UNILOCK MODULAR WORKHOLDING SYSTEM
VOL. 2
ZERO-POINT CLAMPING SYSTEM

Meeting the challenge to set up every process as efficiently as possible with a simple clamping concept.

In a competitive environment, all production cells need efficient workpiece handling solutions. Production diversity should not be a barrier. Let UniLock’s zero-point clamping system lead the way with efficient part loading solutions for low and high volume production runs. UniLock virtually eliminates all setup time and replaces it with production time.

If your company needs to increase its agility, UniLock will allow you to run any job on any available manufacturing cell. You can interrupt jobs without incurring setup time and then switch back as needed. When all of your manufacturing cells have UniLock, work can quickly flow to any available resource.

Get lean and agile on your shop floor with a comprehensive positioning and clamping system that can be applied to almost anything you manufacture or assemble.
## OVERVIEW & APPLICATION EXAMPLES

### ROUND CHUCKS
- **Index** Pg. 11
- ESM 138, ESM 138 Turbo, ERG0 138 & EFM 138 Pg. 12-19
- ASM 90, ASM 120 & ASH 120 Pg. 20-25
- ISM 160 Pg. 26-29
- MSM 170 Pg. 28-29
- ESM 176 Turbo Pg. 30-31
- HSM 196 Pg. 32-33

### RECTANGULAR CHUCKS
- **Index** Pg. 35
- ESM 100/75 Pg. 36-37
- AFM 105/65 Pg. 38-39
- EDM 100/150 Pg. 40-41
- AFM 146 Pg. 42-43
- ESM 180/150 Pg. 44-45

### PRE-ASSEMBLED CHUCKS
- **Index** Pg. 47
- MLM 150 & MCM 150 Pg. 48-51
- DLM 200 & DCM 200 Pg. 52-55
- QC 400 Pg. 56-57
- ERGO Base Stations Pg. 58-59
- Starter Kits Pg. 60-61

### KNOBS & PALLETS
- **Index** Pg. 63
- Clamping Knobs Pg. 64-68
- System 40 Pallets Pg. 70-71

### AUTOMATION CHUCKS
- **Index & Overview** Pg. 73-75
- ESA 120/70 & ESA 110 Pg. 76-79
- NSA 125 Pg. 80-81
- ESA 185 Pg. 82-83
- ASSF 170 & ASSF 250 Pg. 84-87
- Automation Accessories & Pallets Pg. 88-90

### MULTI-AXIS SYSTEMS
- **Index & Overview** Pg. 93-94
- 5-Axis Duo Bridge Pg. 96-97
- First Grip Pg. 98-99
- 5-Axis Univice Synchro Pg. 100-101
- 5-Axis Uncilamp Pg. 102-103
- 5-Axis System 40 Overview Pg. 104
- 5-Axis Bases Pg. 106-111
- 5-Axis Table Adapters Pg. 112-113
- 5-Axis Air Chuck Pg. 114-115
- 5-Axis Extensions, Reductions & Shims Pg. 116-119
- 5-Axis ER Collet Chucks & Serrated Adapter Pg. 120-121
- 5-Axis System 25 Pg. 122-123
- 5-Axis Uniflex System Pg. 124-127

### MINERAL CAST SYSTEMS
- **Index** Pg. 129
- Columns Pg. 130-131
- Grid Columns Pg. 132-133
- Pallets, Riser Pads & Custom Solutions Pg. 134-135

### ROBOT INTERFACES
- **Index** Pg. 137
- Grippers Pg. 138-141

### ACCESSORIES
- **Index** Pg. 143
- Chuck & Subplate Air Fittings Pg. 144-147
- Accessories & Repair Components Pg. 148-149

### SERVICE & OPERATING INSTRUCTIONS

---

**Notes:**
- All sections are cross-referenced with page numbers for easy navigation.
- The document covers a range of topics including chuck systems, automation, robotic interfaces, and accessories.
- Each section has an index that directs users to detailed pages for further information.
OVERVIEW

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 clearances for large parts or out of position locations.

<table>
<thead>
<tr>
<th>Type</th>
<th>Metric</th>
<th>Inch</th>
</tr>
</thead>
<tbody>
<tr>
<td>SBC</td>
<td>.1mm</td>
<td>.004</td>
</tr>
<tr>
<td>SBCC</td>
<td>.3mm</td>
<td>.012</td>
</tr>
<tr>
<td>SBCC</td>
<td>.6mm</td>
<td>.024</td>
</tr>
</tbody>
</table>

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

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
- Welding, Plasma and Laser 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 pre-assembled pallets. Shown below are the Mono, Duo and Quad table chucks, along with their pallets. Pneumatic kits are also available so you can install a working solution in minutes.

Build Your Own Custom Solutions
Unilock components can be purchased individually for incorporation into your own custom designs.

It’s Easy to Get Started
Starter Kits help save time between part changes. Chucks are pre-mounted to a base plate which functions as a reference edge. With a single part number you get all the required components to be up and running immediately.
APPLICATION EXAMPLES

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.

Applications Are Endless – Limited Only by Your Imagination

You can 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, contact your tool and fixture provider or purchase them from one of our workholding associates.

Unilock can be used in any configuration and 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.
APPLICATION EXAMPLES
LARGE & SMALL PARTS

Large Parts

Even Your Largest Machines Can Save Money Starting With 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 if you want to mount knobs directly to warped or loosely toleranced workpieces. If you do not need to, or cannot hold a tight tolerance, simply select the appropriate undersized clamping knobs to accommodate your 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

<table>
<thead>
<tr>
<th>Type</th>
<th>Metric</th>
<th>Inch</th>
</tr>
</thead>
<tbody>
<tr>
<td>SBC</td>
<td>.1mm</td>
<td>.004</td>
</tr>
<tr>
<td>SBCC</td>
<td>.3mm</td>
<td>.012</td>
</tr>
<tr>
<td>SBCC</td>
<td>.6mm</td>
<td>.024</td>
</tr>
</tbody>
</table>

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 over 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 so you can immediately increase your 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. The more expensive fixtures which hold machined parts for subsequent operations would also be eliminated.

<table>
<thead>
<tr>
<th>Operation</th>
<th>Before Unilock</th>
<th>After Unilock</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Set Up</td>
<td>Production</td>
</tr>
<tr>
<td>Op-10 Lathe</td>
<td>3 hours</td>
<td>4 hours</td>
</tr>
<tr>
<td>Op-20 Lathe</td>
<td>2 hours</td>
<td>10 hours</td>
</tr>
<tr>
<td>Op-30 Mill</td>
<td>4 hours</td>
<td>11 hours</td>
</tr>
<tr>
<td>Total</td>
<td>10 hours</td>
<td>25 hours</td>
</tr>
</tbody>
</table>
The round Unilock chucks come in diameters from ø90mm to ø196mm (ø3.543” to ø7.716”) and body styles to fit a wide variety of applications. Chucks can be supplied with single notches, multiple notches or bushing holes for timing. Most body forms allow the use of turbo assisted clamping for higher retention forces.

**NEW!**

- ESM 138 .......................... Pg. 12-13
- ERGO 138 .......................... Pg. 16-17
- ASM 90 .......................... Pg. 20-21
- ASH 120 .......................... Pg. 24-25
- MSM 170 .......................... Pg. 28-29
- HSM 196 .......................... Pg. 32-33

**NEW!**

- ESM 138 Turbo .......................... Pg. 14-15
- EFM 138 .......................... Pg. 18-19
- ASM 120 .......................... Pg. 22-23
- ISM 160 .......................... Pg. 26-27
- ESM 176 Turbo .......................... Pg. 30-31
Our Most Popular Chuck

The ESM 138 Unilock chuck is easily mounted in custom fixture designs, and its versatility makes it our best seller.

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
- Stainless steel body option (ESM 138-SS)

Available with Notches

<table>
<thead>
<tr>
<th>Chuck Model</th>
<th>Catalog Number</th>
<th>Notch (Width x Qty)</th>
<th>Recommended Bolt Sizes</th>
<th>Clamping Force [lbs]</th>
<th>Weight [lbs]</th>
<th>Air Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESM 138</td>
<td>15.270.100</td>
<td>—</td>
<td>✓</td>
<td>990-1,320</td>
<td>9.9</td>
<td>1/8</td>
</tr>
<tr>
<td>ESM 138</td>
<td>15.270.107</td>
<td>14 H7 x 1</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td>3,300-3,520*</td>
<td>9.9</td>
<td></td>
</tr>
<tr>
<td>ESM 138-SS</td>
<td>15.276.100</td>
<td>—</td>
<td>✓</td>
<td>990-1,320</td>
<td>9.9</td>
<td></td>
</tr>
</tbody>
</table>

* Screws, screw covers and o-ring included
* Sealed pocket required for turbo assist
† Optional

AIR FITTINGS  ACCESSORIES  REPAIR COMPONENTS

PG. 144  PG. 148  PG. 149
• All dimensions are in millimeters
• Dimensions marked ☐ are for notch option
ESM 138 TURBO

Our Most Popular Chuck Has Been Improved

The ESM 138 Turbo Unilock chuck comes with an air assisted clamping turbo function. This is accomplished by covering the piston with a sealed cover plate. It also has improved retention force with a new slide wedge actuation.

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

<table>
<thead>
<tr>
<th>Chuck Model</th>
<th>Catalog Number</th>
<th>Notch (Width x Qty)</th>
<th>Recommended Bolt Sizes</th>
<th>Clamping Force (lbs)</th>
<th>Weight (lbs)</th>
<th>Air Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESM 138 TURBO</td>
<td>15.270.140</td>
<td>—</td>
<td>✓ ✓ ✓ ✓ ✓ ✓</td>
<td>990-1,320</td>
<td>3,300-3,520</td>
<td>9.9</td>
</tr>
<tr>
<td></td>
<td>15.270.147</td>
<td>14 H7 x 1</td>
<td>✓ ✓ ✓ ✓</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Screws, screw covers and o-ring included
† Optional
• All dimensions are in millimeters
• Dimensions marked [ ] are for notch option
**Space Saving Chuck**

The 138 family of chucks has a new member with the all new ERGO 138 Unilock chuck. It has many new features, but the primary difference is its space saving height of 28mm. A 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**

**Recommended Bolt Sizes**

<table>
<thead>
<tr>
<th>Chuck Model</th>
<th>Catalog Number</th>
<th>Notch Width x Qty</th>
<th>M10</th>
<th>M12</th>
<th>M16</th>
<th>M20†</th>
<th>M24†</th>
<th>Clamping Force (lbs)</th>
<th>Weight (lbs)</th>
<th>Air Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERGO 138</td>
<td>15.270.110</td>
<td>—</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>990-1,320</td>
<td>9.9</td>
<td></td>
</tr>
<tr>
<td></td>
<td>15.270.117</td>
<td>14 H7 x 1</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>3,300-3,520</td>
<td>1/8</td>
<td></td>
</tr>
</tbody>
</table>

* Screws, screw covers and o-ring included
† Optional
• All dimensions are in millimeters
• Dimensions marked [ ] are for notch option
The Tombstone Specialist

The EFM 138 Unilock flange mount chuck is easily mounted in custom fixture designs due to the reduced projection height. Especially suited for thinner walled tombstones.

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
- Stainless steel body option (EFM 138-SS)

Available with Notches

<table>
<thead>
<tr>
<th>Chuck Model</th>
<th>Catalog Number</th>
<th>Notch (Width x Qty)</th>
<th>Recommended Bolt Sizes</th>
<th>Clamping Force (lbs)</th>
<th>Weight (lbs)</th>
<th>Air Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>EFM 138</td>
<td>15.263.100</td>
<td>—</td>
<td>M10, M12, M16</td>
<td>Spring Only</td>
<td>990-1,350</td>
<td></td>
</tr>
<tr>
<td>EFM 138</td>
<td>15.263.107</td>
<td>14 H7 x 1</td>
<td>M20†, M24†</td>
<td>Turbo Assist</td>
<td>3,300-3,520</td>
<td></td>
</tr>
<tr>
<td>EFM 138-SS</td>
<td>15.276.107</td>
<td>—</td>
<td>All sizes</td>
<td></td>
<td>—</td>
<td></td>
</tr>
</tbody>
</table>

- Screws, screw covers and o-rings included
- † Optional
• All dimensions are in millimeters
• Dimensions marked x are for notch option
ASM 90

Smaller Application Chucks
As one of the smallest chucks in the Unilock family, the ASM 90 specialized 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

<table>
<thead>
<tr>
<th>Chuck Model</th>
<th>Catalog Number</th>
<th>Notch (Width x Qty)</th>
<th>Recommended Bolt Sizes</th>
<th>Clamping Force (lbs)</th>
<th>Weight (lbs)</th>
<th>Air Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>M10</td>
<td>M12</td>
<td>M16</td>
<td>M20†</td>
</tr>
<tr>
<td>ASM 90</td>
<td>15.240.090</td>
<td>—</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>15.240.091</td>
<td>12 H7 x 1</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>

* O-rings included
† Optional

AIR FITTINGS

ACCESSORIES

REPAIR COMPONENTS

PG. 144

PG. 148

PG. 149

20
• All dimensions are in millimeters
• Dimensions marked with an asterisk (*) are for notch option
A Grid Plate’s Best Friend

Changing positions and jobs is no problem for this plate-friendly smaller, yet robust chuck with multiple positioning and securing options.

**Features:**
- Integrated toe clamp lip
- Reduced diameter for small work or tight spaces
- Jig ground reference pin location on bottom of chuck
- Air supply from bottom or side of chuck
- Optional timing pin hole in face of chuck
- Non-air mechanical version available

Optional Timing Pin Feature

The Model 120 chuck has a reference hole on center (shown here with a step pin). Threaded holes are also provided for mounting the chuck to a baseplate.

Toe clamps can also be used to clamp the chuck in place.

<table>
<thead>
<tr>
<th>Chuck Model</th>
<th>Catalog Number</th>
<th>Notch (Width x Qty)</th>
<th>Recommended Bolt Sizes</th>
<th>Clamping Force (lbs)</th>
<th>Weight (lbs)</th>
<th>Air Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASM 120</td>
<td>15.270.150</td>
<td>—</td>
<td>M10 M12 M16 M20† M24†</td>
<td>Spring Only/ Turbo Assist</td>
<td>770-990/ 2,860-3,300*</td>
<td>8.8</td>
</tr>
<tr>
<td></td>
<td>15.270.155</td>
<td>8 H7 x 1</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>1/8 P</td>
</tr>
<tr>
<td>ASM 120-SS</td>
<td>15.270.161</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>15.270.160</td>
<td>8 H7 x 1</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>ASM 120M</td>
<td>15.270.180</td>
<td>—</td>
<td>—</td>
<td>1,760-2,200</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>15.270.185</td>
<td>8 H7 x 1</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

- O-rings included
- *Sealed pocket required for Turbo Assist
- †Optional

The manual version comes with a wrench for easy opening and closing.
All dimensions are in millimeters
Dimensions marked [x] are for notch option
A New Member of the 120 Family

The 120 family has a new manual version. The ASH 120 is the same diameter and height as its original ASM 120 version but now 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.

The ASH 120 comes with a wrench for easy opening and closing. The wrench swings 90° about the axis of the chuck.

<table>
<thead>
<tr>
<th>Chuck Model</th>
<th>Catalog Number</th>
<th>Notch (Width x Qty)</th>
<th>Recommended Bolt Sizes</th>
<th>Clamping Force (lbs)</th>
<th>Weight (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASH 120</td>
<td>15.270.170</td>
<td>14 H7 x 1</td>
<td>✓ ✓</td>
<td>1,760-2,200</td>
<td>8.8</td>
</tr>
</tbody>
</table>

How it Works

- Chuck Body
- Clamping Knob
- Clamping Pin
- Scroll

Open

Clamped
• All dimensions are in millimeters
The ISM 160 chuck is a single chuck solution for the face of 4th and 5th axis rotary tables. Exterior timing features are comparable with MCM 150 & 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

Adapter Plate for ISM 160 to HAAS 160 Size Indexers and Trunnions

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

---

**Chuck Model** | **Catalog Number** | **Notch (Width x Qty)** | **Recommended Bolt Sizes** | **Clamping Force (lbs)** | **Weight (lbs)** | **Air Connection**
--- | --- | --- | --- | --- | --- | ---
ISM 160 | 15.260.160 | 14 H7 x 1 | ✓ | ✓ | ✓ | 1,100-1,540 | 3,300-3,740 | 12.1 | 1/8
ISM 160 | 15.260.164 | 12 H7 x 4 | ✓ | ✓ | ✓ | — | — | — | —
ISM 160 (A2-6) | 15.300.008 | 10 H7 x 2 | ✓ | ✓ | ✓ | — | — | — | —

- No hardware included
- † Optional

---

Air Fittings

---

Accessories

---

Repair Components

---

Other sizes available upon request
Please contact BIG KAISER Engineering Dept. for additional information
• All dimensions are in millimeters
Larger More Robust Chucks

The rigidity of the MSM 170 design allows for use in the highest precision operations in all types of applications and environments.

Features:
- Large diameter, heavy duty mechanical clamping
- Clamping lip for top side table clamping
- Threaded holes for bottom side clamping to plates
- Integrated timing pin locations every 90 degrees
- Air supply from bottom or side of chuck

<table>
<thead>
<tr>
<th>Chuck Model</th>
<th>Catalog Number</th>
<th>Notch (Width x Qty)</th>
<th>Recommended Bolt Sizes</th>
<th>Clamping Force [lbs]</th>
<th>Weight [lbs]</th>
<th>Air Connection</th>
</tr>
</thead>
</table>
| MSM 170     | 15.260.100     | 12 H7 x 4           | M10 M12 M16 M20† M24† | Spring Only Turbo Assist | 1,650-1,980 | 3,520-4,400 16.5 1/8  

- O-ring included
- † Optional

Optional Mounting Ring
- Other sizes available upon request
- Please contact BIG KAISER Engineering Dept. for additional information
All dimensions are in millimeters
**The Heavyweight Champion**

Due to its size and shoulder screw mounting, the ESM 176 Unilock chuck excels in handling heavyweight fixtures.

**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

---

<table>
<thead>
<tr>
<th>Chuck Model</th>
<th>Catalog Number</th>
<th>Notch [Width x Qty]</th>
<th>Recommended Bolt Sizes</th>
<th>Clamping Force [lbs]</th>
<th>Weight [lbs]</th>
<th>Air Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESM 176 Turbo</td>
<td>15.272.170</td>
<td>—</td>
<td>✓</td>
<td>1,540-1,760</td>
<td>4,180-4,840</td>
<td>17.5</td>
</tr>
<tr>
<td></td>
<td>15.272.171</td>
<td>25 H6 x 1</td>
<td>✓</td>
<td></td>
<td></td>
<td>1/8</td>
</tr>
</tbody>
</table>

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

---

**AIR FITTINGS**

[PG. 144](#)

**ACCESSORIES**

[PG. 148](#)

**REPAIR COMPONENTS**

[PG. 149](#)
• All dimensions are in millimeters
• Dimensions marked with a [-] are for notch option
The Vacant Rotator
The HSM 196 chuck can be used on the face of 4th and 5th axis rotary tables, lathes or mills where the center of rotation provides a through-hole to bury the workpiece.

Features:
- 61mm (2.4") through capacity
- Work can pass through chuck
- Rotational limit = 3,000 RPM
- Air assisted clamping option
- Three clamping wedges for added stability
- Bolts into place from top side

Available with Notches

<table>
<thead>
<tr>
<th>Chuck Model</th>
<th>Catalog Number</th>
<th>Notch (Width x Qty)</th>
<th>Recommended Bolt Sizes</th>
<th>Clamping Force (lbs)</th>
<th>Weight (lbs)</th>
<th>Air Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSM 196</td>
<td>15.274.407</td>
<td>25 H6 x 1</td>
<td>M10, M12, M16, M20†, M24†</td>
<td>1,980-2,200, 4,400-5,060</td>
<td>19.3</td>
<td>1/8 ✓</td>
</tr>
</tbody>
</table>

- Screws, screw covers, o-rings and timing bushing included
- M74 option [See Pg. 68]
39.9
3.9
196
6
159
12
87.5
5
1.85
87.5
30°
60°

1/8 BSP Open Port [Ships Plugged]
1/8 BSP Turbo Port [Ships Plugged]
M8 SHCS (6x)

Section B-B

Detail A
Scale 2:3.5
e8x2 O-Ring
(Ships Uplugged)

Turbo Port
Open Port

• All dimensions are in millimeters
Rectangular Chucks

Unilock rectangular chucks are well suited for mono-chuck applications. They are available in several sizes, and when matched to the footprint of the workpiece, they provide maximum access from the remaining five sides.

The EDM 100/150 has the lowest profile of all Unilock chucks, and the new AFM 146 is not far behind. The AFM 105/65 and the ESM 100/75 are the two narrowest chucks in the Unilock family and can be placed very close to the edge of a fixture or workpiece. For extremely large and heavy parts, the new ESM 180/150 with a new robust knob series is your answer.
Perfect for Small Spaces

The ESM 100/75 can be assembled directly to machine tables as well as installation into angle plates, tombstones or pallets.

Features:
- Flange mounting design
- Reduced size for small work or tight spaces
- High clamping force in a small package
- Edge of chuck can be used as a timing surface
- Turbo option for increased holding power

<table>
<thead>
<tr>
<th>Chuck Model</th>
<th>Catalog Number</th>
<th>Notch (Width x Qty)</th>
<th>Recommended Bolt Sizes</th>
<th>Clamping Force (lbs)</th>
<th>Weight (lbs)</th>
<th>Air Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESM 100/75</td>
<td>15.272.175</td>
<td>—</td>
<td>M10 M12 M16 M20† M24†</td>
<td>Spring Only 440-660</td>
<td>3,300-3,520</td>
<td>4.5 1/8</td>
</tr>
</tbody>
</table>

* Screws, screw covers and o-rings included
† Optional
All dimensions are in millimeters.
The Small Footprint Expert

The AFM 105/65 chuck is an excellent choice for single chuck applications on multi-axis machines and work cells where clearance is needed to access all available sides of the part.

Features:
- Simple surface mount design
- Dowel pins into location
- Bolt through or toe clamp
- Ground edges for orientation
- Air assisted clamping option
- Turbo option for increased holding power
- Optional robot gripper version
- Supports 90 degree (4x) indexing
- Elevated for 5-axis accessibility

<table>
<thead>
<tr>
<th>Chuck Model</th>
<th>Catalog Number</th>
<th>Notch (Width x Qty)</th>
<th>Recommended Bolt Sizes</th>
<th>Clamping Force (lbs)</th>
<th>Weight (lbs)</th>
<th>Air Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFM 105/65</td>
<td>15.272.165</td>
<td>—</td>
<td>M10 M12 M16 M20† M24†</td>
<td>660-880</td>
<td>1,980-2,200</td>
<td>6.3 1/8 ✔</td>
</tr>
<tr>
<td></td>
<td>15.272.166</td>
<td>12 H6 x 2</td>
<td>— — — —</td>
<td>660-880</td>
<td>1,980-2,200</td>
<td>6.3 1/8 ✔</td>
</tr>
</tbody>
</table>

† Optional

AIR FITTINGS
PG. 144

ACCESSORIES
PG. 148

Available as Robot Gripper Option (See Pg. 140)
• All dimensions are in millimeters
The EDM Specialist

The EDM 100/150 chuck is designed to operate in submerged environments. Completely sealed and produced from stainless steel, this chuck can be used in Wire EDM and Water Jet machines. This chuck provides an open interface and clamping knobs can be loaded from the top or bottom side. This chuck is compatible with the entire Unilock product range as it uses the standard sized System 40 clamping knob. With a total height of 39mm (1.535”), this chuck delivers the lowest stack height in the Unilock family.

Features:
- Turbo option for increased holding power
- Weight: 3.35 kg (7.3 lbs)
- Knob can be retained from both sides
- Chuck can be mounted on any face

<table>
<thead>
<tr>
<th>Chuck Model</th>
<th>Catalog Number</th>
<th>Notch (Width x Qty)</th>
<th>Recommended Bolt Sizes</th>
<th>Clamping Force (lbs)</th>
<th>Weight (lbs)</th>
<th>Air Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDM 100/150</td>
<td>15.272.150</td>
<td>—</td>
<td>M10 M12 M16 M20† M24†</td>
<td>440-550</td>
<td>7.3</td>
<td>1/8 —</td>
</tr>
</tbody>
</table>

- No hardware included
- † Optional

AIR FITTINGS

PG. 144

REPAIR COMPONENTS

PG. 149
• All dimensions are in millimeters
The Instant Out of the Box Solution

The AFM 146 chuck is an excellent choice for multiple chuck applications on multi-axis machine tables and other work cells where a low stack height is important. Can instantly mount directly to your machine table right out of the box.

Features:

- Simple surface mount design
- Dowel pins into location
- Bolt through or toe clamp
- Ground edges for orientation
- Air assisted clamping option
- Turbo option for increased holding power
- Low profile 46mm (1.811”)
- Through-hole eases cleaning

<table>
<thead>
<tr>
<th>Chuck Model</th>
<th>Catalog Number</th>
<th>Notch (Width x Qty)</th>
<th>Recommended Bolt Sizes</th>
<th>Clamping Force (lbs)</th>
<th>Weight (lbs)</th>
<th>Air Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFM 146</td>
<td>15.260.146</td>
<td>14 H7 x 1</td>
<td>M10 ✓ M12 ✓ M16 ✓ M20† — M24† —</td>
<td>1,100-1,540</td>
<td>3,300-3,740</td>
<td>1/8 ✓</td>
</tr>
</tbody>
</table>

- No hardware included
- † Optional

AIR FITTINGS [PG. 144]  ACCESSORIES [PG. 148]  REPAIR COMPONENTS [PG. 149]
• All dimensions are in millimeters
A Leap Forward in Heavy Part Workholding

The ESM 180/150 uses the System 68 knob which allows for the use of larger fasteners. By having the highest retention forces available, it can be used in industries that specialize in large part manufacturing such as Energy, Aerospace, Agriculture and Construction.

Features:
- Highest retention forces
- Large surface area
- Turbo option for increased holding power
- Edge of chuck can be used as a timing surface

<table>
<thead>
<tr>
<th>Chuck Model</th>
<th>Catalog Number</th>
<th>Notch [Width x Qty]</th>
<th>Recommended Bolt Size</th>
<th>Clamping Force [lbs]</th>
<th>Weight [lbs]</th>
<th>Air Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESM 180/150</td>
<td>15.500.590</td>
<td>—</td>
<td>M10 M12 M16 M20 M24</td>
<td>9,000-10,000</td>
<td>26.5</td>
<td>1/8</td>
</tr>
</tbody>
</table>

*All dimensions are in millimeters*
• All dimensions are in millimeters
Just as the name implies, these chucks are sold mounted to a base plate. The base plate provides easy mounting of the chucks to the machine table as well as a pre-plumbed air supply. All bases provide either notches or a ground edge to square the chucks to the machine table.
Pre-Assembled Single Table Chucks

Four adjustment slots allow for quick positioning on t-slot tables. Additional clamping chucks be used to create an array and provide orientation.

Features:
- Base plate for mounting on machine tables
- Air supply from side of base plate
- Optional timing notch in face of chuck
- Keyways on bottom for positioning on work table
- Utilizes ESM 138 Unilock chuck

Available with Notches

<table>
<thead>
<tr>
<th>Chuck Model</th>
<th>Catalog Number</th>
<th>Notch [Width x Qty]</th>
<th>Recommended Bolt Sizes</th>
<th>Clamping Force (lbs)</th>
<th>Weight (lbs)</th>
<th>Air Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLM 150</td>
<td>15.270.390</td>
<td>—</td>
<td>M10 M12 M16 M20† M24†</td>
<td>Spring Only Turbo Assist</td>
<td>990-1,320</td>
<td>—</td>
</tr>
<tr>
<td>MLM 150</td>
<td>15.270.395</td>
<td>12 H6 x 1</td>
<td>✓ ✓ ✓ ✓ ✓ ✓</td>
<td>—</td>
<td>15.4</td>
<td>1/8</td>
</tr>
</tbody>
</table>

* No hardware included
† Optional

AIR FITTINGS

PG. 144

ACCESSORIES

PG. 148

REPAIR COMPONENTS

PG. 149
MLM 150

1/8 BSP Open Port
(Ships Unplugged)

- All dimensions are in millimeters
- Dimensions marked are for notch option
Pre-Assembled Single Table Chucks

The MCM 150 is prepared to accept four hardened 12mm index bushings, one every 90 degrees. Order one index bushing to orient a pallet with a single knob. If you need to execute multiple 90 degree indexes, additional bushings can be installed.

Features:
- Base plate for mounting on machine tables
- Air supply from side of base plate
- 90 degree [4x] indexing
- Optional timing notch in face of chuck
- Keyways on bottom for positioning on work table
- Utilizes ESM 138 Unilock chuck

<table>
<thead>
<tr>
<th>Chuck Model</th>
<th>Catalog Number</th>
<th>Notch (Width x Qty)</th>
<th>Recommended Bolt Sizes</th>
<th>Clamping Force (lbs)</th>
<th>Weight (lbs)</th>
<th>Air Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCM 150</td>
<td>15.270.250</td>
<td>12 H6 x 4†</td>
<td>M10 M12 M16 M20† M24†</td>
<td>999-1,320 —</td>
<td>17.8</td>
<td>1/8 —</td>
</tr>
</tbody>
</table>

- No hardware included
  † Optional

Optional Air Pass-Through

| Catalog Number | 15.260.725 |

- Other sizes available upon request
  - Please contact BIG KAISER Engineering Dept. for additional information
• All dimensions are in millimeters
• Dimensions marked H7 are for notch option
Pre-Assembled Double Table Chucks

Designed to accept a large single pallet or two smaller pallets. A single external air connection operates both chucks simultaneously.

Features:
- Base plate for mounting on machine tables
- Air supply from side of base plate
- Optional timing notch in face of DLM chuck
- Keyways on bottom for positioning on work table
- Utilizes ESM 138 Unilock chucks

<table>
<thead>
<tr>
<th>Chuck Model</th>
<th>Catalog Number</th>
<th>Notch</th>
<th>Recommended Bolt Sizes</th>
<th>Clamping Force (lbs)</th>
<th>Weight (lbs)</th>
<th>Air Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>DLM 200</td>
<td>15.270.300</td>
<td>—</td>
<td>✓ ✓ ✓ ✓ ✓ ✓</td>
<td>1,980-2,640*</td>
<td>37.4</td>
<td>1/8</td>
</tr>
<tr>
<td></td>
<td>15.270.307</td>
<td>14H7 x 1</td>
<td>✓ ✓ ✓ ✓ ✓ ✓</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

* No hardware included
† Optional
* Combined value of two chucks

The DLM 200 chuck does not have timing pin bushing locations. If you want to orient a double pallet with this chuck, add one timing pin notch. If you need to run two single pallets, add a timing notch for each chuck.
1/8 BSP Open Port [2x]  
(1 Ships Plugged)  
(1 Ships Unplugged)

Air Passage  
Cover Plates  
Do Not Remove

- All dimensions are in millimeters  
- Dimensions marked ± are for notch option
Pre-Assembled Double Table Chucks
The DCM 200 chuck is designed to process two single pallets or one double pallet. Each chuck has a position for a timing pin bushing every 90 degrees.

**Features:**
- Base plate for mounting on machine tables
- Air supply from side of base plate
- 90 degree (4x) indexing
- Keyways on bottom for positioning on work table
- ø25mm locating hole
- Single chuck operation capability
- Utilizes ESM 138 Unilock chucks

<table>
<thead>
<tr>
<th>Chuck Model</th>
<th>Catalog Number</th>
<th>Notch (Width x Qty)</th>
<th>Recommended Bolt Sizes</th>
<th>Clamping Force [lbs]</th>
<th>Weight [lbs]</th>
<th>Air Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>DCM 200</td>
<td>15.270.200</td>
<td>12 H6 x 8</td>
<td>✓ ✓ ✓ ✓ ✓</td>
<td>1,980-2,640*</td>
<td>46.2</td>
<td>1/4 —</td>
</tr>
</tbody>
</table>

* No hardware included
† Optional
* Combined value of two chucks
Optional Timing Bushing
15.260.306

1/8 BSP Port
For Individual Chuck Operation (Ships Unplugged)

1/4 BSP Open Port (2x)

M10 SHCS (6x)

Bushing Hole Locations (8x)
(Bushing Part Sold Separately)
15.260.309

Air Passage Cover Plates Do Not Remove

• All dimensions are in millimeters
**Pre-Assembled Quad Table Chucks**

The Quatro Clamping Station light base has four ESM 138 chucks fed with a single air connection from the side. The steel plate includes two G 1/4” air connections on the front edge and on the back edge. One of the air connection points is plugged and the other is left open for the air connection.

**Features:**
- Repeatability: .0001”-.0002”
- Air Connection (2x): G 1/4”
- Weight: 35.50 kg (78.3 lbs)
- Can be operated as duo and quad
- Utilizes ESM 138 Unilock chucks

<table>
<thead>
<tr>
<th>Chuck Model</th>
<th>Catalog Number</th>
<th>Notch (Width x Qty)</th>
<th>Recommended Bolt Sizes</th>
<th>Clamping Force (lbs)</th>
<th>Weight (lbs)</th>
<th>Air Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>QC 400</td>
<td>15.270.340</td>
<td>—</td>
<td>M10 M12 M16 M20† M24†</td>
<td>3,960-5,280*</td>
<td>78.3</td>
<td>1/4</td>
</tr>
</tbody>
</table>

* No hardware included
† Optional
* Combined value of four chucks

---

**AIR FITTINGS**

[PG. 144]

**ACCESSORIES**

[PG. 148]

**REPAIR COMPONENTS**

[PG. 149]
Air Passage
Cover Plates
Do Not Remove

1/4 BSP Open Port (2x)
(1 Ships Plugged)
(1 Ships Unplugged)

1/8 BSP (2x)
(For Dual Chuck Operation)
(Ships Unplugged)

All dimensions are in millimeters

*QC 400*
Pre-Assembled Double Table Chucks
Base stations with the new ERGO 138 chuck rather than the ESM 138, saving 11mm of height. Available with turbo out of the box.

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

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Fig.</th>
<th>Metric</th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
<th>Inch Length</th>
<th>Width</th>
<th>Height</th>
<th>Number of Chucks</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.270.370</td>
<td>1</td>
<td></td>
<td>196mm</td>
<td></td>
<td>196mm</td>
<td>7.717</td>
<td></td>
<td>1.969</td>
<td>1</td>
</tr>
<tr>
<td>15.270.371</td>
<td>2</td>
<td></td>
<td>396mm</td>
<td></td>
<td></td>
<td>15.591</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>15.270.372</td>
<td>3</td>
<td></td>
<td>596mm</td>
<td></td>
<td>50mm</td>
<td>23.465</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>15.270.373</td>
<td>4</td>
<td></td>
<td>369mm</td>
<td></td>
<td>396mm</td>
<td>14.528</td>
<td></td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>15.270.374</td>
<td>5</td>
<td></td>
<td>596mm</td>
<td></td>
<td></td>
<td>23.465</td>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>15.270.375</td>
<td>6</td>
<td></td>
<td>796mm</td>
<td></td>
<td></td>
<td>31.339</td>
<td></td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>15.270.376</td>
<td>7</td>
<td></td>
<td>996mm</td>
<td></td>
<td></td>
<td>39.213</td>
<td></td>
<td></td>
<td>10</td>
</tr>
</tbody>
</table>

- No hardware included
- See Pg. 16 for ERGO 138 chuck specifics
**ERGO BASE STATIONS**

- **Fig. 1**
- **Fig. 2**
- **Fig. 3**
- **Fig. 4**
- **Fig. 5**
- **Fig. 6**
- **Fig. 7**

- All dimensions are in millimeters
- Dimensions marked [ ] are typical

---

1/8 BSP Open Port  
1/8 BSP Turbo Port
**STARTER KITS**

**Setup & Process Reduction Kits**

**Features:**
- Chucks are mounted to universal base plates
- Reduced chuck diameters support tight work envelopes
- Base plate functions as a reference edge
- Air supply is through the base plate
- Pallet timing pin feature is integrated into chuck face
- 120mm chuck also has a manual option

**Setup Reduction Kits**
Setup Reduction Kits allow users to prep one job while another is running. These kits come with one chuck for the work cell and two pallets. One pallet can be loaded into the cell while the other is available for loading and unloading of fixtures or workpieces. When the job is completed simply change pallets and hit Cycle Start.

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.280.110</td>
<td>ASM 90 one-chuck two-pallet kit with air</td>
</tr>
<tr>
<td>15.280.210</td>
<td>ASM 120 one-chuck two-pallet kit with air</td>
</tr>
<tr>
<td>15.280.310</td>
<td>ASM 120 manual one-chuck two-pallet kit</td>
</tr>
<tr>
<td>15.280.410</td>
<td>ESM 138 one-chuck two-pallet kit with air</td>
</tr>
</tbody>
</table>

**Process Reduction Kits**
Process Reduction Kits allow users to transfer parts between operations without unclamping the parts. A single pallet moves through multiple orientations while others follow as each operation is completed. Additional pallets are prepared while others are being processed.

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.280.112</td>
<td>ASM 90 two-chuck three-pallet kit with air</td>
</tr>
<tr>
<td>15.280.212</td>
<td>ASM 120 two-chuck three-pallet kit with air</td>
</tr>
<tr>
<td>15.280.312</td>
<td>ASM 120 manual two-chuck three-pallet kit</td>
</tr>
<tr>
<td>15.280.412</td>
<td>ESM 138 two-chuck three-pallet kit with air</td>
</tr>
</tbody>
</table>

**AIR FITTINGS**

**ACCESSORIES**

**REPAIR COMPONENTS**
**AS M 90**

<table>
<thead>
<tr>
<th>Turbo Port</th>
<th>Open Port (1/4&quot; Tube Fitting Included)</th>
</tr>
</thead>
<tbody>
<tr>
<td>35 Min</td>
<td></td>
</tr>
</tbody>
</table>

Chuck | Pallet
---|---
16.280.100 | 15.280.101

**AS M 120**

<table>
<thead>
<tr>
<th>Open Port (1/4&quot; Tube Fitting Included)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ø8 H6</td>
</tr>
</tbody>
</table>

Chuck | Pallet
---|---
15.280.200 | 15.280.201
15.280.300 | 15.280.201

† Manual chuck, no air needed

**ES M 138**

<table>
<thead>
<tr>
<th>Open Port (1/4&quot; Tube Fitting Included)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ø138</td>
</tr>
</tbody>
</table>

Chuck | Pallet
---|---
15.280.400 | 15.280.401

All dimensions are in millimeters.
The Unilock retention knob is the heart of the system. It provides high accuracy location while also retaining the fixture. The knob comes in three forms for proper location of large fixtures with metric or inch fastening options. The fastening screw can be captivated within the knob protecting it from rough or improper handling.

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

**Clamping Knobs** .......... Pg. 64-68

**System 40 Pallets** .......... Pg. 70-71
Unilock 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.

(Note: This option is not recommended for “B” type knobs as there is no timing control)

**Option 3** – Retain From Top – The bolt passes through the workpiece or fixture and pulls the knob into position.

Standard clamping knobs have a metric positioning boss which is ø25mm and ground to a fit of h6. This boss is 5mm tall. The overall measurements of the clamping knob is ø40mm 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 +/- .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.
**CLAMPING KNOBS**

**System 40 Knobs**

![Diagram of System 40 Knobs]

<table>
<thead>
<tr>
<th>Knob Type</th>
<th>Catalog Number</th>
<th>Description</th>
<th>Undersize</th>
<th>Internal Thread</th>
<th>Pass-Through Bolt Size</th>
<th>Hex</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>15.260.300</td>
<td>SBA Clamping Knob Absolute Position</td>
<td>.0002</td>
<td>M10</td>
<td>10mm</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>15.260.301</td>
<td>SBB Clamping Knob Orientation</td>
<td>.0002</td>
<td>M10</td>
<td>10mm</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>15.260.302</td>
<td>SBC Clamping Knob Undersized .1mm - Downward Clamping Only</td>
<td>.0040</td>
<td>M10</td>
<td>10mm</td>
<td></td>
</tr>
<tr>
<td>CC</td>
<td>15.260.303</td>
<td>SBCC Clamping Knob Undersized .3mm - Downward Clamping Only</td>
<td>.0120</td>
<td>M10</td>
<td>10mm</td>
<td></td>
</tr>
<tr>
<td>CC</td>
<td>15.260.304</td>
<td>SBCC Clamping Knob Undersized .6mm - Downward Clamping Only</td>
<td>.0240</td>
<td>M10</td>
<td>10mm</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>15.260.305</td>
<td>SBA Clamping Knob 3/4&quot;-10 Thread</td>
<td>.0002</td>
<td>3/4&quot;-10</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>A</td>
<td>15.260.313</td>
<td>SBA Clamping Knob 1/2&quot;-13 Thread</td>
<td>.0002</td>
<td>1/2&quot;-13</td>
<td>3/8&quot; - 16</td>
<td>3/8&quot;</td>
</tr>
<tr>
<td>B</td>
<td>15.260.314</td>
<td>SBB Clamping Knob 1/2&quot;-13 Thread</td>
<td>.0002</td>
<td>1/2&quot;-13</td>
<td>3/8&quot; - 16</td>
<td>3/8&quot;</td>
</tr>
<tr>
<td>C</td>
<td>15.260.315</td>
<td>SBC Clamping Knob 1/2&quot;-13 Thread</td>
<td>.0040</td>
<td>1/2&quot;-13</td>
<td>3/8&quot; - 16</td>
<td>3/8&quot;</td>
</tr>
<tr>
<td>A</td>
<td>15.260.400</td>
<td>SBA Clamping Knob M16</td>
<td>.0002</td>
<td>M16</td>
<td>M12</td>
<td>17mm</td>
</tr>
<tr>
<td>B</td>
<td>15.260.401</td>
<td>SBB Clamping Knob M16</td>
<td>.0002</td>
<td>M16</td>
<td>M12</td>
<td>17mm</td>
</tr>
<tr>
<td>C</td>
<td>15.260.402</td>
<td>SBC Clamping Knob M16</td>
<td>.0040</td>
<td>M16</td>
<td>M12</td>
<td>17mm</td>
</tr>
<tr>
<td>—</td>
<td>16.260.310</td>
<td>Chip Guard Knob</td>
<td>—</td>
<td>M8</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

- All dimensions are in millimeters

**System 40 T-Slot Knobs**

![Diagram of System 40 T-Slot Knobs]

<table>
<thead>
<tr>
<th>Knob Type</th>
<th>Catalog Number</th>
<th>Description</th>
<th>Undersize</th>
<th>Thread</th>
<th>T-Slot</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>15.250.360</td>
<td>SBA Clamping Knob Absolute Position 14mm T-Slot</td>
<td>.0002</td>
<td>M10xP1.5</td>
<td>14mm</td>
</tr>
<tr>
<td>C</td>
<td>15.250.361</td>
<td>SBC Clamping Knob Undersized 0.3mm 14mm T-Slot</td>
<td>.0040</td>
<td>M10xP1.5</td>
<td>14mm</td>
</tr>
<tr>
<td>A</td>
<td>15.250.366</td>
<td>SBA Clamping Knob Absolute Position 16mm T-Slot</td>
<td>.0002</td>
<td>M12xP1.75</td>
<td>16mm</td>
</tr>
<tr>
<td>C</td>
<td>15.250.367</td>
<td>SBC Clamping Knob Undersized 0.3mm 16mm T-Slot</td>
<td>.0040</td>
<td>M12xP1.75</td>
<td>16mm</td>
</tr>
<tr>
<td>A</td>
<td>15.250.362</td>
<td>SBA Clamping Knob Absolute Position 18mm T-Slot</td>
<td>.0002</td>
<td>M12xP1.75</td>
<td>18mm</td>
</tr>
<tr>
<td>C</td>
<td>15.250.363</td>
<td>SBC Clamping Knob Undersized 0.3mm 18mm T-Slot</td>
<td>.0040</td>
<td>M12xP1.75</td>
<td>18mm</td>
</tr>
<tr>
<td>A</td>
<td>15.250.364</td>
<td>SBA Clamping Knob Absolute Position 22mm T-Slot</td>
<td>.0002</td>
<td>M12xP1.75</td>
<td>22mm</td>
</tr>
<tr>
<td>C</td>
<td>15.250.365</td>
<td>SBC Clamping Knob Undersized 0.3mm 20mm T-Slot</td>
<td>.0040</td>
<td>M12xP1.75</td>
<td>20mm</td>
</tr>
</tbody>
</table>

- All dimensions are in millimeters
- T-nuts and fasteners not included
- Inch t-slot versions available upon request
**CLAMPING KNOBS**

**System 40 Pass-Through ø12mm Knobs**

```
• All dimensions are in millimeters
```

**System 40 Pass-Through ø12mm Knob Screws**

```
• All dimensions are in millimeters
```

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Description</th>
<th>øD1</th>
<th>Thread (G)</th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.250.540</td>
<td>Shoulder Screw ø12 x M12xP1.75 x L50</td>
<td>12</td>
<td>M12xP1.75</td>
<td>50.0</td>
<td>22.0</td>
<td>30.0</td>
<td>8.0</td>
</tr>
<tr>
<td>15.250.541</td>
<td>Shoulder Screw ø12 x M12xP1.75 x L55</td>
<td>12</td>
<td>M12xP1.75</td>
<td>55.0</td>
<td>22.0</td>
<td>35.0</td>
<td>13.0</td>
</tr>
<tr>
<td>15.250.542</td>
<td>Shoulder Screw ø12 x M12xP1.75 x L28</td>
<td>12</td>
<td>M12xP1.75</td>
<td>28.0</td>
<td>—</td>
<td>8.0</td>
<td>—</td>
</tr>
<tr>
<td>15.250.543</td>
<td>Shoulder Screw ø12 x M12xP1.5   x L28</td>
<td>12</td>
<td>M12xP1.5</td>
<td>28.0</td>
<td>—</td>
<td>8.0</td>
<td>—</td>
</tr>
<tr>
<td>15.250.544</td>
<td>Shoulder Screw ø12 x M12xP1.25  x L28</td>
<td>12</td>
<td>M12xP1.25</td>
<td>28.0</td>
<td>—</td>
<td>8.0</td>
<td>—</td>
</tr>
<tr>
<td>15.250.545</td>
<td>Shoulder Screw ø12 x M12xP1.5   x L34.5</td>
<td>12</td>
<td>M10xP1.5</td>
<td>24.5</td>
<td>15.0</td>
<td>14.5</td>
<td>—</td>
</tr>
<tr>
<td>15.250.546</td>
<td>Shoulder Screw ø12 x M12xP1.5   x L28</td>
<td>12</td>
<td>M10xP1.5</td>
<td>28.0</td>
<td>—</td>
<td>8.0</td>
<td>—</td>
</tr>
<tr>
<td>15.250.547</td>
<td>Shoulder Screw ø12 x M12xP1.25  x L28</td>
<td>12</td>
<td>M10xP1.25</td>
<td>28.0</td>
<td>—</td>
<td>8.0</td>
<td>—</td>
</tr>
</tbody>
</table>
System 40 Pass-Through ø16mm Knobs

- All dimensions are in millimeters

System 40 Pass-Through ø16mm Knob Screws

- All dimensions are in millimeters

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Description</th>
<th>øD1</th>
<th>Thread [G]</th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.250.520</td>
<td>Shoulder Screw ø16 x M12xP2xL55</td>
<td>16</td>
<td>M16xP2</td>
<td>55.0</td>
<td>25.0</td>
<td>35.0</td>
<td>10.0</td>
</tr>
<tr>
<td>15.250.521</td>
<td>Shoulder Screw ø16 x M12xP2xL43.5</td>
<td>16</td>
<td>M16xP2</td>
<td>43.5</td>
<td>24.0</td>
<td>23.5</td>
<td>—</td>
</tr>
<tr>
<td>15.250.522</td>
<td>Shoulder Screw ø16 x M12xP2xL28</td>
<td>16</td>
<td>M16xP2</td>
<td>28.0</td>
<td>—</td>
<td>8.0</td>
<td>—</td>
</tr>
<tr>
<td>15.250.523</td>
<td>Shoulder Screw ø16 x M14xP1.5xL28</td>
<td>16</td>
<td>M14xP1.5</td>
<td>28.0</td>
<td>—</td>
<td>8.0</td>
<td>—</td>
</tr>
<tr>
<td>15.250.524</td>
<td>Shoulder Screw ø16 x M14xP1.25xL28</td>
<td>16</td>
<td>M14xP1.25</td>
<td>28.0</td>
<td>—</td>
<td>8.0</td>
<td>—</td>
</tr>
<tr>
<td>15.250.525</td>
<td>Shoulder Screw ø16 x M12xP1.75xL40.5</td>
<td>16</td>
<td>M12xP1.75</td>
<td>37.5</td>
<td>18.0</td>
<td>17.5</td>
<td>—</td>
</tr>
<tr>
<td>15.250.526</td>
<td>Shoulder Screw ø16 x M14xP2xL28</td>
<td>16</td>
<td>M14xP2</td>
<td>28.0</td>
<td>—</td>
<td>8.0</td>
<td>—</td>
</tr>
<tr>
<td>15.250.527</td>
<td>Shoulder Screw ø16 x M14xP1.5xL28</td>
<td>16</td>
<td>M14xP1.5</td>
<td>28.0</td>
<td>—</td>
<td>8.0</td>
<td>—</td>
</tr>
<tr>
<td>15.250.528</td>
<td>Shoulder Screw ø16 x M14xP1.25xL28</td>
<td>16</td>
<td>M14xP1.25</td>
<td>28.0</td>
<td>—</td>
<td>8.0</td>
<td>—</td>
</tr>
<tr>
<td>15.250.529</td>
<td>Shoulder Screw ø16 x M12xP1.75xL37.5</td>
<td>16</td>
<td>M12xP1.75</td>
<td>37.5</td>
<td>18.0</td>
<td>17.5</td>
<td>—</td>
</tr>
<tr>
<td>15.250.530</td>
<td>Shoulder Screw ø16 x M12xP1.75xL28</td>
<td>16</td>
<td>M12xP1.75</td>
<td>28.0</td>
<td>—</td>
<td>8.0</td>
<td>—</td>
</tr>
<tr>
<td>15.250.531</td>
<td>Shoulder Screw ø16 x M12xP1.5xL28</td>
<td>16</td>
<td>M12xP1.5</td>
<td>28.0</td>
<td>—</td>
<td>8.0</td>
<td>—</td>
</tr>
<tr>
<td>15.250.532</td>
<td>Shoulder Screw ø16 x M12xP1.25xL28</td>
<td>16</td>
<td>M12xP1.25</td>
<td>28.0</td>
<td>—</td>
<td>8.0</td>
<td>—</td>
</tr>
<tr>
<td>15.250.533</td>
<td>Shoulder Screw ø16 x M10xP1.5xL28</td>
<td>16</td>
<td>M10xP1.5</td>
<td>28.0</td>
<td>—</td>
<td>8.0</td>
<td>—</td>
</tr>
<tr>
<td>15.250.534</td>
<td>Shoulder Screw ø16 x M10xP1.25xL28</td>
<td>16</td>
<td>M10xP1.25</td>
<td>28.0</td>
<td>—</td>
<td>8.0</td>
<td>—</td>
</tr>
</tbody>
</table>
**System 25 Knobs**

<table>
<thead>
<tr>
<th>Knob Type</th>
<th>Catalog Number</th>
<th>Description</th>
<th>Undersize</th>
<th>Internal Thread</th>
<th>Pass-Through Bolt Size</th>
<th>Hex</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>15.255.400</td>
<td>SBA Clamping Knob Absolute Position</td>
<td>.0002</td>
<td>M10</td>
<td>M8</td>
<td>8mm</td>
</tr>
<tr>
<td>B</td>
<td>15.255.401</td>
<td>SBB Clamping Knob Orientation</td>
<td>.0002</td>
<td>M10</td>
<td>M8</td>
<td>8mm</td>
</tr>
<tr>
<td>C</td>
<td>15.255.402</td>
<td>SBC Clamping Knob Undersized .1mm - Downward Clamping Only</td>
<td>.0040</td>
<td>M10</td>
<td>M8</td>
<td>8mm</td>
</tr>
</tbody>
</table>

- See Pg. 122 for compatible chucks

**System 90 Knobs**

<table>
<thead>
<tr>
<th>Knob Part</th>
<th>Catalog Number</th>
<th>Description</th>
<th>Undersize</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>15.274.300</td>
<td>HSI 90 Clamping Knob – SBA</td>
<td>.0002</td>
</tr>
<tr>
<td>B</td>
<td>15.274.303</td>
<td>HSI 90 Clamping Knob – SBB</td>
<td>.0002</td>
</tr>
<tr>
<td>A</td>
<td>15.274.301</td>
<td>HSR 90 Clamping Knob – SBA</td>
<td>.0002</td>
</tr>
<tr>
<td>A</td>
<td>15.274.303</td>
<td>HSR 90 Clamping Knob – SBA</td>
<td>.0002</td>
</tr>
</tbody>
</table>

- See Pg. 32 for HSM 196 chuck

All dimensions are in millimeters.
Mono Pallet
Pallet is shown with a ø12mm timing pin for use with MCM 150, MSM 170, ISM 160 and DC 200 chucks. The model ESM 138 chuck accepts a 14mm key or pin. The 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
- DLM/DCM 200

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

Can be Configured for the Following Chucks:
- DLM 200
- DCM 200
- QC 400
- 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.

<table>
<thead>
<tr>
<th>Pallet Type</th>
<th>Pallet Name</th>
<th>Catalog Number</th>
<th>Material</th>
<th>Weight [lbs]</th>
<th>Thickness</th>
<th>Length</th>
<th>Width</th>
<th>Length w/ Handles</th>
<th>Timing Pin T</th>
<th>Pin Dia. øP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mono</td>
<td>AP 200</td>
<td>15.260.640</td>
<td>Aluminum</td>
<td>6.6</td>
<td>25mm</td>
<td>199mm</td>
<td>199mm</td>
<td>266mm</td>
<td>81mm</td>
<td>12mm</td>
</tr>
<tr>
<td>Mono</td>
<td>SP 200</td>
<td>15.260.540</td>
<td>Steel</td>
<td>15.4</td>
<td>20mm</td>
<td>199mm</td>
<td>199mm</td>
<td>266mm</td>
<td>81mm</td>
<td>12mm</td>
</tr>
<tr>
<td>Mono</td>
<td>AP 200-138</td>
<td>15.260.647</td>
<td>Aluminum</td>
<td>6.6</td>
<td>25mm</td>
<td>199mm</td>
<td>199mm</td>
<td>266mm</td>
<td>61mm</td>
<td>14mm</td>
</tr>
<tr>
<td>Mono</td>
<td>AP 200-176</td>
<td>15.260.645</td>
<td>Aluminum</td>
<td>6.6</td>
<td>25mm</td>
<td>199mm</td>
<td>199mm</td>
<td>266mm</td>
<td>76mm</td>
<td>25mm</td>
</tr>
<tr>
<td>Duo</td>
<td>AP 400</td>
<td>15.270.640</td>
<td>Aluminum</td>
<td>13.2</td>
<td>25mm</td>
<td>399mm</td>
<td>199mm</td>
<td>470mm</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Duo</td>
<td>SP 400</td>
<td>15.270.540</td>
<td>Steel</td>
<td>30.8</td>
<td>20mm</td>
<td>399mm</td>
<td>199mm</td>
<td>470mm</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Quad</td>
<td>AP 400 x 400</td>
<td>15.270.644</td>
<td>Aluminum</td>
<td>26.4</td>
<td>25mm</td>
<td>399mm</td>
<td>399mm</td>
<td>470mm</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

Pallet Stand
Used to stabilize a pallet while it is being worked on outside of the machine.
Mono Pallets

Duo Pallets

Quad Pallets

- All dimensions are in millimeters
Unilock automation chucks are expanding the role of air pressure beyond that of holding the chuck open during changeovers or assisting the springs in the clamping process. Automation chucks can confirm the presence of a clamping ring/fixture via air pressure monitoring. Air is also used to help clean the locating surfaces.
Minimizes or Eliminates Flats and Recesses on the Mating Surfaces Where Chips Can Collect and Interfere with the Positioning and Clamping Process

The clamping chuck has a ground cone projecting out of its base that is used to establish centerline. Chips and debris will tend to slide off of this surface. 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.

Assists in the Cleaning Process so the Chuck Can be Safely Installed in an Automated Cell

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).

Provides Feedback to the Cell Controller on Clamping Status

The air passages are restricted once the pallet is clamped. This restriction can be measured and used to verify pallet presence.
The ESA 120/70 automation chuck has it all! 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

### Chuck Model

<table>
<thead>
<tr>
<th>Chuck Model</th>
<th>Catalog Number</th>
<th>Notch (Width x Qty)</th>
<th>Recommended Bolt Sizes</th>
<th>Clamping Force (lbs)</th>
<th>Weight (lbs)</th>
<th>Air Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESA 120/70</td>
<td>15.277.200</td>
<td>—</td>
<td>✔ M10 ✔ M12 ✔ M16 — — —</td>
<td>660-880</td>
<td>1,980-2,200</td>
<td>— ✔</td>
</tr>
</tbody>
</table>

+ Optional

**AIR FITTINGS**

![Detail A](Scale 4:1) Chip Slot
• All dimensions are in millimeters
• Please consult with BIG KAISER Engineering Dept. for detailed mounting instructions
The ESA 110 automation chuck 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

<table>
<thead>
<tr>
<th>Chuck Model</th>
<th>Catalog Number</th>
<th>Clamping Force (lbs)</th>
<th>Weight (lbs)</th>
<th>Air Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Spring Only</td>
<td>Turbo Assist*</td>
<td></td>
</tr>
<tr>
<td>ESA 110</td>
<td>15.277.300</td>
<td>660-880</td>
<td>3,080-3,300</td>
<td>—</td>
</tr>
</tbody>
</table>

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

### Clamping Ring

<table>
<thead>
<tr>
<th>Ring Type</th>
<th>Catalog Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRA 110</td>
<td>15.277.030</td>
</tr>
<tr>
<td>SRB 110</td>
<td>15.277.031</td>
</tr>
<tr>
<td>SRC 110</td>
<td>15.277.032</td>
</tr>
</tbody>
</table>

• Screws included

• All dimensions are in millimeters
• All dimensions are in millimeters
• Please consult with BIG KAISER Engineering Dept. for detailed mounting instructions
The NSA 125 automation chuck 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

<table>
<thead>
<tr>
<th>Chuck Model</th>
<th>Catalog Number</th>
<th>Clamping Force (lbs)</th>
<th>Weight (lbs)</th>
<th>Air Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Spring Only</td>
<td>Turbo Assist*</td>
<td></td>
</tr>
<tr>
<td>NSA 125</td>
<td>15.277.125</td>
<td>1,100-1,350</td>
<td>3,300-3,740</td>
<td>7.9</td>
</tr>
</tbody>
</table>

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

### Clamping Ring

<table>
<thead>
<tr>
<th>Ring Type</th>
<th>Catalog Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRA 125</td>
<td>15.277.001</td>
</tr>
<tr>
<td>SRB 125</td>
<td>15.277.002</td>
</tr>
<tr>
<td>SRC 125</td>
<td>15.277.003</td>
</tr>
</tbody>
</table>

- Screws included

- All dimensions are in millimeters
All dimensions are in millimeters

Please consult with BIG KAISER Engineering Dept. for detailed mounting instructions.
The ESA 185 chuck is the largest self cleaning Unilock clamping chuck. It is especially well suited for the use in heavy machining. Supporting pallets up to 1,000mm x 1,000mm with weight in excess of 10 tons, this chuck offers rigid clamping for turning and milling. After the blow-off function cleans the chuck during a load cycle, it can be used to monitor pallet presence.

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

<table>
<thead>
<tr>
<th>Chuck Model</th>
<th>Catalog Number</th>
<th>Clamping Force (lbs)</th>
<th>Weight (lbs)</th>
<th>Air Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESA 185</td>
<td>15.277.185</td>
<td>Spring Only 2,850-3,300, Turbo Assist* 660-8,800</td>
<td>21.4</td>
<td>— ✔</td>
</tr>
</tbody>
</table>

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

### Clamping Ring

<table>
<thead>
<tr>
<th>Ring Type</th>
<th>Catalog Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRA 185</td>
<td>15.277.040</td>
</tr>
<tr>
<td>SRB 185</td>
<td>15.277.041</td>
</tr>
<tr>
<td>SRC 185</td>
<td>15.277.043</td>
</tr>
</tbody>
</table>

* Screws included

* All dimensions are in millimeters
**ESA 185**

- All dimensions are in millimeters
- Please consult with BIG KAISER Engineering Dept. for detailed mounting instructions
**Pre-Assembled Automation Solutions**

This automation chuck is produced from a steel body with dimensions of 170mm x 170mm. It is designed to accept a single clamping ring at the centerline of the pallet. A stable platform is provided for all machining applications through the use of four clamping wedges and four supporting orientation pads.

<table>
<thead>
<tr>
<th>Chuck Model</th>
<th>Catalog Number</th>
<th>Clamping Force (lbs)</th>
<th>Weight (lbs)</th>
<th>Air Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Spring Only</td>
<td>Turbo Assist*</td>
<td></td>
</tr>
<tr>
<td>ASSF 170</td>
<td>15.279.170</td>
<td>1,100-1,350</td>
<td>2,860-3,300</td>
<td>20.1</td>
</tr>
</tbody>
</table>

- No hardware included
- *Sealed pocket required for Turbo Assist

**Clamping Ring**

<table>
<thead>
<tr>
<th>Ring Type</th>
<th>Catalog Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRA 170</td>
<td>15.279.120</td>
</tr>
</tbody>
</table>

- Screws included

Ring shown on pallet
- All dimensions are in millimeters
• All dimensions are in millimeters
• Pallet drawing see Pg. 89
ASSF 250

This automation chuck is produced from a steel body with dimensions of 250mm x 250mm. It is designed to accept a single clamping ring at centerline of the pallet. A stable platform is provided for all machining applications through the use of four clamping wedges and four supporting orientation pads. This chuck supports a passage for delivering compressed air to the top side of the fixture plate.

<table>
<thead>
<tr>
<th>Chuck Model</th>
<th>Catalog Number</th>
<th>Clamping Force (lbs)</th>
<th>Weight (lbs)</th>
<th>Air Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASSF 250</td>
<td>15.279.250</td>
<td>Spring Only 1,100-1,350</td>
<td>2,860-3,300</td>
<td>71.2</td>
</tr>
</tbody>
</table>

- No hardware included
- Sealed pocket required for Turbo Assist

**Clamping Ring**

<table>
<thead>
<tr>
<th>Ring Type</th>
<th>Catalog Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRA 170</td>
<td>15.279.120</td>
</tr>
</tbody>
</table>

- Screws included

**All dimensions are in millimeters**
• All dimensions are in millimeters
• Pallet drawing see Pg. 89
When automation pallets need additional support or orientation, a mating cup bushing and taper cone are used. Their tight fit delivers stability and accurate orientation for large pallets.

![Image of automation accessories](image_url)

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Description</th>
<th>Fig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.279.055</td>
<td>Centering Bushing Male Taper</td>
<td>1</td>
</tr>
<tr>
<td>15.279.056</td>
<td>Centering Bushing Female Taper</td>
<td>2</td>
</tr>
<tr>
<td>15.279.057</td>
<td>SHCS M10 x L20 w/ Air Passage</td>
<td>3</td>
</tr>
</tbody>
</table>

### Clamping Ring

<table>
<thead>
<tr>
<th>Ring Type</th>
<th>Catalog Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRA 170</td>
<td>15.279.120</td>
</tr>
</tbody>
</table>

- Screws included

* All dimensions are in millimeters
BALSF 170 & BALSF 250 PALLETS

**BALSF 170 Pallet**

- Handles included

**BALSF 250 Pallet**

- Handles included but not shown on drawing

- All dimensions are in millimeters
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.
Our multi-axis workholding products are designed to provide flexibility and functionality for 5-axis machining and 5-sided machining via multiple part transfers. We also offer solutions for machines with retrofit 4th/5th axis tables. BIG KAISER can help you to maximize the benefits of your machine design through efficient workholding.

These multi-axis workholding solutions locate and stabilize the workpieces without obstructing access to the top and sides of the part. They also allow a clamped workpiece to be flipped into new orientations for subsequent machining operations without unclamping it from the workholding.

NEW!

5-Axis Duo Bridge .......... Pg. 96-97

NEW!

5-Axis Univeice Synchro ... Pg. 100-101

NEW!

5-Axis System 40 Overview ... Pg. 104

NEW!

5-Axis B Style Base ............ Pg. 108-109

NEW!

5-Axis Table Adapters .......... Pg. 112-113

NEW!

5-Axis Extensions .......... Pg. 116-117

NEW!

5-Axis ER Collet Chucks & Serrated Adapters ........ Pg. 120-121

NEW!

5-Axis Uniflex System ..... Pg. 124-127

NEW!

First Grip ....................... Pg. 98-99

NEW!

5-Axis Uniclamp ................ Pg. 102-103

NEW!

5-Axis Base ................. Pg. 106-107

NEW!

5-Axis Double Base ........ Pg. 110-111

NEW!

5-Axis Air Chuck ............. Pg. 114-115

NEW!

5-Axis Reductions & Shims ... Pg. 118-119

NEW!

5-Axis System 25 .......... Pg. 122-123
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 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.
This base plate can be mounted directly to the top of a 5-axis table or loaded through a pair of Unilock zero-point chucks. Two elevated Unilock chucks are mounted at 90° to each other so one is out of the way while the other is being machined. Each cycle, two parts can be completed. Special base plates can be designed and manufactured, so there is no limit to the machine table configurations that can be supported by this solution.

Features:
- Dual 45° 105/65 base plates
- Process two workpieces at a time without interference
- Turbo option provides over 2,000 lbs of clamping force
- Two timing notches provide increased rigidity
- Timing pins can also locate off the sides of the chuck
- Plumbing is integrated into the bottom of the base plate

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Description</th>
<th>Chuck</th>
<th>Air Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.270.365</td>
<td>DXB 200-45 5-Axis Duo Bridge</td>
<td>AFM 105/65 (2x)</td>
<td>Fittings or Through Base</td>
</tr>
</tbody>
</table>

- Fixture includes (1) SBA Knob and (1) SBB Knob

**AIR FITTINGS**

PG. 144
All dimensions are in millimeters.
FIRST GRIP

First Grip is a minimally intrusive clamping solution for 1st operations using raw bar or plate stock. Designed to bite into raw material, First Grip leaves an impression that in most cases will be machined away in a subsequent operation. First Grip can be used in a single jaw configuration or it can be used in series to hold larger workpieces. The fixed jaw can be removed allowing for unlimited workpiece sizes and shapes. For special fixture designs, dowel pin locations are provided to accurately position First Grip where you need it.

Features:

- No preparatory machining of workpieces is required
- Can be used in series for wide workpieces
- Available in two widths: 34mm and 50mm
- Unilock adapter plates are available

All dimensions are in millimeters
First Grip 34

- Catalog Number
  - 15.282.120

- Screws & pins not included

First Grip 50

- Catalog Number
  - 15.282.145

- Screws & pins not included

- All dimensions are in millimeters
The 5-Axis Univice Synchro vise is a self centering vise that will come with Unilock System 40 knobs, allowing it to be quickly installed on any 200mm pattern.

**Features:**
- Ductile iron base (GJS-600)
- SBA and SBB knobs installed
- Jaws can be reversed
- 30kn (6,700 lbs) clamping force
- Can be converted to fixed jaw
- Snap on parallels available

<table>
<thead>
<tr>
<th>Item</th>
<th>Catalog Number</th>
<th>Height</th>
<th>Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vise</td>
<td>15.400.014</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Conversion Kit</td>
<td>15.400.017</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Parallel</td>
<td>15.400.079</td>
<td>15</td>
<td>100</td>
</tr>
<tr>
<td>Parallel</td>
<td>15.400.080</td>
<td>35</td>
<td>100</td>
</tr>
<tr>
<td>Replacement Handle</td>
<td>15.400.034</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

- All dimensions are in millimeters
- 12mm hex wrench not included
5-AXIS UNIVICE SYNCHRO

• All dimensions are in millimeters

Weight: 33 lbs
The new 5-Axis Uniclamp expands the First Grip part clamping system into an interface that is compatible with the Uniclamp serrated rail system.

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Description</th>
<th>Fig.</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.282.110</td>
<td>Clamping Heads</td>
<td>1 &amp; 2*</td>
<td>—</td>
</tr>
<tr>
<td>15.282.200</td>
<td>Base Rail</td>
<td>3*</td>
<td>198</td>
</tr>
</tbody>
</table>

- All dimensions are in millimeters
- 14mm hex wrench not included
* See Pg. 103
5-AXIS UNICLAMP

- All dimensions are in millimeters
- Other lengths available
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 Ø12mm 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 (40mm) clamping knob. 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.
The new 5-Axis Base Chucks are now offered with a timing key for single base applications. New table adapters are now also offered. These chucks can be mounted on 50/40/M12 grids as well as on Unilock clamping systems using Unilock clamping knobs.

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

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

15.250.101 & 15.250.103

15.250.102 & 15.250.104

• All dimensions are in millimeters
• Dimensions marked ▼ are for notch option
The 5-Axis B Style Base 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 50/40/M12 grids as well as on t-nut machine tables.

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Notch (Width x Qty)</th>
<th>Height</th>
<th>Clamping Force [lbs] (at 11 ft/lbs)</th>
<th>Weight [lbs]</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.250.111</td>
<td>—</td>
<td>125</td>
<td>2,200-2,500</td>
<td>14.7</td>
</tr>
<tr>
<td>15.250.113</td>
<td>10 H7 x 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.250.112</td>
<td>—</td>
<td>150</td>
<td></td>
<td>16.8</td>
</tr>
<tr>
<td>15.250.114</td>
<td>10 H7 x 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.250.115</td>
<td>—</td>
<td>175</td>
<td></td>
<td>18.6</td>
</tr>
<tr>
<td>15.250.116</td>
<td>10 H7 x 1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- All dimensions are in millimeters
- Manual actuation, 6mm hex wrench not included
5-AXIS B STYLE BASE

- All dimensions are in millimeters
The new 5-Axis Double Ended Clamping Base 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.

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Notch (Width x Qty)</th>
<th>Height</th>
<th>Clamping Force [lbs] (at 11 ft/lbs)</th>
<th>Weight [lbs]</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.250.105</td>
<td>—</td>
<td>125</td>
<td>2,200-2,500</td>
<td>11</td>
</tr>
<tr>
<td>15.250.106</td>
<td>10 H7 x 1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

• All dimensions are in millimeters
• Manual actuation, 6mm hex wrench not included
• All dimensions are in millimeters
• Dimensions marked ∈ are for notch option
5-Axis Table Adapters allow the 5-Axis Base Chucks to be mounted anywhere they are needed in order to access the table t-slots or grid holes, all the while providing a strong foundation.

They come in three different styles with up to four different heights.

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Height</th>
<th>Fig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.250.175</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>15.250.176</td>
<td>100</td>
<td>1*</td>
</tr>
<tr>
<td>15.250.177</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>15.250.179</td>
<td>25</td>
<td>2*</td>
</tr>
<tr>
<td>15.250.120</td>
<td>100</td>
<td>3*</td>
</tr>
</tbody>
</table>

* All dimensions are in millimeters
* See Pg. 1113
5-AXIS TABLE ADAPTERS

**Fig. 1**

- ø12 H7 T15 (2x)
- M12x1.75 T24 (4x)
- 50
- 49.5
- 132
- 269.5

**Fig. 2**

- ø12 H7 (2x)
- M12 x1.75 (4x)
- ø16 G6 (10x)
- M12 C-Bore (4x) (From Bottom)

**Fig. 3**

- ø12 H7 T17 (2x)
- M12x1.75 T24 (4x)
- M12 C-Bore 2x) (From Bottom)

- ø16 G6 (10x)
- M12 C-Bore (4x) (From Bottom)

- ø12 H7 (2x)
- M12x1.75 (4x)

- All dimensions are in millimeters
The new 5-Axis Air Chuck allows the use of air for open and turbo functions when using with 5-Axis Base Chucks or stacking risers. These chucks utilize the System 40 clamping knobs.

<table>
<thead>
<tr>
<th>Chuck Model</th>
<th>Catalog Number</th>
<th>Recommended Bolt Sizes</th>
<th>Clamping Force (lbs)</th>
<th>Weight (lbs)</th>
<th>Air Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-Axis Air Chuck</td>
<td>15.250.205</td>
<td>✓ ✓ — — —</td>
<td>550-660</td>
<td>1,540-1,760</td>
<td>7.2</td>
</tr>
</tbody>
</table>

† Optional

AIR FITTINGS
PG. 144
5-AXIS AIR CHUCK

- All dimensions are in millimeters

Detail A
Scale 1:1.5

ø25 H6 ± 0.005
ø12 F7 ± 0.01 (2x)

1/8 BSP Open Port (Shipped Plugged)
1/8 BSP Turbo Port (Shipped Plugged)

ø4×1.5 O-Ring (2x) (Shipped Plugged)

M5 ± 0.001

12 ± 0.001

50 ± 0.001

39 ± 0.01
5-AXIS EXTENSIONS

5-Axis Extensions allow for additional height when paired with 5-Axis Bases. By building up different extensions, workpieces which are difficult to access or which have different heights are easy to clamp.

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Notch (Width x Qty)</th>
<th>Height</th>
<th>Clamping Force (lbs) (at 11 ft/lbs)</th>
<th>Weight (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.250.201</td>
<td>—</td>
<td>75</td>
<td></td>
<td>6.3</td>
</tr>
<tr>
<td>15.250.211</td>
<td>10 H7 x 1</td>
<td>100</td>
<td>2,200-2,500</td>
<td>8</td>
</tr>
<tr>
<td>15.250.202</td>
<td>—</td>
<td>125</td>
<td></td>
<td>10.3</td>
</tr>
</tbody>
</table>

Available with Notches

- All dimensions are in millimeters
- Manual actuation, 6mm hex wrench not included
• All dimensions are in millimeters
• Dimensions marked with [ ] are for notch option
5-Axis Reductions are used to reduce from ø80mm to ø50mm 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

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Knob Type</th>
<th>Height</th>
<th>Thread Size</th>
<th>Material State</th>
<th>Fig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.250.304</td>
<td>SBA</td>
<td>25</td>
<td>M10</td>
<td>Hard</td>
<td>1*</td>
</tr>
<tr>
<td>15.250.334</td>
<td>SBB</td>
<td>50</td>
<td>M10</td>
<td>Hard</td>
<td>2*</td>
</tr>
<tr>
<td>15.250.349</td>
<td>SBB</td>
<td>75</td>
<td>M12</td>
<td>Hard</td>
<td>3*</td>
</tr>
<tr>
<td>15.250.379</td>
<td>SBC</td>
<td>25</td>
<td>M10</td>
<td>Soft</td>
<td>1*</td>
</tr>
<tr>
<td>15.250.344</td>
<td>SBB</td>
<td>50</td>
<td>M10</td>
<td>Soft</td>
<td>2*</td>
</tr>
<tr>
<td>15.250.339</td>
<td>SBB</td>
<td>75</td>
<td>M12</td>
<td>Soft</td>
<td>1*</td>
</tr>
</tbody>
</table>

### Shims

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Height</th>
<th>Fig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.250.405</td>
<td>9</td>
<td>4*</td>
</tr>
<tr>
<td>15.250.406</td>
<td>14</td>
<td>5*</td>
</tr>
<tr>
<td>15.250.407</td>
<td>5</td>
<td>6*</td>
</tr>
<tr>
<td>15.250.410</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>15.250.411</td>
<td>1.1</td>
<td></td>
</tr>
<tr>
<td>15.250.412</td>
<td>1.2</td>
<td></td>
</tr>
<tr>
<td>15.250.413</td>
<td>1.3</td>
<td></td>
</tr>
<tr>
<td>15.250.414</td>
<td>1.4</td>
<td></td>
</tr>
<tr>
<td>15.250.415</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>15.250.416</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>15.250.417</td>
<td>1.7</td>
<td></td>
</tr>
<tr>
<td>15.250.418</td>
<td>1.8</td>
<td></td>
</tr>
<tr>
<td>15.250.419</td>
<td>1.9</td>
<td></td>
</tr>
</tbody>
</table>

*All dimensions are in millimeters

* See Pg. 119
5-AXIS REDUCTIONS & SHIMS

Fig. 1

M12 or M10 SHCS (Included)

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Fig. 6

Fig. 7

• All dimensions are in millimeters
**ER Collet Chuck**

The Unilock 5-Axis ER Collet Chuck Adapter is the perfect solution for clamping shafts and other small round workpieces. The collet chucks fit on to any 5-Axis Base Chuck or 5-Axis Extension with a timing key, and uses standard ER40 and ER50 collets.

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Collet Type</th>
<th>Notch (Width x Qty)</th>
<th>Fig.</th>
<th>Weight (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.250.040</td>
<td>ER40</td>
<td>10 H7 x 1</td>
<td>1*</td>
<td>4.3</td>
</tr>
<tr>
<td>15.250.047</td>
<td>ER50</td>
<td>10 H7 x 1</td>
<td></td>
<td>4.4</td>
</tr>
</tbody>
</table>

- Includes (1) System 40 SBA Clamping Knob
- ER Collets are not included
- See Pg. 121

**Serrated Adapter**

The Unilock Serrated Adapter is 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 to any 5-Axis Base Extension with a timing key.

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Notch (Width x Qty)</th>
<th>Fig.</th>
<th>Weight (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.250.041</td>
<td>10 H7 x 1</td>
<td>2*</td>
<td>2.9</td>
</tr>
</tbody>
</table>

- Includes (1) System 40 SBA Clamping Knob
- See Pg. 121
5-AXIS ER COLLET CHUCKS & SERRATED ADAPTER

**Fig. 1**

- Ø63 (ER40) Ø78 (ER50)
- M8 x L45 Adjusting Screw
- M8 x L25 Locking Screw
- Wrench Flats:
  - 50 (ER40)
  - 60 (ER50)
- SBA Knob Included

**Fig. 2**

- Ø20 M10
- HEX 8
- SBA Knob Included

**Fig. 1**

**Fig. 2**
The 5-Axis 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 that is compatible with the System 40 knobs and chucks, an extension and a reduction.

The System 25 series is made entirely of stainless steel.

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Notch (Width x Qty)</th>
<th>Height</th>
<th>Weight (lbs)</th>
<th>Fig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.255.101</td>
<td>6 H7 x 1</td>
<td>45</td>
<td>2</td>
<td>1*</td>
</tr>
<tr>
<td>15.255.201</td>
<td>6 H7 x 1</td>
<td>50</td>
<td>1.5</td>
<td>2*</td>
</tr>
<tr>
<td>15.255.301</td>
<td>—</td>
<td>25</td>
<td>.5</td>
<td>3*</td>
</tr>
</tbody>
</table>

*All dimensions are in millimeters
*Manual actuation, 4mm hex wrench not included
*See Pg. 68 for System 25 Knobs
*See Pg. 123
5-AXIS SYSTEM 25

Fig. 1

Fig. 2

Fig. 3

• All dimensions are in millimeters
UNIFLEX SYSTEM OVERVIEW

The Uniflex system is composed of a clamping ball and collar that are attached to the underside of a part or fixture. The part and fixture are then lowered onto either a camping base or a clamping extension. The clamping collar is then rotated to tighten the six bearing balls on to the main ball. If the part or fixture is warped or needs to be set at an angle, the clamping ball can pivot up to 15° in any direction.

The Uniflex Clamping Base allows for up to 20mm of height adjustment. The Clamping Extension is a fixed height of 65mm and can be combined with the all Unilock chucks and 5-Axis components.
Three Collar Options
Each set will come with a ball, a collar and a M10 SHCS.

Fig. 1  No location pilot
Fig. 2  ø18mm H7 location pilot
Fig. 3  ø18mm H7 location pilot and is 10mm taller

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Fig.</th>
<th>Height</th>
<th>Location Bore</th>
<th>Weight [lbs]</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.251.280</td>
<td>1</td>
<td>15</td>
<td>—</td>
<td>.2</td>
</tr>
<tr>
<td>15.251.381</td>
<td>2</td>
<td>15</td>
<td>ø18 H7</td>
<td>.2</td>
</tr>
<tr>
<td>15.250.382</td>
<td>3</td>
<td>25</td>
<td>ø18 H7</td>
<td>.2</td>
</tr>
</tbody>
</table>

* All dimensions are in millimeters
**Uniflex Clamping Base**
The Uniflex Base Chuck features ø16mm H7 grid holes and can be mounted on 50/100/M12 grids as well as on t-nuts. Height adjustment is possible for part feature compensation.

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Height</th>
<th>Fig.</th>
<th>Weight (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.251.361</td>
<td>130-150</td>
<td>1*</td>
<td>18.7</td>
</tr>
</tbody>
</table>

- All dimensions are in millimeters
- Includes mounting screws
- Manual clamping, wrench not included
* See Pg. 127

**Uniflex Clamping Extension**
Used as a heightening extension for Uniflex Bases or 5-Axis Bases, warped or difficult to access workpieces can be clamped perfectly. Comes standard with a System 40 SBA Clamping Knob for use with other Unilock System 40 standard or 5-axis chucks.

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Height</th>
<th>Fig.</th>
<th>Weight (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.251.360</td>
<td>65</td>
<td>2*</td>
<td>4.2</td>
</tr>
</tbody>
</table>

- All dimensions are in millimeters
- Includes System 40 SBA clamping knob
- Manual clamping, wrench not included
* See Pg. 127
Fig. 1

Fig. 2

- All dimensions are in millimeters
Mineral Cast Systems

ROC® mineral cast solutions increase capacity and throughput by reducing burden and transport weights. Much like a skyscraper, we produce a steel substructure for stability. Ours are precision machined and filled with ground positioning components and fasteners. We then fill or encapsulate the assembly with a composite structure of mineral particles and epoxy resin. The result is a working platform that is lightweight, stable and dampened.

Mineral particles make up about 90% of the added weight, with the remaining being resin and curing agents. The added composite structure has an excellent density-to-weight ratio of 2.3 kg/dm³. The finished composite structure is produced without heat to preserve the integrity of the precision machined surfaces and clamping components.

ROC® mineral cast has low thermal conductivity and excellent resistance to corrosion. As the mineral cast component has low tensile and impact strength, unintended impacts to the composite structure will not disturb the steel positioning and clamping components. With attenuation rates 6 to 10 times better than grey cast iron, ROC® mineral cast solutions can increase cell output.

ROC® mineral cast columns can be designed and built to customer specifications. We do offer standard columns for horizontal machining center applications with integrated Unilock zero-point chucks or grid patterns.

Ergonomics and machine capacity aspects of manufacturing get easier with ROC® mineral cast workholding solutions, many of which are 50% lighter than alternatives. As companies look to standardize their operator interfaces, they should also look to ROC® mineral cast solutions to package these standards.

Features:
- All critical metal surfaces are finish machined after molding
- Customer specific solutions are available upon request
- Weight reduced solutions do not induce vibration
- Hollow structures can be filled, solid structures can be encased
- Mineral cast surfaces are corrosion resistant

Columns .................... Pg. 130-131

Grid Columns ............... Pg. 132-133

Pallets, Riser Pads & Custom Solutions .......... Pg. 134-135
### COLUMNS

**ROCA® Mineral Cast Body**

- Steel Core
- 1/4" Ports for Unclamping (4x)
- 1/4" Port for Turbo Assist (1x)
- M16 for Eyebolt (1x)

**Steel Base Plate**

- Air Fitting and Air Lines Cast Into the Body

**Steel Housing for Chuck**

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Shape</th>
<th>Core</th>
<th>Cover</th>
<th>Metric</th>
<th>Inch</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Length</td>
<td>Width</td>
</tr>
<tr>
<td>15.100.000</td>
<td>Cross</td>
<td>✓</td>
<td>—</td>
<td>270mm</td>
<td>270mm</td>
</tr>
<tr>
<td>15.100.001</td>
<td>Cross</td>
<td>✓</td>
<td>—</td>
<td>—</td>
<td>450mm</td>
</tr>
<tr>
<td>15.100.002</td>
<td>Cross</td>
<td>—</td>
<td>✓</td>
<td>450mm</td>
<td>—</td>
</tr>
<tr>
<td>15.100.003</td>
<td>Cross</td>
<td>—</td>
<td>✓</td>
<td>—</td>
<td>650mm</td>
</tr>
<tr>
<td>15.100.004</td>
<td>Cube</td>
<td>—</td>
<td>✓</td>
<td>238mm</td>
<td>238mm</td>
</tr>
<tr>
<td>15.100.005</td>
<td>Cube</td>
<td>—</td>
<td>✓</td>
<td>—</td>
<td>650mm</td>
</tr>
<tr>
<td>15.100.006</td>
<td>Rectangle</td>
<td>—</td>
<td>✓</td>
<td>399mm</td>
<td>450mm</td>
</tr>
<tr>
<td>15.100.007</td>
<td>Rectangle</td>
<td>—</td>
<td>✓</td>
<td>—</td>
<td>650mm</td>
</tr>
<tr>
<td>15.100.008</td>
<td>Rectangle</td>
<td>—</td>
<td>✓</td>
<td>499mm</td>
<td>450mm</td>
</tr>
<tr>
<td>15.100.009</td>
<td>Rectangle</td>
<td>—</td>
<td>✓</td>
<td>—</td>
<td>650mm</td>
</tr>
</tbody>
</table>

- Base plate sold separately, please consult BIG KAISER Engineering Dept. for assistance
- * See Pg. 131
Fig. 1
Fig. 2
Fig. 3
Fig. 4

- All dimensions are in millimeters
- 250mm spacing also available
GRID COLUMNS

Compatible Unilock Chuck: AFM 146
AFM 105/65
ASM 120
5-Axis Systems

40mm Grid Pattern

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Fig.</th>
<th>Shape</th>
<th>Steel Core</th>
<th>Steel Cover</th>
<th>Metric Length</th>
<th>Width</th>
<th>Height</th>
<th>Inch Length</th>
<th>Width</th>
<th>Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.100.010</td>
<td>1*</td>
<td>Cross</td>
<td>✓</td>
<td>–</td>
<td>300mm</td>
<td>300mm</td>
<td>600mm</td>
<td>11.811</td>
<td>11.811</td>
<td>23.622</td>
</tr>
<tr>
<td>15.100.012</td>
<td></td>
<td>Cross</td>
<td>✓</td>
<td>–</td>
<td>750mm</td>
<td></td>
<td></td>
<td>29.528</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.100.014</td>
<td>2*</td>
<td>Cube</td>
<td>✓</td>
<td>✓</td>
<td>300mm</td>
<td>300mm</td>
<td>600mm</td>
<td>11.811</td>
<td>11.811</td>
<td>23.622</td>
</tr>
<tr>
<td>15.100.016</td>
<td></td>
<td>Cube</td>
<td>✓</td>
<td>✓</td>
<td>750mm</td>
<td></td>
<td></td>
<td>29.528</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.100.018</td>
<td>3*</td>
<td>Rectangle</td>
<td>✓</td>
<td>✓</td>
<td>400mm</td>
<td>200mm</td>
<td>600mm</td>
<td>15.748</td>
<td>7.874</td>
<td>23.622</td>
</tr>
<tr>
<td>15.100.020</td>
<td></td>
<td>Rectangle</td>
<td>✓</td>
<td>✓</td>
<td>750mm</td>
<td></td>
<td></td>
<td>29.528</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.100.022</td>
<td></td>
<td>Rectangle</td>
<td>✓</td>
<td>✓</td>
<td>750mm</td>
<td></td>
<td></td>
<td>29.528</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.100.024</td>
<td></td>
<td>Rectangle</td>
<td>✓</td>
<td>✓</td>
<td>800mm</td>
<td></td>
<td></td>
<td>31.496</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

50mm Grid Pattern

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Fig.</th>
<th>Shape</th>
<th>Steel Core</th>
<th>Steel Cover</th>
<th>Metric Length</th>
<th>Width</th>
<th>Height</th>
<th>Inch Length</th>
<th>Width</th>
<th>Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.100.011</td>
<td>4*</td>
<td>Cross</td>
<td>✓</td>
<td>–</td>
<td>300mm</td>
<td>300mm</td>
<td>600mm</td>
<td>11.811</td>
<td>11.811</td>
<td>23.622</td>
</tr>
<tr>
<td>15.100.013</td>
<td></td>
<td>Cross</td>
<td>✓</td>
<td>–</td>
<td>750mm</td>
<td></td>
<td></td>
<td>29.528</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.100.015</td>
<td>5*</td>
<td>Cube</td>
<td>✓</td>
<td>✓</td>
<td>300mm</td>
<td>300mm</td>
<td>600mm</td>
<td>11.811</td>
<td>11.811</td>
<td>23.622</td>
</tr>
<tr>
<td>15.100.017</td>
<td></td>
<td>Cube</td>
<td>✓</td>
<td>✓</td>
<td>750mm</td>
<td></td>
<td></td>
<td>29.528</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.100.019</td>
<td>6*</td>
<td>Rectangle</td>
<td>✓</td>
<td>✓</td>
<td>400mm</td>
<td>200mm</td>
<td>600mm</td>
<td>15.748</td>
<td>7.874</td>
<td>23.622</td>
</tr>
<tr>
<td>15.100.021</td>
<td></td>
<td>Rectangle</td>
<td>✓</td>
<td>✓</td>
<td>750mm</td>
<td></td>
<td></td>
<td>29.528</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.100.023</td>
<td></td>
<td>Rectangle</td>
<td>✓</td>
<td>✓</td>
<td>750mm</td>
<td></td>
<td></td>
<td>29.528</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.100.025</td>
<td></td>
<td>Rectangle</td>
<td>✓</td>
<td>✓</td>
<td>800mm</td>
<td></td>
<td></td>
<td>31.496</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

• Base plate sold separately, please consult BIG KAISER Engineering Dept. for assistance
* See Pg. 133
GRID COLUMNS

40mm Grid Pattern

Fig. 1

Fig. 2

Fig. 3

50mm Grid Pattern

Fig. 4

Fig. 5

Fig. 6

• All dimensions are in millimeters
Grid Clamping Pallets

Specifically made for the requirements of new machining centers, we offer grid clamping pallets produced with the help of ROC® mineral casting, including a steel cover on the top of the pallet for optimal stability. Every pallet is about 50% lighter than a comparable all-steel version.

Fillings

All clamping pallets and devices can be manufactured as light as possible and filled up with ROC® mineral cast. Threaded inserts or other construction elements can be cast into the pallets. Pneumatic lines are encased in the casting and are completely air-tight.
Riser Pads
For a more flexible use of your vises, we offer riser pads for many popular vise brands. With a width up to 4.921”, vises can be elevated on our ROC® vise pads according to their mounting requirements. Brands with the following dimensions are mountable:
- 3.937 x 15.748 (w x l)
- 4.921 x 18.700 (w x l)

Customized Items
ROC® mineral cast products can be customized to meet your specific needs. We gladly provide our know-how in this area for maximizing your designs. We look forward to giving you advice on the use of ROC® mineral cast technology for your own components and to show you possible cost-reducing potential. Designs are very flexible for customizable casting up to 39.37” x 39.37” and up to 1,100 lbs.
When using robots to pick and place fixtured workpieces into machine tools, Unilock can be used on the table to control workpiece placement and clamping. Unilock can also be used on the end of the robot arm as the pick interface.

Twin Pin Gripper .................... Pg. 138-139

Clamping Knob Gripper .......... Pg. 140-141
Sold as a complete assembly, the gripper is located on the robot arm or an adapter plate with two dowel pins. Four M8 threaded holes are used to secure it in place. The coupling is also oriented on the pallet with two dowel pins. Three M10 cap screws are used to attach the couplings to fixture plates.

- All dimensions are in millimeters
Robot Gripper RK1

- Dimensions: 120, 135, 64, 80, 80, 156, 30, 85.5
- Features: Turbo Port (Ships Unplugged), Cleaning Port (Ships Unplugged), Open Port (Ships Unplugged), 1/8 BSP (4x) (Ships Plugged), Optional Support Pads, M10 SHCS (3x), Ø8 H7 15 Deep (2x), M8x1.25 16 Deep (4x), Ø30 H9

Robot Gripper Pallet Block PKV1

- Dimensions: 65, 156, 65, 49, 46, 21, 140, 80, 30
- Features: M10 SHCS (3x), Ø8 H7 [2x] Through-All, A, Locktite 638

All dimensions are in millimeters.

Catalog Number

15.279.200

15.279.210

Robot Gripper RK1

Robot Gripper Pallet Block PKV1
Any Unilock chuck and clamping knob combination can be used as a robot gripper and coupler. In order to keep the pallet coupling to a minimal thickness, we offer a version of our AFM 105/65 chuck that has two dowel pin holes in the face to help support the pallet. These couplings can be purchased as an assembly or the clamping knob and pins can be attached directly to the pallets.
Robot Gripper PK 105/65

Catalog Number
15.272.166

- No hardware included

Robot Gripper Pallet Block PKV 105/65

Catalog Number
15.279.215

- Screws & pins included

• All dimensions are in millimeters
ACCESSORIES

Accessories

For proper operation of the Unilock chucks, air fittings, valves and supply systems are required. Please consult with BIG KAISER Engineering Dept. for proper selection.

Other accessories help with the maintenance and use of the system for various functions. Please consult BIG KAISER Engineering Dept. for proper selection.

Chuck Air Fittings .................. Pg. 144-146
Subplate Air Fittings ........ Pg. 147
Positioning Pins & Bushings ..................... Pg. 148
Dust Covers ...................... Pg. 148
Toe Clamps ....................... Pg. 148
Mounting Rings & Rotary Table Kits ........ Pg. 148
Repair & Replacement Components ................ Pg. 149
Air fittings and parts are sold separately or as a kit. Other valve options available upon request. Please consult BIG KAISER Engineering Dept.

<table>
<thead>
<tr>
<th>Air Kit Catalog Number</th>
<th>Contents</th>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.350.000</td>
<td>15.312.001</td>
<td>Filter Regulator Oiler Assembly</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>15.350.009</td>
<td>Standard Hand Valve</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>15.350.020</td>
<td>Uni Thread 1/4&quot; Tube</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>15.350.021</td>
<td>Uni Thread 1/8&quot; Pipe x 1/4&quot; Tube</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>15.350.001</td>
<td>1/4&quot; OD Tube</td>
<td>10 ft</td>
</tr>
</tbody>
</table>
**CHUCK AIR FITTINGS**

**15.350.001**

- Sold by the foot

**15.350.009**

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

**Recommended Oil:**
Class 1 Turbine Oil ISO VG32

**Mounting Bracket Positions**

- Fully assembled
- All dimensions are in millimeters
CHUCK AIR FITTINGS

1/4 Pipe Fitting

Catalog Number
15.350.020

Catalog Number
15.350.022

Catalog Number
15.350.024

Catalog Number
15.350.021

Catalog Number
15.350.023

Catalog Number
15.350.025

• Compatible with Rc, GNDT & NDTF

• All dimensions are in millimeters

1/8 Pipe Fitting

Catalog Number
15.350.021

Catalog Number
15.350.023

Catalog Number
15.350.025
## ACCESSORIES

### Positioning Pins & Bushings

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.260.309</td>
<td>Positioning Bushing - Indexing</td>
</tr>
<tr>
<td>15.260.351</td>
<td>Positioning Pin 8mm Indexing</td>
</tr>
<tr>
<td>15.260.352</td>
<td>Positioning Pin 10mm Indexing</td>
</tr>
<tr>
<td>15.260.350</td>
<td>Positioning Pin 12mm Indexing</td>
</tr>
<tr>
<td>15.261.169</td>
<td>Positioning Pin 25mm Indexing</td>
</tr>
<tr>
<td>15.270.420</td>
<td>Positioning Pin - ASM 120 – 12/10</td>
</tr>
<tr>
<td>15.270.422</td>
<td>Positioning Pin - ASM 120 – 12/12</td>
</tr>
<tr>
<td>15.270.426</td>
<td>Positioning Pin - ASM 120 – 12/16</td>
</tr>
<tr>
<td>15.270.427</td>
<td>Indexing Pin ø14mm</td>
</tr>
<tr>
<td>15.270.428</td>
<td>Indexing Step Pin ø8mm/ø14mm</td>
</tr>
<tr>
<td>15.270.429</td>
<td>14mm Indexing Key</td>
</tr>
</tbody>
</table>

### Dust Covers

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.270.090</td>
<td>Chip Guard 90</td>
</tr>
<tr>
<td>15.270.120</td>
<td>Chip Guard 120</td>
</tr>
<tr>
<td>15.270.130</td>
<td>Chip Guard 138</td>
</tr>
<tr>
<td>15.260.170</td>
<td>Chip Guard 170</td>
</tr>
<tr>
<td>15.260.310</td>
<td>Chip Guard Clamping Knob M8</td>
</tr>
<tr>
<td>15.260.790</td>
<td>M8 SHCS Cover (Pkg of 6)</td>
</tr>
</tbody>
</table>

- Clamping knobs included with dust covers

### Toe Clamps

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.270.403</td>
<td>Adj. Toe Clamp - S30</td>
</tr>
<tr>
<td>15.270.404</td>
<td>Adj. Toe Clamp - S40</td>
</tr>
<tr>
<td>15.270.405</td>
<td>Adj. Toe Clamp - S50</td>
</tr>
<tr>
<td>15.270.450</td>
<td>Toe Clamp Blank</td>
</tr>
<tr>
<td>15.270.454</td>
<td>Toe Clamp Blank (Set of 4)</td>
</tr>
</tbody>
</table>

### Mounting Rings & Rotary Table Kits

<table>
<thead>
<tr>
<th>Catalog Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.260.205</td>
<td>210mm Mounting Ring for MSM 170</td>
</tr>
<tr>
<td>15.260.200</td>
<td>217mm Mounting Ring for MSM 170</td>
</tr>
<tr>
<td>15.260.215</td>
<td>Ctr. Plug ø2&quot; for 210mm Ring</td>
</tr>
<tr>
<td>15.270.186</td>
<td>178mm Split Ring (ASM 120)</td>
</tr>
</tbody>
</table>

- Other sizes available upon request, please contact BIG KAISER Engineering Dept.
### Repair & Replacement Components

<table>
<thead>
<tr>
<th>Ref. Chuck Type</th>
<th>O-Ring Only Kits</th>
<th>Full Repair Kit</th>
<th>Ref. Chuck Type</th>
<th>Catalog Number</th>
<th>Catalog Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Catalog Number</td>
<td>Catalog Number</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BUNA</td>
<td>VITON</td>
<td>BUNA</td>
<td>VITON</td>
<td></td>
</tr>
<tr>
<td>5-Axis (Air)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15.250.1XX/2XX</td>
</tr>
<tr>
<td>5-Axis (Manual)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15.272.16X</td>
</tr>
<tr>
<td>AFM 105/65</td>
<td></td>
<td></td>
<td>15.269.285</td>
<td>15.269.029</td>
<td>15.260.146</td>
</tr>
<tr>
<td>AFM 146</td>
<td>15.270.198</td>
<td>15.270.199</td>
<td>15.269.007</td>
<td></td>
<td>15.270.15X</td>
</tr>
<tr>
<td>ASH 120</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15.270.170</td>
</tr>
<tr>
<td>ASM 120</td>
<td>15.269.004</td>
<td></td>
<td>15.269.028</td>
<td>15.279.170</td>
<td></td>
</tr>
<tr>
<td>ASM 120-M</td>
<td></td>
<td></td>
<td>15.270.250</td>
<td></td>
<td>15.272.250</td>
</tr>
<tr>
<td>ASM 120-SS</td>
<td></td>
<td>15.270.18X</td>
<td>15.272.150</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASM 90</td>
<td>15.269.022</td>
<td>15.269.021</td>
<td>15.272.17X</td>
<td>15.274.407</td>
<td></td>
</tr>
<tr>
<td>ASSF 170</td>
<td></td>
<td>15.270.195</td>
<td>15.272.190</td>
<td>15.269.019</td>
<td></td>
</tr>
<tr>
<td>ASSF 250</td>
<td></td>
<td>15.269.027</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDM 100/150</td>
<td></td>
<td>15.269.013</td>
<td>15.269.014</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EFM 138</td>
<td>15.270.195</td>
<td>15.269.013</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EFM 138 SS</td>
<td></td>
<td>15.269.027</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ERM 138</td>
<td>15.269.035</td>
<td>15.269.036</td>
<td></td>
<td>15.270.11X</td>
<td></td>
</tr>
<tr>
<td>ESA 110</td>
<td></td>
<td>15.269.011</td>
<td></td>
<td>15.273.10X</td>
<td></td>
</tr>
<tr>
<td>ESA 120/70</td>
<td></td>
<td>15.269.012</td>
<td></td>
<td>15.273.10X</td>
<td></td>
</tr>
<tr>
<td>ESA 185</td>
<td></td>
<td>15.269.022</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ESM 100/75</td>
<td>15.269.022</td>
<td>15.269.021</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ESM 138</td>
<td>15.270.192</td>
<td>15.270.193</td>
<td>15.269.030</td>
<td>15.270.10X</td>
<td></td>
</tr>
<tr>
<td>ESM 138-SS</td>
<td></td>
<td>15.269.011</td>
<td></td>
<td>15.276.10X</td>
<td></td>
</tr>
<tr>
<td>ESM 138-V2</td>
<td></td>
<td>15.269.015</td>
<td></td>
<td>15.276.14X</td>
<td></td>
</tr>
<tr>
<td>ESM 176</td>
<td>15.272.190</td>
<td>15.269.019</td>
<td></td>
<td>15.272.17X</td>
<td></td>
</tr>
<tr>
<td>ESM 176-SS</td>
<td></td>
<td>15.269.022</td>
<td></td>
<td>15.266.11X</td>
<td></td>
</tr>
<tr>
<td>ESM 180/150</td>
<td></td>
<td>15.269.023</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HSM 196</td>
<td>15.269.285</td>
<td>15.269.029</td>
<td></td>
<td>15.266.160</td>
<td></td>
</tr>
<tr>
<td>ISM 160</td>
<td>15.269.190</td>
<td>15.269.017</td>
<td></td>
<td>15.260.100</td>
<td></td>
</tr>
<tr>
<td>NSA 125</td>
<td></td>
<td>15.269.023</td>
<td></td>
<td>15.277.125</td>
<td></td>
</tr>
</tbody>
</table>
• 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 that are 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 preventative into air ports and cycle the chuck 4-5 times
• For more in-depth service instructions please consult BIG KAISER Engineering Dept.

Visit www.us.BIGKAISER.com for Additional Instructions