

BIG KAISER



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SUPPLEMENTAL PRODUCTS UNILOCK MODULAR WORKHOLDING SYSTEM

VOL. 2

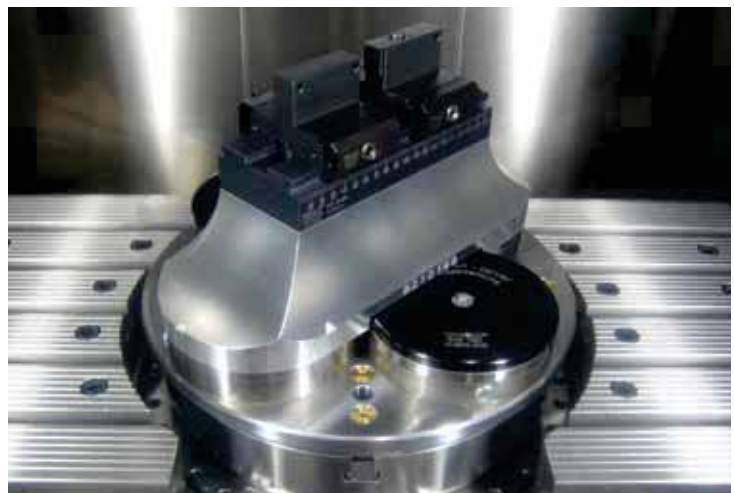


ROUND CHUCKS**4-17****ERG0138-PREASSEMBLED BASES OVERVIEW****4-5****E100****6****E100-V1****7****E100-V2****8****E200****9****E300****10****E400****11-12****E600****13****E800****14****E1000****15****MULTI-AXIS SYSTEM****16-31****SYSTEM 68 FOR 5-AXIS****16-19****ESA125/85****20-21****5-AXIS STABILIZER UNIFLEX BALL SYSTEM****22-27****UNIFLEX SYSTEM 50****28-31**

ERGO138-PREASSEMBLED BASES OVERVIEW Preassembled Double Table Chucks

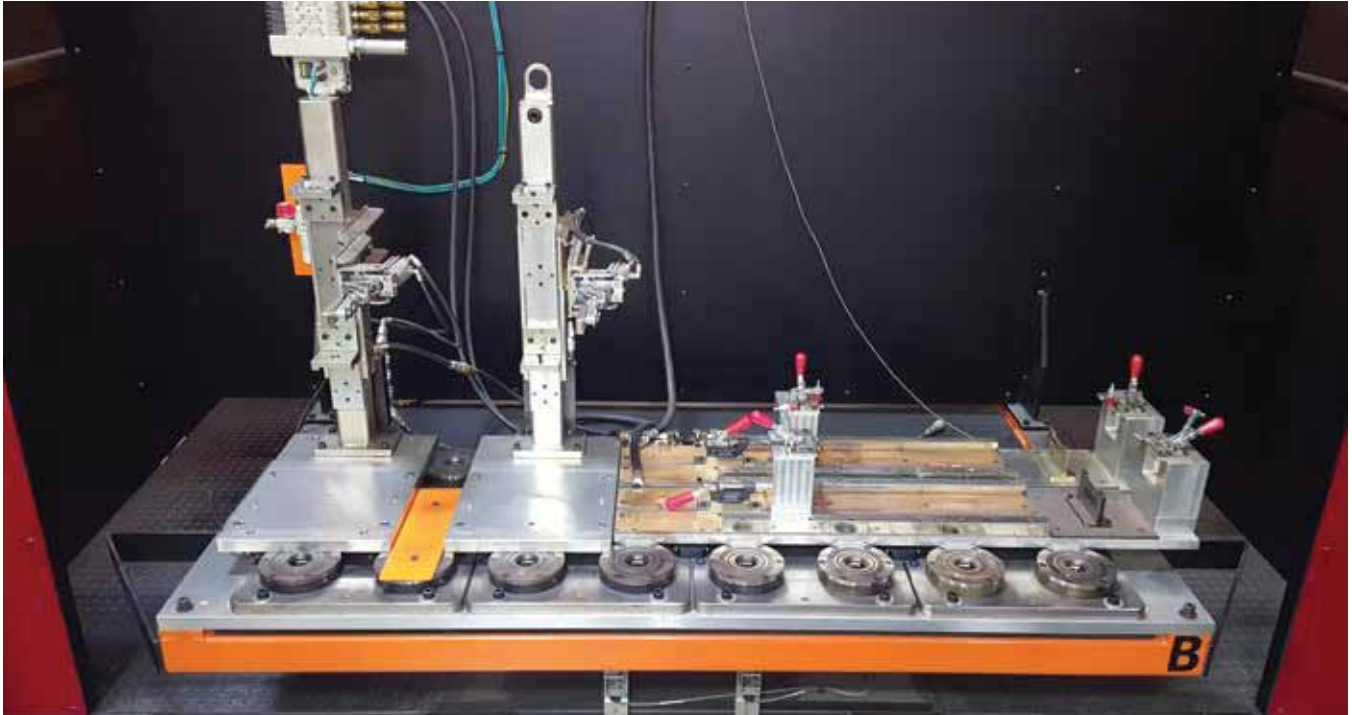
Base stations with the new ERGO 138 chuck save 11mm of height compared to ESM 138. Available with turbo out of the box.

- 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



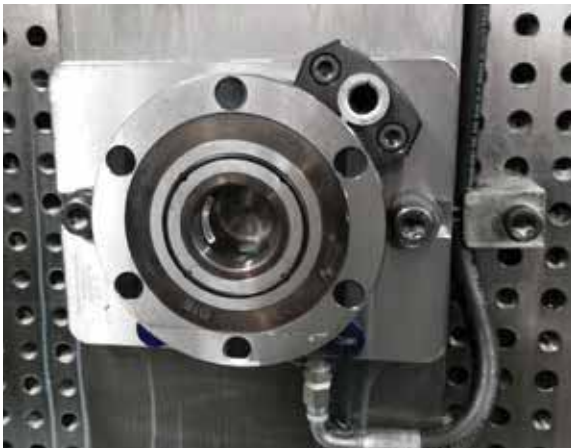
Catalog Number	Page Number	Metric (mm)			Imperial (in)			Number of Chucks
		Length	Width	Height	Length	Width	Height	
15.270.370	6	196	149	50	7.717	5.866	1.969	1
15.270.370.1	7	240	190		9.448	7.480		1
15.270.370.2	8	240	19		9.448	.748		1
15.270.371	9	396	196		15.591	7.717		2
15.270.372	10	595	195		23.425	7.677		3
15.270.373	11	395	395		15.551	15.551		4
15.270.374	13	596	395	23.465	15.551	6		
15.270.375	14	796	396	60	31.339	15.591	2.362	8
15.270.376	15	996	396		39.213	15.591		10

• No hardware included



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 µm (.0002") is greater than needed in most welding applications.



ERG0138 — TIMING BLOCK

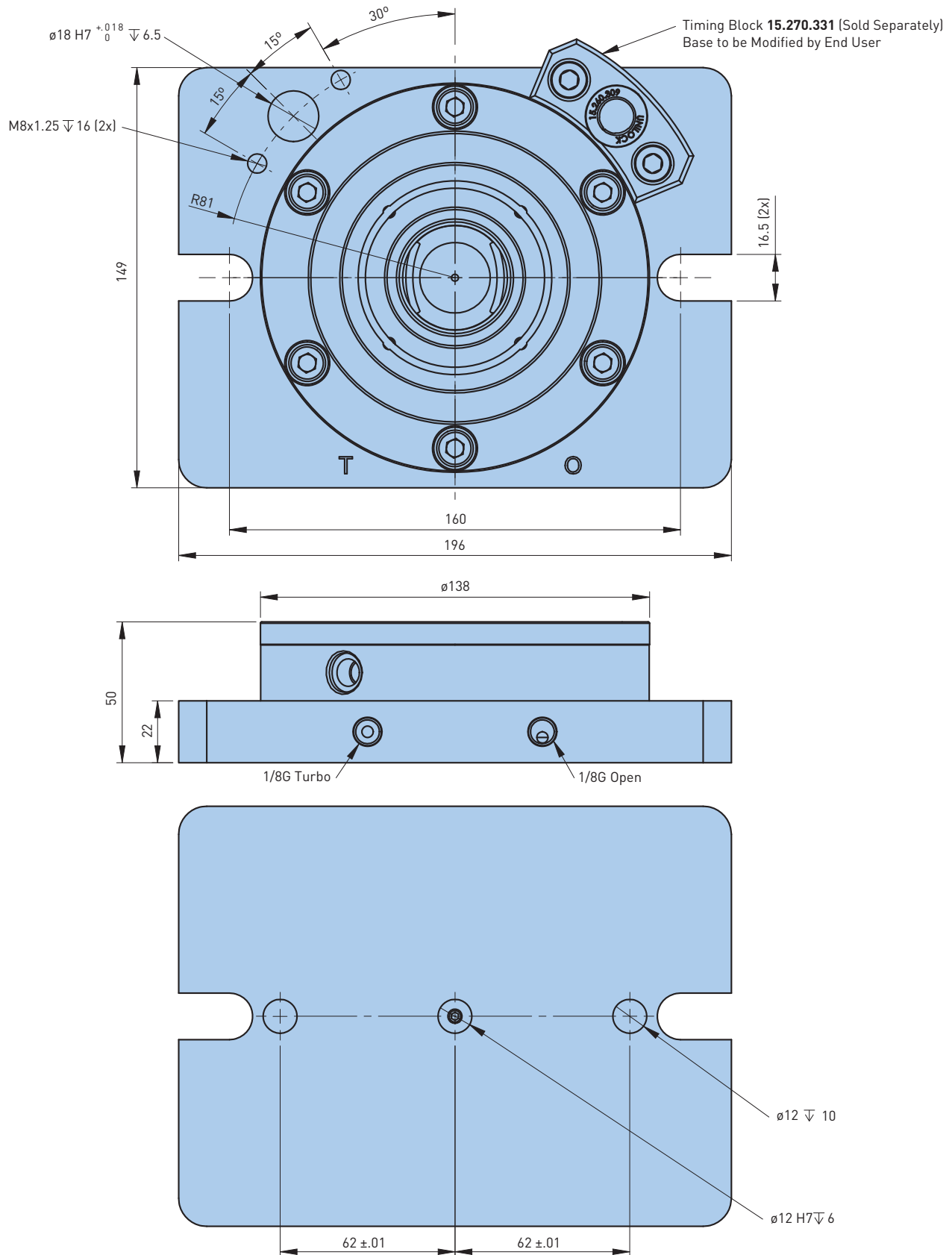
The ERGO E100 base can be modified by the end user to accept a timing block allowing for the timing of smaller fixtures at 45° or 135°. The ERGO E100 V1 and V2 bases offers a 45° timing block mount with no modification. The V1 also has a single 14mm H7 timing notch. In all cases the block (15.270.331)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



ERG0138 E300 - ROUND, SPECIAL ITEM

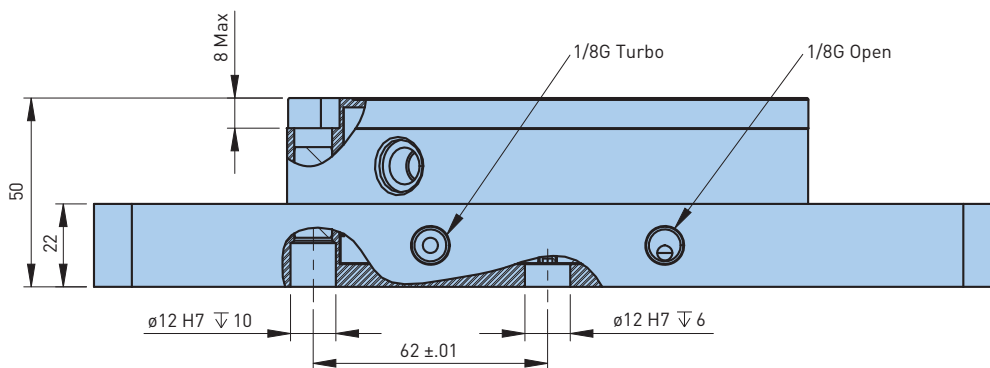
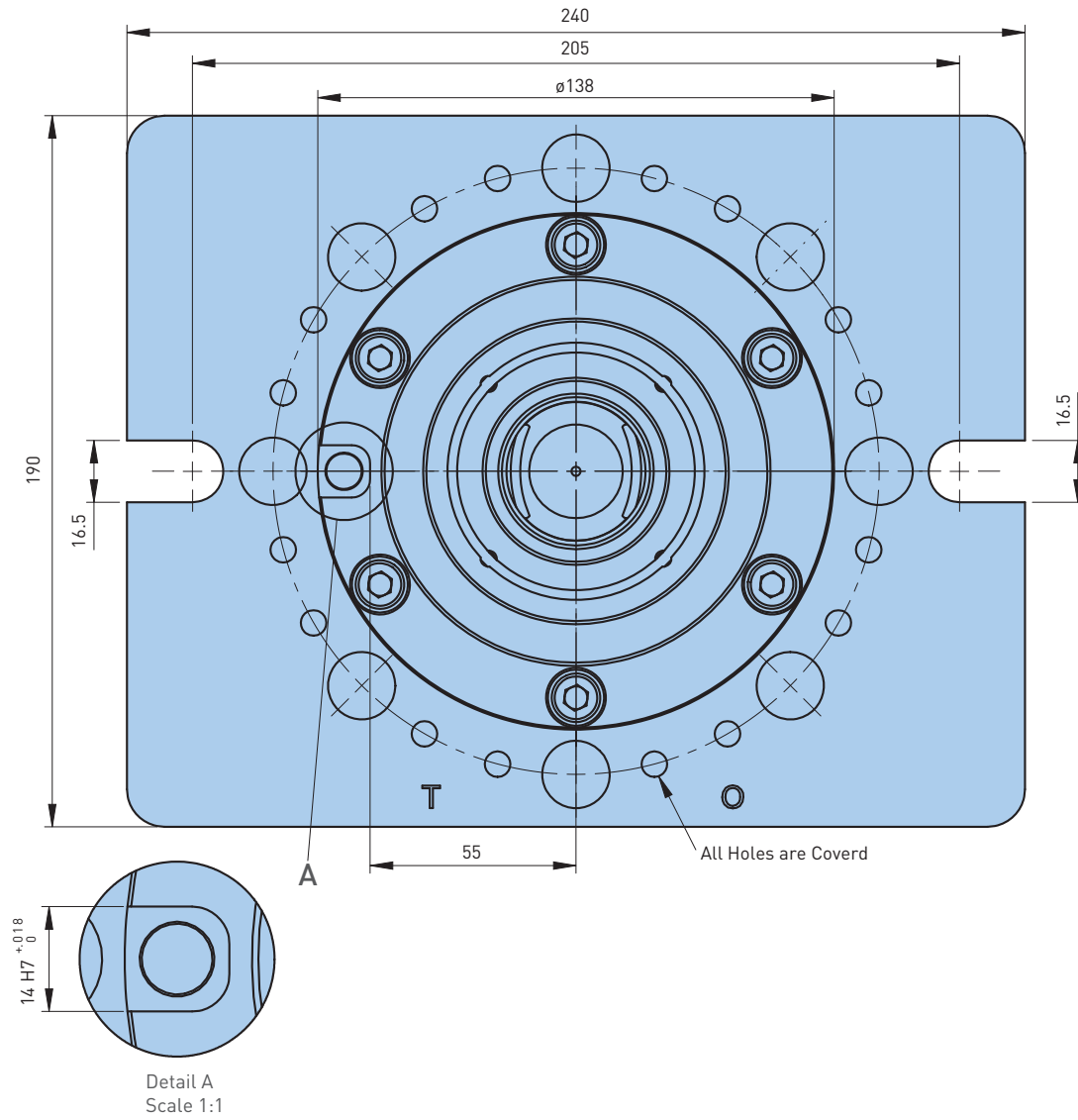
Special versions of round bases can be built to customer specifications. For assistance, please consult the BIG KAISER Eng. Dept.

E100—15.270.370



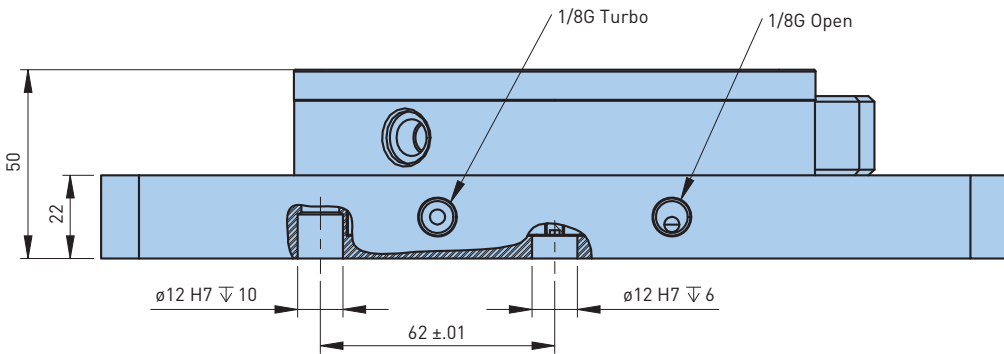
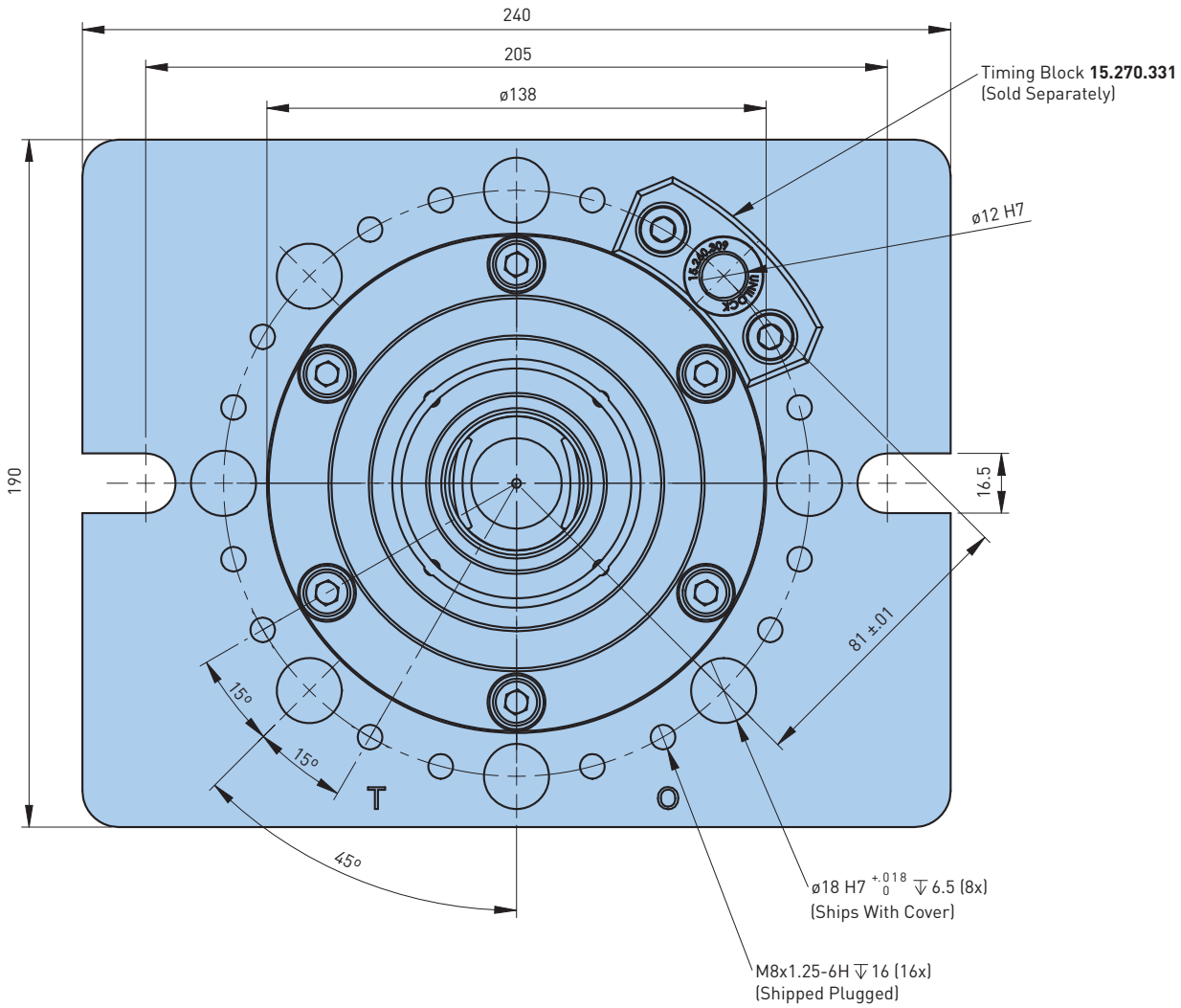
- All dimensions are in millimeters
- For detailed information on additional mounting hole locations, please consult the BIG KAISER Eng. Dept.

E100 V1—15.270.370.1



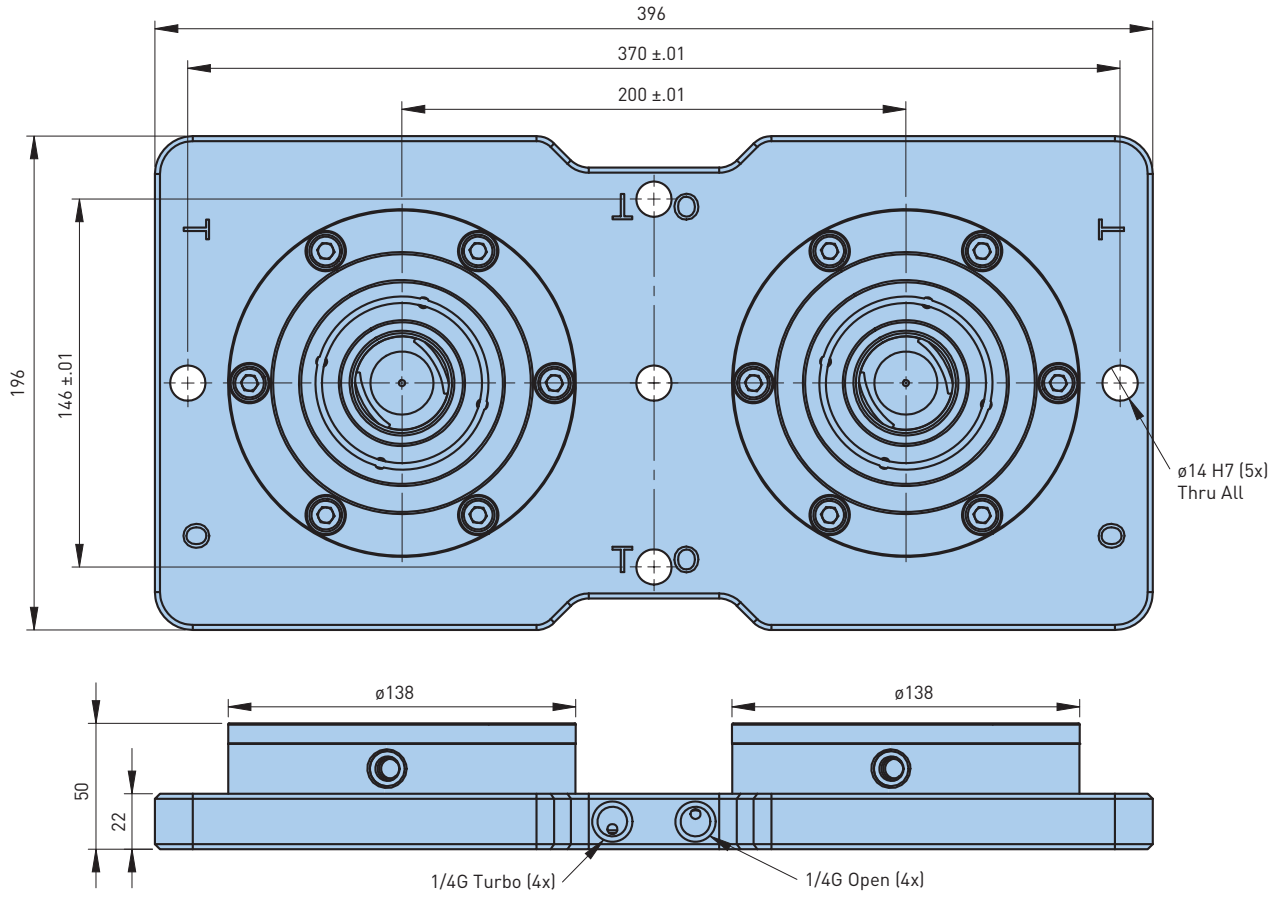
- All dimensions are in millimeters
- For detailed information on additional mounting hole locations, please consult the BIG KAISER Eng. Dept.

E100 V2—15.270.370.2



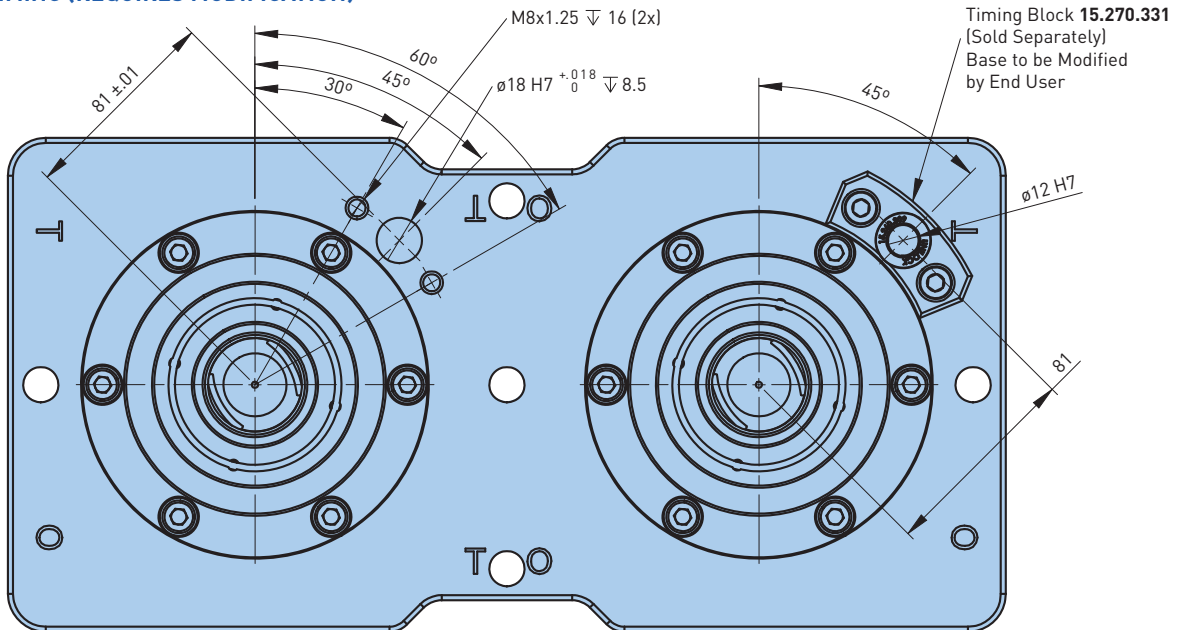
- All dimensions are in millimeters
- For detailed information on additional mounting hole locations, please consult the BIG KAISER Eng. Dept.

E200—15.270.371



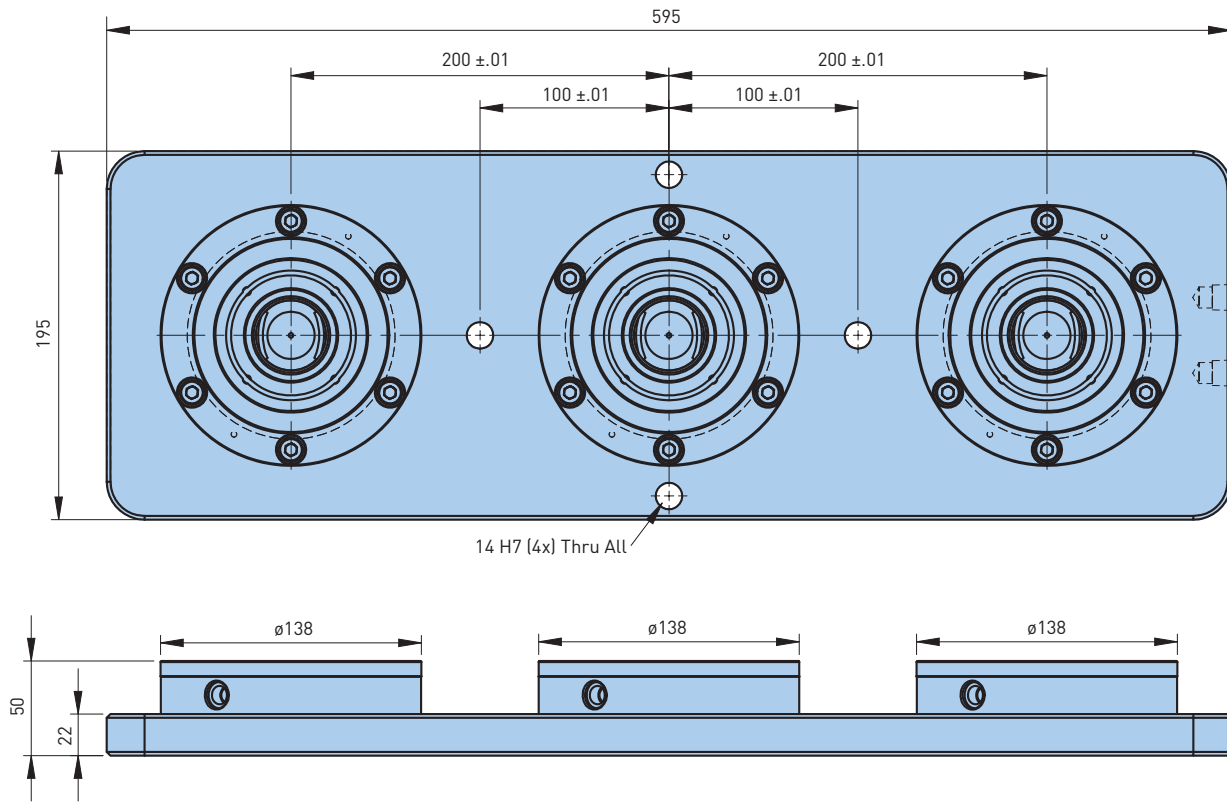
- All dimensions are in millimeters
- For individual chuck operation, please consult the BIG KAISER Eng. Dept.

E200—FOR TIMING (REQUIRES MODIFICATION)



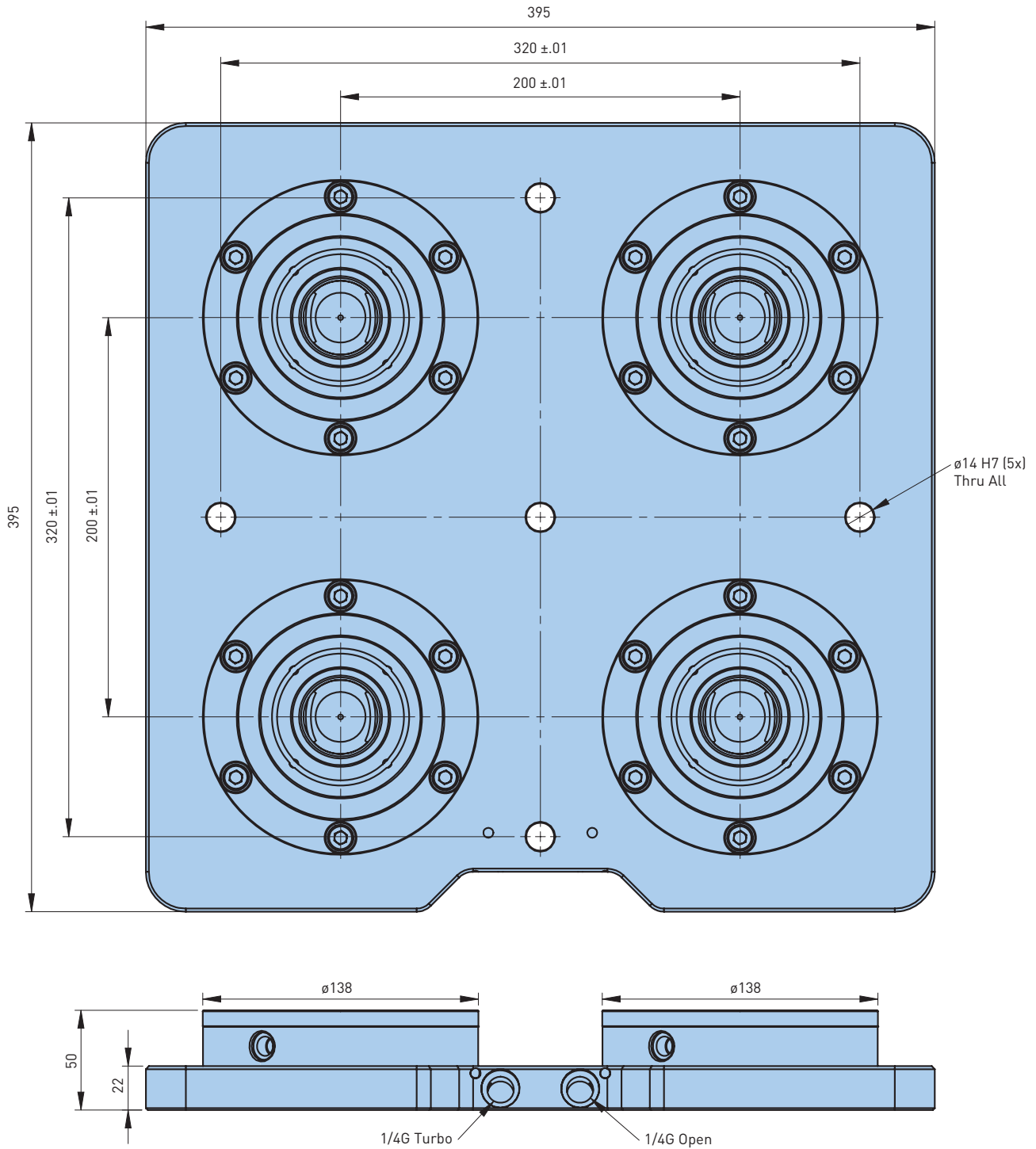
- All dimensions are in millimeters
- For detailed information on additional mounting hole locations, please consult the BIG KAISER Eng. Dept.

E300—15.270.372



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

E400—15.270.373



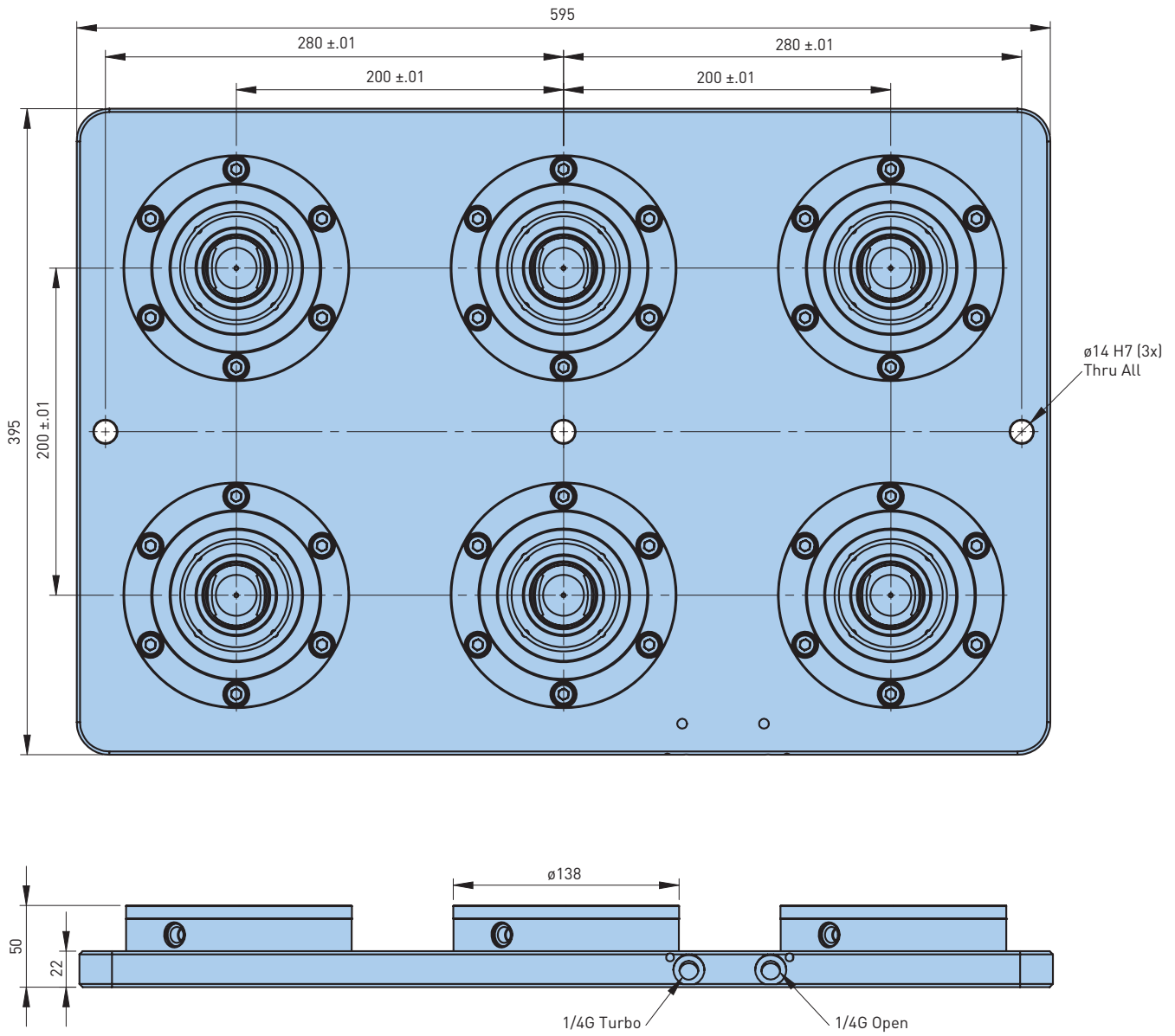
- All dimensions are in millimeters
- For detailed information on additional mounting hole locations, please consult the BIG KAISER Eng. Dept.



E400

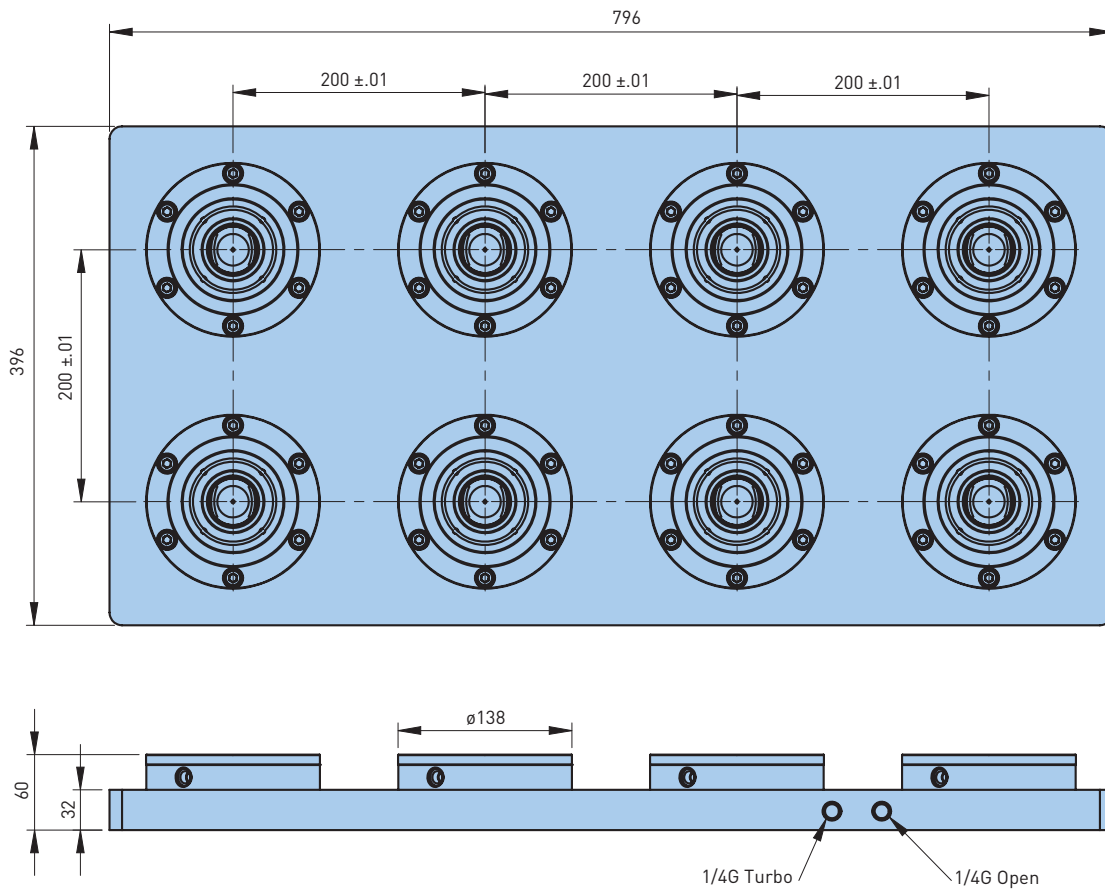
The ERGO E400 base stations shown above are mounted together for a master reference system on the table to the machine. They are also pneumatically linked to operate in unison. The vise plate (left bottom) and the grid plate (right bottom) are easily swapped or removed entirely. Then, when needed, replaced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

E600—15.270.374



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

E800—15.270.375



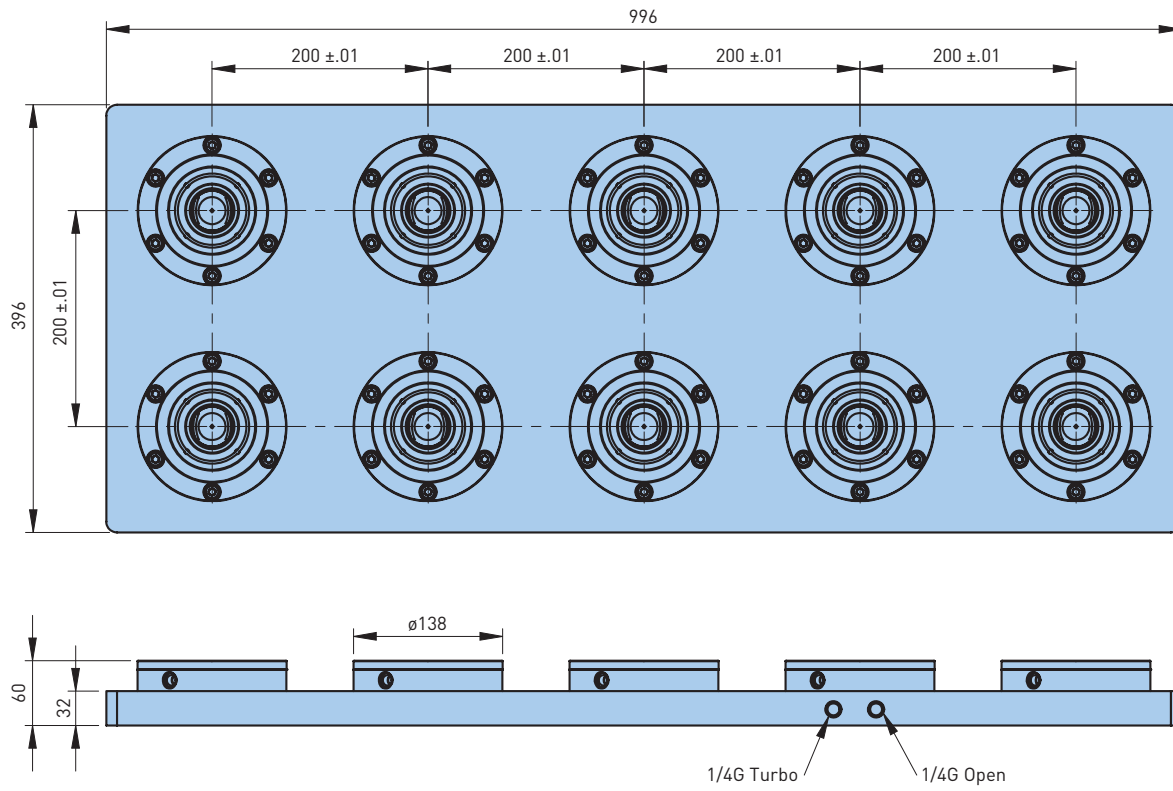
- All dimensions are in millimeters
- For detailed information on additional mounting hole locations, please consult the BIG KAISER Eng. Dept.



The ERGO E800 preassembled bases shown with custom mounting holes to match the T-slot pattern of the customer's machine.

- For additional information on base modifications, please consult BIG KAISER Engineering Dept.

E1000—15.270.376



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

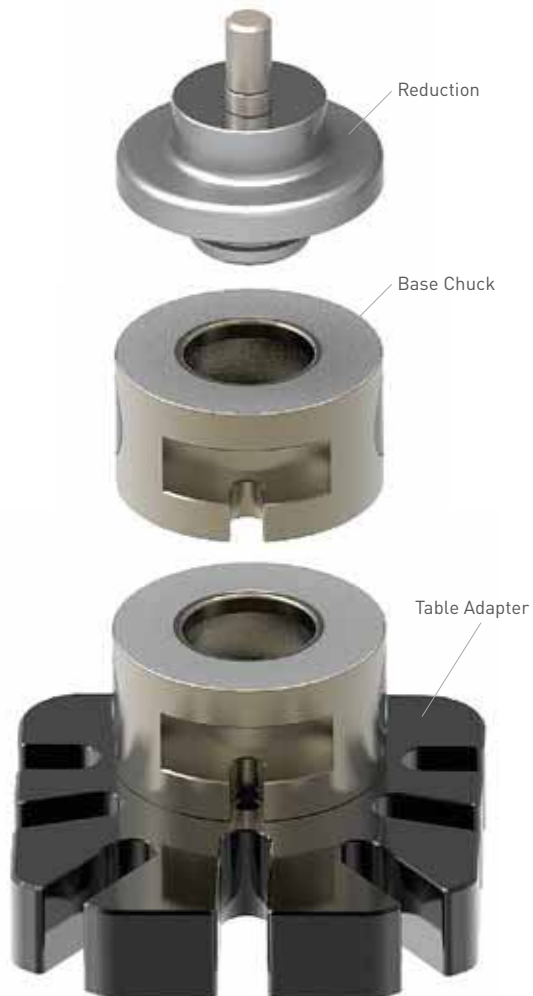


The ERGO E1000 preassembled base shown with four customer-designed fixtures. Standard fixture pallets are available in either aluminum or steel and various sizes and thickness. Please see UNILOCK Vol. 2, Pg. 70-71.

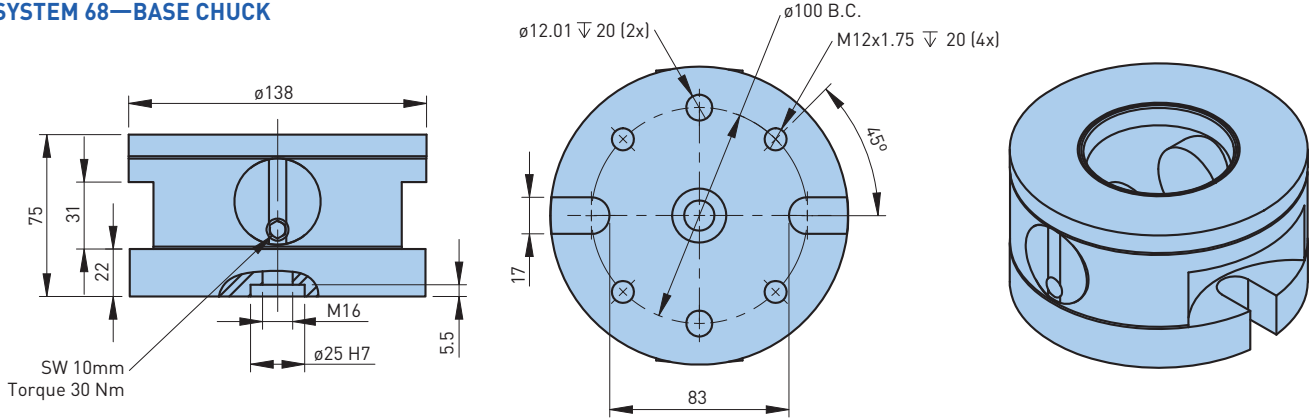
SYSTEM 68 FOR 5-AXIS

The original SYSTEM 40 for 5-Axis modular workholding system now has a larger cousin with the addition of the SYSTEM 68 for 5-Axis product line. 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 ESM 180/150 pneumatic chuck.

- 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.



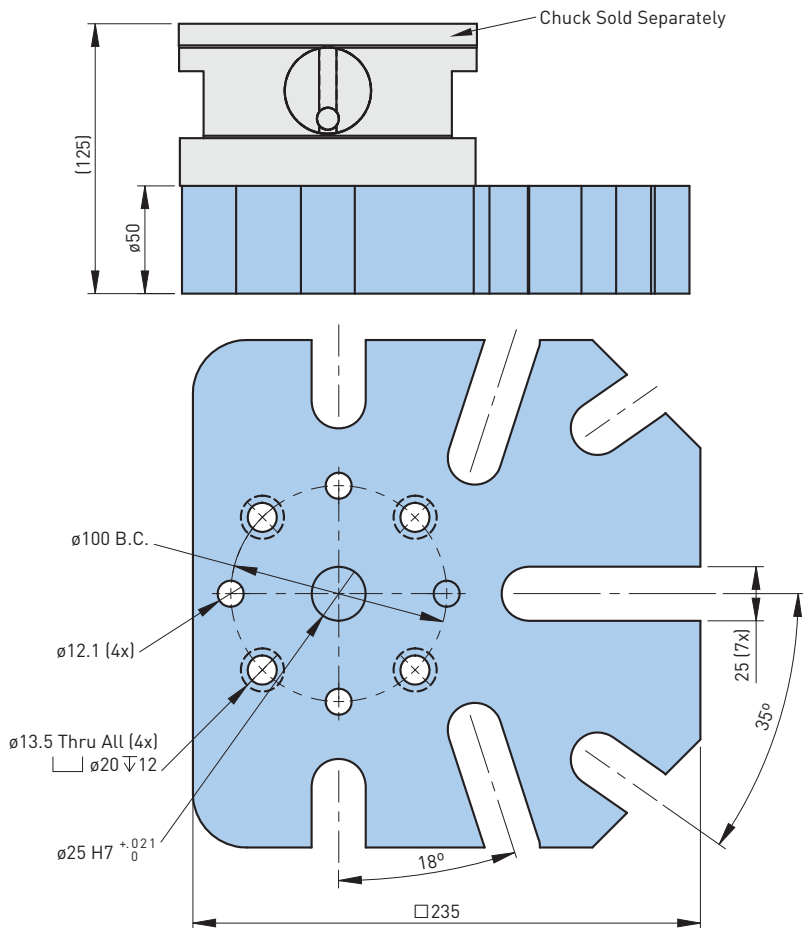
SYSTEM 68—BASE CHUCK



Catalog Number	Weight (lbs.)
15.500.710	14.1

• All dimensions are in millimeters

SYSTEM 68—TABLE ADAPTER

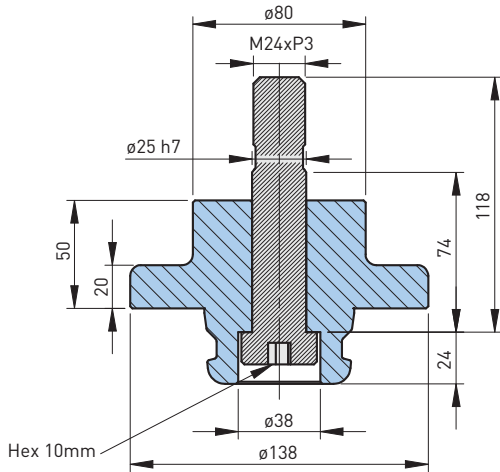


Catalog Number	Weight (lbs.)
15.500.740	36.4

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

SYSTEM 68—REDUCTION

The SYSTEM 68 reduction is used to reduce the clamping base body from $\varnothing 138\text{mm}$ to $\varnothing 80\text{mm}$ allowing for clamping of workpieces with a limited supporting surface. It is offered with a M24 bolt and only comes in one standard height.

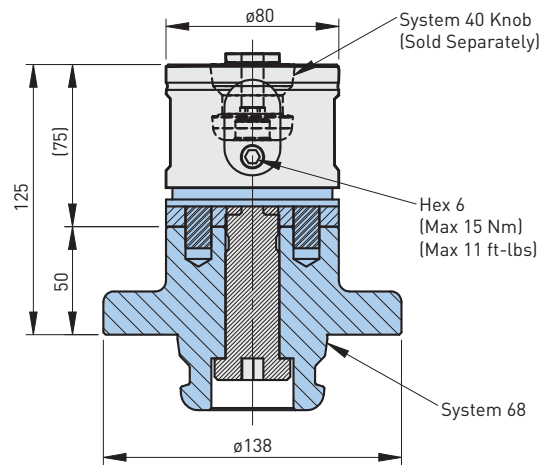


Catalog Number	Weight (lbs.)
15.500.720	9.7

- All dimensions are in millimeters
- Bolt Included
- For other length options, please consult the BIG KAISER Eng. Dept.

SYSTEM 68 TO SYSTEM 40—REDUCTION

The SYSTEM 68 to SYSTEM 40 reduction is 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


- All dimensions are in millimeters

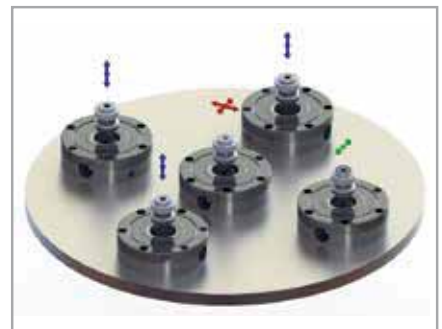
SYSTEM 68—CLAMPING KNOBS

Standard clamping knobs have a metric positioning boss which is $\varnothing 57\text{mm}$ and ground to a fit of h6. This boss is 10mm tall. The overall measurements of the clamping knob are $\varnothing 40\text{mm}$ 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 $\pm .0002''$.

 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 68—CLAMPING KNOBS

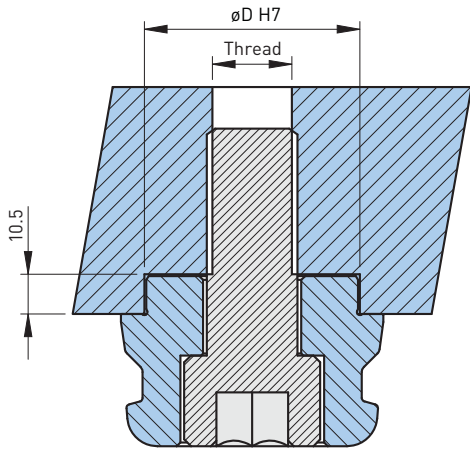


Fig. 1

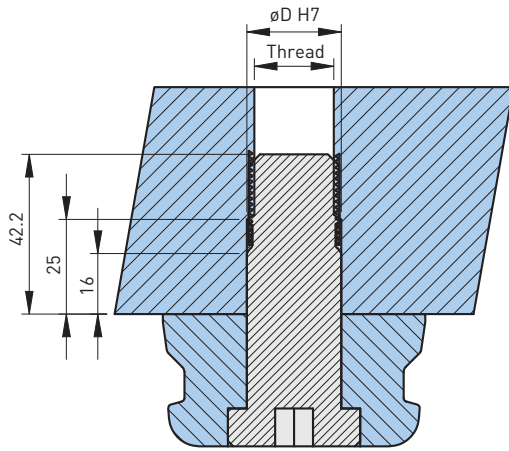
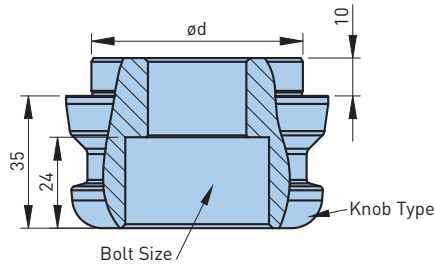
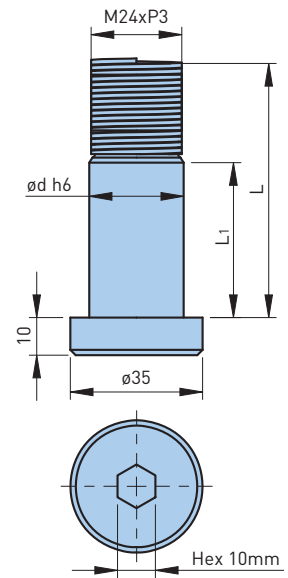
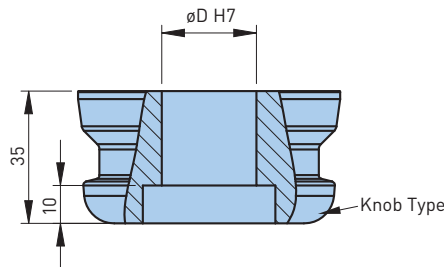


Fig. 2



Knob Type	Catalog Number	Fig.	Description	Bolt Thread	$\varnothing D/\varnothing d$
A	15.500.593	1	SBA Clamping Knob-Absolute Position SYS 68 [SHCS M24]	M24	57H7/57h6
B	15.500.594	1	SBB Clamping Knob-Orientation SYS 68 [SHCS M24]	M24	57H7/57h6
C	15.500.595	1	SBC Clamping Knob-Retention Only SYS 68 [SHCS M24]	M24	57H7/57h6
A	15.500.596	1	SBA Clamping Knob-Absolute Position SYS 68 [SHCS M30]	M30	57H7/57h6
B	15.500.597	1	SBB Clamping Knob-Orientation SYS 68 [SHCS M30]	M30	57H7/57h6
C	15.500.598	1	SBC Clamping Knob-Retention Only SYS 68 [SHCS M30]	M30	57H7/57h6
A	15.500.603	1	SBA Clamping Knob-Absolute Position SYS 68 [SHCS M24]	M24	25H7/25h6
B	15.500.604	1	SBB Clamping Knob-Orientation SYS 68 [SHCS M24]	M24	25H7/25h6
C	15.500.605	1	SBC Clamping Knob-Retention Only SYS 68 [SHCS M24]	M24	25H7/25h6
A	15.500.606	2	SBA Clamping Knob-Absolute Position SYS 68 ($\varnothing 25$ PASS THRU)	M24	25H7/25h6
B	15.500.607	2	SBB Clamping Knob-Orientation SYS 68 ($\varnothing 25$ PASS THRU)	M24	25H7/25h6
C	15.500.608	2	SBC Clamping Knob-Retention Only SYS 68 ($\varnothing 25$ PASS THRU)	M24	25H7/25h6

• All dimensions are in millimeters

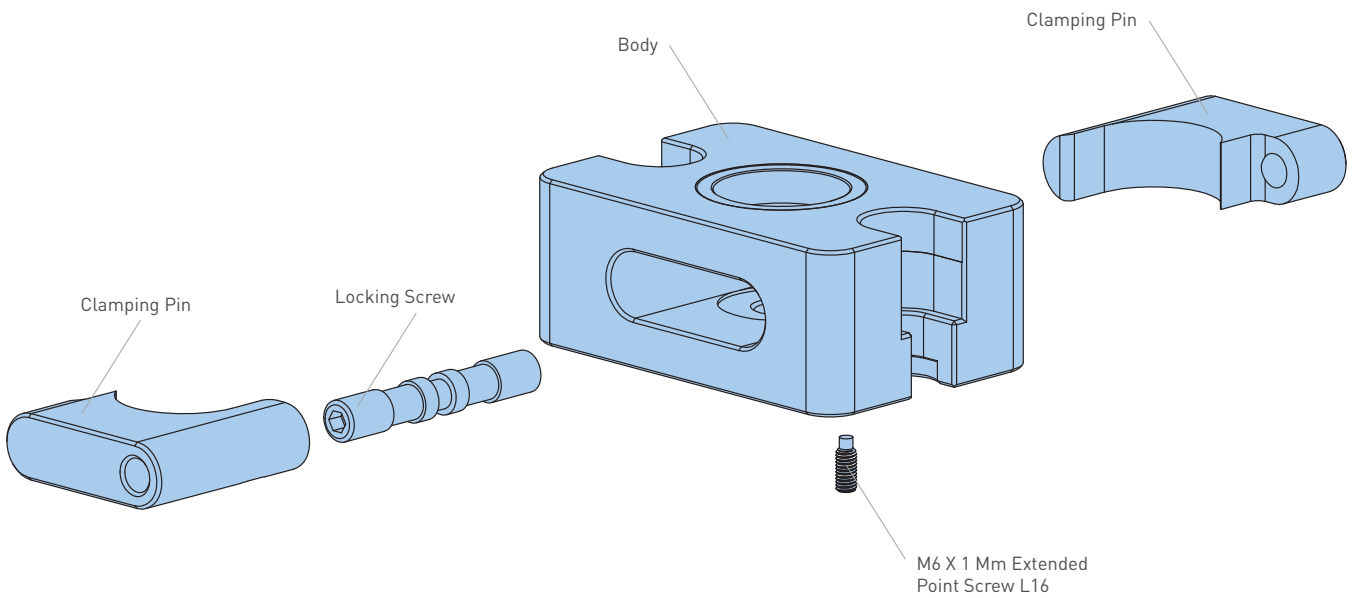
ESA125/85—FLAT CHUCK

The ESA125/85 FLAT CHUCK is a new body form for the SYSTEM 40 knob for smaller parts and machines with smaller work envelopes.

The clamping is manual, eliminating the need for air.

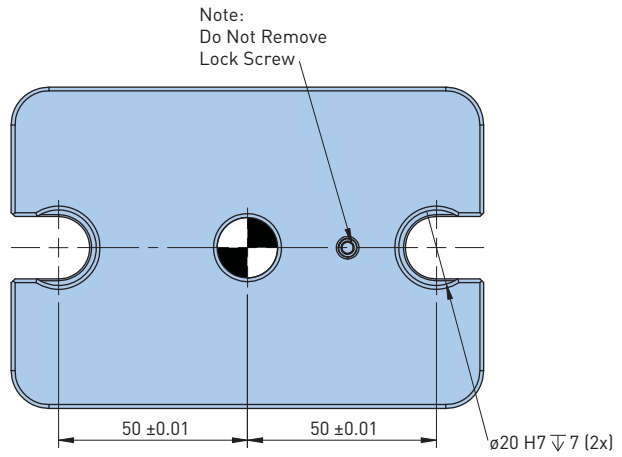
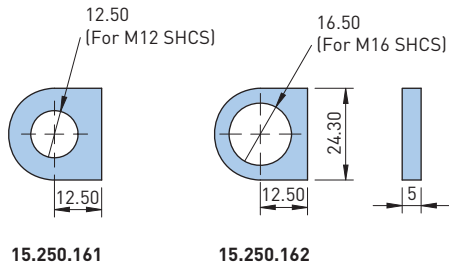
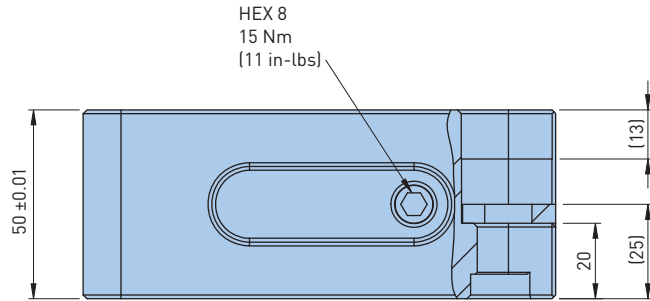
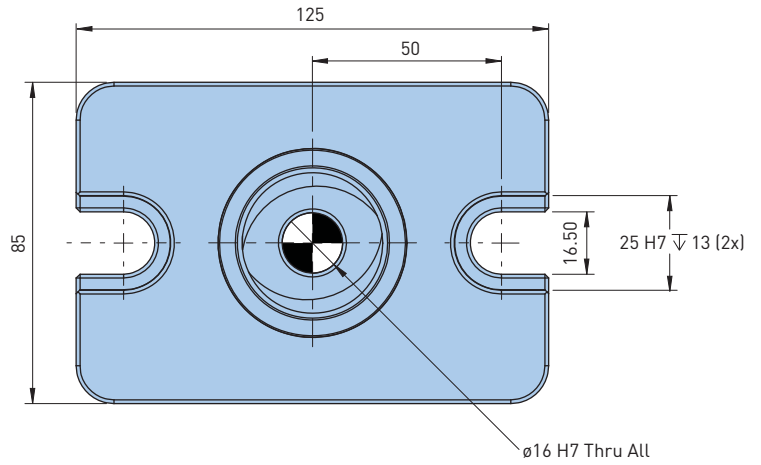
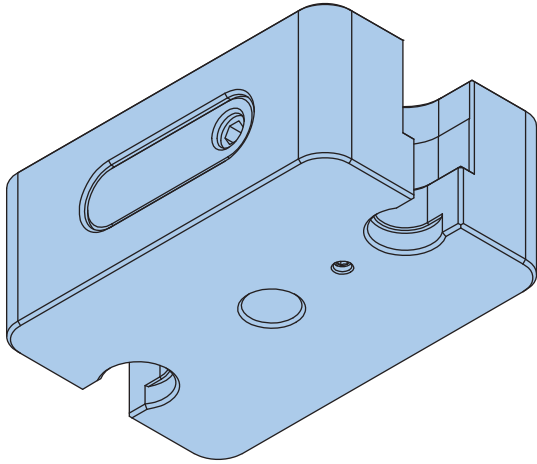
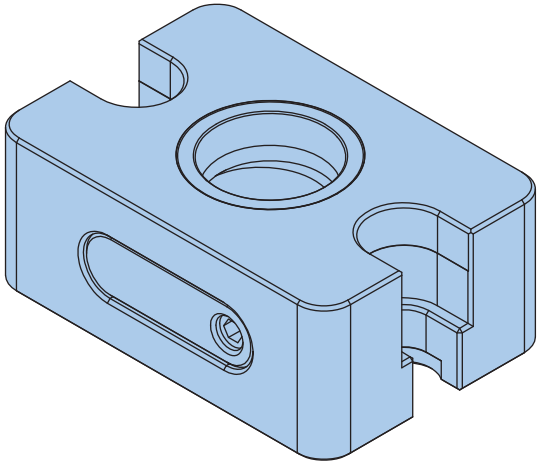
The use of a torque limiting wrench is recommended in cases where a lighter retention force is required and to limit overtightening. The chuck can be used on its own or in combination with other chucks.

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



Chuck Model	Catalog Number
ESM125-85	15.250.160

ESA125/85—FLAT CHUCK



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

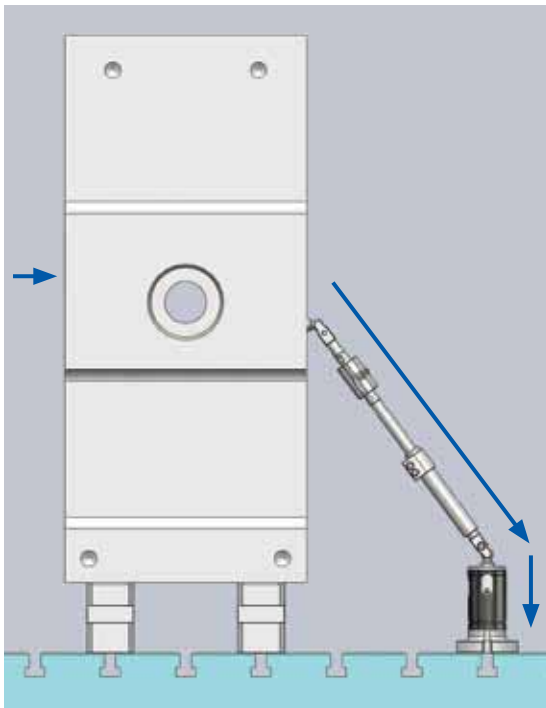
5-AXIS STABILIZER UNIFLEX BALL SYSTEM (ø25.4)

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

- Compatible with standard UNILOCK SYSTEM 40 chucks, Manual 5-Axis clamping units & 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
- 5 fixed length extensions
- 2 adjustable length bases



5-AXIS STABILIZER

PART ATTACHMENT OPTIONS

These items allow you to attach or grab the workpiece(s) via a variety of different methods.

- 1) Mounting Ball
- 2) Mounting Screw
- 3) Tab/Flange Gripper
- 4) Magnetic Base

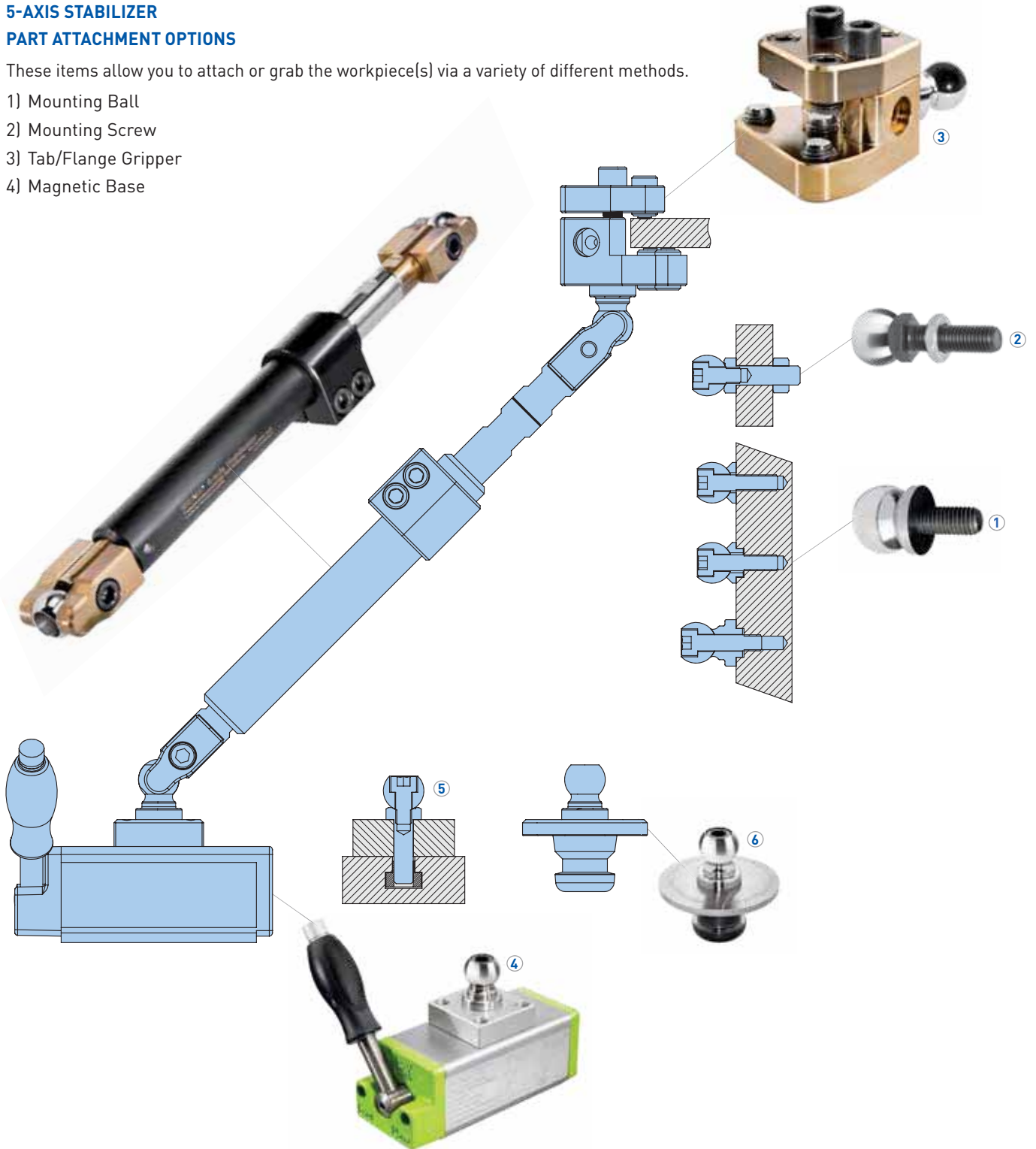
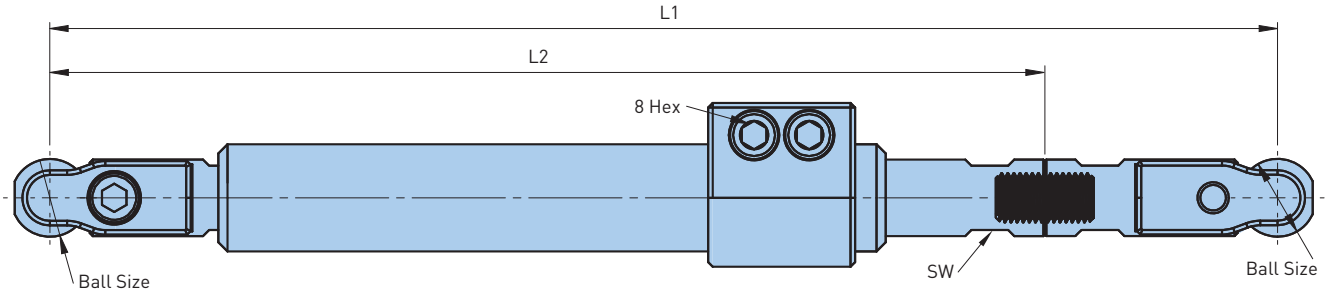


TABLE ATTACHMENT OPTIONS

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

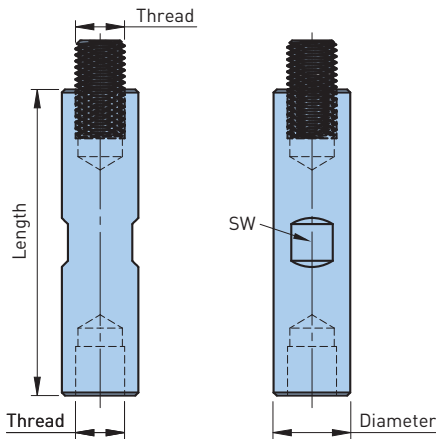
5-AXIS ADJUSTABLE STABILIZER—BASE



Catalog Number	Description	Length L1 (mm)	Length L2* (mm)	Clamping Ball (mm)	Weight (lbs.)
15.252.009	5-Axis Adjustable Stabilizer Base 255-305mm (ø25.4)	255-305	187	ø25.4	4.3
15.252.010	5-Axis Adjustable Stabilizer Base 400-550mm (ø25.4)	400-550	287		5.3
15.252.011	5-Axis Adjustable Stabilizer Base 350-450mm (ø50)	350-450	257	ø50	14.7
15.252.012	5-Axis Adjustable Stabilizer Base 450-650mm (ø50)	450-650	356		16.9

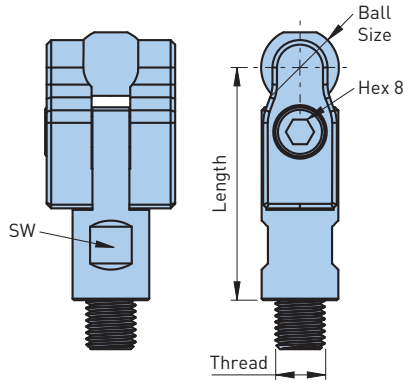
*L2 at minimum position
 • 2x balls are included; clamps can be ordered separately

5-AXIS FIXED STABILIZER—EXTENSION



Catalog Number	Description	Length (mm)	Diameter (mm)	Thread	Wrench (SW)	Weight (lbs.)
15.252.030	5-Axis Fixed Stabilizer Extension (ø25xL75mm)	75	25	M16xP1.5	21	.3
15.252.031	5-Axis Fixed Stabilizer Extension (ø25xL100mm)	100				.4
15.252.032	5-Axis Fixed Stabilizer Extension (ø25xL150mm)	150				.8
15.252.033	5-Axis Fixed Stabilizer Extension (ø25xL500mm)	500				2.6
15.252.034	5-Axis Fixed Stabilizer Extension (ø25xL250mm)	250				1.4
15.252.040	5-Axis Fixed Stabilizer Extension (ø40xL100mm)	100	40	M27xP2	36	.7
15.252.041	5-Axis Fixed Stabilizer Extension (ø40xL150mm)	150				1.2
15.252.042	5-Axis Fixed Stabilizer Extension (ø40xL250mm)	250				2.2
15.252.043	5-Axis Fixed Stabilizer Extension (ø40xL500mm)	500				3.9

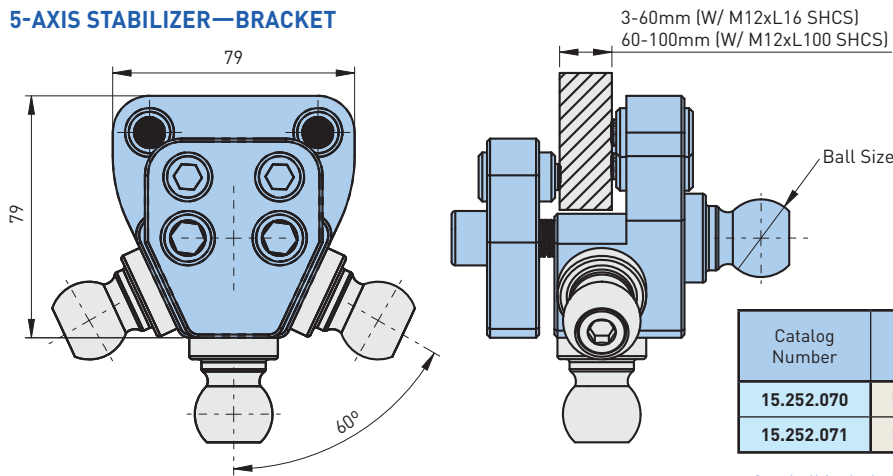
5-AXIS STABILIZER—END CLAMP



Catalog Number	Description	Ball Size	Length (mm)	Thread	SW	Weight (lbs.)
15.252.001	5-Axis Stabilizer End Clamp (ø25.4)	ø25.4	75	M16xP1.5	21	3.4
15.252.002	5-Axis Stabilizer End Clamp (ø50)	ø50	92.6	M27xP2	36	TBA

• Ball included

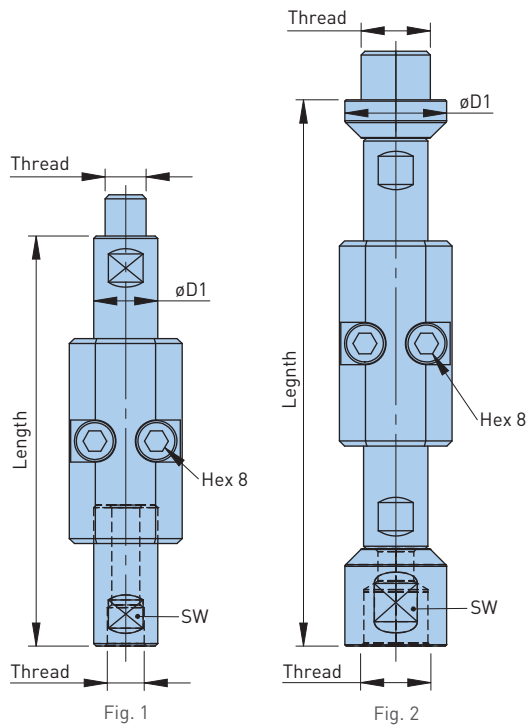
5-AXIS STABILIZER—BRACKET



Catalog Number	Description	Ball Size	Weight (lbs.)
15.252.070	5-Axis Bracket Stabilizer (ø25.4x4)	ø25.4	3.4
15.252.071	5-Axis Bracket Stabilizer (ø50x4)	ø50	5.1

• One ball included; additional balls can be ordered separately

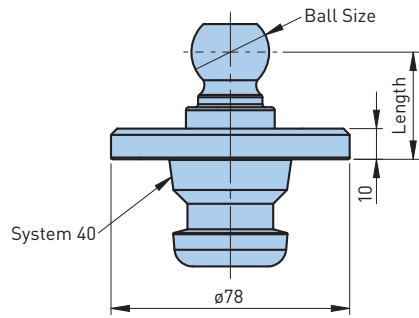
5-AXIS FINE ADJUSTABLE STABILIZER—EXTENSION



Catalog Number	Description	Fig.	Length (mm)	øD1 (mm)	Thread	Wrench (SW)	Weight (lbs)
15.252.020	5-Axis Fine Adjustable Stabilizer Extension (ø25)	1	120-160	25	M16xP1.5	21	2.6
15.252.021	5-Axis Fine Adjustable Stabilizer Extension (ø50)	2	173-213	40	M27xP2	36	3.7

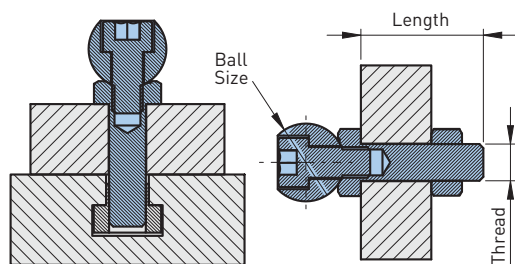
• Hex nut included

5-AXIS STABILIZER—BALL TO KNOB ADAPTOR



Catalog Number	Description	Ball Size	Length (mm)	Weight (lbs.)
15.252.060	5-Axis Stabilizer Ball to Knob Adaptor (ø25.4 x SBA40)	ø25.4	35	1.5
15.252.061	5-Axis Stabilizer Ball to Knob Adaptor (ø50 x SBA40)	ø50	24	2.4

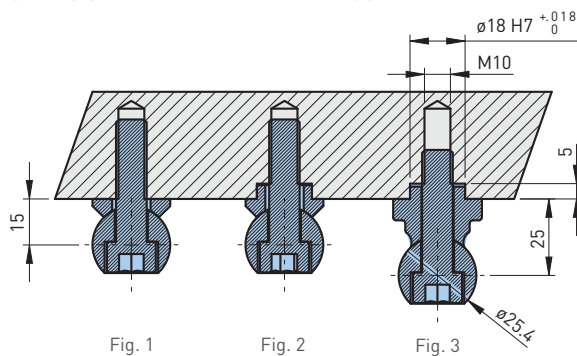
5-AXIS STABILIZER—MOUNTING SCREW



Catalog Number	Description	Thread	Ball Size	Length (mm)	Weight (lbs.)
15.252.080	Stabilizer Mounting Screw M12 (ø25.4)	M12xP1.75	ø25.4	40	.4
15.252.081	Stabilizer Mounting Screw M14 (ø25.4)	M14xP2			.4
15.252.082	Stabilizer Mounting Screw M16 (ø25.4)	M16xP2			.4
15.252.083	Stabilizer Mounting Screw M18 (ø25.4)	M18xP2.5			.4
15.252.084	Stabilizer Mounting Screw M20 (ø25.4)	M20xP2.5		50	.4
15.252.085	Stabilizer Mounting Screw M24 (ø25.4)	M24xP3	ø50	50	.9
15.252.086	Stabilizer Mounting Screw M24 (ø50)	M24xP3			50
15.252.087	Stabilizer Mounting Screw M30 (ø50)	M30xP3.5		60	1.3
15.252.089	Stabilizer Mounting Screw M36 (ø50)	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	15	.2
15.252.382	3	5-Axis Stabilizer Ball and Collar	25	.2
15.252.005	1/2/3	5-Axis Stabilizer Ball and Collar Set (ø25.4)	15 or 25	.4

- Set [15.252.005] contains 1 ball and 3 collars
- See Pg. 29 for ø50 balls

5-AXIS STABILIZER—MAGNETIC BASE

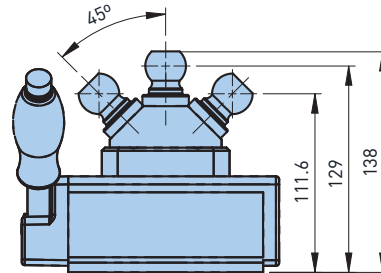
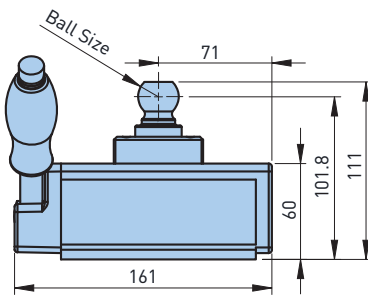
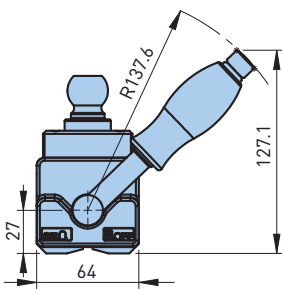
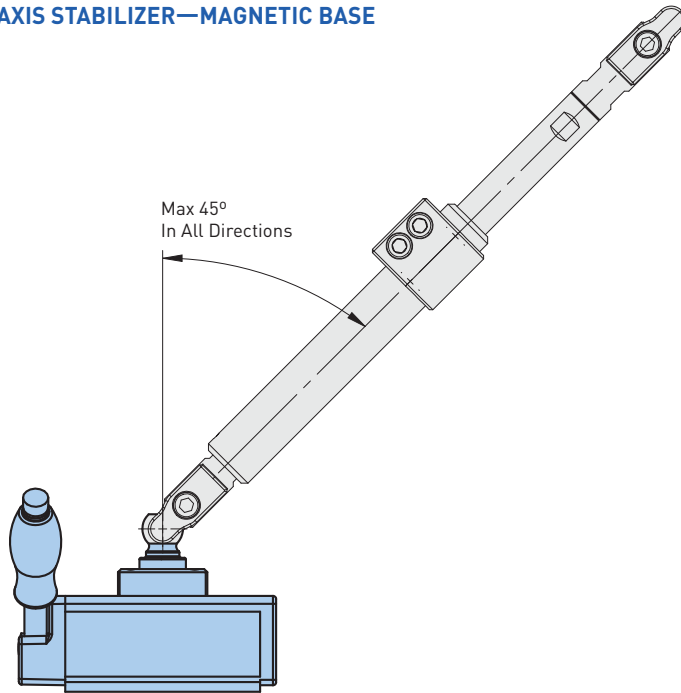


Fig. 2

Fig. 1

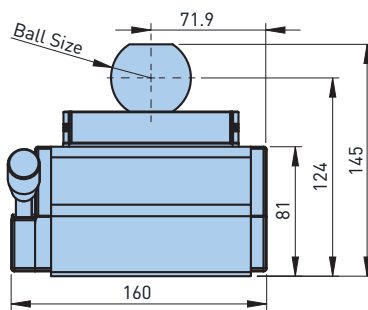
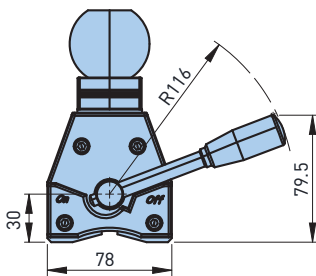


Fig. 3

Catalog Number	Description	Load Capacity*		Ball Size	Qty. of Balls	Weight (lbs.)	Fig.
		(lbs.)	(kg)				
15.252.055	5-Axis Stabilizer Magnetic Base 150kg (1x ball, ø25.4)	330	150	ø25.4	1	7.5	1
15.252.056	5-Axis Stabilizer Magnetic Base 150kg (2x ball, ø25.4)	330	150		2	7.5	2
15.252.068	5-Axis Stabilizer Magnetic Base 150kg (1x ball, ø50)	275	125	ø50	1	34.1	3
15.252.069	5-Axis Stabilizer Magnetic Base 250kg (1x ball, ø50)	550	250		1	34.2	

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

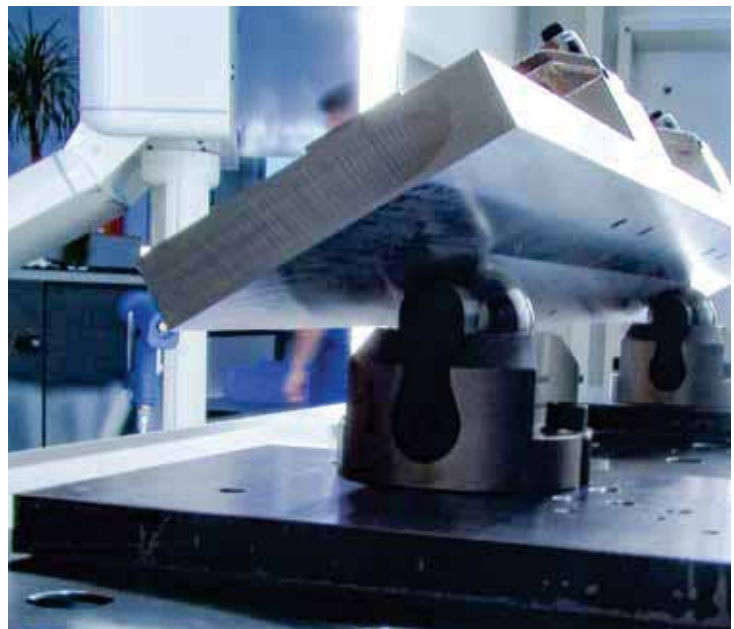
CAUTION 
Not for lifting. Do not stand or lift loads overhead.

UNIFLEX SYSTEM 50

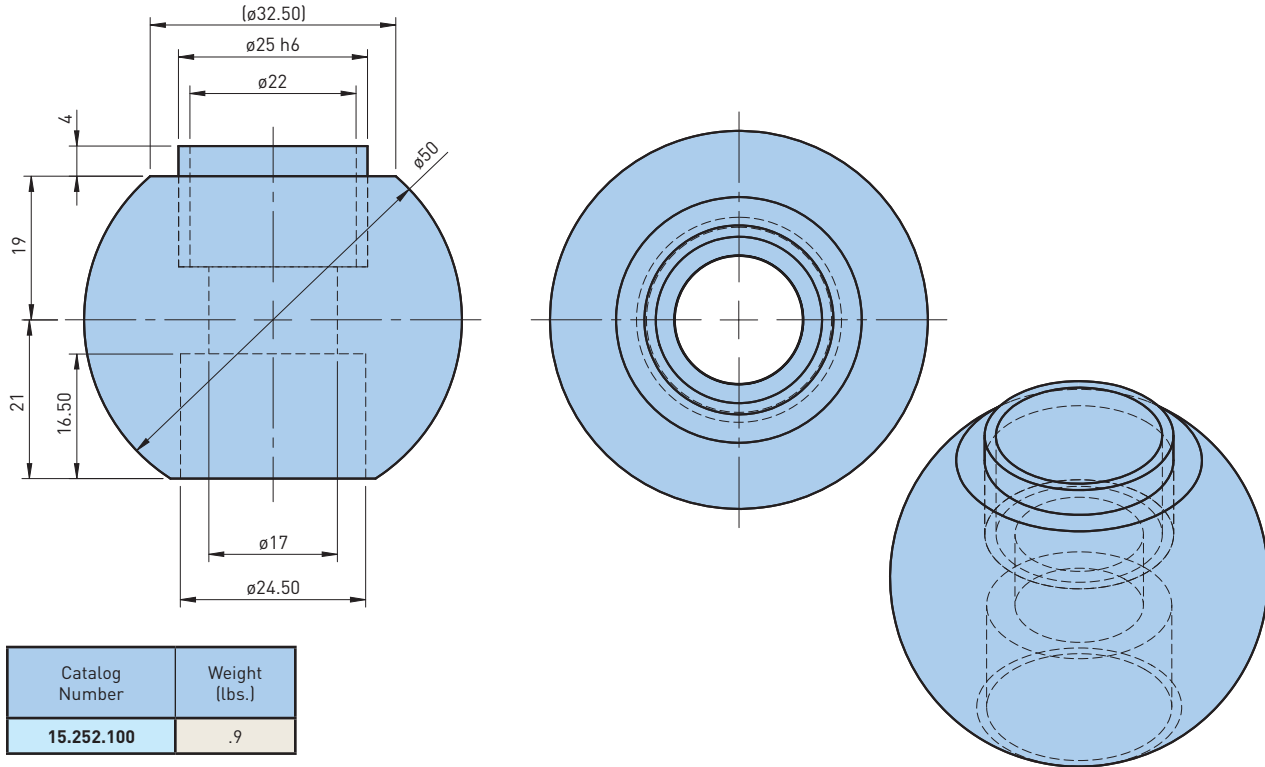
The UNIFLEX SYSTEM has expanded to include $\varnothing 50\text{mm}$ balls and clamping bases. The UNIFLEX SYSTEM 50 BALL is available in two configurations: a location type with a $\varnothing 25\text{mm}$ removable locating collar and a grip type which has serrations only. The ball is made from hardened steel like that used in industrial bearings.

The base is available in two heights: 110mm or 59mm to the center of the ball. The 110mm base also has the ability to be clamped on top of a SYSTEM 40 knob, allowing it to be used with the standard UNILOCK system chuck. Both bases can be easily toe clamped to standard t-slots or grid plates via their flanges. The bases are designed to support 10 tons each; when clamped at 14 ft-lbs, apply 4500 lbs of clamping force.

- Grip type should not be used on finished surfaces

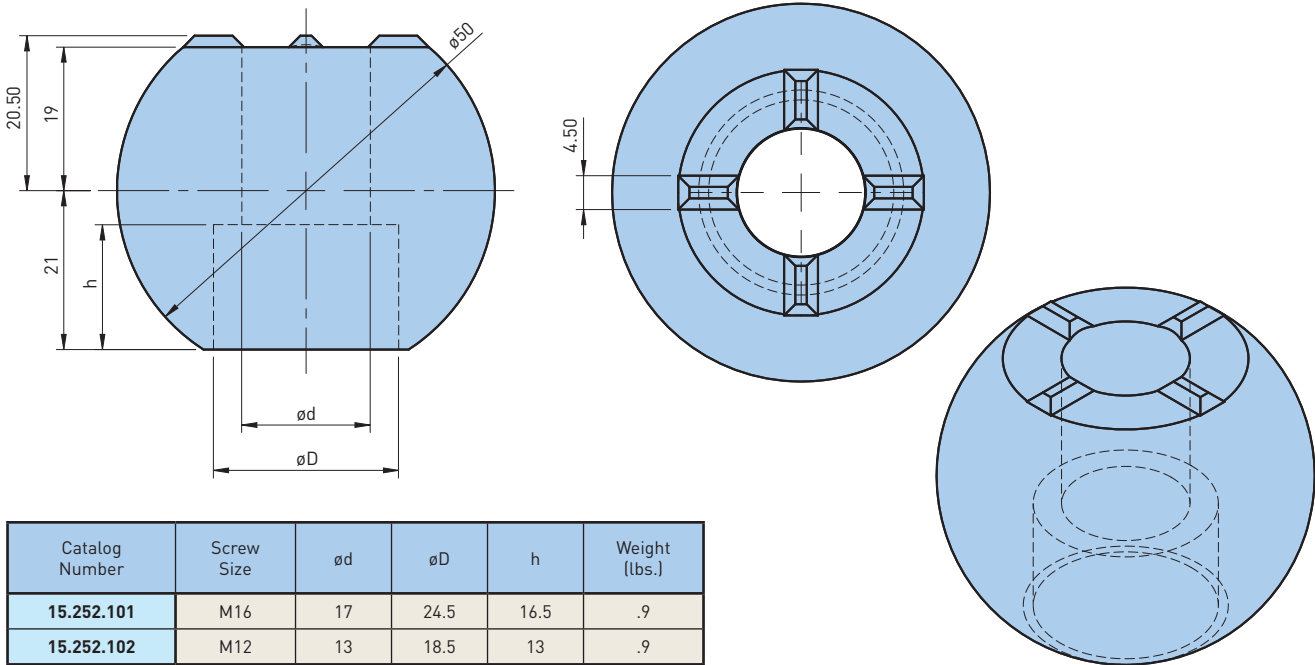


STABILIZER BALL—LOCATION TYPE



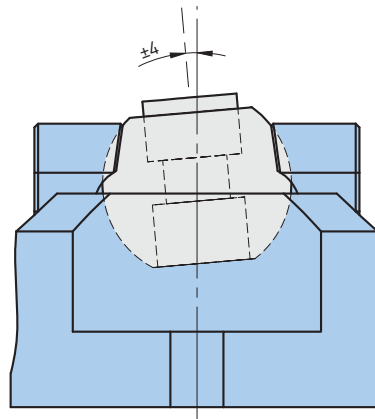
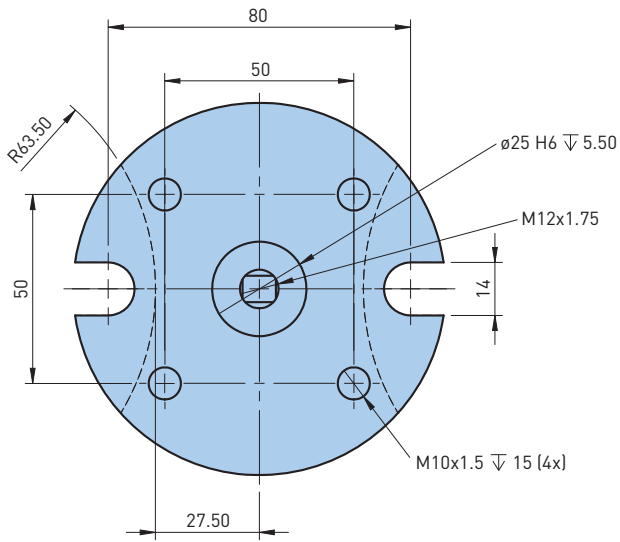
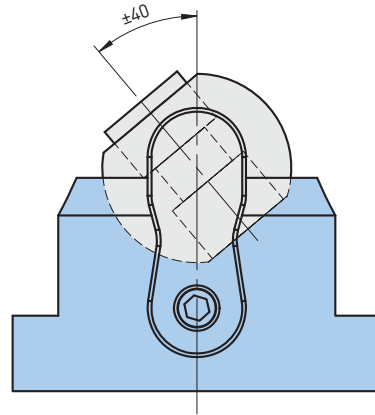
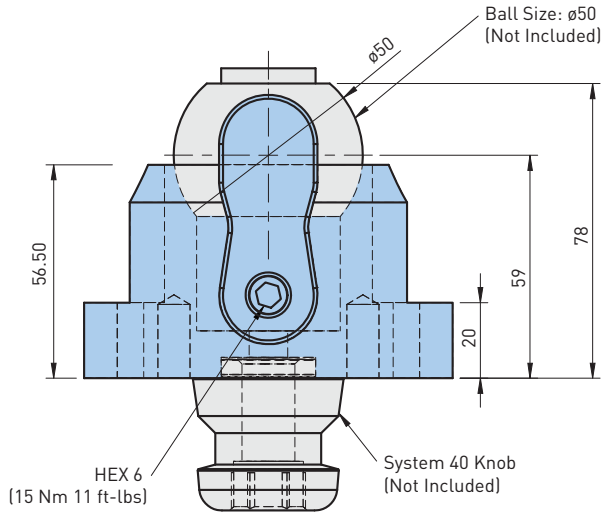
- All dimensions are in millimeters
- M16 x L50 SHCS not included

STABILIZER BALL—GRIP TYPE



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

UNIFLEX SYSTEM 50—BASE



Catalog Number	Weight (lbs.)
15.252.200	5.2

- All dimensions are in millimeters
- For SYSTEM 40/50 KNOBS; please see UNILOCK Vol. 2, Pg. 64

BIG KAISER Precision Tooling Inc.

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