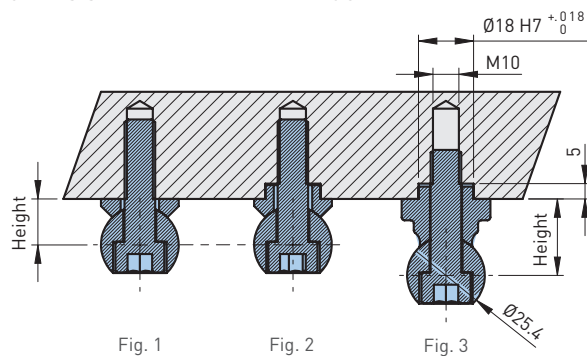
5-AXIS STABILIZER BALL MOUNTING SCREW



Catalog Number	Thread	Ball Size	Length (mm)	Weight (lbs)
15.252.080	M12xP1.75	Ø25.4	40	.4
15.252.081	M14xP2			.4
15.252.082	M16xP2			.4
15.252.083	M18xP2.5			.4
15.252.084	M20xP2.5	Ø50	50	.4
15.252.085	M24xP3		.9	
15.252.086	M24xP3	Ø50	50	1.2
15.252.087	M30xP3.5		60	1.3
15.252.089	M36xP4		70	1.5

• T-nut not included

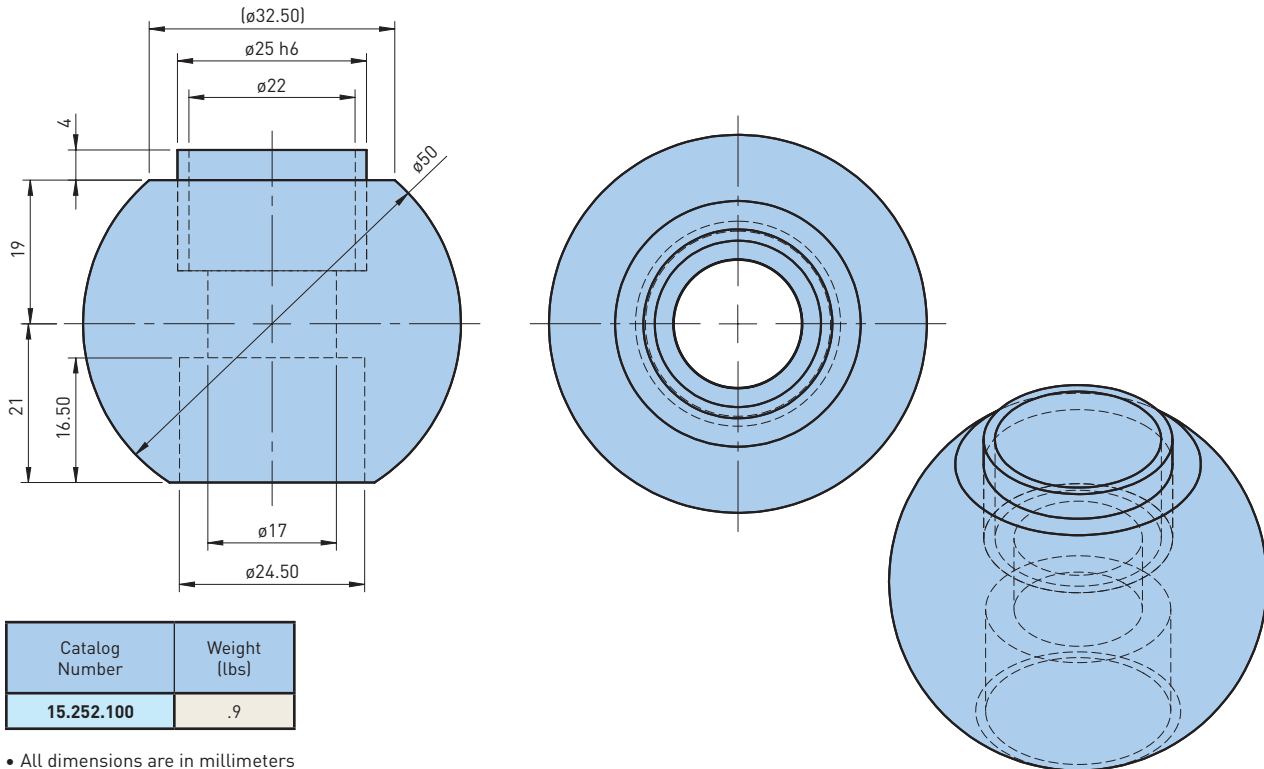
5-AXIS STABILIZER BALL AND COLLAR



Catalog Number	Fig.	Description	Height (mm)	Weight (lbs)
15.252.380	1	5-Axis Stabilizer Ball and Collar	15	.1
15.252.381	2	5-Axis Stabilizer Ball and Collar with Locating Pilot	15	.2
15.252.382	3	5-Axis Stabilizer Ball and Collar with Locating Pilot	25	.2
15.252.005*	1/2/3	5-Axis Stabilizer Ball and Collar Set (Ø25.4)	15 or 25	.4

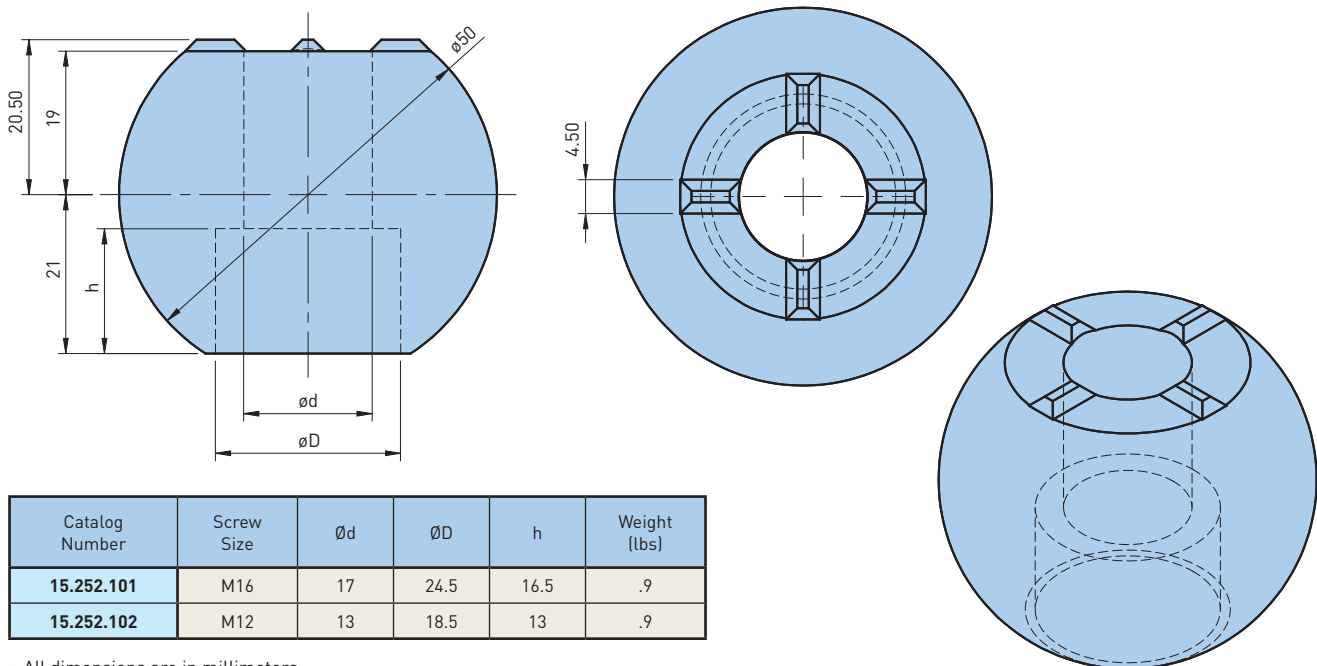
*Set includes 1 ball and 3 collars
 • See pg. 48 for Ø50 balls

5-AXIS STABILIZER BALL LOCATION TYPE



- All dimensions are in millimeters
- M16 x L50 SHCS not included

5-AXIS STABILIZER BALL GRIP TYPE



- All dimensions are in millimeters
- Mounting screw not included
- This will mare surfaces and should be used with rough surfaces

SYSTEM 40 PALLETS

Preassembled with Knobs and Handles

Pallets are provided fully assembled with their required quantity of UNILOCK knobs and lifting handles, and are available in either steel or aluminum.

SYSTEM 40 MONO PALLET

The UNILOCK ESM 138 chuck accepts a 14mm key or pin. The UNILOCK ESM 176 chuck accepts a 25mm key or pin.

CAN BE CONFIGURED FOR THE FOLLOWING CHUCKS

- ESM/EFM/ERGO 138
- MLM/MCM 150
- ISM 160
- MSM 170
- ESM 176 TURBO
- DC 200

SYSTEM 40 DUO & QUAD PALLET

Duo and Quad pallets with load on the UNILOCK QC 400 or any set of chucks on 200mm spacing.

Can be configured for the UNILOCK ERGO base stations

While loading and unloading work into the fixture, the holes in the bottom of the pallet mate to setup plates that stabilize the pallet for safe operation outside of a UNILOCK chuck.

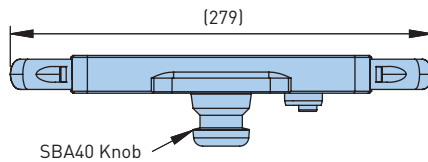
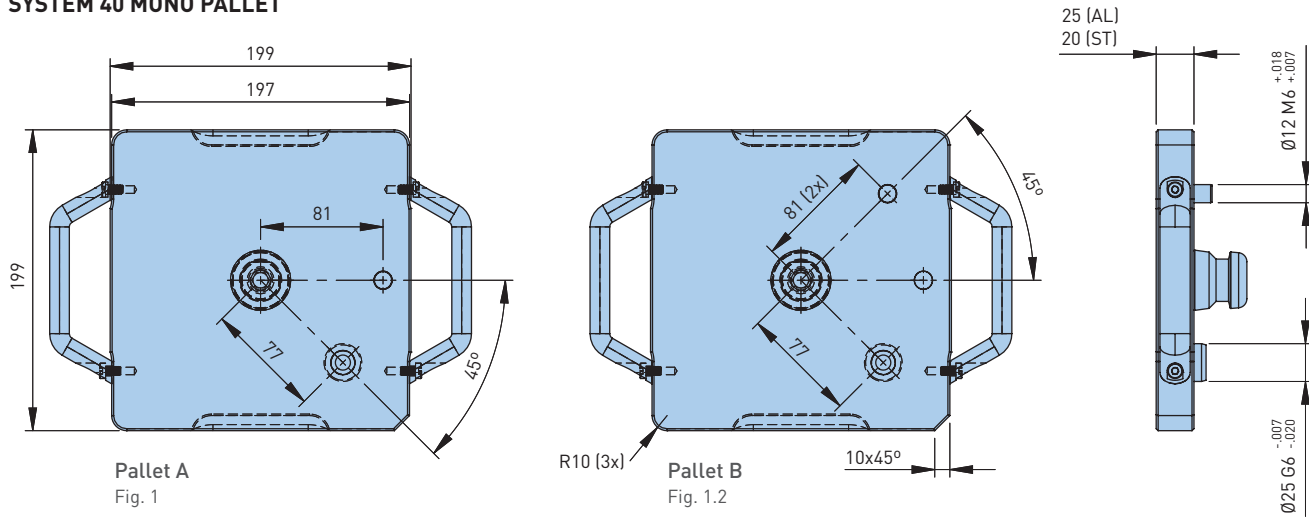


Pallet Type	Pallet Name	Catalog Number	Material	Thickness (mm)	Length (mm)	Width (mm)	Length w/Handles (mm)	#12 H7 of Pin Holes	Weight (lbs)
MONO*	SPA200	15.260.540A	STEEL	20	199	199	279	0° (1x)	9.3
		15.260.540B						0° & 45° (2x)	
MONO*	APA200	15.260.640A	ALUM	25	199	199	279	0° (1x)	4.9
		15.260.640B						0° & 45° (2x)	
DUO	SAP400	15.250.645A	STEEL	20	399	159	481	—	23.4
	APA400	15.260.645A	ALUM	25				—	11.2
TRIO	SPQ300	15.270.546A	STEEL	20	599	159	681	—	34.4
	APQ300	15.250.646A	ALUM	25				—	16.3
QUAD	SPQ400	15.270.544A	STEEL	20	399	399	481	—	61.7
	APQ400	15.250.644A	ALUM	25				—	26.5

*MONO pallets include Ø12mm pin (1x) and Ø25mm pin (1x); customer to install as needed

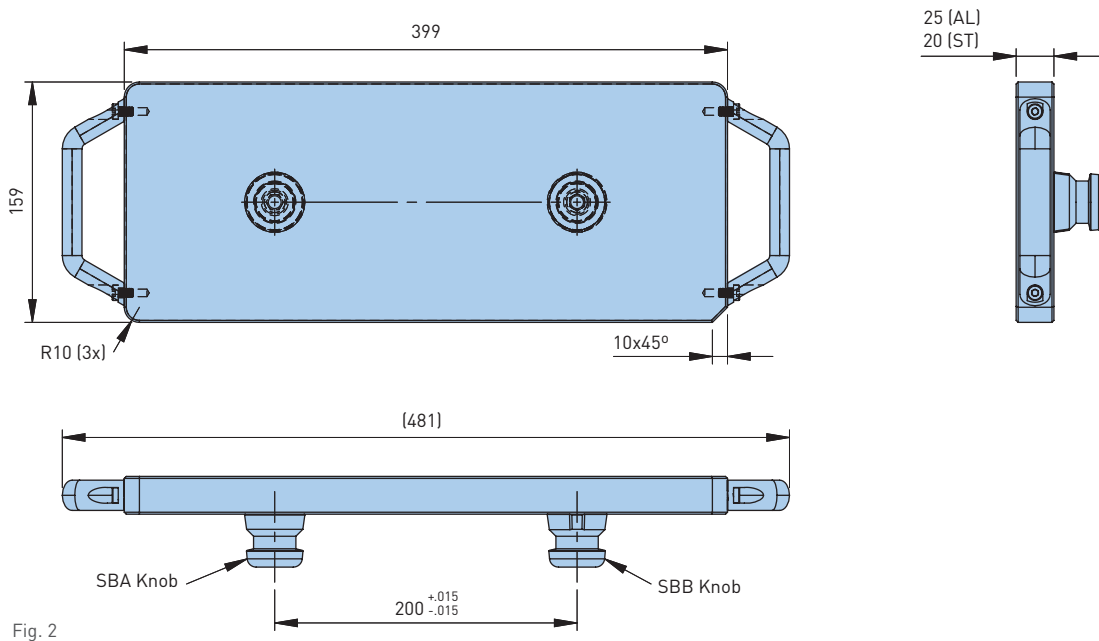
**For pallet compatibility to older base stations please contact the BIG DAISHOWA Engineering Dept. for assistance

SYSTEM 40 MONO PALLET



- Ø12mm pin (1x) and Ø25mm pin (1x); customer to install as needed
- For pallet compatibility please contact the BIG DAISHOWA Engineering Dept. for assistance

SYSTEM 40 DUO PALLET



- All dimensions are in millimeters

SYSTEM 40 TRIO PALLET

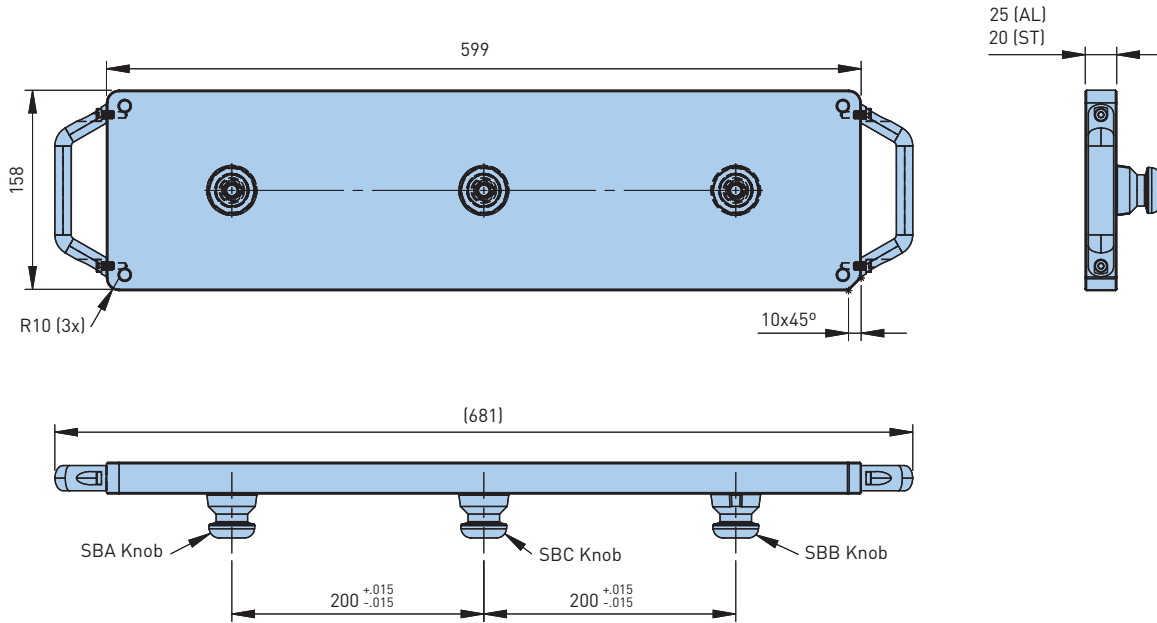


Fig. 3

SYSTEM 40 QUAD PALLET

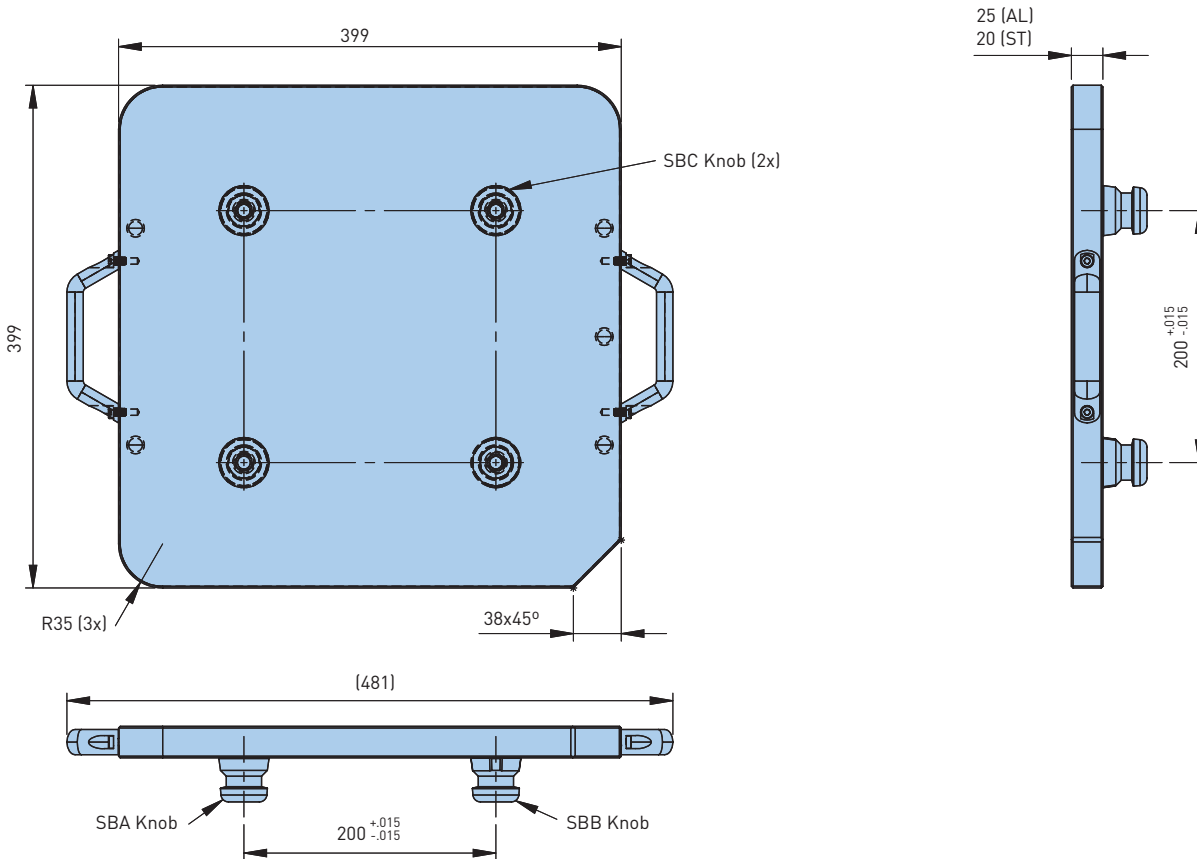
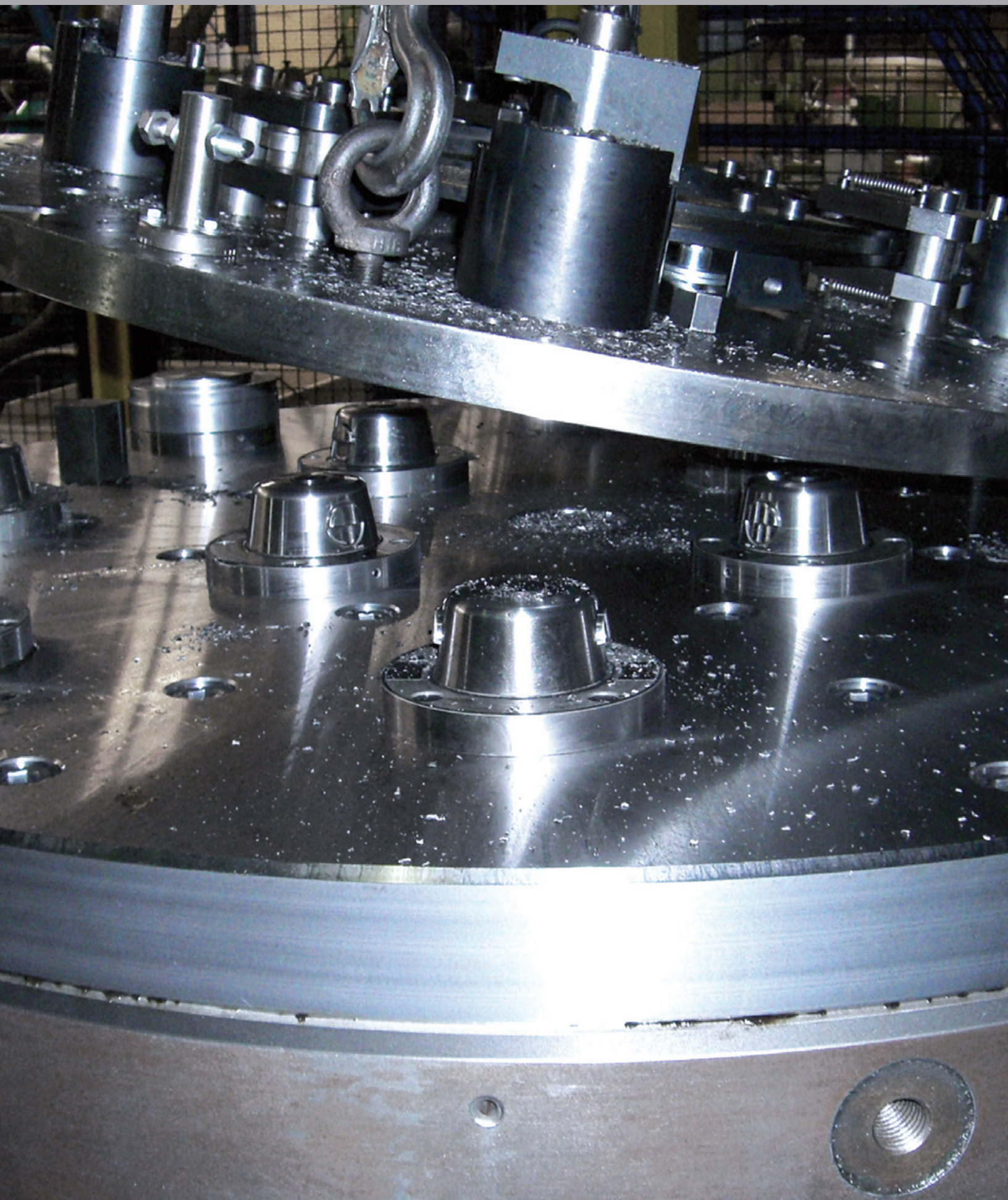


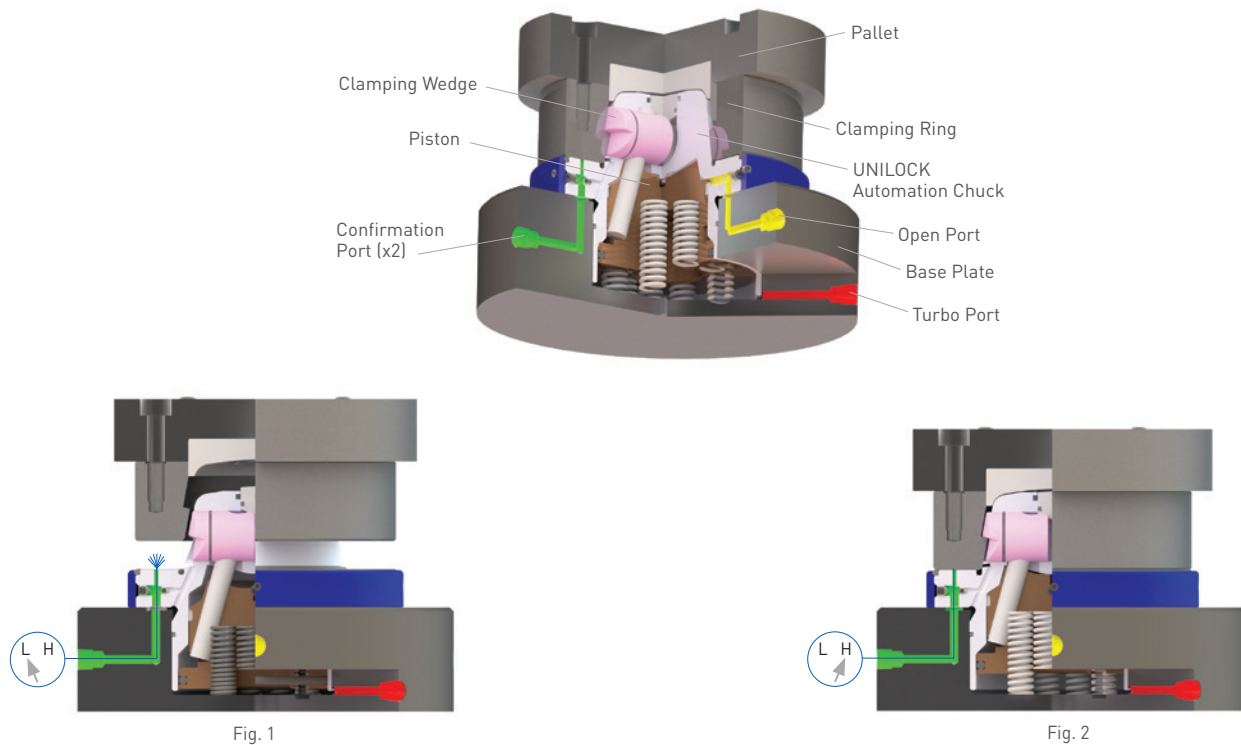
Fig. 4

• All dimensions are in millimeters



CONFIRM CLAMPING RING/FIXTURE VIA AIR PRESSURE MONITORING AUTOMATION CHUCKS

ESA 120/70	54-55
ESA 110	56-57
NSA 125	58-59
AUTOMATION PALLET ASSEMBLIES	60



The clamping chuck has a ground cone projecting out of its base that is used to establish centerline. Elevation is controlled with small raised pads surrounding the cone. They reduce the surface area on which debris and chips can contaminate the positioning and clamping process.

The clamping ring resides on the bottom of the pallet, a location that is not prone to collecting contamination when it is being stored in the robot or locked in a UNILOCK chuck.

When the chuck is in an open position (Fig. 1), an upward air blast is activated. These air passages project onto the bottom of the clamping ring to assist in the cleaning process. As the pallet nears its final position, the restriction of the upward air flow is redirected onto the contact surface (Fig. 2).

The air passages are restricted once the pallet is clamped. This restriction can be measured and used to verify pallet presence.

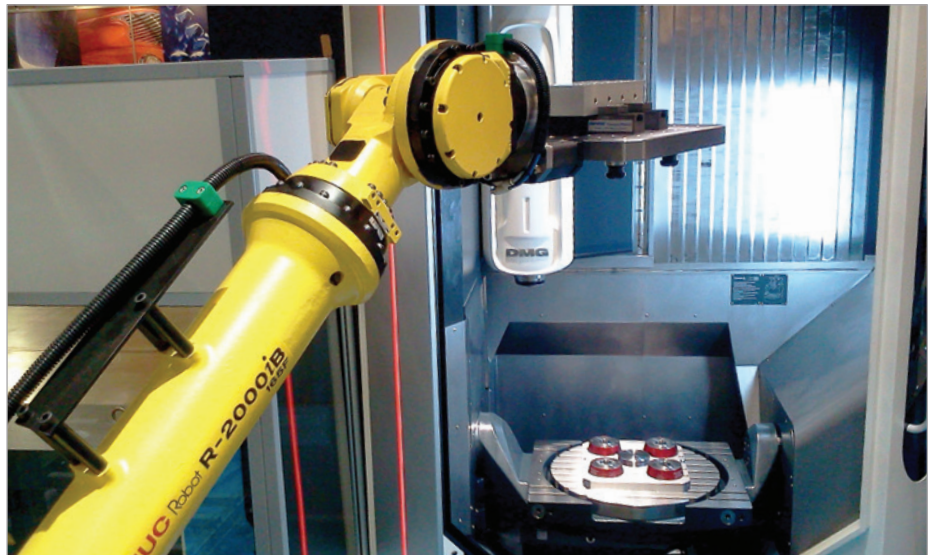
ESA 120/70

For Automatic Pallet Loading

Open and turbo functions from the original system and all of the properties from the automation series allow it to be monitored by a control. With the original SYSTEM 40 knobs, it is a more economical option for automatic pallet loading of pre-existing fixtures.

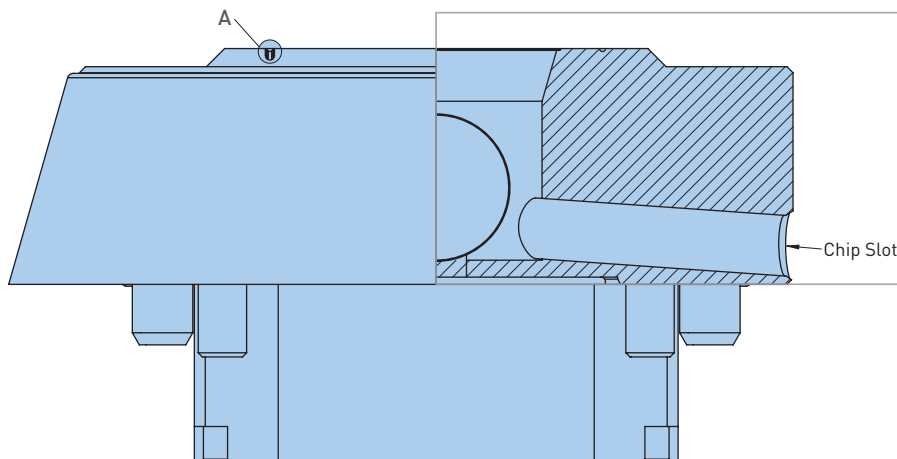
FEATURES

- Uses standard knobs
- Integrated coolant output
- Reduced ring support with sealing air
- Turbo assist for increased holding power



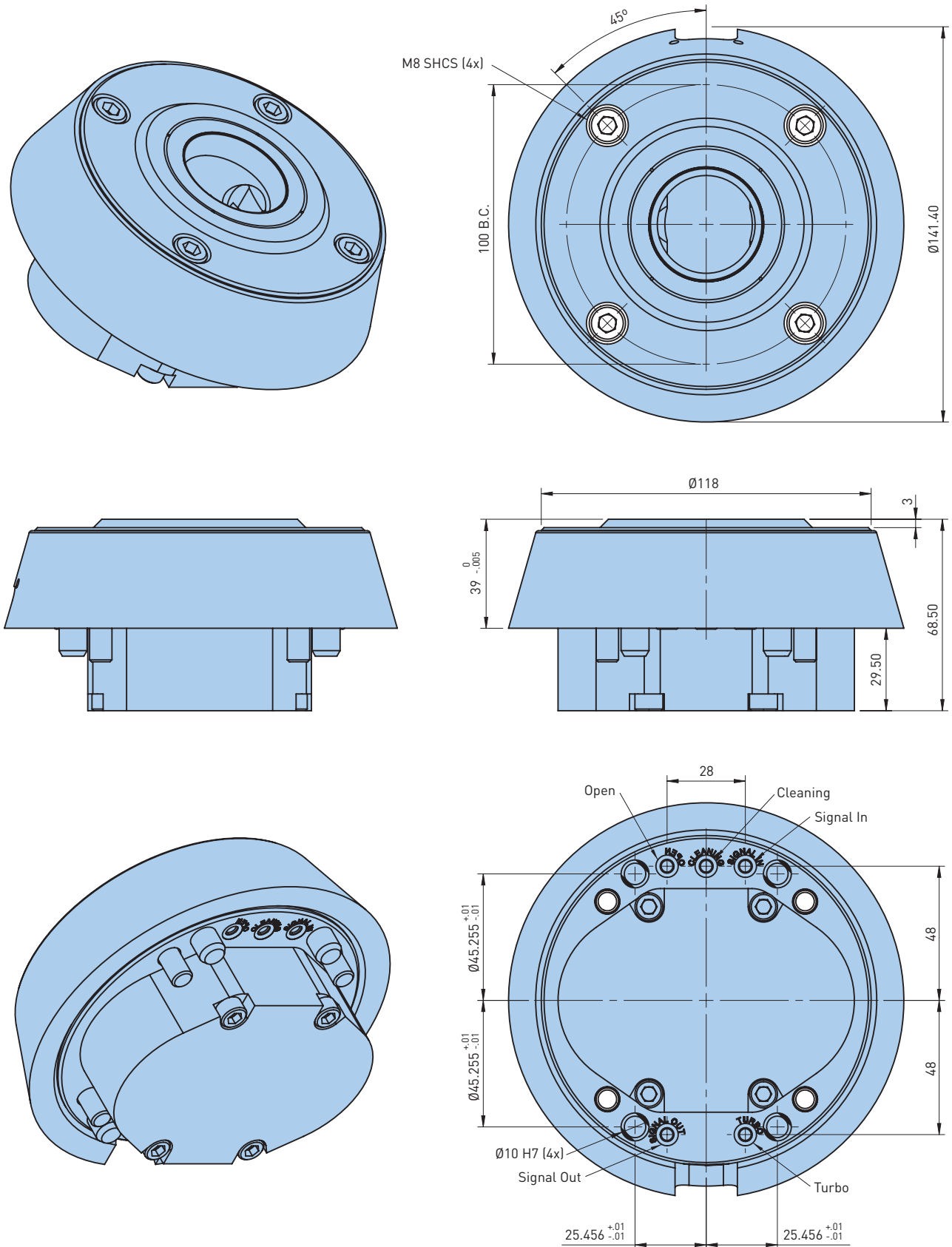
Catalog Number	Description	Notch (Width x Qty)	Recommended Bolt Sizes					Clamping Force (lbs)		Air Connection		Weight (lbs)
			M10	M12	M16	M20†	M24†	Spring Only	Turbo Assist	Port Size	Flange	
15.277.200	ESA 120/70	—	✓	✓	—	—	—	660-880	1,980-2,200	—	✓	6.3

†Optional



ACCESSORIES





- All dimensions are in millimeters
- Please consult the BIG DAISHOWA Engineering Dept. for detailed mounting instructions

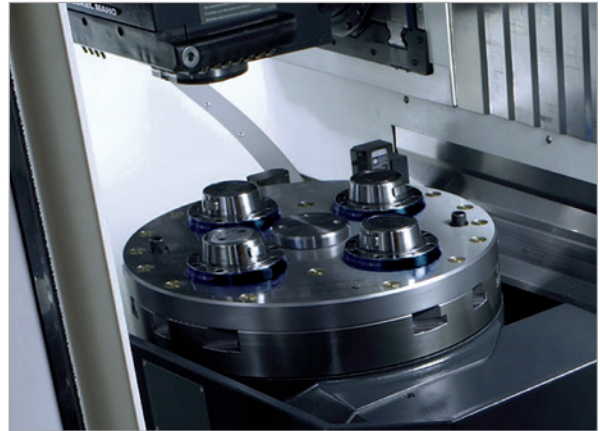
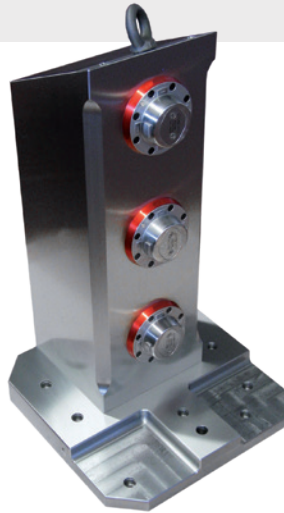
ESA 110

For the Verification of a Pallet

Can be used as a single or multiple chuck solution. Pallets seal off air passages allowing for the verification of a pallet through back pressure monitoring.

FEATURES

- Tapered chuck eases cleaning
- Turbo assist clamping option
- Air blast cleaning passages
- Air verification of pallet presence
- Four elevated support pads



ACCESSORIES



KNOBBS
PG. 40

AIR FITTINGS
PG. 104

Catalog Number	Chuck Model	Clamping Force (lbs)		Air Connection		Weight (lbs)
		Spring Only	Turbo Assist*	Port Size	Flange	
15.277.300	ESA 110	660-880	3,080-3,300	—	✓	4.8

- *Sealed pocket required for turbo assist
- Screws, screw covers and O-rings included

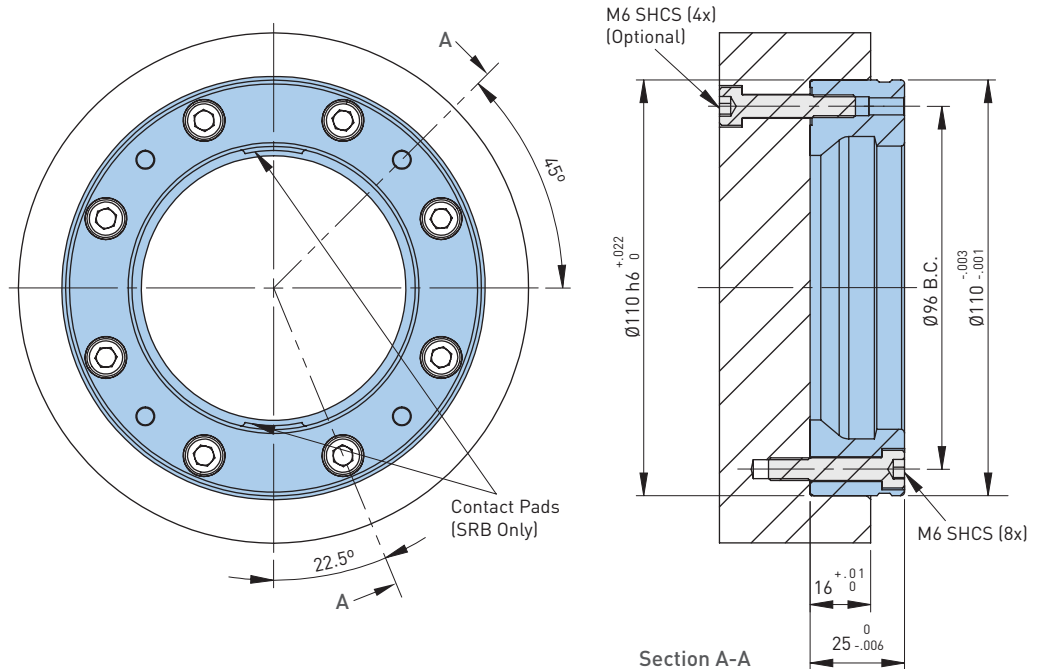
CLAMPING RING

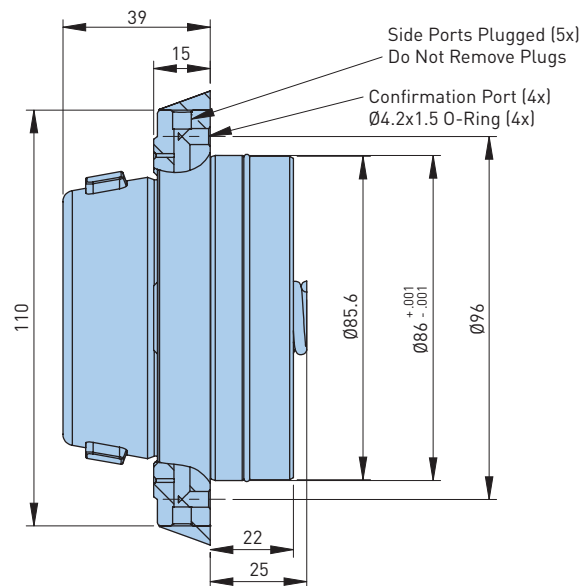
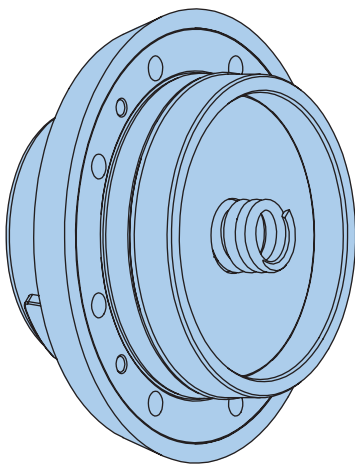
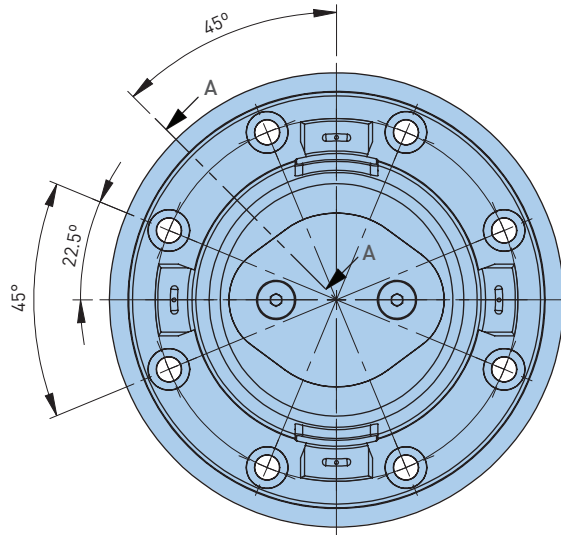
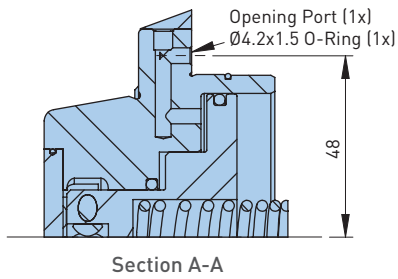
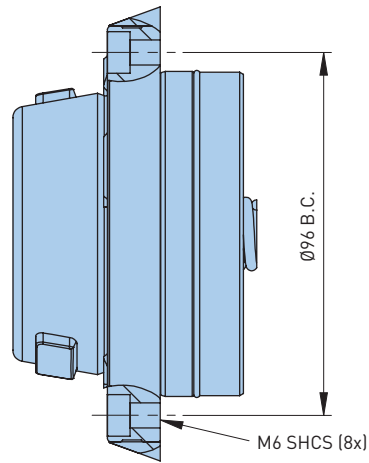
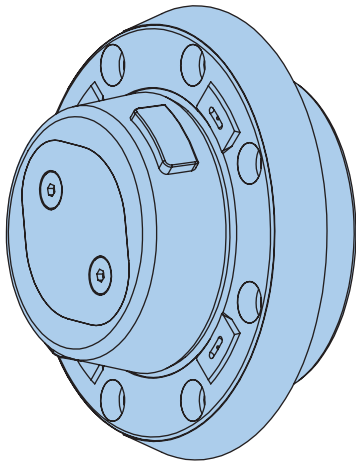
Ring Type	Catalog Number
SRA 110	15.277.030
SRB 110	15.277.031
SRC 110	15.277.032

- Screws included



- All dimensions are in millimeters





- All dimensions are in millimeters
- Please consult the BIG DAISHOWA Engineering Dept. for detailed mounting instructions

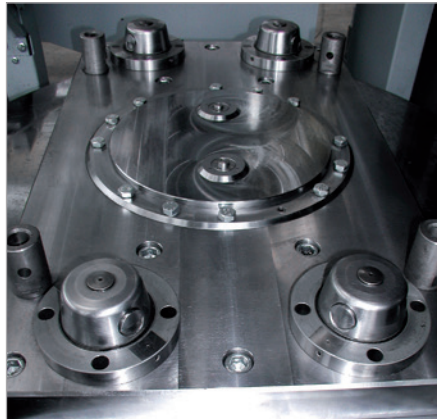
NSA 125

Air Verification of Pallet Presence

Can be used as a single or multiple chuck solution. Pallets seal off air passages allowing for the verification of a pallet through back pressure monitoring.

FEATURES

- Tapered chuck eases cleaning
- Turbo assist clamping option
- Air blast cleaning passages
- Air verification of pallet presence
- Two elevated support pads



ACCESSORIES



Catalog Number	Description	Clamping Force (lbs)		Air Connection		Weight (lbs)
		Spring Only	Turbo Assist*	Description	Flange	
15.277.125	NSA 125	1,100-1,350	3,300-3,740	—	✓	7.9

- *Sealed pocket required for Turbo Assist
- Screws, screw covers and O-rings included

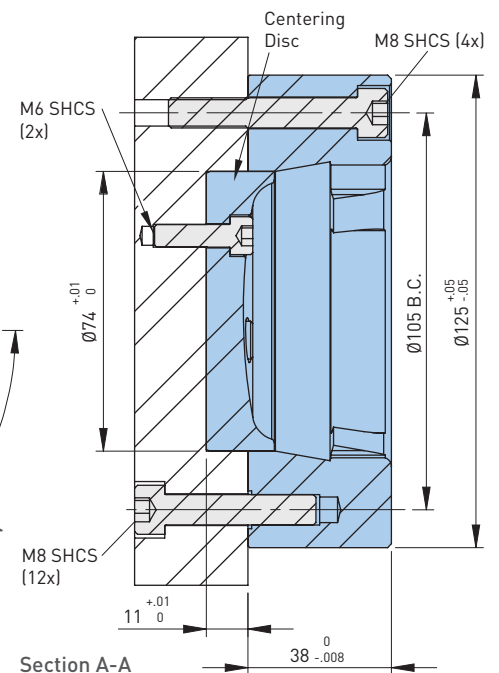
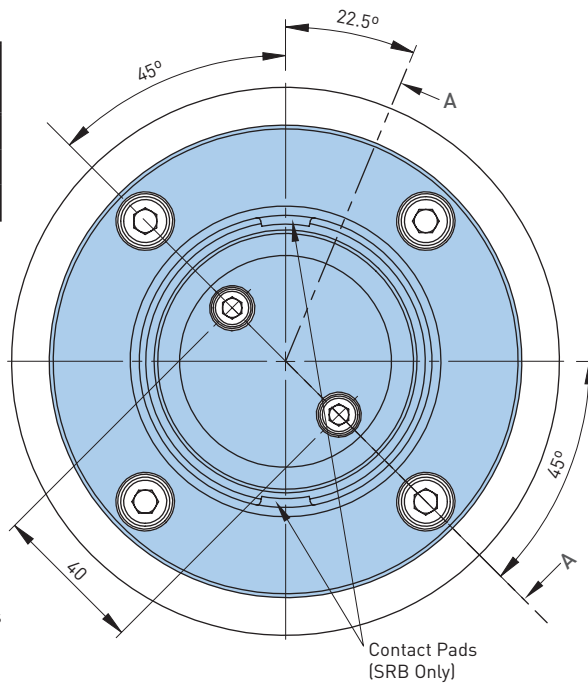
CLAMPING RING

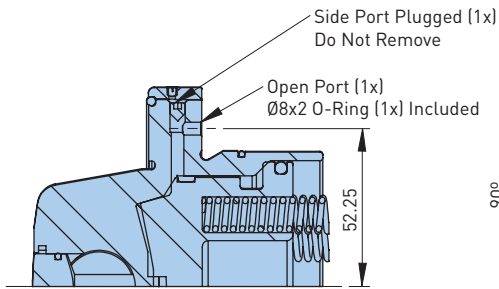
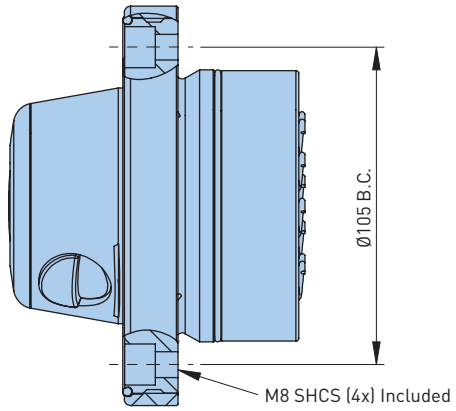
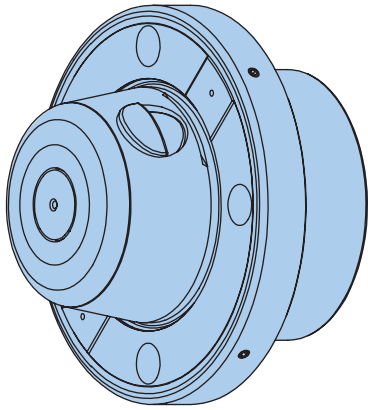
Ring Type	Catalog Number
SRA 125	15.277.001
SRB 125	15.277.002
SRC 125	15.277.003

- Screws included

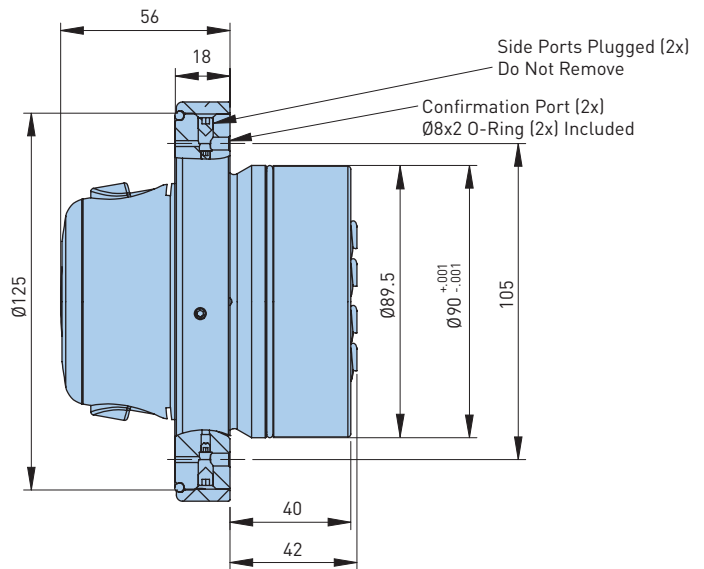
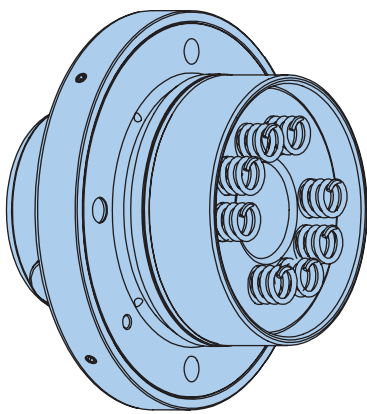
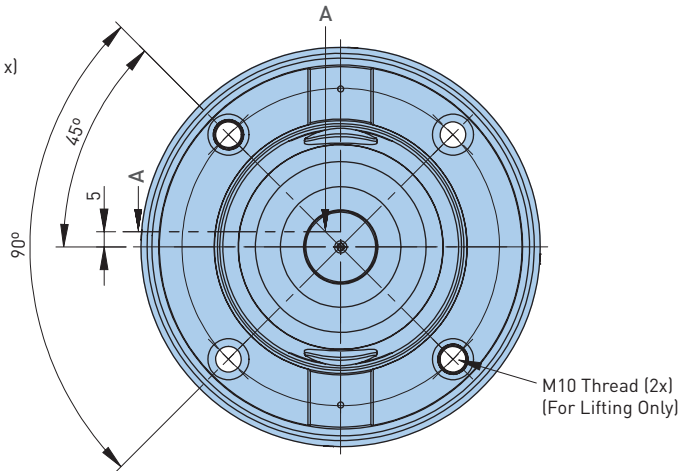


- All dimensions are in millimeters





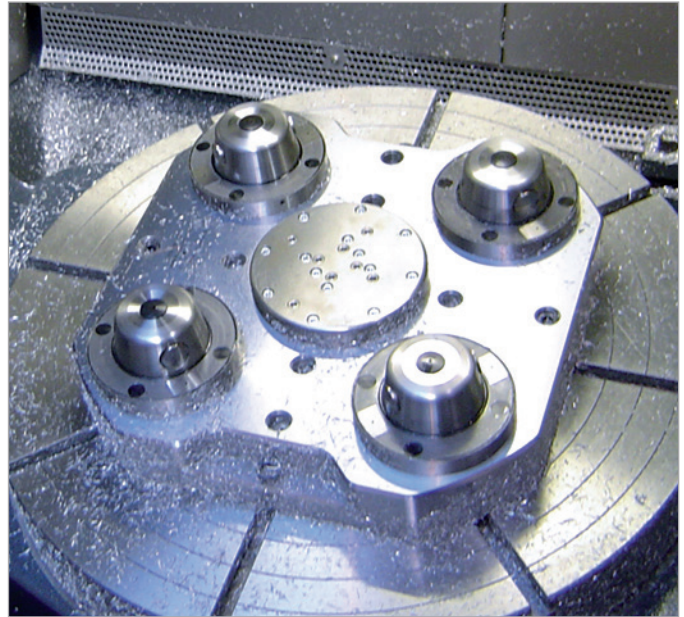
Section A-A



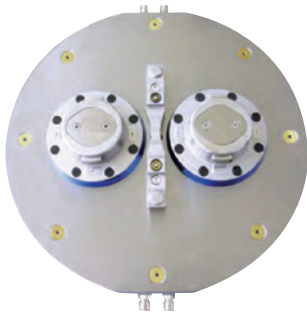
- All dimensions are in millimeters
- Please consult the BIG DAISHOWA Engineering Dept. for detailed mounting instructions

AUTOMATION PALLET ASSEMBLIES

Complete pallet assemblies are available for use in mono, duo and quad configurations. For companies opting to produce their own pallets, all components can be purchased individually. The robot gripper couplings are also available.



DUAL CLAMPING STATIONS



DSA 110



DPA 110

QUAD CLAMPING STATIONS



QSA 110



QPA 110



QSA 125



QPA 125





PROVIDES FLEXIBILITY AND FUNCTIONALITY

MULTI-AXIS SYSTEMS

OVERVIEW	64-65
5-AXIS BASE	66-67
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5-AXIS ER COLLET CHUCKS	86
SERRATED ADAPTERS	87
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5-AXIS SYSTEMS

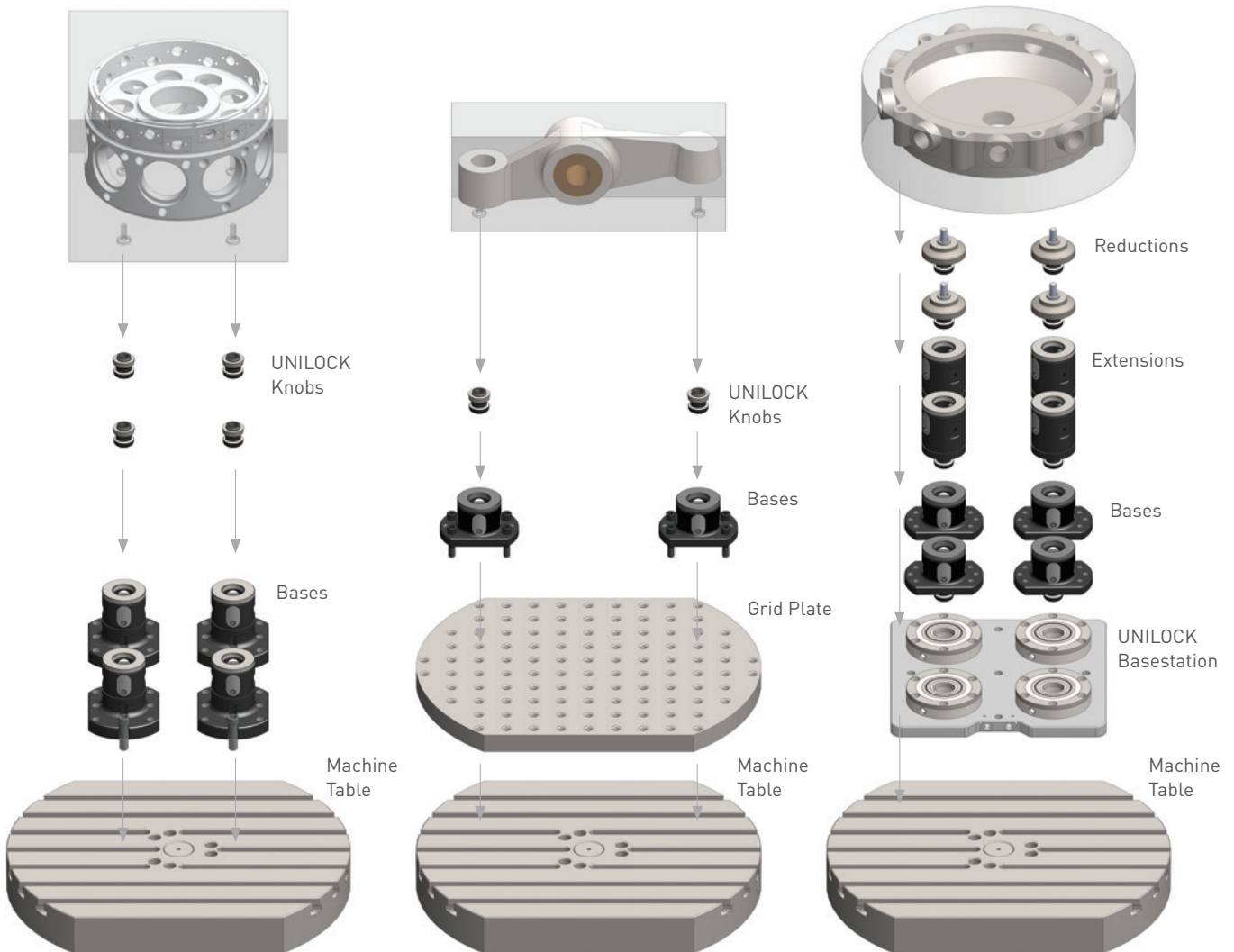
When and Where You Need It

If your optimal work zone is directly over the center of the machine table, our low-profile grid plates with integrated UNILOCK zero-point clamping systems are available, out of the box, as turnkey solutions. By offering cap screw and dowel pin technology intermixed with zero-point UNILOCK chucks, our base plates allow you to quickly load virtually any workholding product, including 5-axis vises and dovetail clamping solutions.

If the workpiece needs to be elevated above the table and that feature is not built into the workholding component, UNILOCK can be used to raise the workholding or the workpiece. UNILOCK clamping knobs can also be attached directly to the bottom of the workpieces and within 25mm of the machining edge.

UNILOCK zero-point clamping chucks can also be surface mounted directly to the machine table. With an overall height of 46mm, the UNILOCK ASM 146 and ISM 160 chucks are excellent candidates when you need to quickly bolt on a quick-change UNILOCK receiver. Our 5-axis clamping products, UNIVICE SYNCHRO, UNICLAMP and FIRST GRIP can also be directly affixed to a machine table, a grid plate or processed in UNILOCK chucks.

ASSEMBLY EXAMPLES

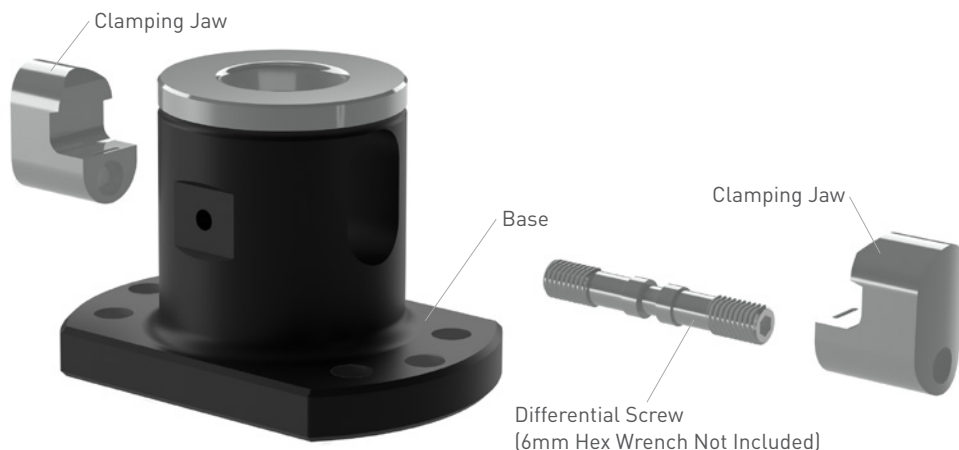
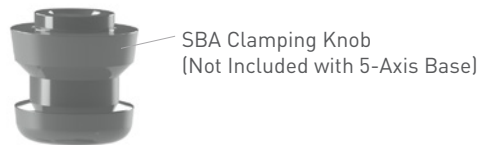


5-AXIS SYSTEM 40

UNILOCK Riser Chucks, Extensions & Reductions

UNILOCK riser chucks have a working diameter of 80mm. They are available on base plates or as stacking modules in heights of 75mm and 100mm. Base plate chucks have $\varnothing 12\text{mm}$ dowel pin holes that locate chucks on 40mm and 50mm grid patterns. Base chucks can also have clamping knobs attached for use in other UNILOCK chucks, or the stacking version can be used for elevation and clearance. All chucks open and close quickly with a single hex key.

The chucks are all capable of clamping any UNILOCK SYSTEM 40 clamping knob (40mm). By using a riser assembly, workpieces can be clamped 40mm from their edge. Extensions allow the clamping knob to be anchored 25mm from the workpiece edge. Extensions reduce the working diameter from 80mm to 50mm and add an additional elevation of 25mm or 50mm.



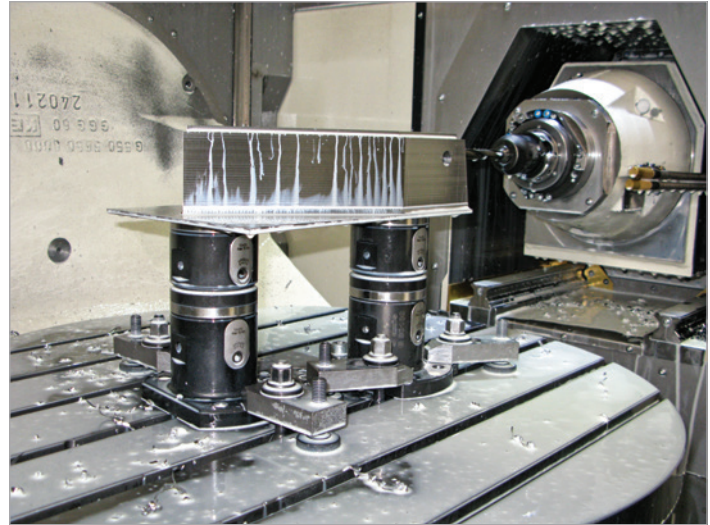
5-AXIS BASE

Integral Mounting Flange

Offered with a timing key for single base applications. Table adapters are also offered. These chucks can be mounted on 40mm, 50mm and M12 grids, as well as on UNILOCK clamping systems using UNILOCK clamping knobs.

FEATURES

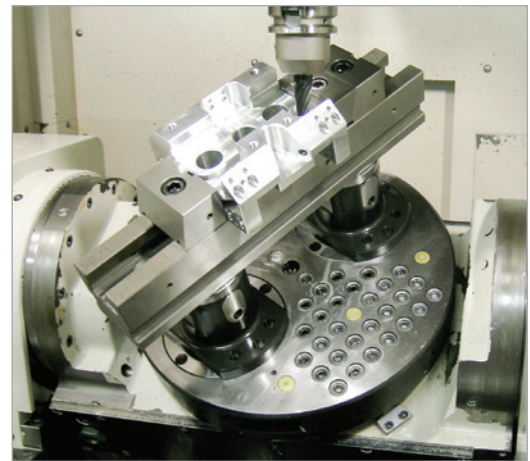
- Elevate your workpiece for clearance
- Use UNILOCK clamping knobs
- Stackable chucks available
- Quickly open and close with a single hex key

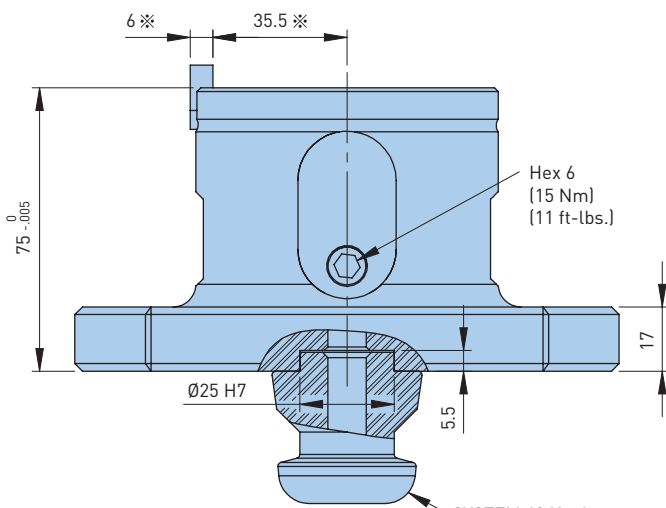
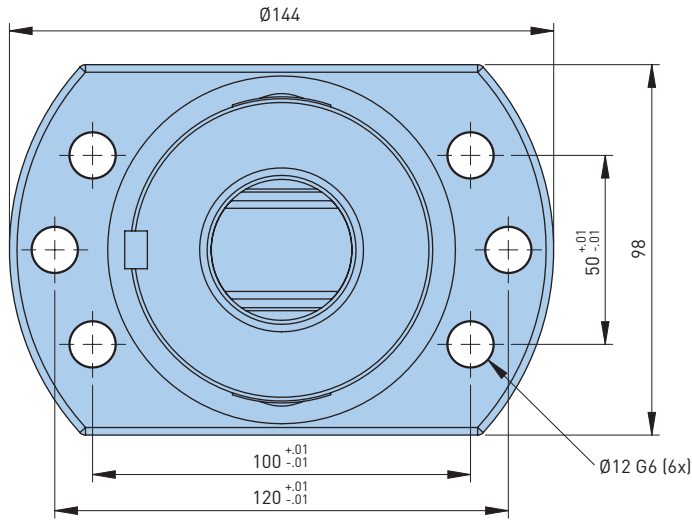


Catalog Number	Notch (Width x Qty)	Height	Clamping Force (lbs) (at 11 ft/lbs)	Weight (lbs)
15.250.101	—	75	2,200-2,500	8.1
15.250.103	10 H7 x 1			
15.250.102	—	100		9.8
15.250.104	10 H7 x 1			

- All dimensions are in millimeters
- Manual actuation, 6mm hex wrench not included

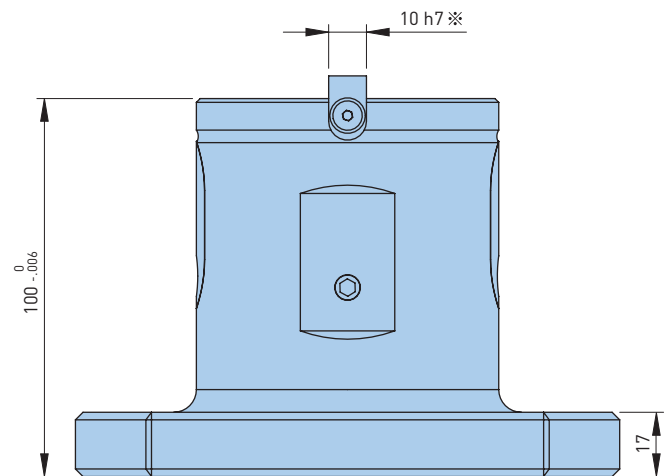
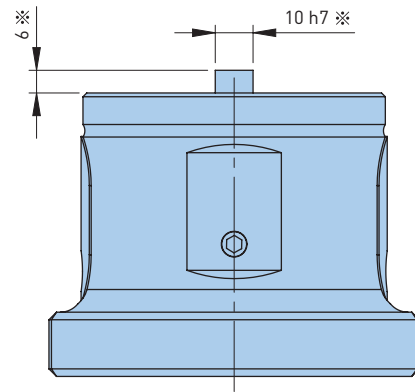
ACCESSORIES



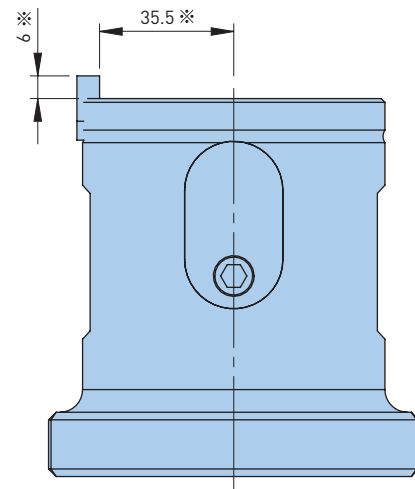


15.250.101 & 15.250.103

SYSTEM 40 Knob
[Not Included]



15.250.102 & 15.250.104



- All dimensions are in millimeters
- Dimensions marked ※ are for notch option

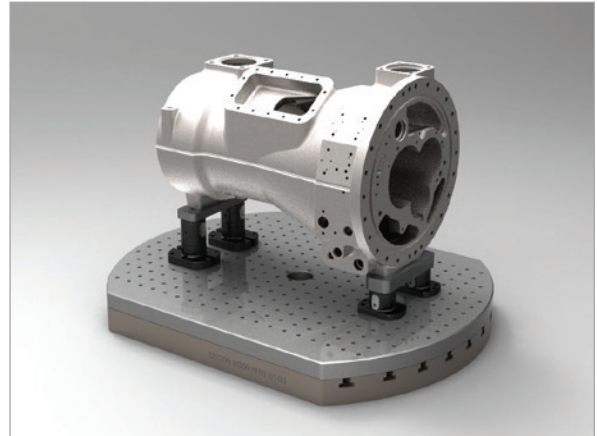
5-AXIS B STYLE BASE

For Flexibility of Position

Chucks allow for flexibility of the position of the base via the use of a slotted flange directly over t-slots. These chucks can be mounted on 40mm, 50mm and M12 grids as well as on t-nut machine tables.

FEATURES

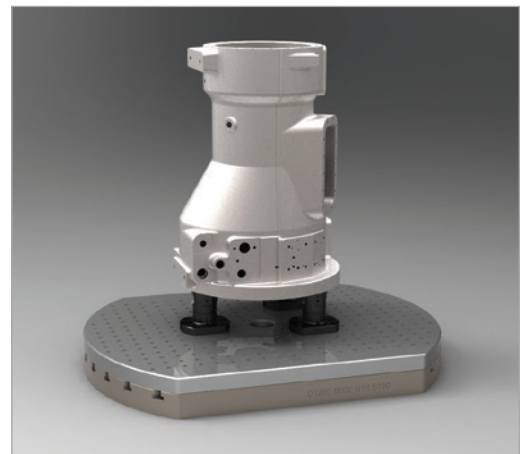
- Elevate your workpiece for clearance
- Use UNILOCK clamping knobs
- Stackable chucks available
- Quickly open and close with a single hex key

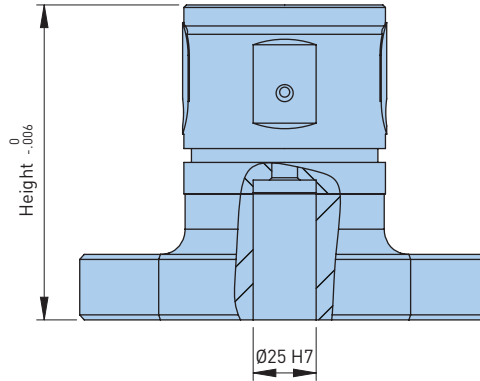
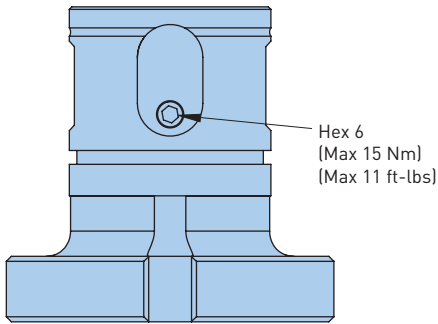
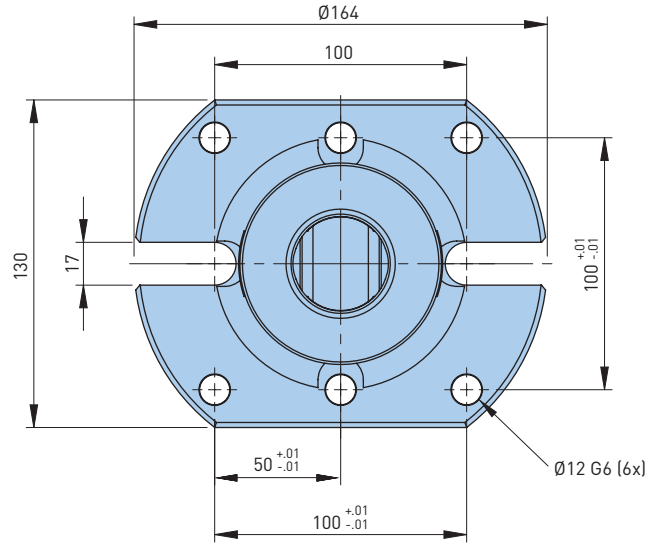


Catalog Number	Notch (Width x Qty)	Height	Clamping Force (lbs) (at 11 ft/lbs)	Weight (lbs)
15.250.111	—	125	2,200-2,500	14.7
15.250.113	10 H7 x 1			
15.250.112	—	150		16.8
15.250.114	10 H7 x 1			
15.250.115	—	175		18.6
15.250.116	10 H7 x 1			

- All dimensions are in millimeters
- Manual actuation, 6mm hex wrench not included

ACCESSORIES





• All dimensions are in millimeters

5-AXIS C-STYLE BASE

Allows for mounting over t-slots in a patterns that allow for a tighter spacing in either linear or circular.

FEATURES

- Elevate your workpiece for clearance
- Use UNILOCK clamping knobs
- Stackable chucks available
- Quickly open and close with a single hex key

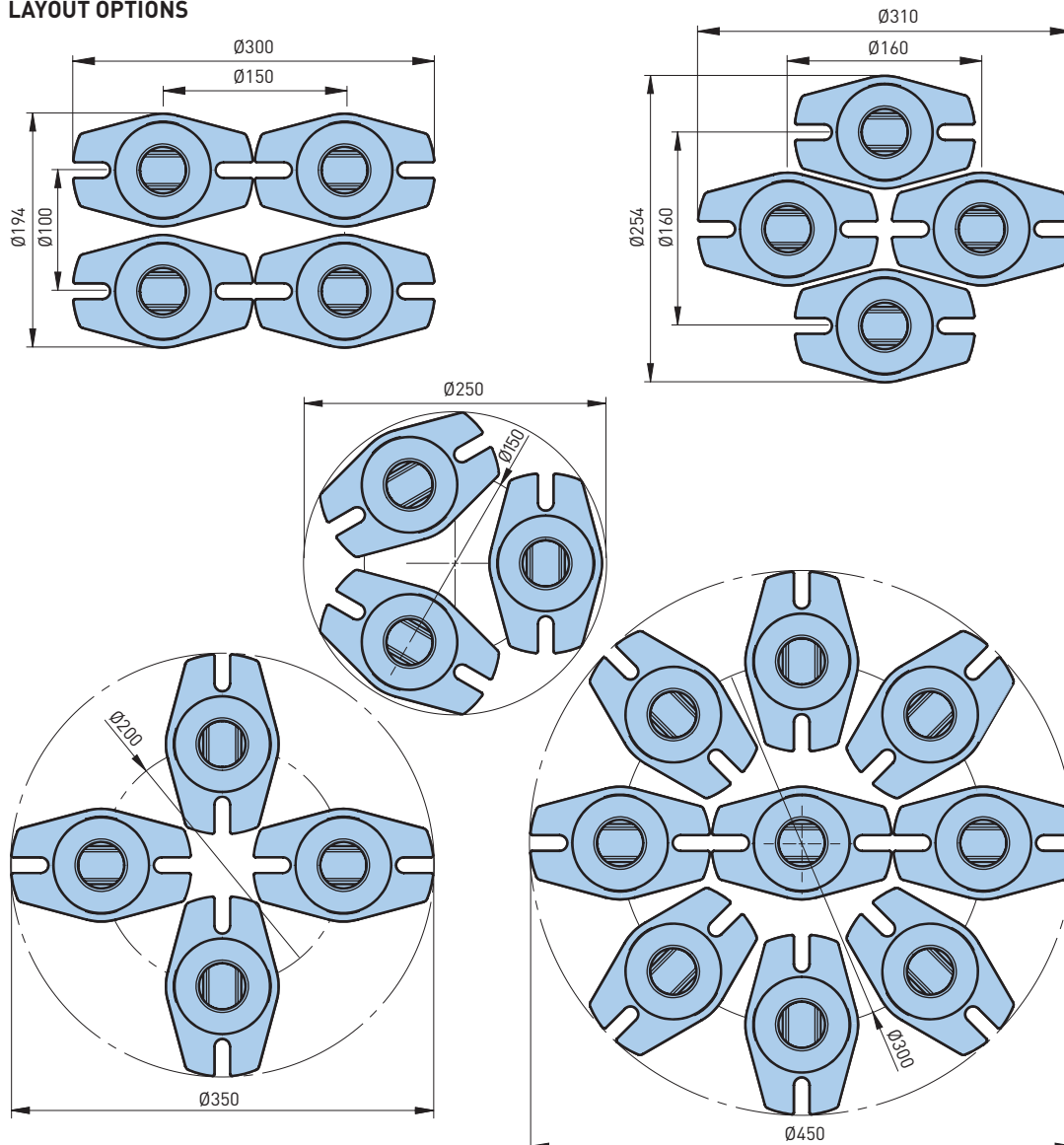


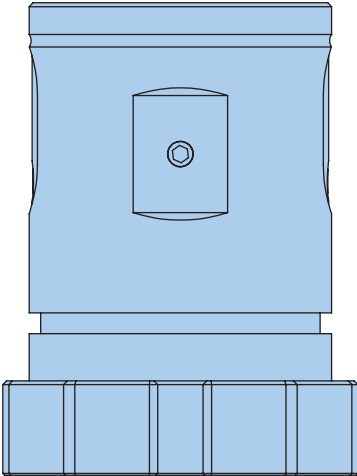
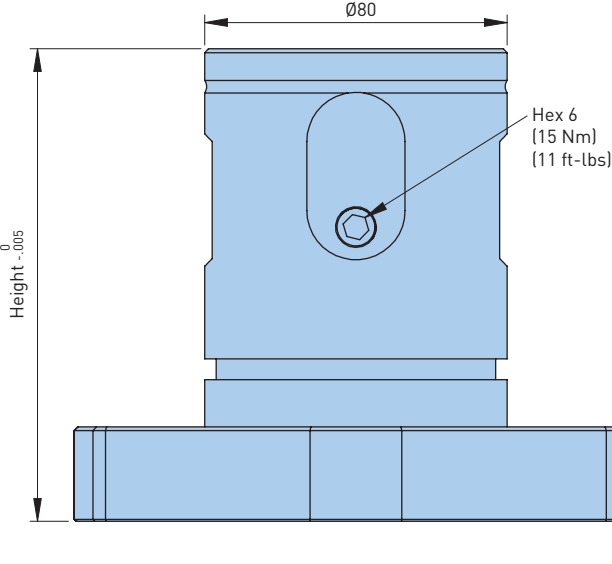
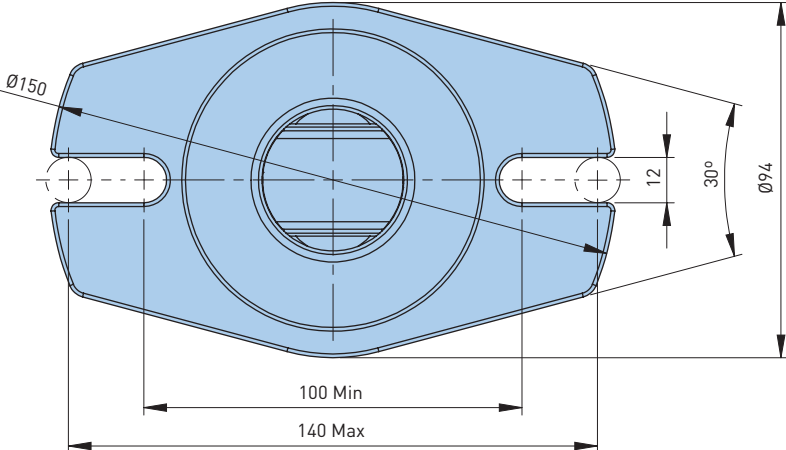
Catalog Number	Height (mm)	Weight (lbs)
15.250.117	100	5.5
15.250.118	125	5.7

ACCESSORIES



LAYOUT OPTIONS





• All dimensions are in millimeters

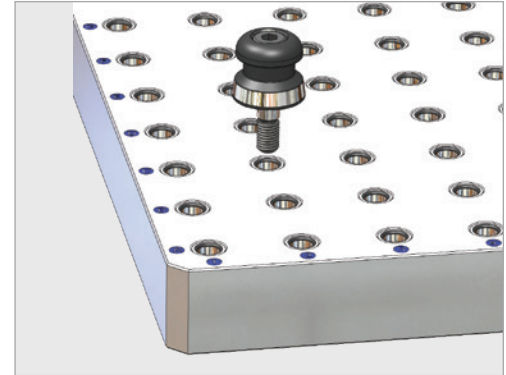
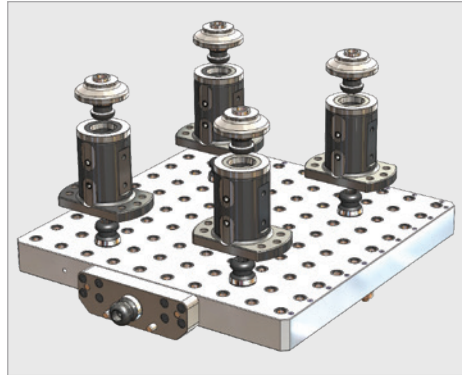
5-AXIS DOUBLE-ENDED CLAMPING BASE

Knobs Can be Used on Grids and T-Slot Tables

Allows for knobs to be used on grids and t-slot tables to affix the clamping base. This offers a universal interface between your machine table and workpiece.

FEATURES

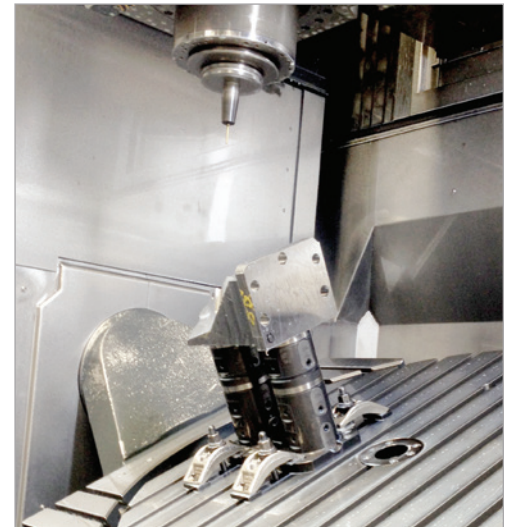
- Elevate your workpiece for clearance
- Use UNILOCK clamping knobs
- Stackable chucks available
- Quickly open and close with a single hex key

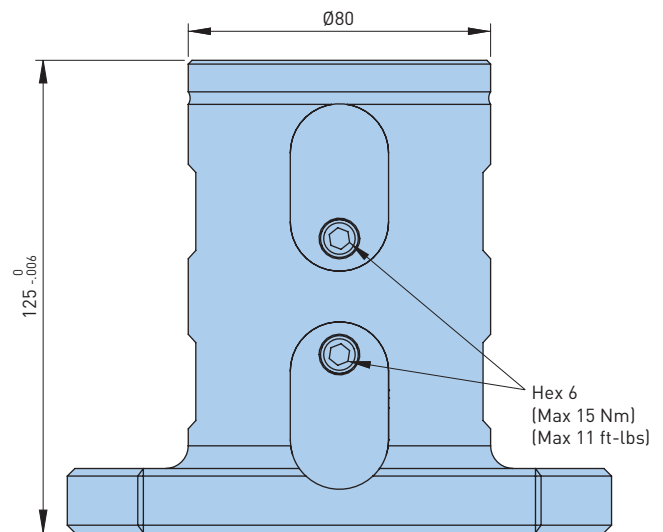
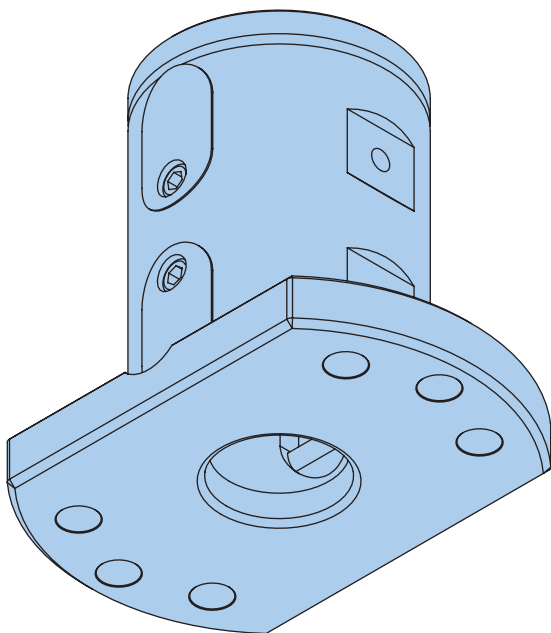
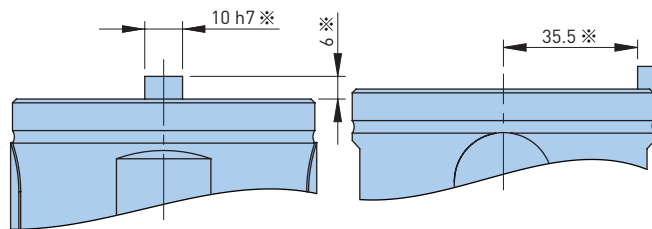
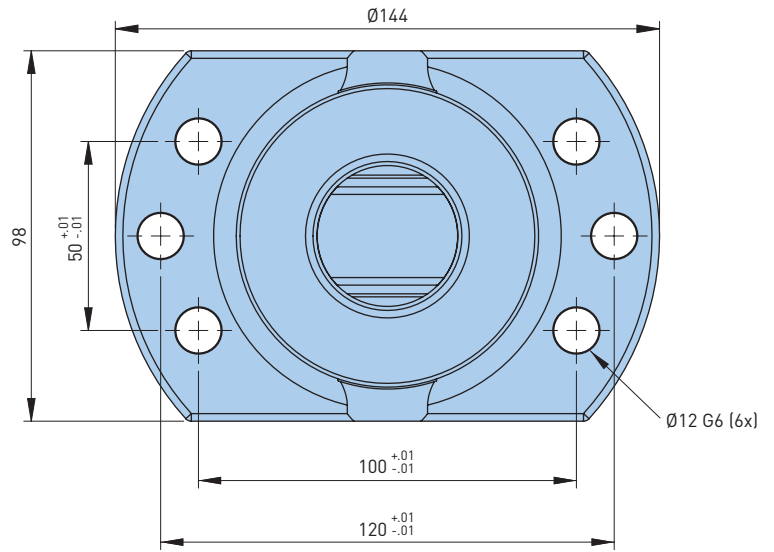
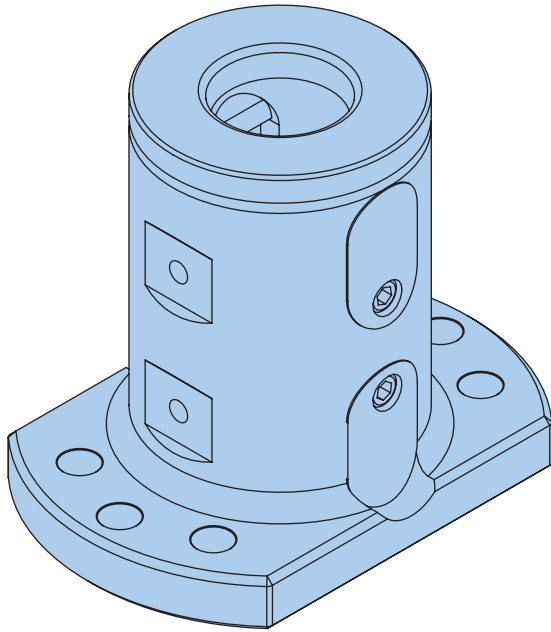


Catalog Number	Notch (Width x Qty)	Height	Clamping Force (lbs) (at 11 ft/lbs)	Weight (lbs)
15.250.105	—	125	2,200-2,500	11
15.250.106	10 H7 x 1			

- All dimensions are in millimeters
- Manual actuation, 6mm hex wrench not included

ACCESSORIES





- All dimensions are in millimeters
- Dimensions marked ※ are for notch option

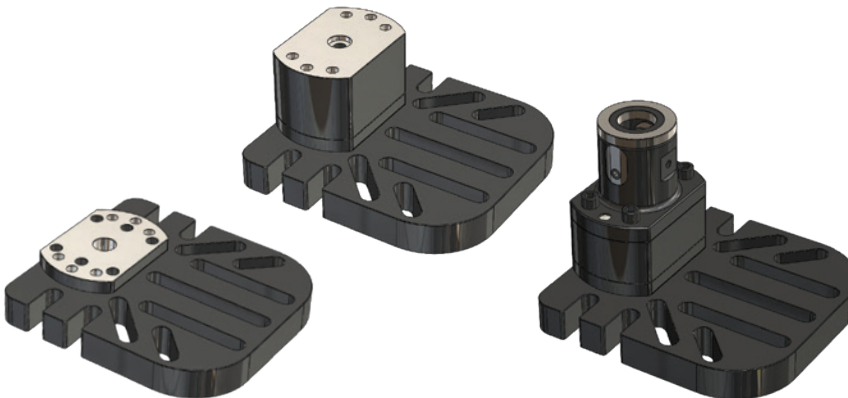
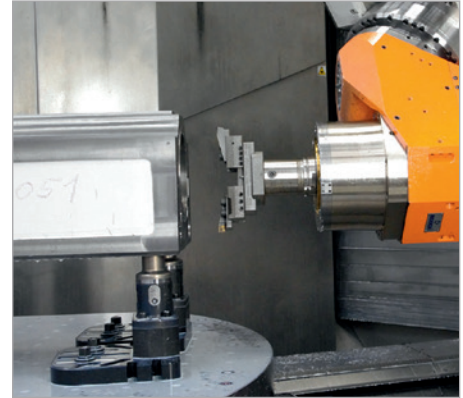
5-AXIS TABLE ADAPTERS

Mount Anywhere to the Table T-Slots or Grid Holes

Allows the base chucks to be mounted anywhere they are needed in order to access the table t-slots or grid holes, while providing a strong foundation. They come in three different styles with up to four different heights.

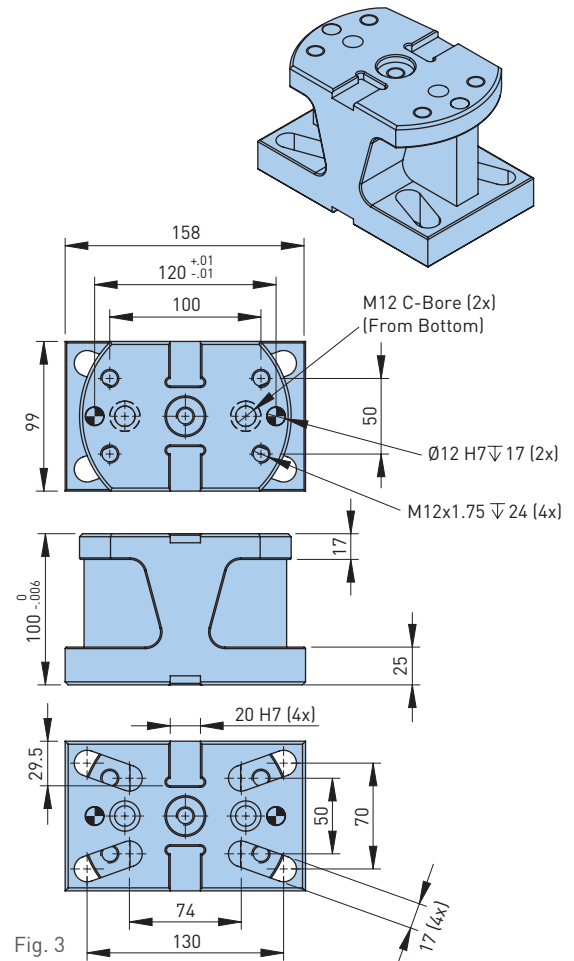
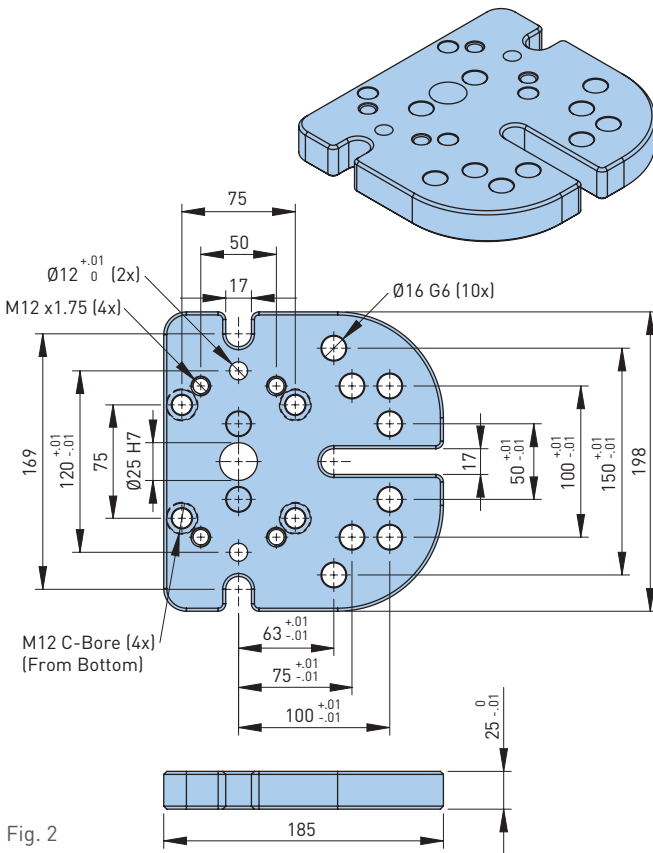
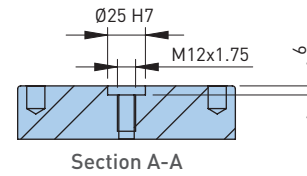
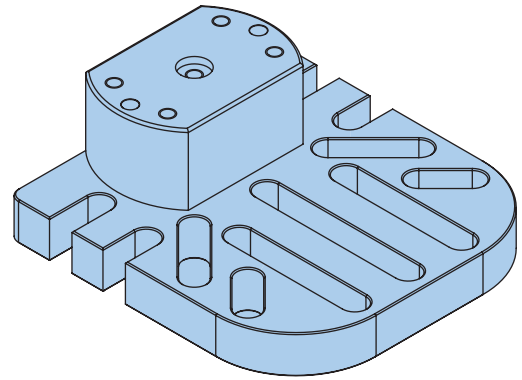
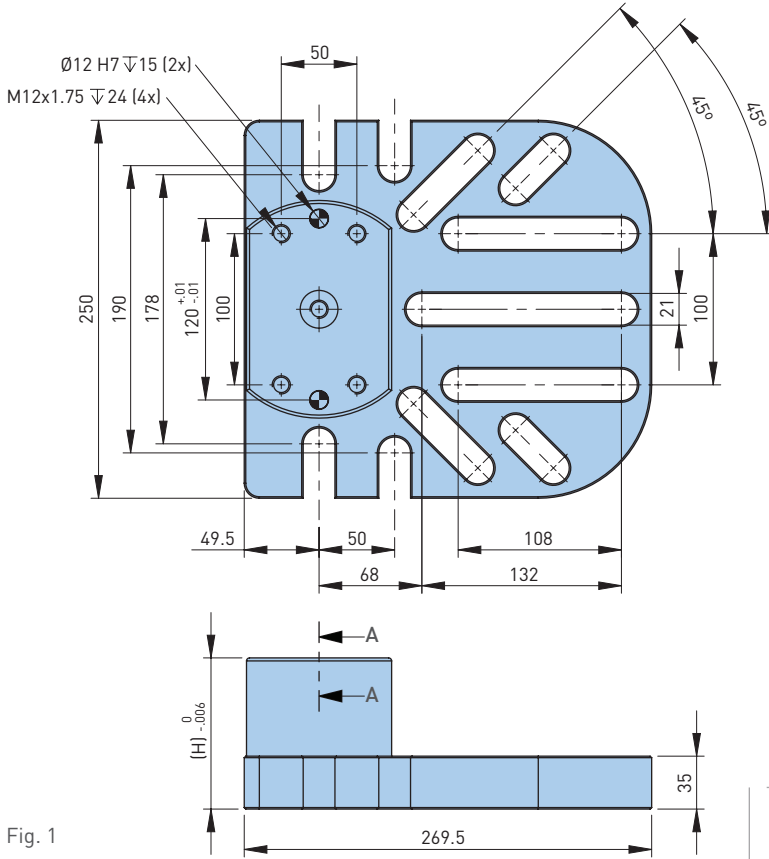
FEATURES

- 5-Axis base chucks can mount anywhere
- Strong foundation
- 4 different heights available



Catalog Number	Height	Fig.*
15.250.175	50	1
15.250.176	100	
15.250.177	150	
15.250.179	25	2
15.250.120	100	3

*See pg. 75
 • All dimensions are in millimeters



• All dimensions are in millimeters

5-AXIS AIR CHUCK

Provides added height when needed to meet clearance requirements.

FEATURES

- Allows air for open and turbo functions
- Use with 5-axis base chucks or stacking risers
- Uses SYSTEM 40 clamping knobs



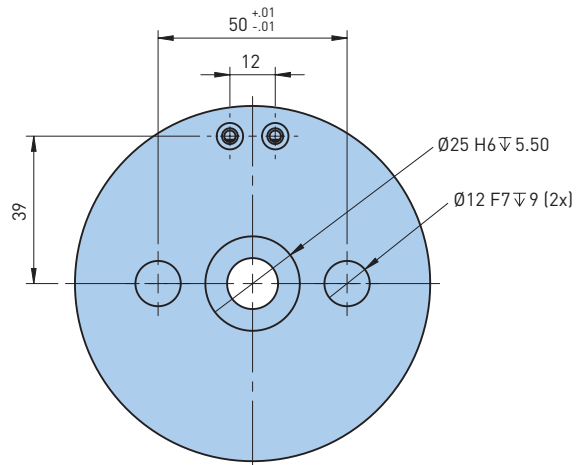
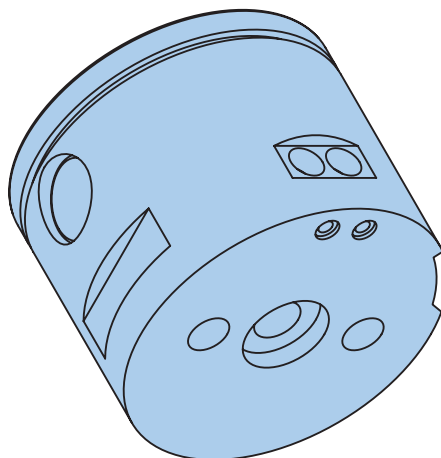
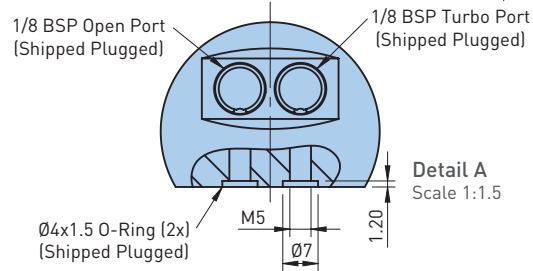
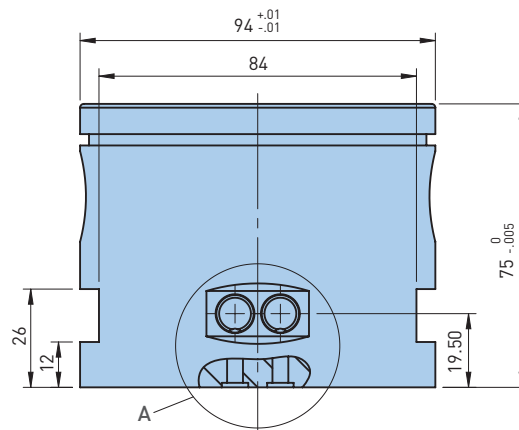
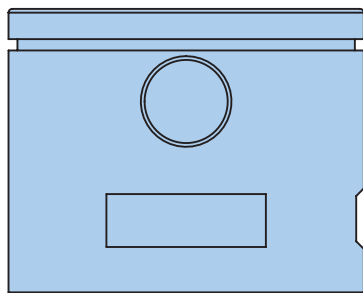
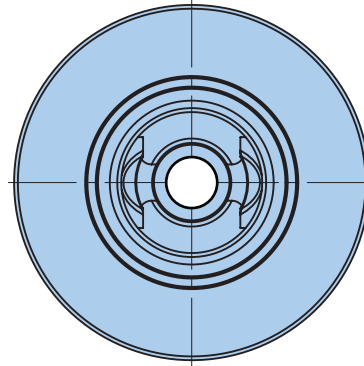
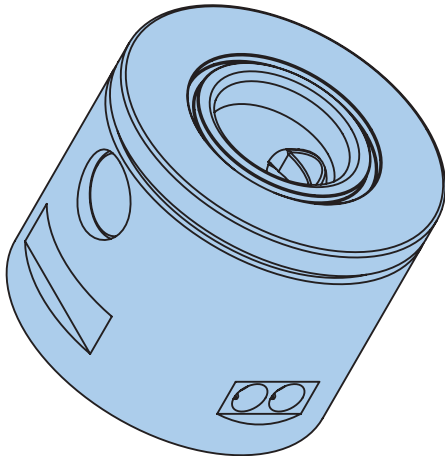
Catalog Number	Description	Recommended Bolt Sizes					Clamping Force (lbs)		Air Connection		Weight (lbs)
		M10	M12	M16	M20†	M24†	Spring Only	Turbo Assist	Port Size	Flange	
15.250.205	5-Axis Air Chuck	✓	✓	—	—	—	550-660	1,540-1,760	1/8	✓	7.2

†Optional

- 100mm or higher option available upon request.

ACCESSORIES

 KNOB PG. 40	 AIR FITTINGS PG. 104
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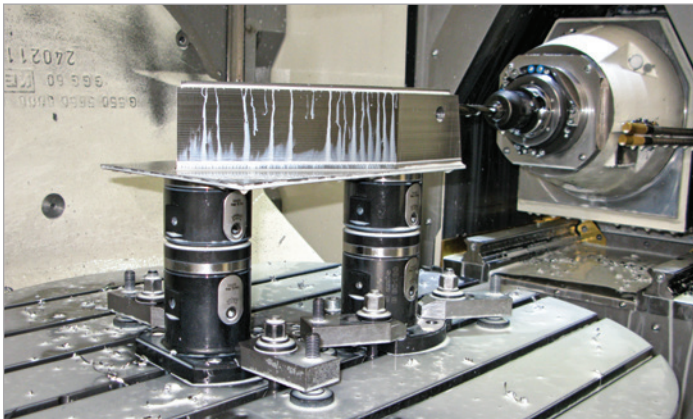
• All dimensions are in millimeters

5-AXIS EXTENSIONS

Used on the top of a base unit to provide additional height and/or clearance for certain applications. They are supplied with clamping knobs so they are ready to use out of the box. By building up different extensions, workpieces which are difficult to access or have different heights are easy to clamp.

FEATURES

- Timed or untimed
- Clamping knob included
- Clamp workpieces with different heights



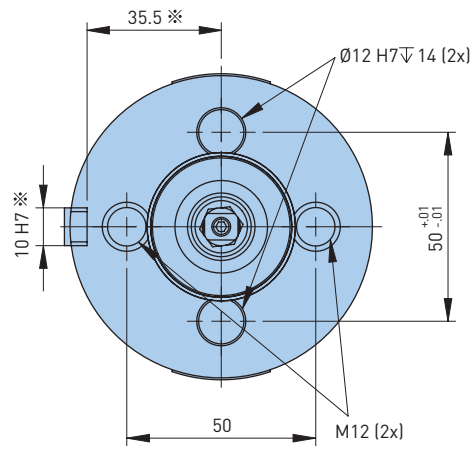
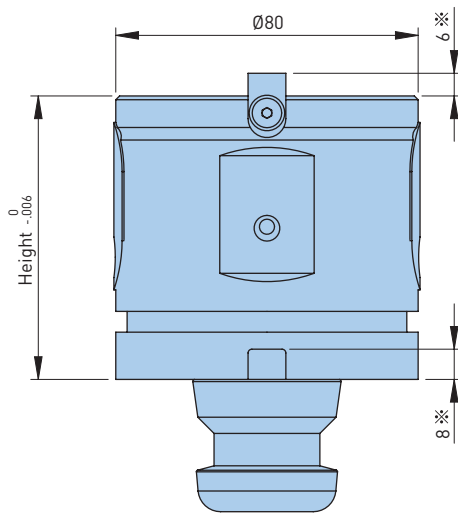
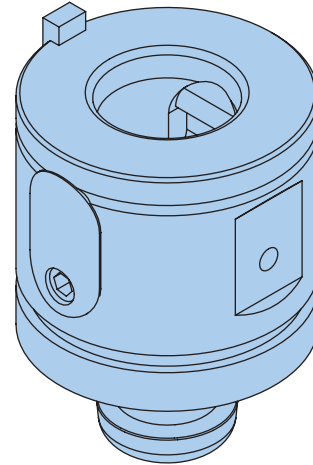
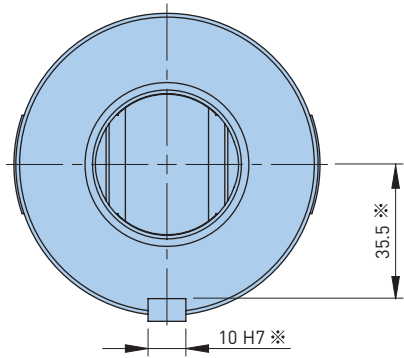
Available with Notches

Catalog Number	Notch (Width x Qty)	Height	Clamping Force (lbs) (at 11 ft/lbs)	Weight (lbs)
15.250.201	—	75	2,200-2,500	6.3
15.250.211	10 H7 x 1	75		6.3
15.250.202	—	100		8.0
15.250.212	10 H7 x 1	100		8.0
15.250.203	—	125		10.3
15.250.213	10 H7 x 1	125		10.3

- All dimensions are in millimeters
- Manual actuation, 6mm hex wrench not included

ACCESSORIES





- All dimensions are in millimeters
- Dimensions marked ※ are for notch option

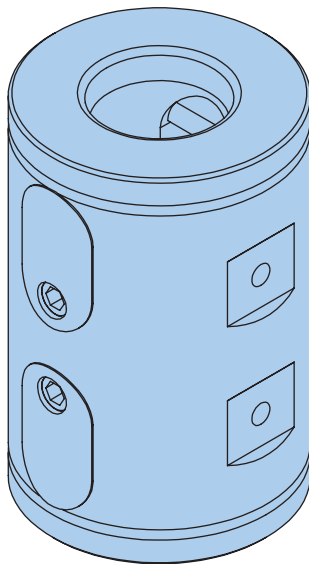
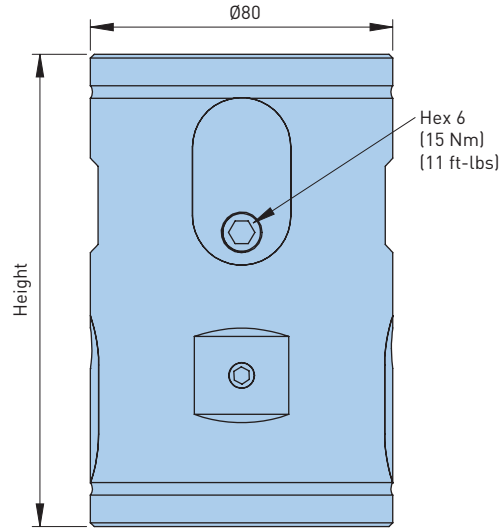
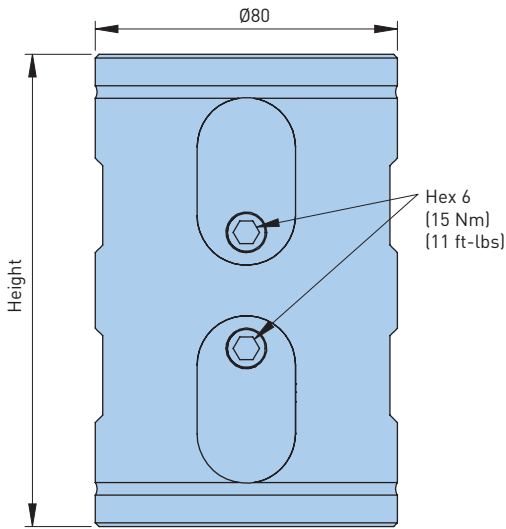
DOUBLE-ENDED BASES

Used as a base when spacing between items needs to be closer on grid plates. In limited applications they can be stacked.

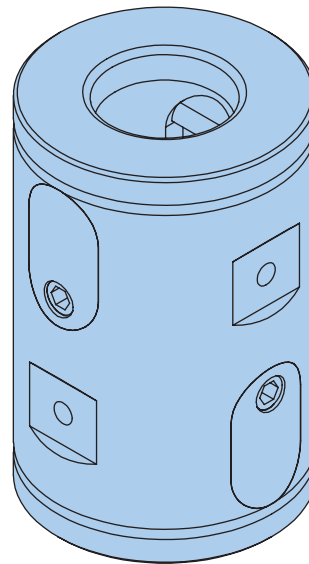


Catalog Number	Clamp Direction	Height (mm)	Weight (lbs)
15.250.107	0°	125	9.9
15.250.109	90°		9.9

ACCESSORIES



15.250.107



15.250.109

• All dimensions are in millimeters



ESA125/85 FLAT CHUCK

For Smaller Parts

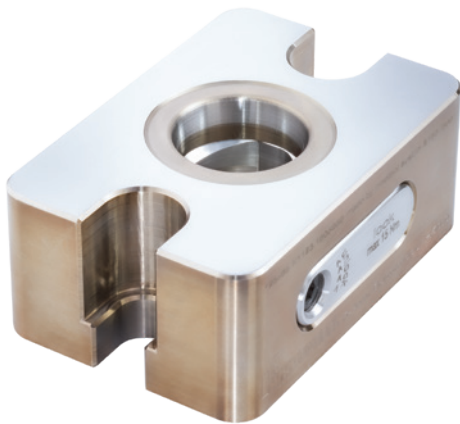
For the SYSTEM 40 knob for smaller parts and machines with smaller work envelopes.

The clamping is manual, eliminating the need for air.

The use of a torque limiting wrench is recommended in cases where a lighter retention force is required and to limit overtightening. The chuck can be used on its own or in combination with other chucks.

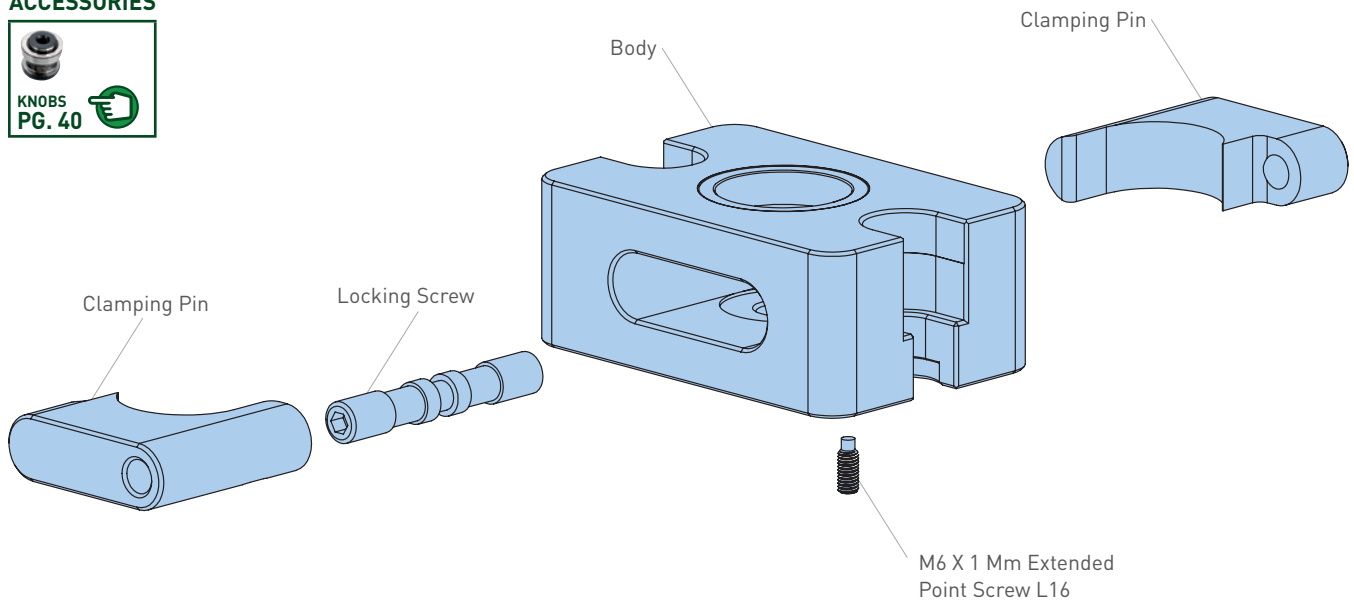
FEATURES

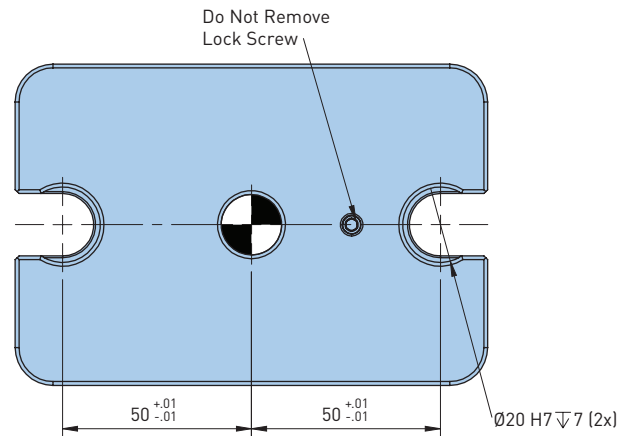
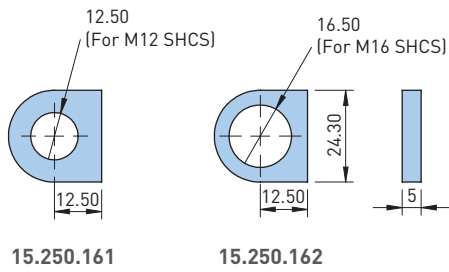
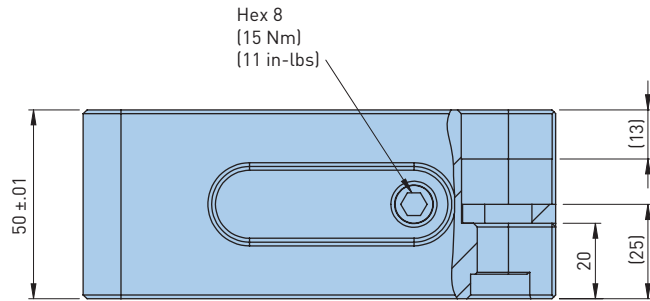
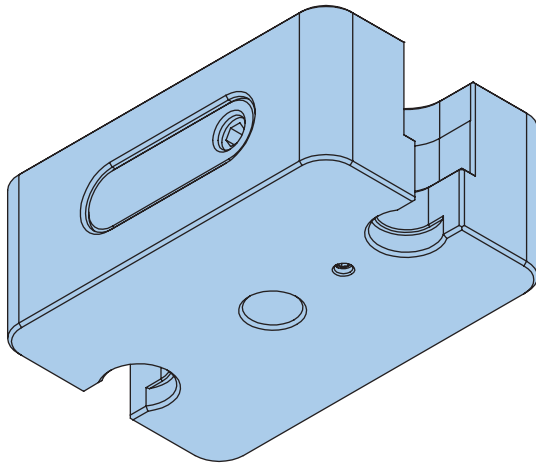
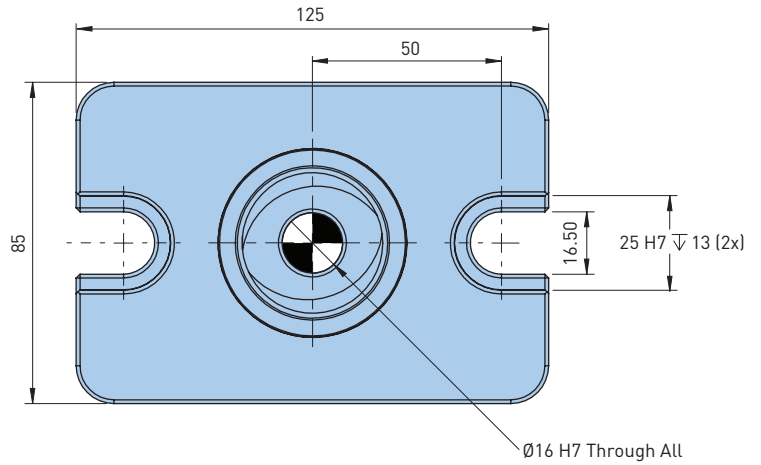
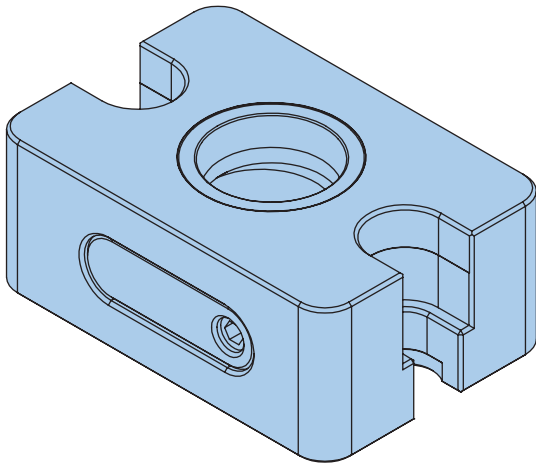
- Compact body form
- Precision location bores on the bottom face
- Precision timing slots on the top face
- Mounting via M12 or M16 screws



Catalog Number	Description
15.250.160	ESM125-85

ACCESSORIES





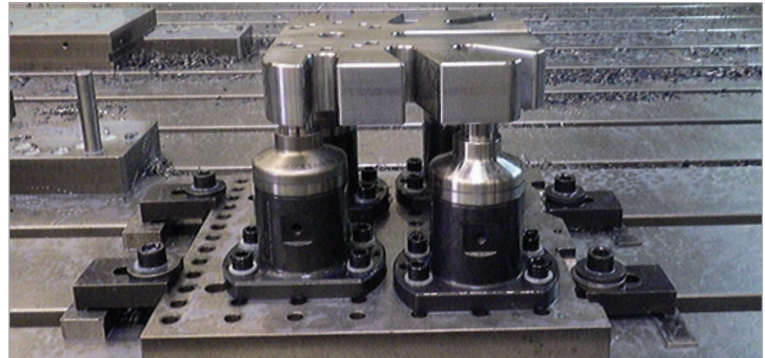
- All dimensions are in millimeters
- 2 pcs. of each washer included with chuck

5-AXIS REDUCTIONS AND SHIMS

Clamp Workpieces with Limited Supporting Surfaces

Used on the top of a base unit to provide additional height and/or clearance for certain applications. They are supplied with clamping knobs so they are ready to use out of the box.

Reduce from Ø80-50mm to clamp workpieces with limited supporting surfaces. They are also offered in 25, 50 & 75mm heights and two hardnesses if modification is needed. SYSTEM 40 clamping knob and bolt are included.



REDUCTIONS

Catalog Number	Knob Type	Height	Thread Size	Material State	Fig.*
15.250.302	SBA	25	M12	Hard	1
15.250.332	SBB				
15.250.362	SBC				
15.250.301	SBA	50	M12	Hard	2
15.250.331	SBB				
15.250.361	SBC				
15.250.329	SBA	75	M12	Hard	3
15.250.349	SBB				
15.250.379	SBC				
15.250.343	SBA	25	M12	Soft	1
15.250.339	SBB				
15.250.369	SBC				
15.250.342	SBA	50	M12	Soft	2
15.250.338	SBB				
15.250.368	SBC				
15.250.320	SBA	75	M12	Soft	3
15.250.350	SBB				
15.250.380	SBC				

*See pg. 85
 • All dimensions are in millimeters

SHIMS

Catalog Number	Height	Fig.*
15.250.405	9	4
15.250.406	14	5
15.250.407	5	6
15.250.410	1	7
15.250.411	1.1	
15.250.412	1.2	
15.250.413	1.3	
15.250.414	1.4	
15.250.415	1.5	
15.250.416	1.6	
15.250.417	1.7	
15.250.418	1.8	
15.250.419	1.9	

*See pg. 85
 • All dimensions are in millimeters

ADJUSTABLE REDUCTION

Catalog Number	Fig.*
15.255.101	8

*See pg. 85

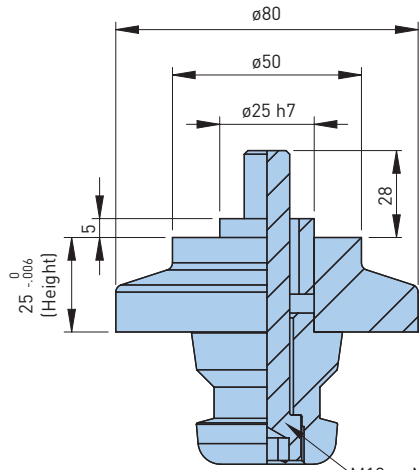


Fig. 1

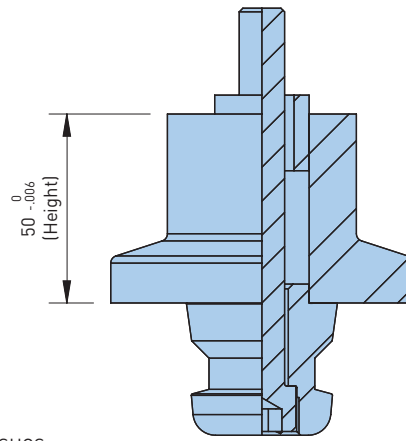


Fig. 2

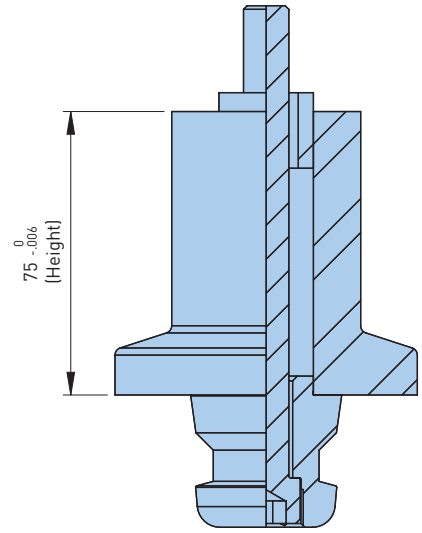


Fig. 3

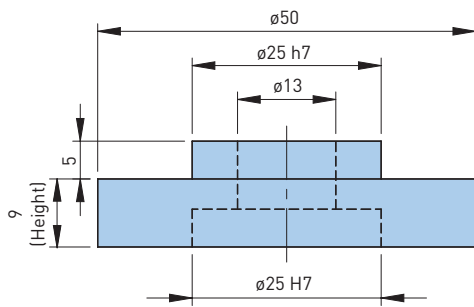


Fig. 4

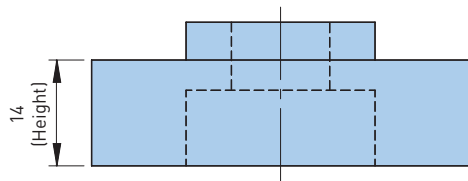


Fig. 5

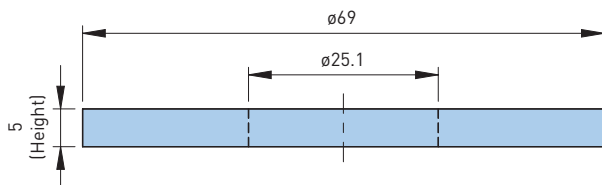


Fig. 6

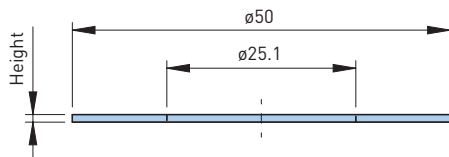


Fig. 7

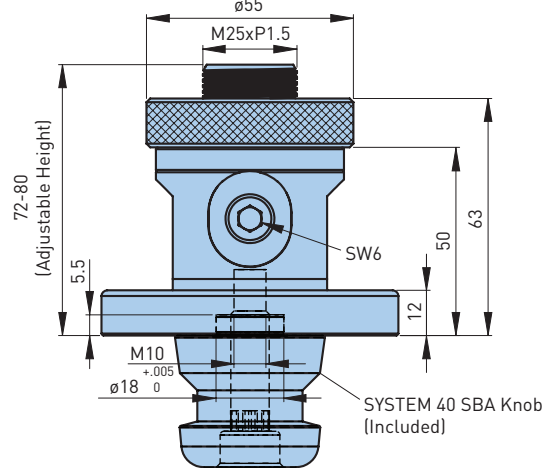
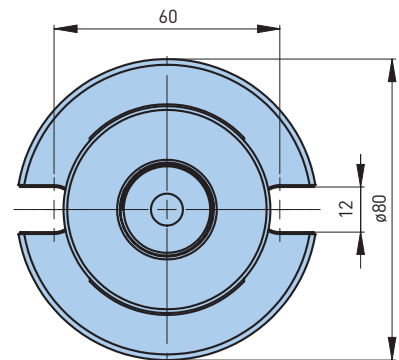
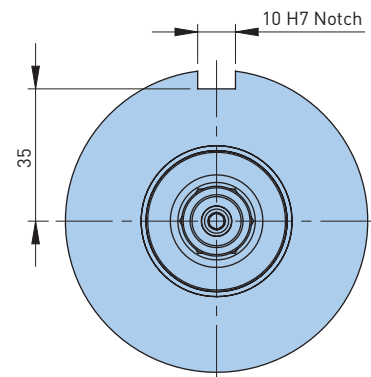
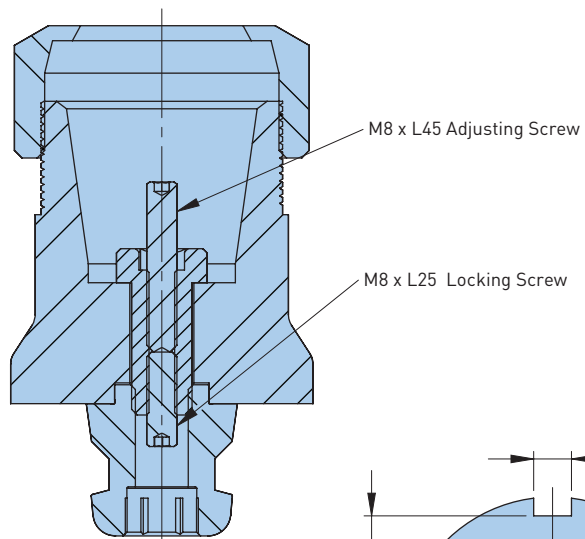
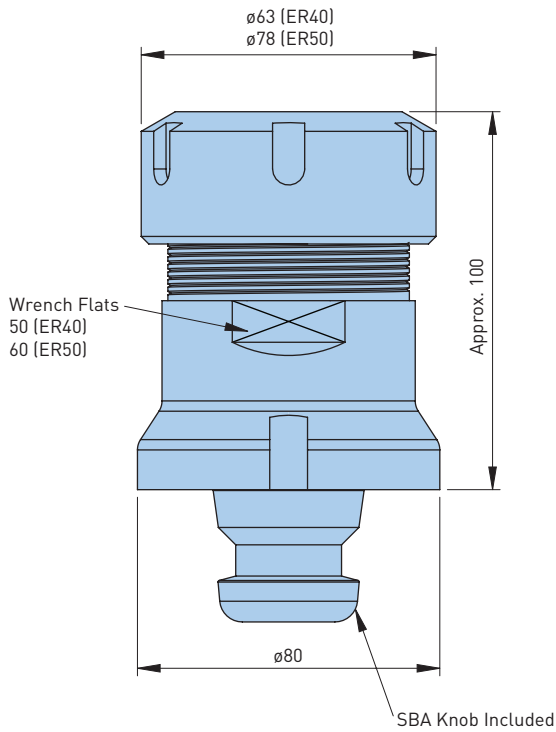


Fig. 8

5-AXIS ER COLLET CHUCK

For Clamping Shafts and Small Round Workpieces

The collet chucks fit any 5-axis base chuck or 5-axis extension with a timing key, and use standard ER40 and ER50 collets.



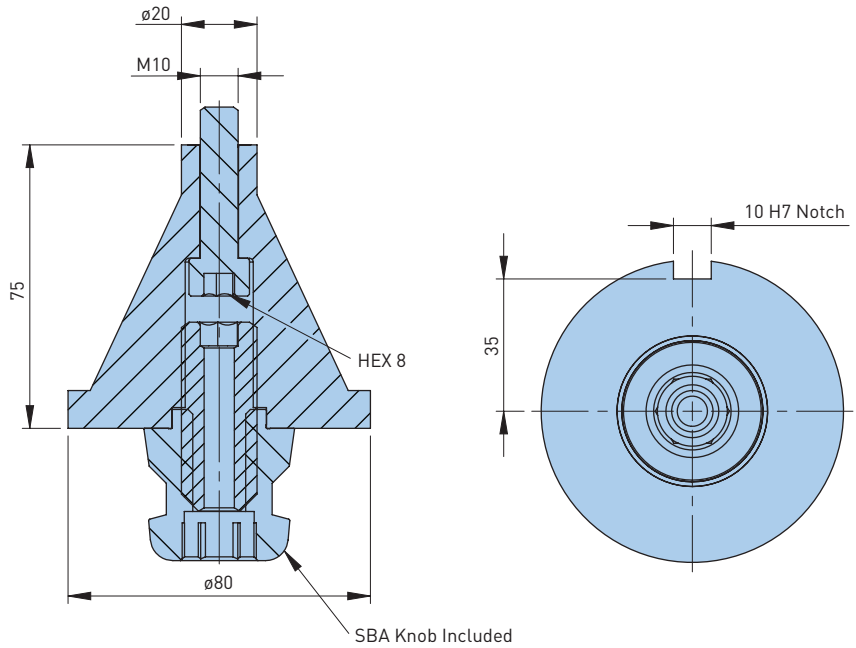
Catalog Number	Collet Type	Notch (Width x Qty)	Weight (lbs)
15.250.040	ER40	10 H7 x 1	4.3
15.250.047	ER50	10 H7 x 1	4.4

- Includes SYSTEM 40 SBA clamping knob (1x)
- ER Collets are not included
- All dimensions are in millimeters

SERRATED ADAPTER

For Small Raw Workpieces

Used for small raw workpieces with the aid of an M10 mounting thread through the UNILOCK clamping knob. The workpiece is securely clamped thanks to the serrated contact surface. Fits on any 5-axis base extension with a timing key.



Catalog Number	Notch (Width x Qty)	Weight (lbs)
15.250.041	10 H7 x 1	2.9

- Includes SYSTEM 40 SBA clamping knob (1x)
- All dimensions are in millimeters

5-AXIS SYSTEM 25

For 5-Sided Machining of Small Workpieces

The system can now handle even smaller parts via the SYSTEM 25 knob and chucks, designed for 5-sided machining of small workpieces, and based off of the proven SYSTEM 40 knob design.

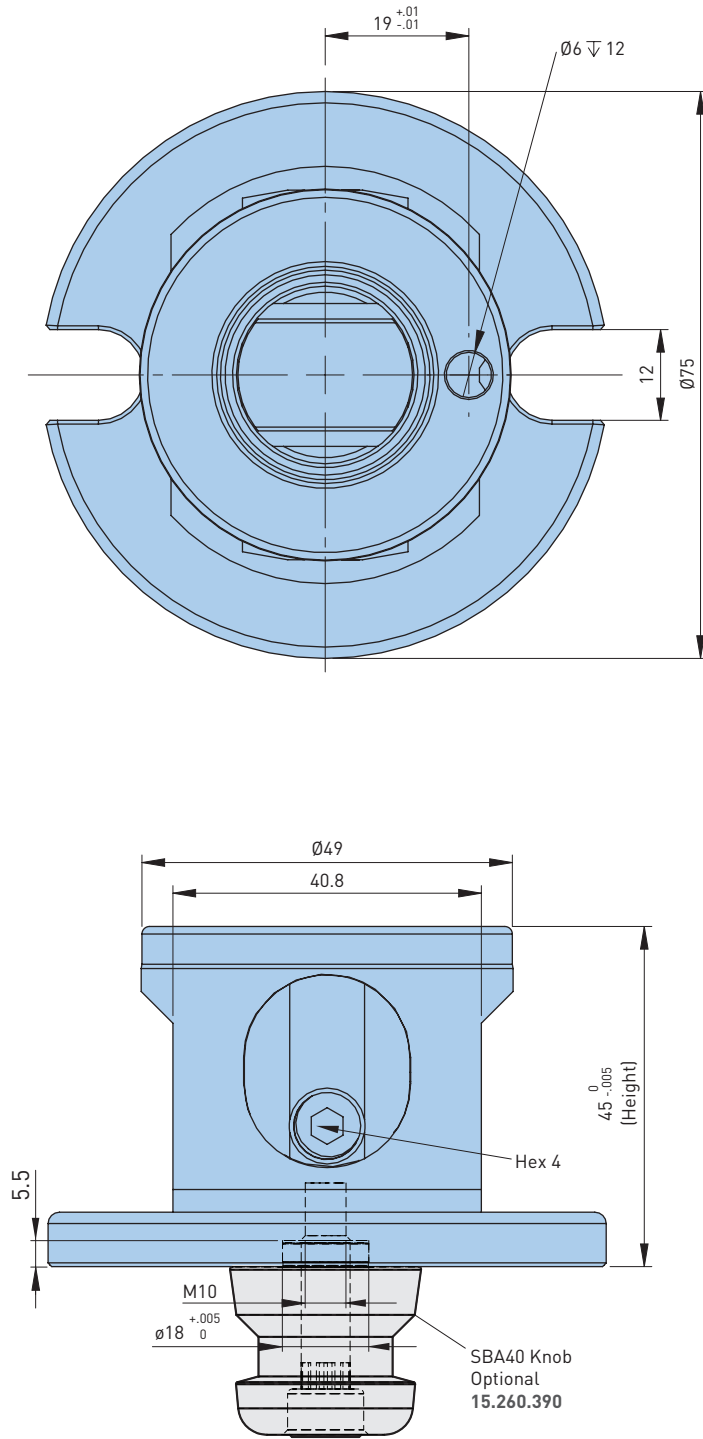
The system is composed of A, B & C clamping knobs, a base compatible with the SYSTEM 40 knobs and chucks, an extension and a reduction.

The SYSTEM 25 series is made entirely of stainless steel.

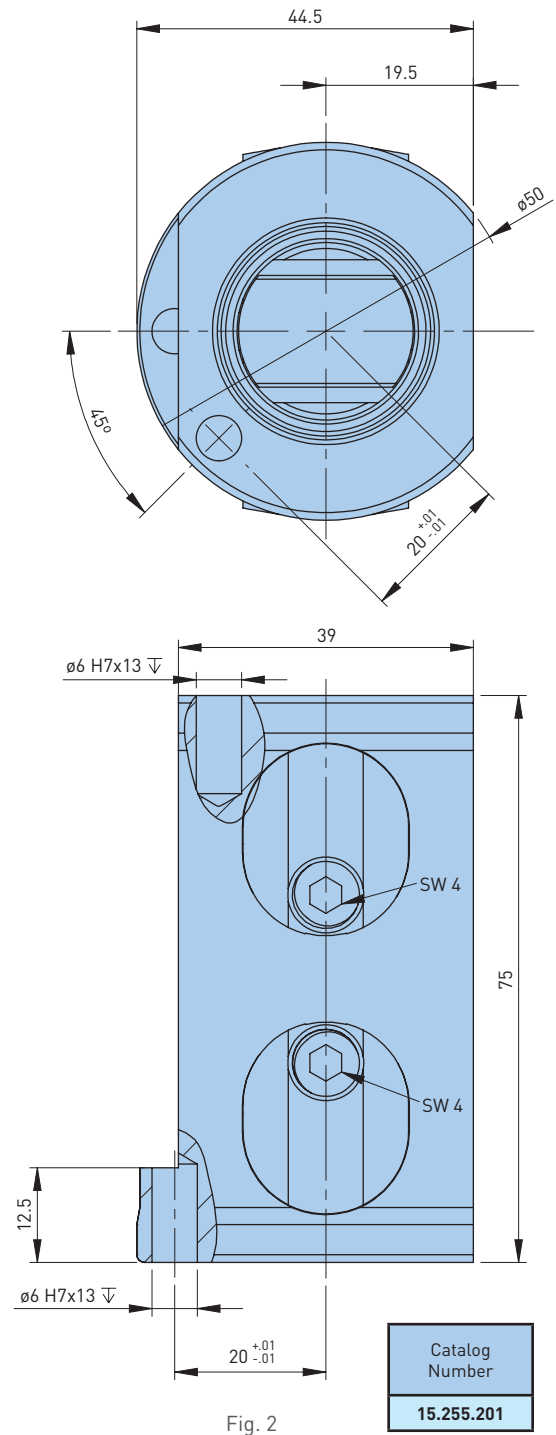


Catalog Number	Notch (Ø H7 x Qty)	Height (mm)	Weight (lbs)	Fig.	Page
15.255.101	Ø6 H7 x 1	45	2.0	1	105
15.255.201	Ø6 H7 x 1	50	1.5	2	105
15.225.250	—	75	2.0	3	106
15.255.300	—	25	.5	4	106
15.255.301	—	50	.5	5	106

- Manual actuation, 4mm hex wrench not included
- See pg. 44 for SYSTEM 25 Knobs



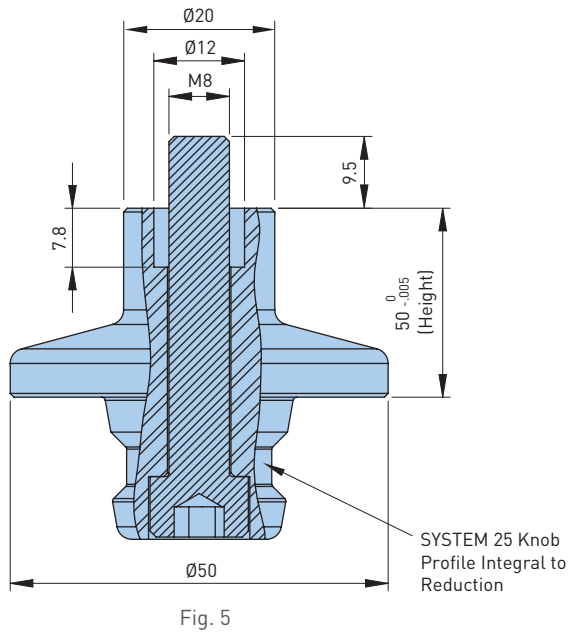
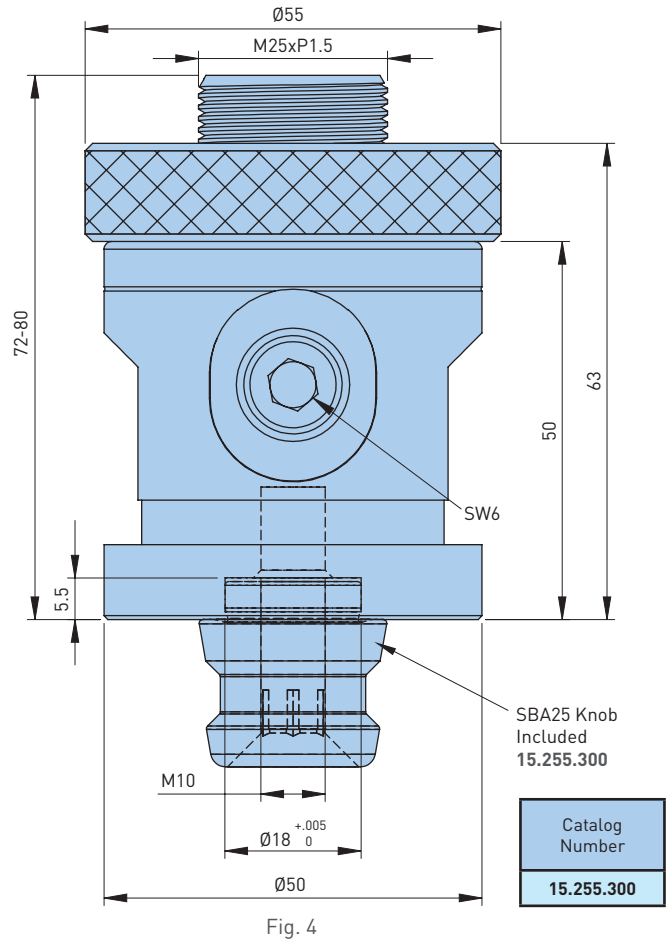
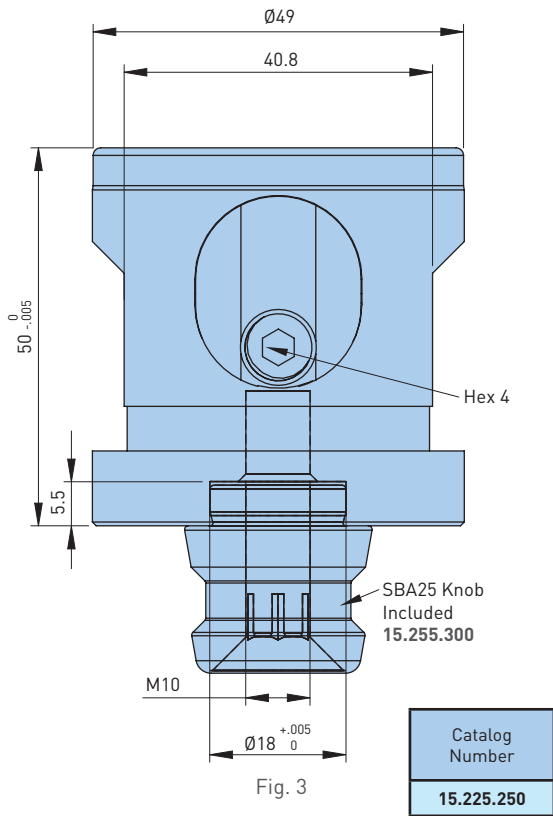
Catalog Number
15.255.101



Catalog Number
15.255.201

• All dimensions are in millimeters





ACCESSORIES



• All dimensions are in millimeters

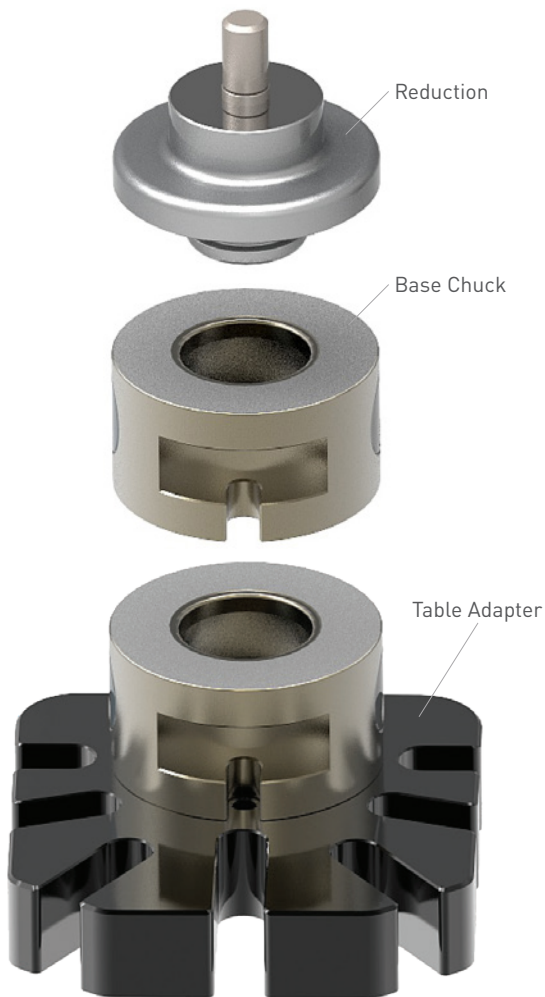
SYSTEM 68

Large Robust Knobs

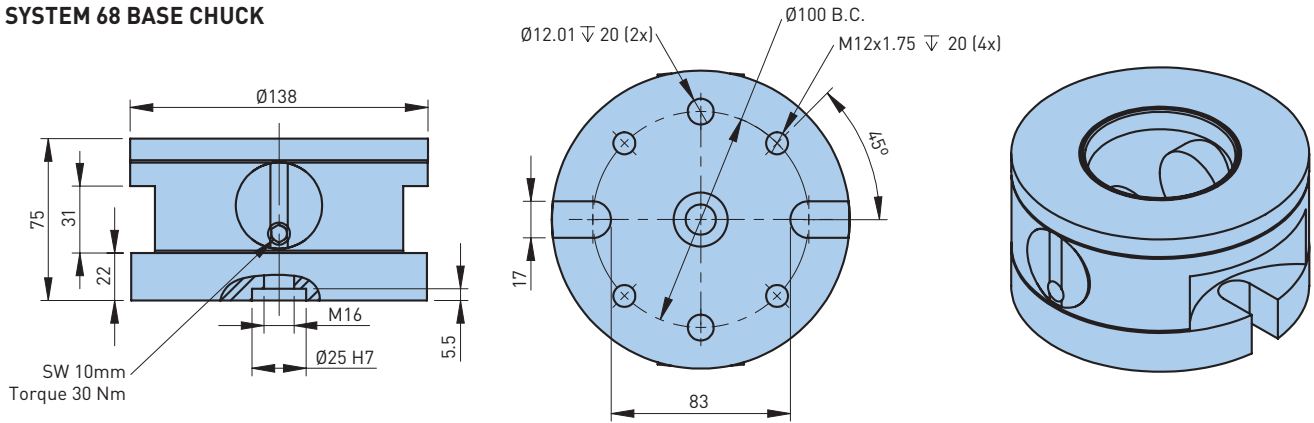
A larger version of the original UNILOCK SYSTEM 40 modular workholding system. It is composed of a base chuck, an optional ground plate, two styles of reductions, and offers additional knob options that are compatible with the original UNILOCK ESM 180/150 pneumatic chuck.

FEATURES

- Manual
- Two reduction options
- Compatible with smaller SYSTEM 40 for 5-Axis
- Large robust knobs for M24 & M30 SHCS and M24 precision shoulder screws
- Knobs are compatible with ESM 180/150 pneumatic chuck



SYSTEM 68 BASE CHUCK



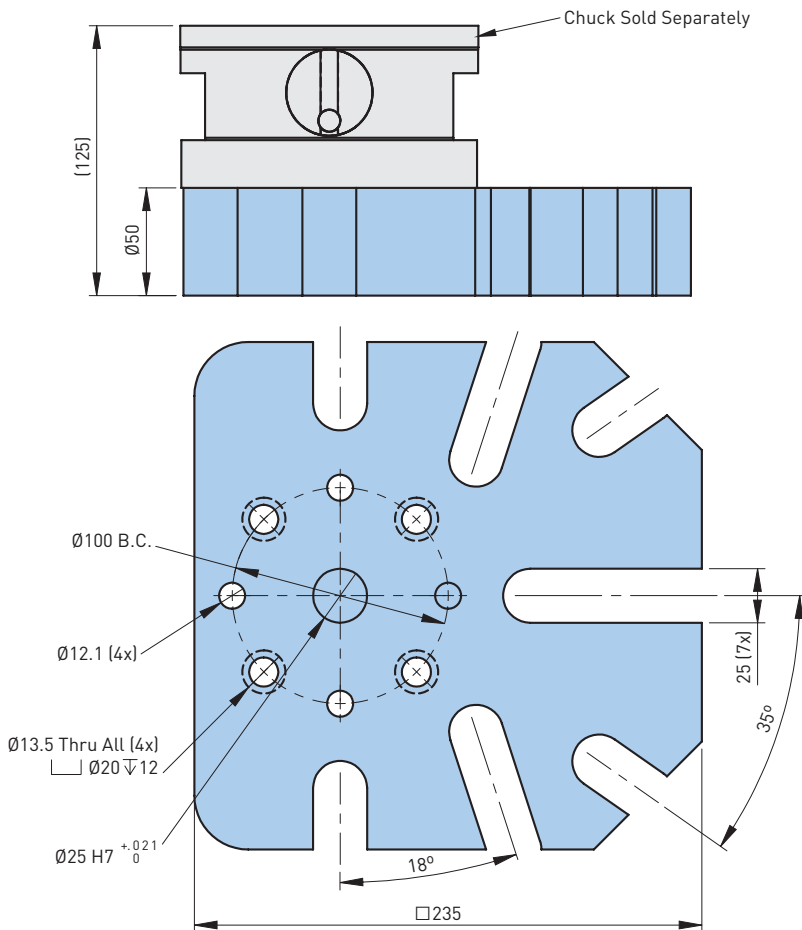
Catalog Number	Weight (lbs)
15.500.710	14.1

ACCESSORIES



• All dimensions are in millimeters

SYSTEM 68 TABLE ADAPTER



Catalog Number	Weight (lbs)
15.500.740	36.4

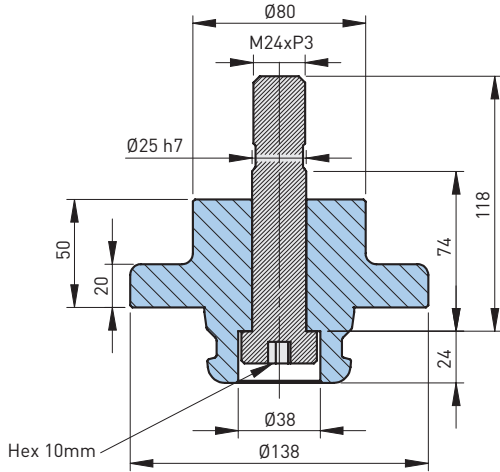
ACCESSORIES



• All dimensions are in millimeters
• Other heights available upon request

SYSTEM 68 REDUCTION

Used to reduce the clamping base body from Ø138mm to Ø80mm allowing for clamping of workpieces with a limited supporting surface. It is offered with a M24 bolt and only comes in one standard height.



Catalog Number	Weight (lbs)
15.500.720	9.7

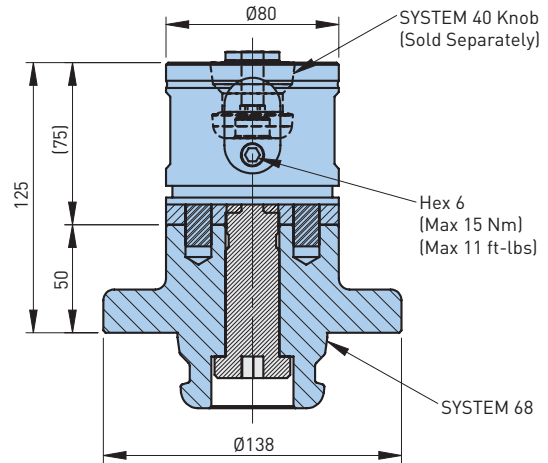
ACCESSORIES



- All dimensions are in millimeters
- Bolt included
- For other length options, please consult the BIG DAISHOWA Engineering Dept.

SYSTEM 68 TO SYSTEM 40 REDUCTION

Used in cases where a fixture already has the smaller SYSTEM 40 clamping knob. This allows the reuse of current fixtures without the need to modify or replace them.



Catalog Number	Weight (lbs)
15.500.731	10.3


ACCESSORIES




- All dimensions are in millimeters

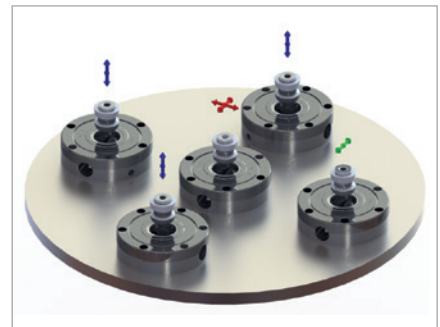
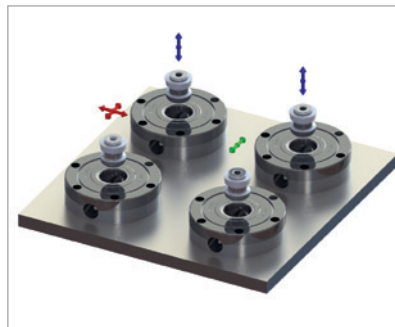
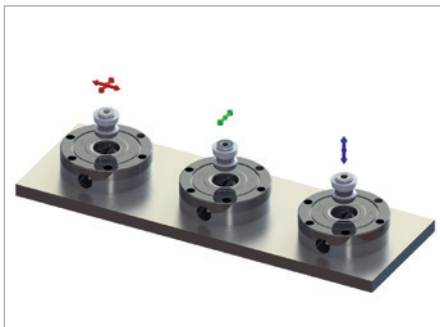
SYSTEM 68 CLAMPING KNOBS

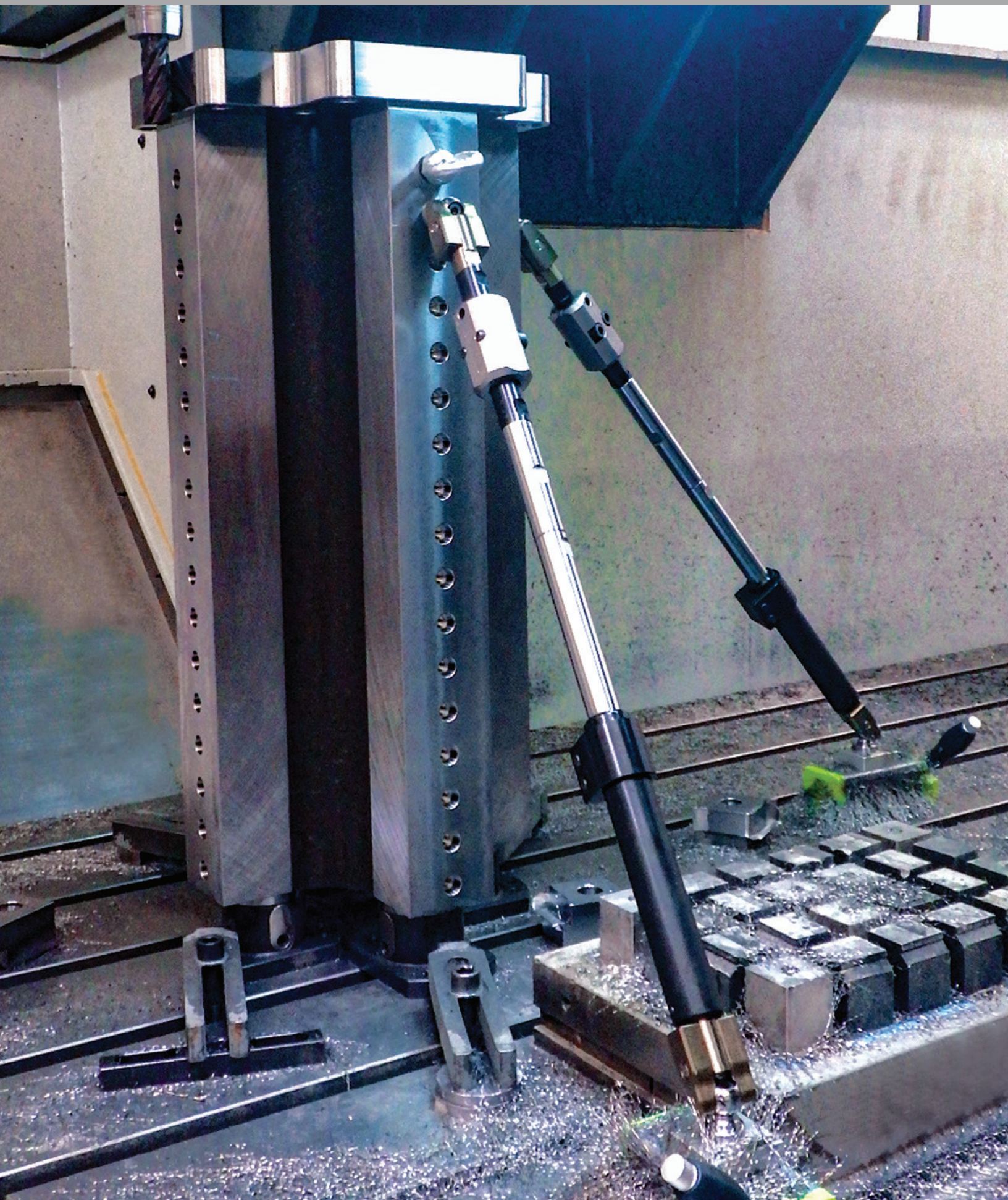
Standard clamping knobs have a metric positioning boss which is Ø57mm and ground to a fit of h6. This boss is 10mm tall. The overall measurements of the clamping knob are Ø40mm by 68mm tall.

 The SBA Knob is ground to fit with the center ground taper of the chuck. This fit establishes centerline location. This location will repeat to better than +/- .0002" (.005mm).

 The SBB Knob is ground like a diamond pin and orients your work relative to the centerline of the SBA Knob.

 The SBC Knob is ground undersize. It will bring the bottom of the workpiece or fixture down on the top of the UNILOCK chuck.





LATERAL SUPPORT FOR TALL PARTS

STABILIZER SYSTEM

UNIFLEX BALL SYSTEM (Ø25.4)	96-97
ADJUSTABLE STABILIZER BASE	98
FIXED STABILIZER EXTENSION	98
STABILIZER END CLAMP	99
STABILIZER BRACKET	99
FINE ADJUSTABLE STABILIZER EXTENSION	99
STABILIZER BALL TO KNOB ADAPTOR	100
STABILIZER MOUNTING SCREW	100
STABILIZER BALL AND COLLAR	100
STABILIZER MAGNETIC BASE	101

UNIFLEX BALL SYSTEM (Ø25.4 & Ø50)

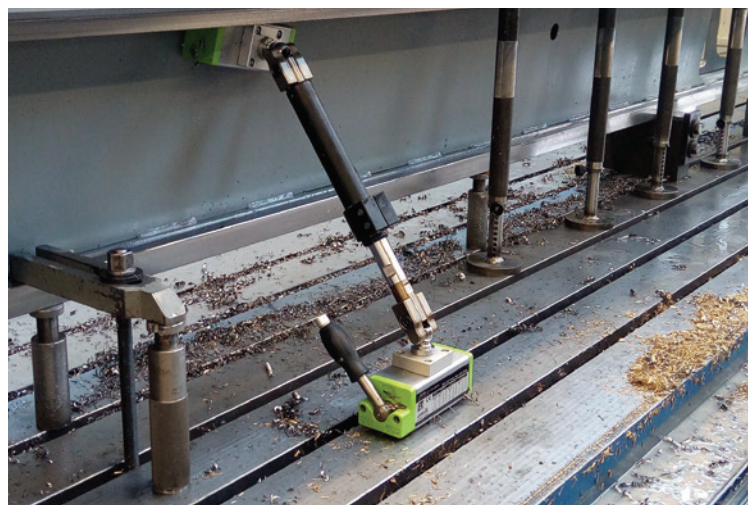
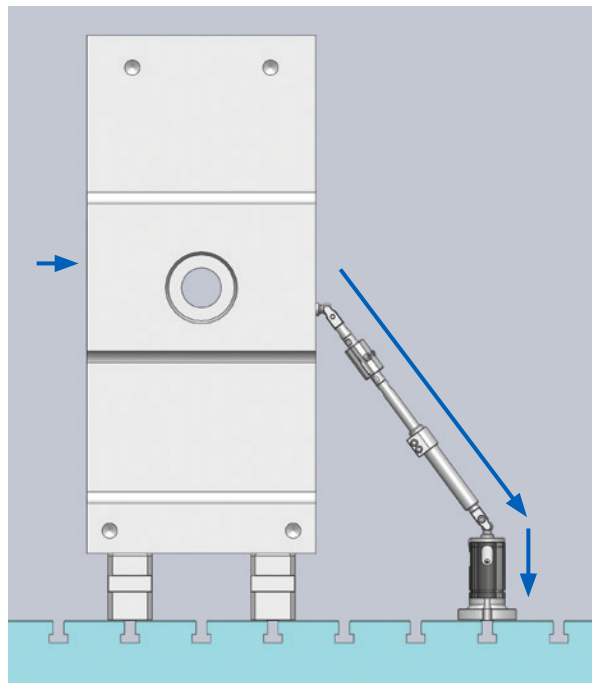
Provides lateral support for tall parts during machining, welding or assembly processes. Allows for the transfer of loads to the table or base.

FEATURES

- Compatible with standard SYSTEM 40 chucks, manual 5-axis clamping units and UNIFLEX clamping system
- Fine adjustment unit allows for adjusting the position of parts as needed

OPTIONS

- Magnetic base
- Tab/flange gripper
- Direct ball attachment with no location requirement
- Multiple fixed length extensions
- 2 adjustable length bases



UNIFLEX BALL SYSTEM (Ø25.4 & Ø50)

Part Attachment Options

These items allow you to attach or grab the workpiece in different ways.

- 1) Mounting screw
- 2) Mounting screw
- 3) Tab/flange gripper

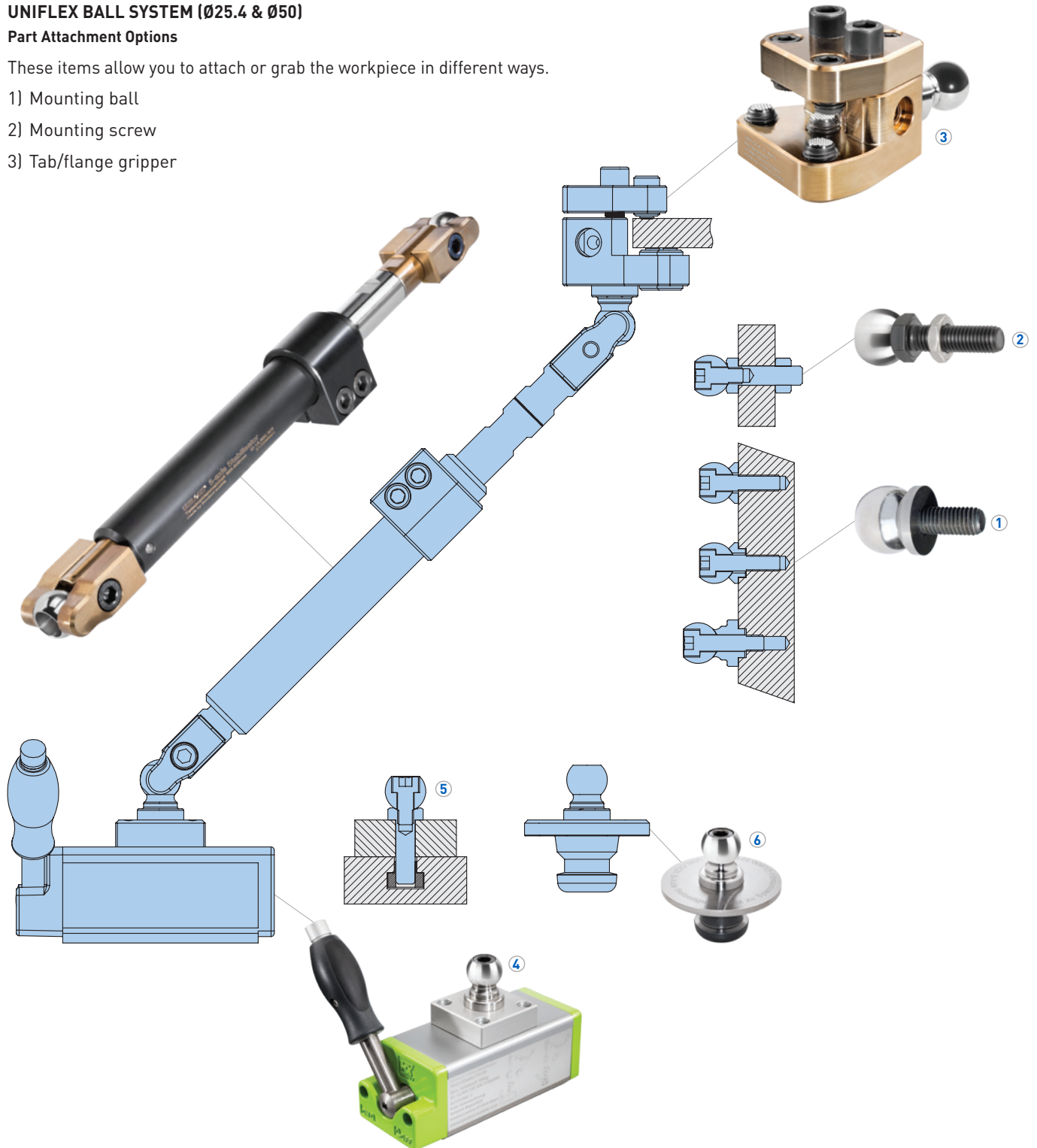
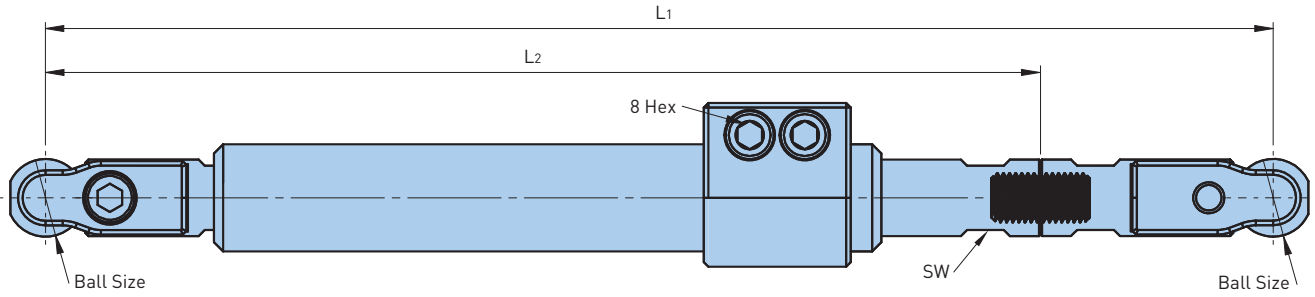


Table Attachment Options

These items are used at the bottom of the stabilizer system and allow it to be rigidly fixed in place.

- 4) Magnetic base
- 5) Mounting screw via t-slot nut
- 6) UNILOCK SYSTEM 40 knob adapter

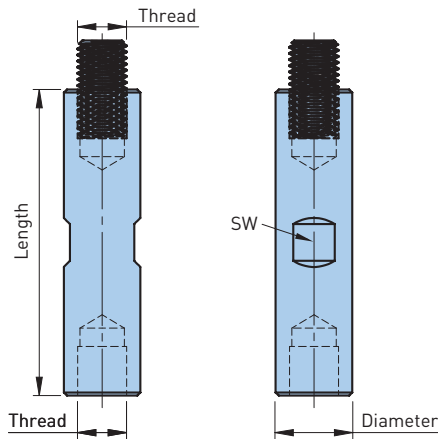
ADJUSTABLE STABILIZER BASE



Catalog Number	Length L1 (mm)	Length L2* (mm)	Ball Size (mm)	Weight (lbs)
15.252.009	255-305	187	Ø25.4	4.3
15.252.010	400-550	287		5.3
15.252.011	350-450	257	Ø50.0	14.7
15.252.012	450-650	356		16.9

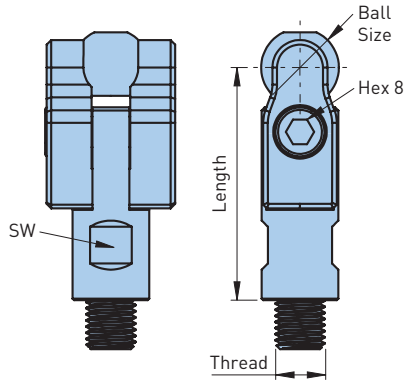
*L2 at minimum position
 • Two balls are included; clamps can be ordered separately

FIXED STABILIZER EXTENSION



Catalog Number	Length (mm)	Diameter (mm)	Thread	Wrench (SW)	Weight (lbs)
15.252.030	75	25	M16xP1.5	21	.3
15.252.031	100				.4
15.252.032	150				.8
15.252.033	500				2.6
15.252.034	250	40	M27xP2	36	1.4
15.252.040	100				.7
15.252.041	150				1.2
15.252.042	250				2.2
15.252.043	500				3.9

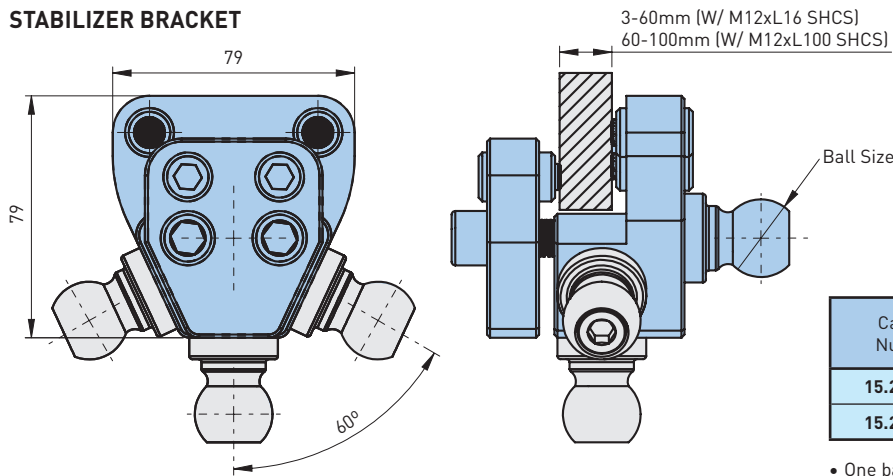
STABILIZER END CLAMP



Catalog Number	Ball Size (mm)	Length (mm)	Thread	SW	Weight (lbs)
15.252.001	Ø25.4	75.0	M16xP1.5	21	3.4
15.252.002	Ø50.0	92.6	M27xP2	36	4.5

• Ball included

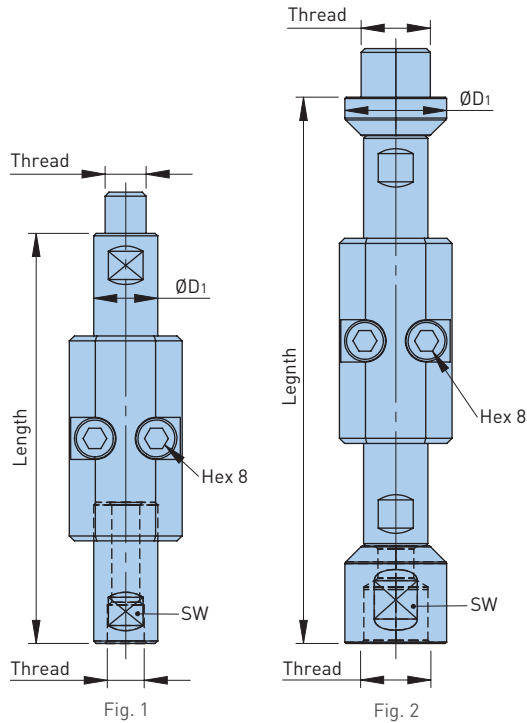
STABILIZER BRACKET



Catalog Number	Ball Size (mm)	Weight (lbs)
15.252.070	Ø25.4	3.4
15.252.071	Ø50.0	5.1

• One ball included; additional balls can be ordered separately

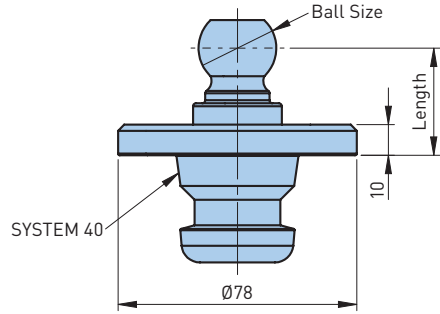
FINE ADJUSTABLE STABILIZER EXTENSION



Catalog Number	Description	Fig.	Length (mm)	ØD1 (mm)	Thread	Wrench (SW)	Weight (lbs)
15.252.020	Ø25	1	120-160	25	M16xP1.5	21	2.6
15.252.021	Ø50	2	173-213	40	M27xP2	36	3.7

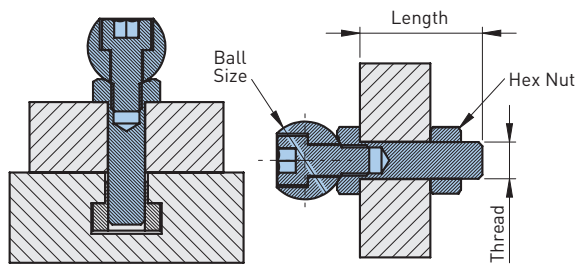
• Hex nut included

STABILIZER BALL TO KNOB ADAPTOR



Catalog Number	Description	Ball Size	Length (mm)	Weight (lbs)
15.252.060	SBA40	Ø25.4	35	1.5
15.252.061	SBA40	Ø50	24	2.4

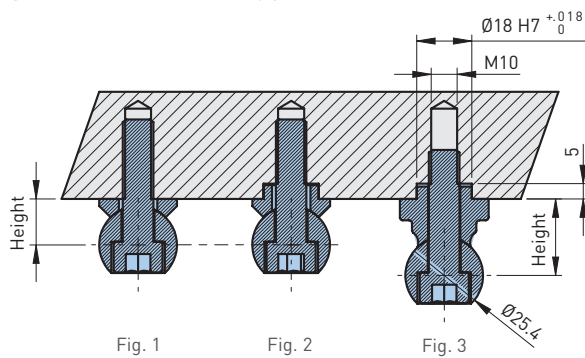
STABILIZER MOUNTING SCREW



Catalog Number	Thread	Ball Size	Length (mm)	Weight (lbs)	
15.252.080	M12xP1.75	Ø25.4	40	.4	
15.252.081	M14xP2			.4	
15.252.082	M16xP2			.4	
15.252.083	M18xP2.5			.4	
15.252.084	M20xP2.5			.4	
15.252.085	M24xP3	Ø50	50	.9	
15.252.086	M24xP3			1.2	
15.252.087	M30xP3.5		70	60	1.3
15.252.089	M36xP4			70	1.5

- Hex nut included; T-nut not included
- Inch sizes available upon request

STABILIZER BALL AND COLLAR



Catalog Number	Fig.	Description	Height (mm)	Weight (lbs)
15.252.380	1	5-Axis Stabilizer Ball and Collar	15	.1
15.252.381	2	5-Axis Stabilizer Ball and Collar with Locating Pilot	15	.2
15.252.382	3	5-Axis Stabilizer Ball and Collar with Locating Pilot	25	.2
15.252.005*	1/2/3	5-Axis Stabilizer Ball and Collar Set (Ø25.4)	15 or 25	.4

*Set includes 1 ball and 3 collars
 • See pg. 48 for Ø50 balls

STABILIZER MAGNETIC BASE

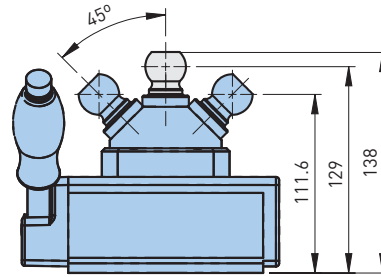
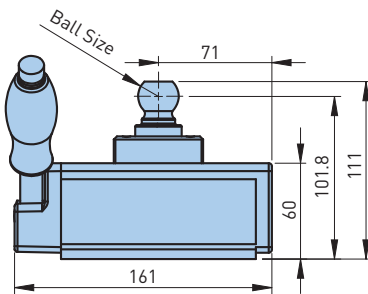
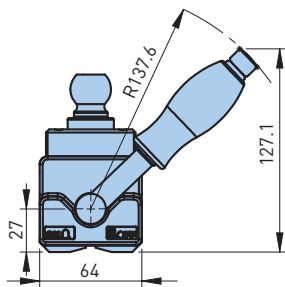
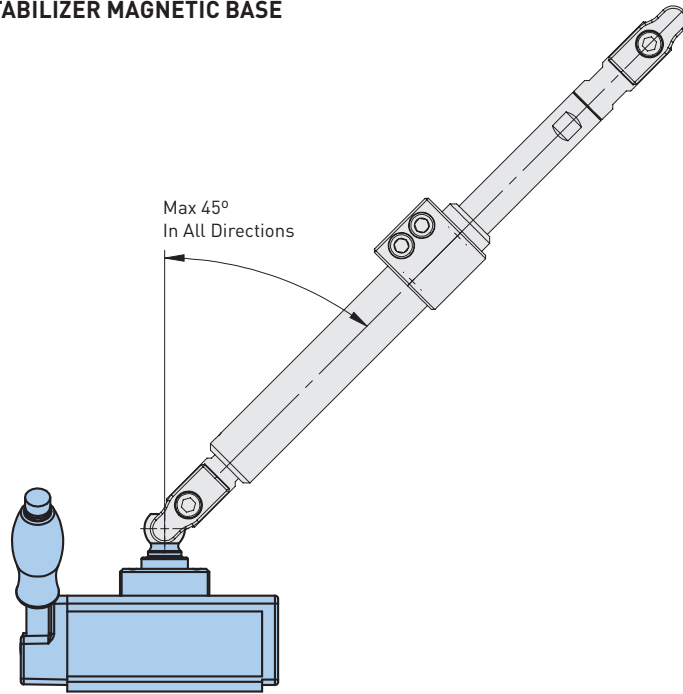


Fig. 1

Fig. 2

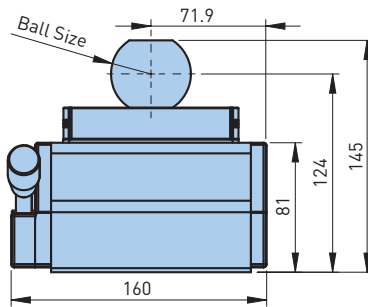
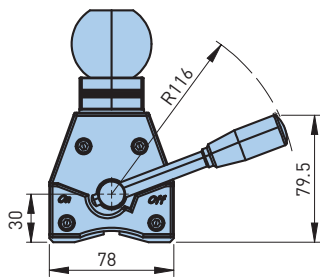


Fig. 3

Catalog Number	Load Capacity*		Ball Size	Qty. of Balls	Fig.	Weight (lbs)
	(lbs)	(kg)				
15.252.055	330	150	Ø25.4	1	1	7.5
15.252.056	330	150		2	2	7.5
15.252.068	275	125	Ø50	1	3	34.1
15.252.069	550	250		1		34.2

*Load rating is for flat surfaces; for round surface holding, please consult the BIG DAISHOWA Engineering Dept.
 • All dimensions are in millimeters
 • Two balls included with Fig. 2

CAUTION

Not for lifting. Do not stand or lift loads overhead.



OPTIMIZE PRODUCTIVITY

ACCESSORIES

CHUCK AIR FITTINGS	104-105
QUICK DISCONNECT FITTINGS	106
SUBPLATE AIR FITTINGS	107
AIR CIRCUIT DIAGRAM	108
POSITIONING PINS & BUSHINGS	109
TOE CLAMPS	109
DUST COVERS	109

OPERATE AT PEAK EFFICIENCY

MAINTENANCE

REPAIR AND REPLACEMENT COMPONENTS	110
SERVICE AND OPERATING INSTRUCTIONS	111

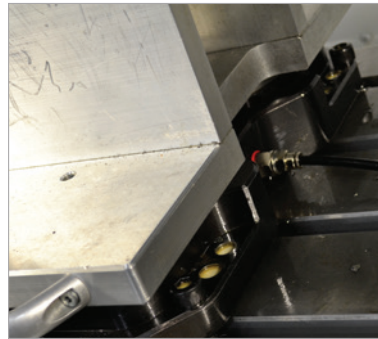
CHUCK AIR FITTINGS

Air fittings and parts are sold separately or as a kit. Other valve options available upon request. Please consult the BIG DAISHOWA Engineering Dept.

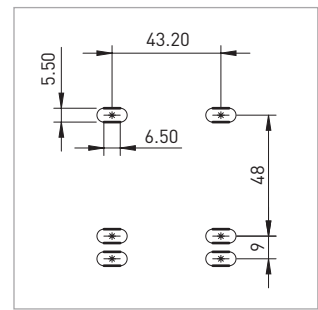


- Fully assembled
- Other options available
- All dimensions are in millimeters

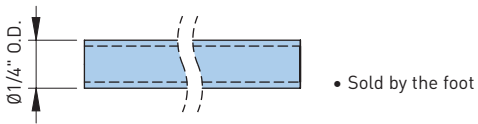
Air Kit Catalog Number	Contents		
	Catalog Number	Description	Quantity
15.350.000	15.312.001	Filter Regulator Oiler Assembly	1
	15.350.009	Standard Hand Valve	1
	15.350.020	Uni Thread 1/4" Tube	1
	15.350.021	Uni Thread 1/8" Pipe x 1/4" Tube	1
	15.350.001	1/4" OD Tube	10 ft



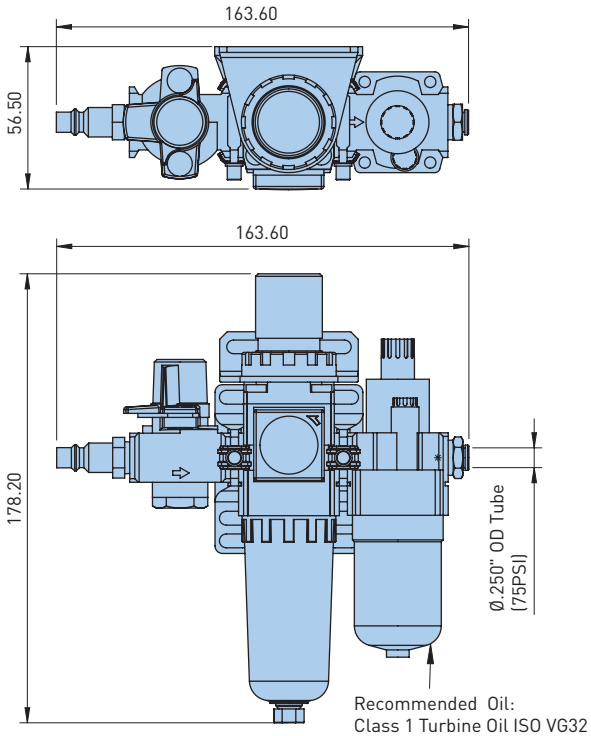
Mounting Bracket Positions



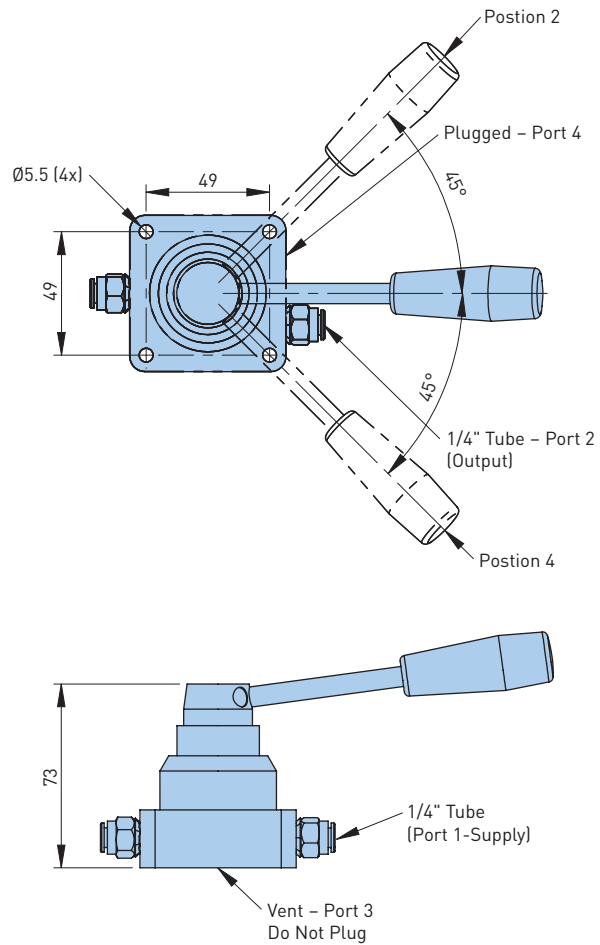
15.350.001



15.312.001

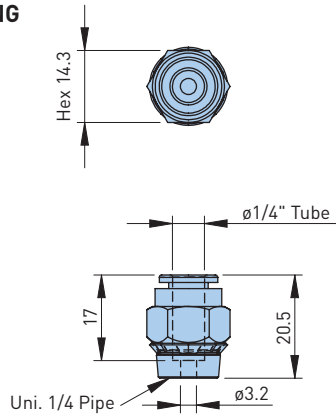


15.350.009



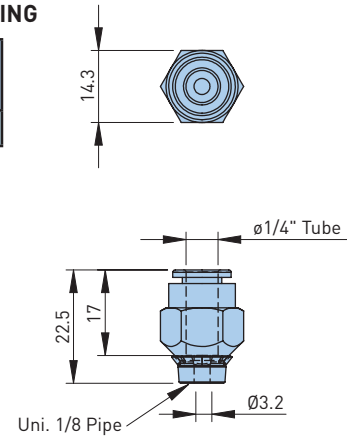
1/4 PIPE FITTING

Catalog Number
15.350.020



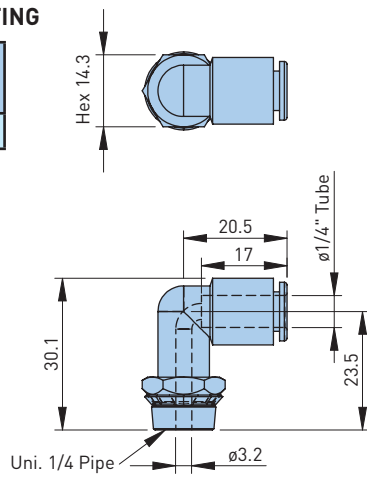
1/8 PIPE FITTING

Catalog Number
15.350.021



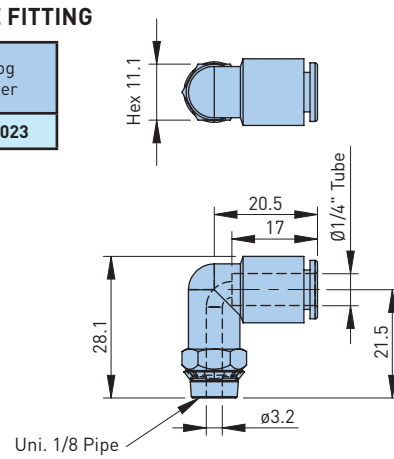
1/4 PIPE FITTING

Catalog Number
15.350.022



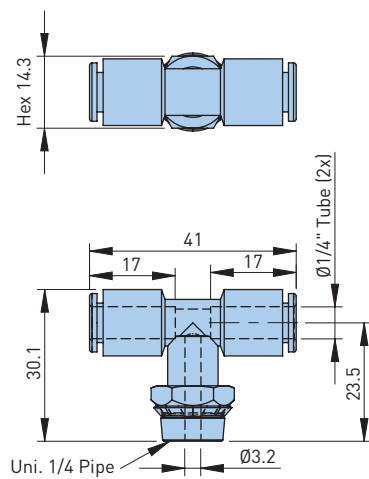
1/8 PIPE FITTING

Catalog Number
15.350.023



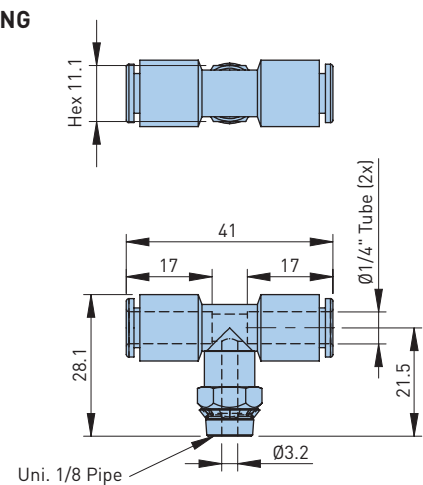
1/4 PIPE FITTING

Catalog Number
15.350.024



1/8 PIPE FITTING

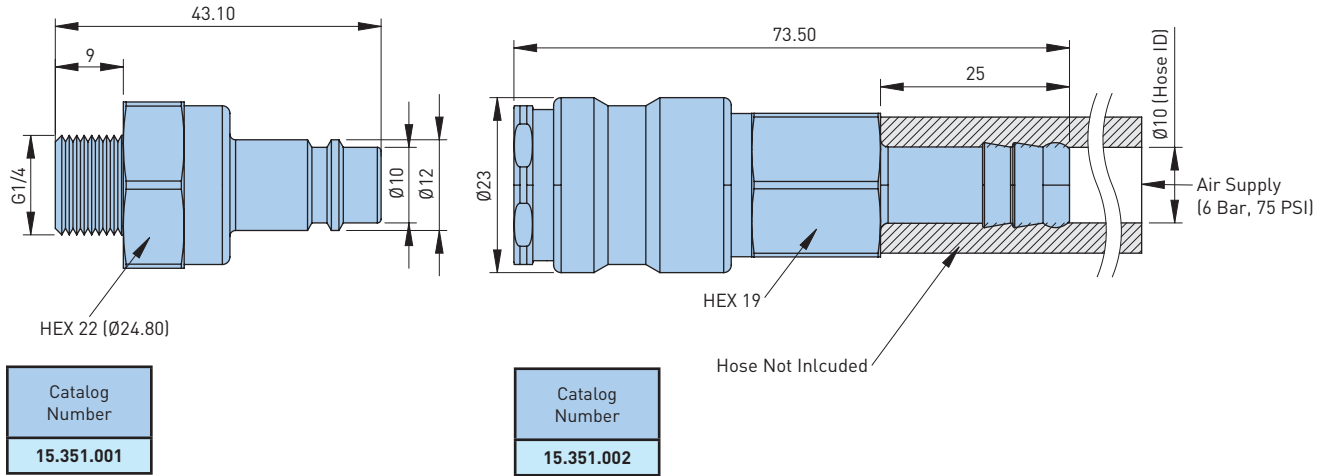
Catalog Number
15.350.025



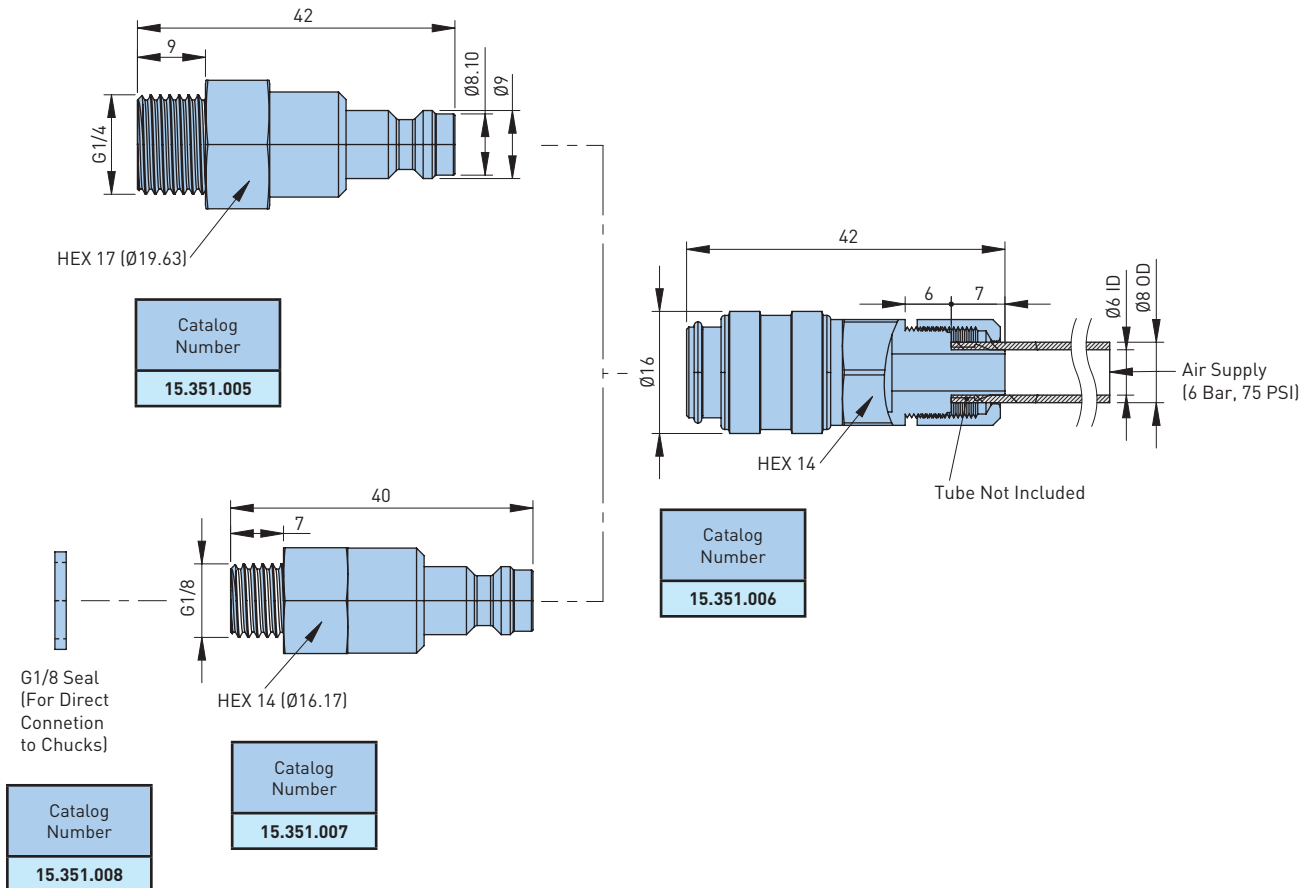
- Compatible with Rc, GNDT & NDTF
- All dimensions are in millimeters

QUICK DISCONNECT FITTINGS

NOMINAL $\varnothing 7.4 = 43\text{mm}^2$
(PLUG PROFILE: Europe)

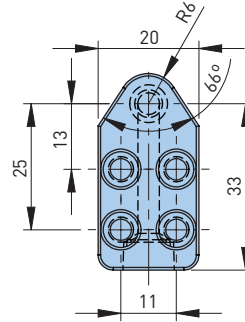
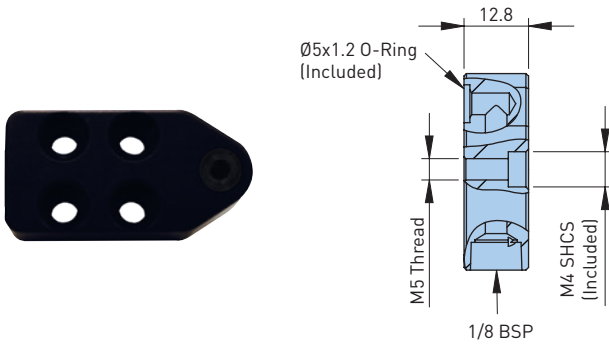
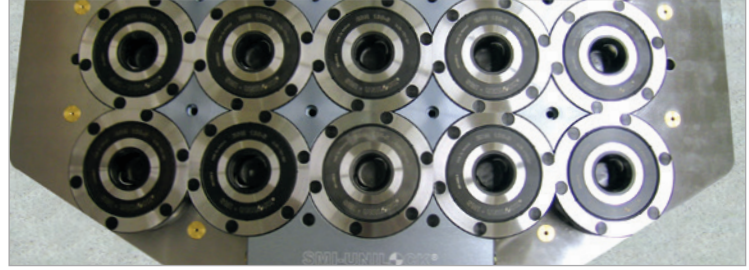
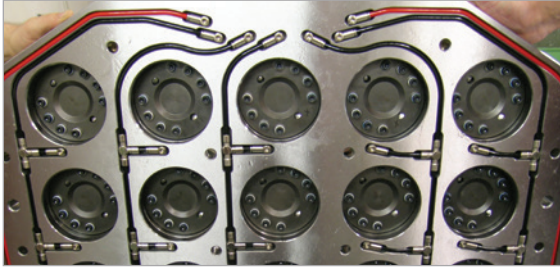


NOMINAL $\varnothing 5 = 20\text{mm}^2$
(PLUG PROFILE: Europe)

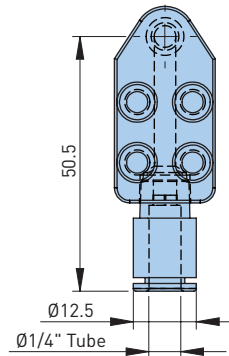


• 15.351.001, 15.351.005 and 15.351.007 are not sealed

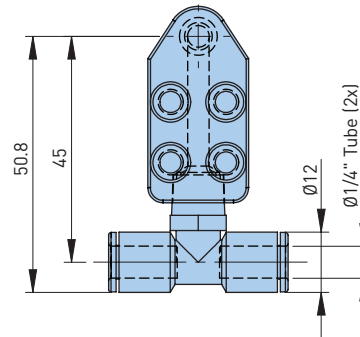
SUBPLATE AIR FITTINGS



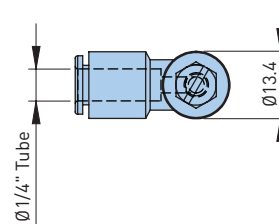
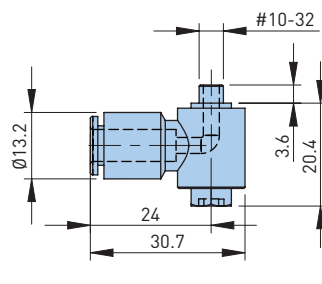
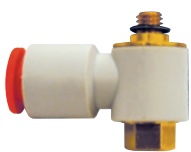
Catalog Number
15.260.727



Catalog Number
15.260.728

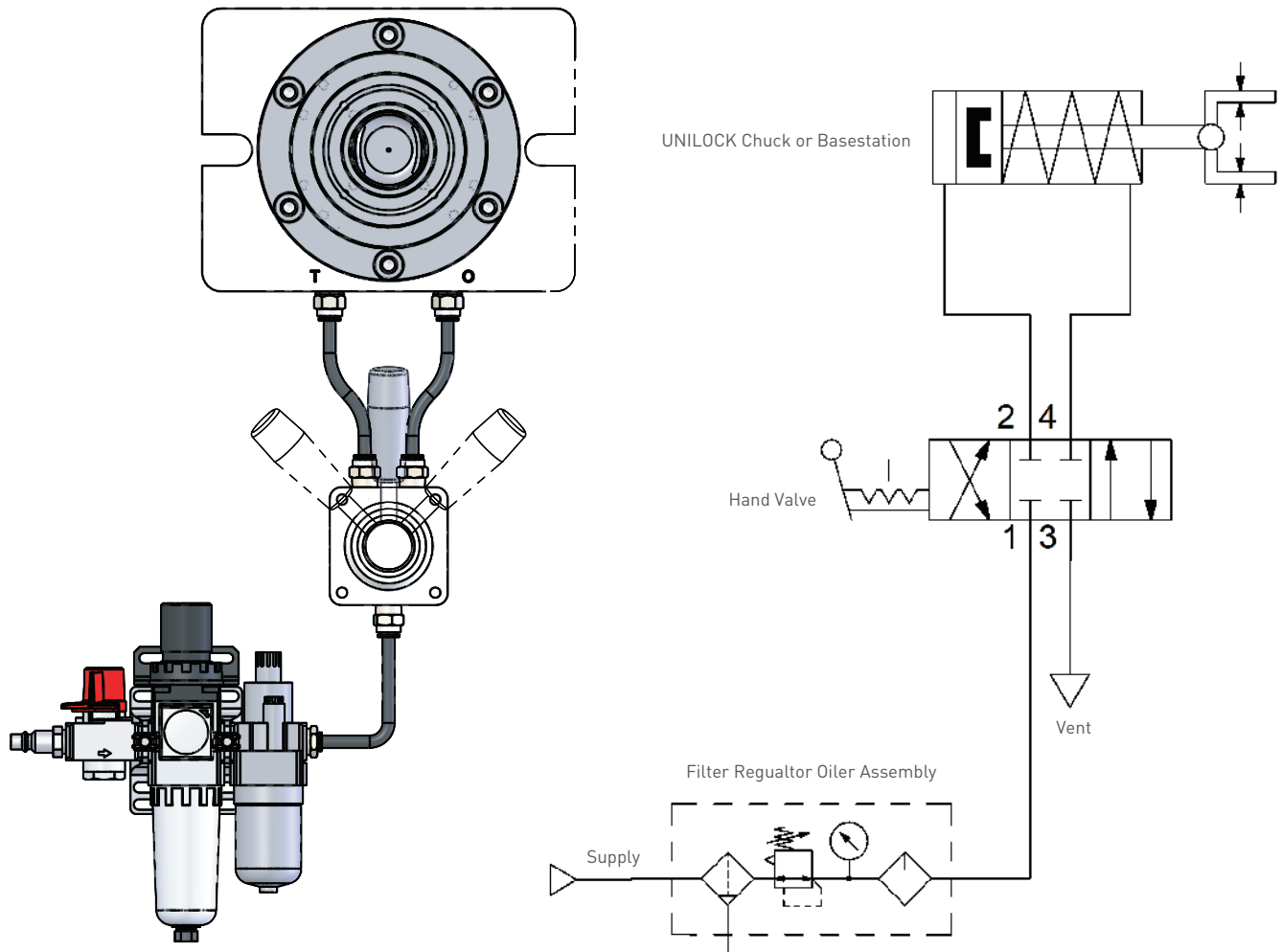


Catalog Number
15.260.729



Catalog Number
15.350.026

AIR CIRCUIT DIAGRAM





POSITIONING PINS & BUSHINGS

Catalog Number	Description
15.260.309	Positioning Bushing—Indexing
15.260.351	Positioning Pin—8mm Indexing
15.260.352	Positioning Pin—10mm Indexing
15.260.350	Positioning Pin—12mm Indexing
15.261.169	Positioning Pin—25mm Indexing
15.270.420	Positioning Pin—ASM 120 - 12/10
15.270.422	Positioning Pin—ASM 120 - 12/12
15.270.426	Positioning Pin—ASM 120 - 12/16
15.270.427	Indexing Pin—Ø14mm
15.270.428	Indexing Step Pin—Ø8mm/Ø14mm
15.270.429	Indexing—Key 14mm



TOE CLAMPS

Catalog Number	Description
15.270.403	Adjustable Toe Clamp—S30
15.270.404	Adjustable Toe Clamp—S40
15.270.405	Adjustable Toe Clamp—S50
15.270.450	Toe Clamp Blank
15.270.454	Toe Clamp Blank (Set of 4)



DUST COVERS

Catalog Number	Description
15.270.090	Chip Guard—90
15.270.120	Chip Guard—120
15.270.130	Chip Guard—138
15.260.170	Chip Guard—170
15.260.310	Chip Guard Clamping Knob—M8
15.260.790	M8 SHCS Cover (pkg of 6)

- Clamping knobs included with dust covers



REPAIR AND REPLACEMENT COMPONENTS

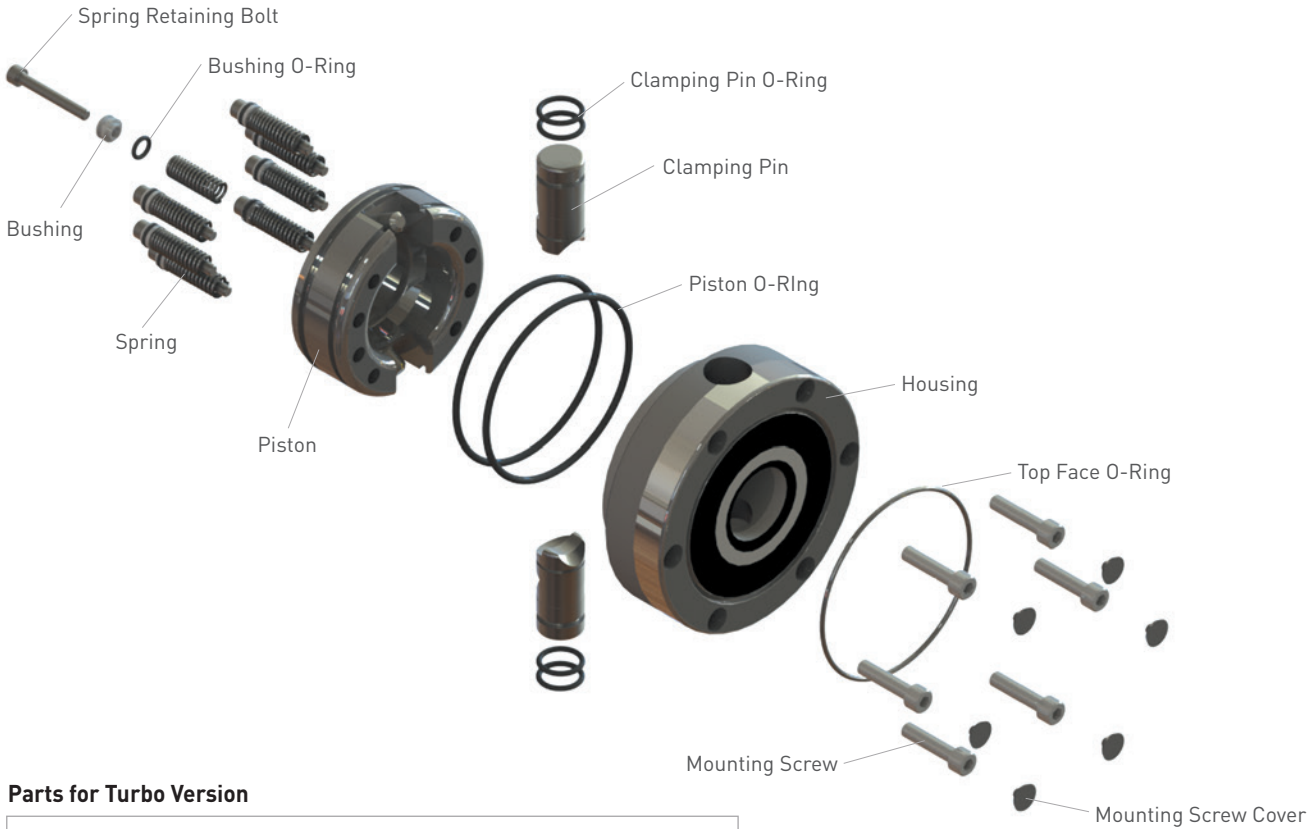
Chuck Type	O-Ring Only Kits		Full Repair Kit		Chuck Catalog Number
	Catalog Number		Catalog Number		
	BUNA	VITON	BUNA	VITON	
5-Axis (Air)	—	—	—	—	15.250.205
5-Axis (Manual)	—	—	—	—	15.250.1XX/2XX
AFM 105/65*	—	—	—	—	15.272.16X
AFM 146*	15.269.285	—	15.269.029	—	15.260.146
ASH 120	—	—	—	—	15.270.170
ASM 120*	15.270.198	15.270.199	15.269.007	—	15.270.15X
ASM 120-M*	—	—	—	—	15.270.18X
ASM 120-SS*	—	—	—	—	15.270.16X
ASM 90*	—	—	15.269.004	—	15.240.09X
ASM90A**	—	—	—	—	15.240.09XA
ASSF 170	—	—	15.269.028	—	15.279.170
ASSF 250	—	—	—	—	15.279.250
EDM 100/150*	—	—	15.269.027	—	15.272.150
EFM 138*	—	15.270.195	15.269.013	15.269.014	15.263.10X
EFM 138A**	—	—	—	—	15.263.10XA
EFM 138 SS	—	—	—	—	15.276.10X
ERGO 138	15.269.035	—	15.269.036	—	15.270.11X
ESA 110	—	—	—	—	15.277.300
ESA 120/70	—	—	—	—	15.277.200
ESA 185*	—	—	—	—	15.277.185
ESM 100/75*	15.269.022	—	15.269.021	—	15.272.175/.185
ESM 138*	15.270.192	15.270.195	15.270.193	15.269.030	15.270.10X
ESM 138-SS*	—	—	15.269.011	—	15.276.10X
ESM 138-C*	—	—	15.269.015	—	15.270.14X
ESM 138A**	—	—	—	—	15.270.14XA
ESM 176*	—	15.272.190	15.269.019	—	15.272.17X
ESM176A**	—	—	—	—	15.272.17XA
ESM 176-SS*	—	—	—	—	15.260.11X
ESM 180/150*	—	—	—	—	15.500.590
HSM 196*	15.269.020	—	—	—	15.274.407
ISM 160	15.269.285	—	15.269.029	—	15.260.160/.160A
MSM 170*	15.260.190	15.260.192	15.269.017	—	15.260.100
NSA 125	—	—	15.269.023	—	15.277.125

*Discontinued chucks.

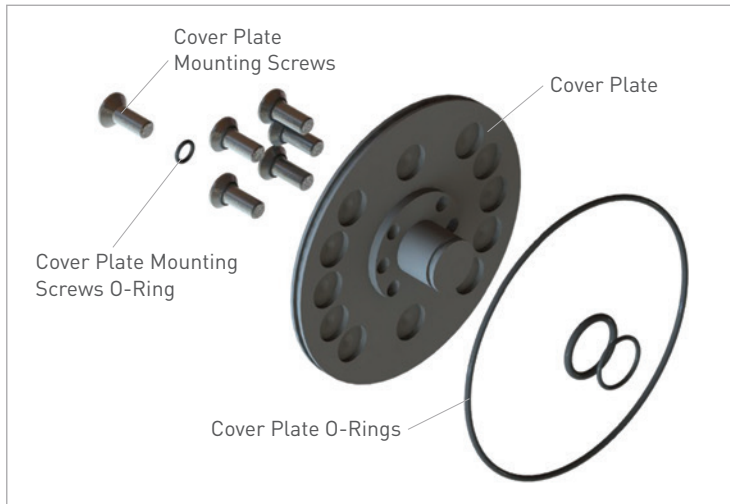
**Chucks can not be repaired by end user.

• Please contact BIG DAISHOWA Eng. Dept. for additional service information.

SERVICE & OPERATING INSTRUCTIONS



Parts for Turbo Version



- Min. operating air pressure: 75 PSI
- Min. recommended air line: Ø.250" O.D.
- Air must be filtered to a maximum particle size of 10µm, dried and lubricated
- Use of dust covers is recommended for chucks when not in use
- Close all air connections when chuck is not in use
- For vertical wall mounting, chuck orientation should be such that the clamping pins are horizontal
- For long-term storage, spray rust preventive into air ports and cycle the chuck 4-5 times
- For more in-depth service instructions, please consult the BIG DAISHOWA Engineering Dept.

Represented by

BIG DAISHOWA Inc.

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