



# Jergens®

MANUFACTURING EFFICIENCY

 [WWW.JERGENSINC.COM](http://WWW.JERGENSINC.COM)



# WORKHOLDING SOLUTIONS

## Support, Locate and Hold:

From standard components like toggle screws and T-bolts to vises and quick change fixture systems like Ball Lock® and ZPS.



1

## QUICK CHANGE FIXTURING

2

## PRODUCTION VISES

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## POWER CLAMPING

4

## LOCATING COMPONENTS

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## WORKHOLDING COMPONENTS

What started as a simple component-based business has grown into a full workholding solutions line that includes engineered products to help customers implement lean manufacturing programs. Whether you're looking for a full line of tooling and locating components, vises, power clamps or quick change fixturing solutions, Jergens has the products you need. We back up our products with a quality guarantee, and engineering assistance to help you with your application challenges.





## Jergens Company Profile

Jergens Inc. was founded in 1942 by Jack Schron, Sr. and his father Christy, to provide standard components for building jigs and fixtures. Today the fourth generation of family involvement continues stronger than ever. Throughout it's sixty-year history the company has grown into four separate operating divisions: Tooling Component Division (TCD), Jergens Industrial Supply (JIS), Acme Industrial Company (AIC), and Advanced Systems Group (ASG) Division of Jergens. While all divisions are vital to the Jergens family, the TCD Division is the centerpiece of our manufacturing capabilities. In June 1999, Jergens moved into a new 110,000 square foot facility and prides itself by manufacturing over 80% of it's product offering, as well as setting the standard for producing the highest quality components in our industry.

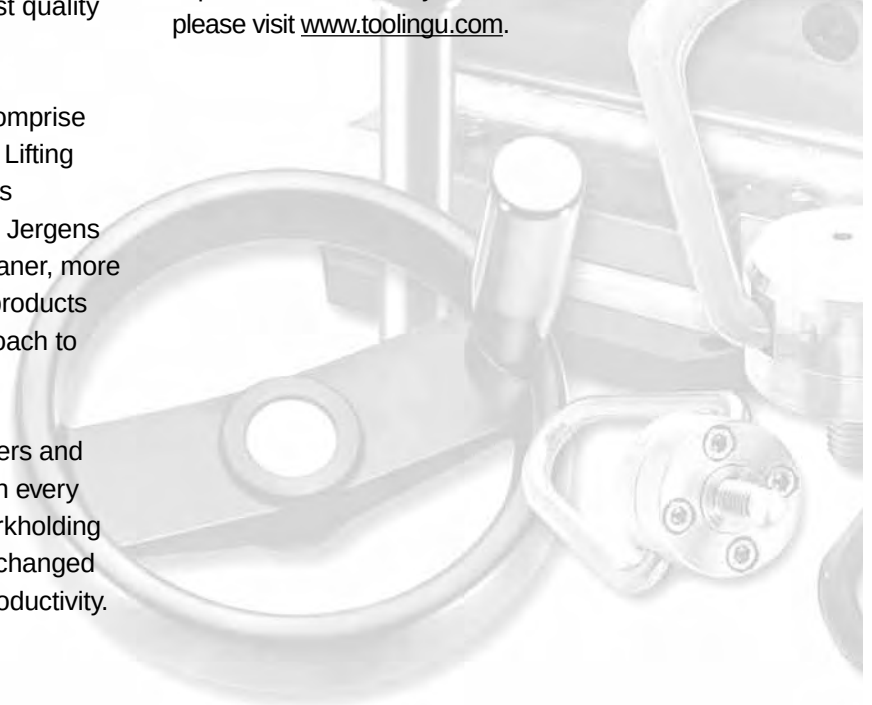
Since our founding Jergens, Inc. has grown to comprise 3 distinct business units: Workholding Solutions, Lifting Solutions and Specialty Fasteners. Building on its reputation of uncompromising quality standards, Jergens is committed to helping its customers achieve leaner, more profitable manufacturing, and continues to add products and engineered solutions for an integrated approach to "Manufacturing Efficiency."

Today, you'll find our tooling components, fasteners and hoist rings at work in just about every industry on every continent. And our innovative Quick Change Workholding Solutions like Ball Lock® Mounting System have changed the way manufacturers worldwide think about productivity.

Additionally, we offer a wide range of metalworking tools, clamps, and supplies to manufacturers in Northeastern Ohio, through our JIS Division. Acme Industrial, located in Carpentersville, Illinois, is a premium manufacturer of precision drill bushings and keylocking thread inserts. Our ASG Division specializes in products for light assembly ranging from torque-controlled electric screwdrivers to automation systems.

In addition to our unique product designs, we lead the industry with unparalleled customer service and delivery. Our website is a good example of our commitment to be the most innovative company in our industry. Customers and distributors can check stock and order on-line, view the Jergens catalog, and even download 2D, 3D and solid model CAD drawings in a variety of formats. Visit our website at [www.jergensinc.com](http://www.jergensinc.com) for the latest news and product information, as well as links to our other divisions. The Jergens family thanks you for your business.

On April 21, 2001, we were proud to launch **Tooling University LLC** that provides on-line training designed to serve the educational needs for the manufacturing community. This is another example of how Jergens is committed to maintaining our leadership position by providing our customers with the best source for innovative products and engineering expertise in the industry. To take a tour or a free trial class please visit [www.toolingu.com](http://www.toolingu.com).





## Distribution of Jergens Products

Jergens is proud to be represented by a network of qualified distributors throughout the world. If you do not know the name of the distributor nearest you, please call Jergens Customer Service at 1-877-486-1454 or visit [www.jergensinc.com](http://www.jergensinc.com).

## Quality Policy

Jergens, Inc. manufactures and supplies only *quality* products. Our quality system is ISO 9001: 2008 Certified. Center-Pull and Side-Pull Hoist Rings are CE Certified. If there is a problem with any of our products, please contact your local Jergens Distributor or contact our Customer Service Department.

## Design Aids

Jergens, Inc. offers several CAD drawing formats for use in fixture design. Our FixturePro™ software is available on CD. Our internet site ([www.jergensinc.com](http://www.jergensinc.com)) offers our complete catalog with hot links to CAD drawings on most of our products. We also offer 3D solid models of our products via the internet.

## Application Assistance

Jergens Inc. maintains a complete Technical Sales Department to work with you. Please feel free to call upon their knowledge and experience. Application videos are available for the Ball Lock® Mounting System, Spinner Grip™ Flange Nuts, and Hydraulic Vise Column products at [www.jergensinc.com](http://www.jergensinc.com) or [www.youtube.com/users/jergensinc](http://www.youtube.com/users/jergensinc).

## Engineering Changes

Product improvement is a continuing process at Jergens, Inc. Specifications and engineering data are subject to change without notice. **If current information is critical to your design, it is suggested that you contact the Jergens Customer Service Department, or download the most current drawing from our website\*, to verify any dimensions or specifications.**

\* 3D Solid Models are available from [www.jergensinc.com](http://www.jergensinc.com)

## Bar Coding

Jergens' boxed and bagged products are fully bar coded for automatic identification. The bar code labels contain the ASCII Code 39 format, which was chosen as being suitable for most bar code readers. Jergens' bar codes will identify part numbers and manufacturer's codes.

## Specials

Jergens, Inc. will modify any item that is similar to our standard component parts. Please contact your Jergens Distributor with your request for a quote. Prints or sketches should be furnished if possible.

## TCMA Standards

Products throughout this catalog meet the standards of the Tooling Component Manufacturers' Association. The items are asterisked and are interchangeable with other tooling component manufacturer's products.

## Material and Finish Specifications

**Stressproof®:** A severely cold worked, furnace treated steel bar. Produced by a LaSalle patented process to obtain high strength, free machinability, good wear, and minimum warpage in the bar.

**Alloy Steel** - 4140 or equivalent

**Low Carbon Steel** - Free Machining 1215, 1018, or equivalent

**52100:** QQS-624

**Zinc Plate:** ASTM B633, Type III, Class FE/ZN 5

**Cadmium Plate:** AMS-QQ-P-416, Class 3, Type 1

**Black Oxide:** MIL-DTL-13924 and AMS-2485

**Black Anodize:** per Mil. Spec. MIL-A-8625, Type II, Class 2 and AMS-2472

**Passivate:** AMS 2700

Alternate Finishes available upon request.

Jergens, Inc.  
**Manufacturing Number: 697830**  
**FSCM #94882**  
**ISO 9001: 2008**  
**Registration #00010133**





**Ball Lock®**  
MOUNTING SYSTEM

**Quick Change Fixturing**

**Ball Lock® Mounting System (Inch)**

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**We Put It All Together... In Seconds.**



**Maximize productivity levels and dramatically increase throughput with Ball Lock®.**

Looking to realize the full benefits of lean manufacturing? Then you need the one system that puts it all together, so you can put it all together...and that's Ball Lock®.

Ball Lock® is the industry's most popular quick-change, fixturing-flexible mounting system that can be configured to create lean-optimized solutions for your most demanding needs.

**The original quick change system for fast set-ups and machine changeover.**



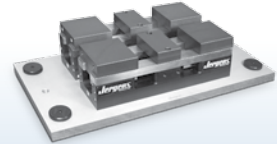
SHANKS



RECEIVERS



FIXTURE PLATES  
& SUBPLATES

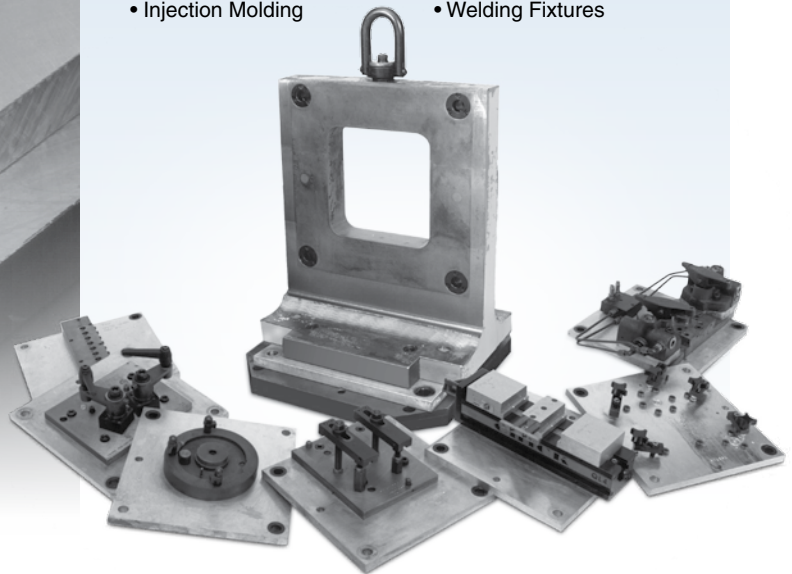


VICES



**The Ball Lock® Mounting System is used as a Quick Change Solution on the following:**

- CNC Machines
- Palletized Fixtures
- Stamping
- Fabricating
- Injection Molding
- Packaging Machines
- Assembly Machines
- EDM
- Robotics
- Welding Fixtures



## Lean Manufacturing and Set Up Reduction Applications

**Accurately Locate and Lock Fixture Plates to Subplates in Seconds...  
With No Indicating Required.**

### Machining Cast Part

**Previous Set Up Method:**

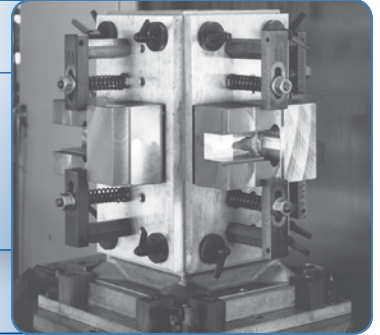
Located part with dowel pins, bolted part to tombstone fixture. Indicated part to zero datum point.

**Set Up Using Ball Lock® System:**

Mount parts to fixture plate while machining other parts. Mount fixture plate to tombstone using Ball Lock® shanks. No indicating required because system provides  $\pm 0.0005$  ( $\pm 0.013\text{mm}$ ) repeatability.

**Previous Set-Up Time:**  
15 minutes

**Set Up Time With Ball Lock® System:**  
60 seconds



### CNC Machine Base:

Drilling and reaming forged part.

**Previous Set Up Method:**

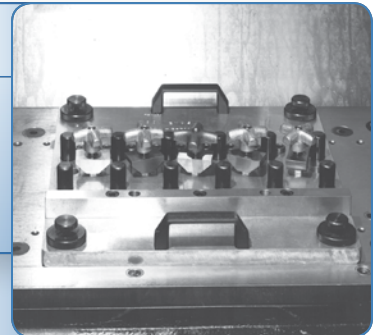
Fixture plate located with dowel pins bolted to machine base. Fixture plate and parts indicated.

**Set Up Using Ball Lock® System:**

Parts are pre-mounted on fixture plate, which is then mounted to machine base using Ball Lock® shanks. No need to indicate.

**Previous Set Up Time:**  
7 minutes

**Set Up Time with Ball Lock® System:**  
60 seconds



### CNC Vertical Machining Center

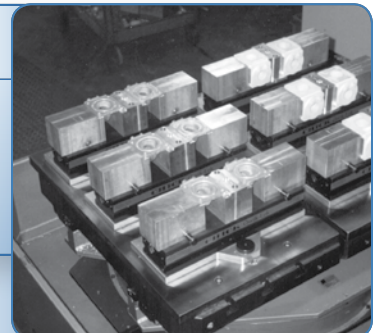
Machining aircraft valve parts

**Previous Set Up Method:** New Project. New Machine. No Prior History.

**Set Up Using Ball Lock® System:** Using Ball Lock® Jig Saw Plate on Multi-Purpose Subplate enables operator to mount two more vises on the fixture. No indicating needed.

**Previous Set Up Time:**  
New Set Up.

**Set Up Time With Ball Lock® System:**  
80 seconds setting up six vises.



### Two-Sided Tombstone

Drilling and tapping cylindrical bodies.

**Previous Set Up Method:**

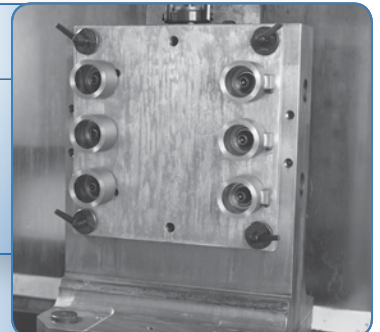
Fixture located and bolted to tombstone. Had to be indicated.

**Set Up Using Ball Lock® System:**

Fixture plate mounted and located with Ball Lock® shanks. No need to indicate.

**Previous Set Up Time:**  
12 minutes

**Set Up Time with Ball Lock® System:**  
45 seconds







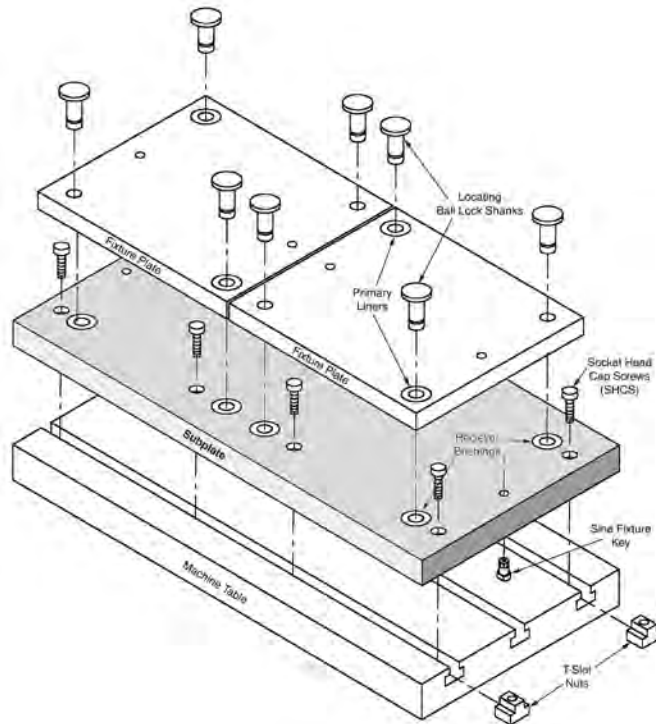
### Locates

The Ball Lock® System accurately positions your fixtureplate with a repeatability of  $\pm 0.0005"$  ( $\pm 0.013\text{mm}$ ) or better, minimizing the need to indicate your fixture.



### Locks

The Ball Lock® System securely holds fixture plates to subplates with up to 20,000 lbs. (9000 kg) of hold-down force per shank.



The Ball Lock® Mounting System is designed to speed the accurate locating and locking of fixture plates to subplates. The system consists of three parts: a Locating Shank, a Liner Bushing, and a Receiver Bushing. Using the Ball Lock® Mounting System is a simple process: Install a subplate with receiver bushings on your machine table; add your fixture plate with two locating liner

bushings; then insert two locating shanks through the liners and into the receiver bushings to provide accurate location.  $2\frac{1}{2}$  turns of the set screw in each of the locating shanks provides positive holding force. Additional Ball Lock® Shanks are inserted through clearance holes in the fixture plate and set screws tightened for additional holding force distributed across

the fixture plate.

It is recommended that the use of the Ball Lock® Mounting System for locating and clamping of fixture plates be incorporated in a systematic process. All fixture plates should have two locating points positioned as far apart as possible. There is no advantage to having more than two

**The Ball Lock® Mounting System** provides a method of quickly and accurately locating fixtures onto machine tables. The Ball Lock® Mounting System has done for machining centers what the Japanese SMED concept did for presses. Instead of single minute exchange of dies, Ball Lock® provides single minute exchange of fixtures. Fixtures can often be exchanged in less than a minute and with position repeatability of  $\pm 0.0005"$  ( $\pm 0.013\text{mm}$ ). Fixtures can be exchanged between different machines when both are using the Jergens Ball Lock® Mounting System.

## Commonly Asked Questions

### Q. What is the Ball Lock® Mounting System?

**A.** It is a means of locating and locking two flat surfaces together, normally a fixture plate and a sub-plate.

### Q. How does it locate?

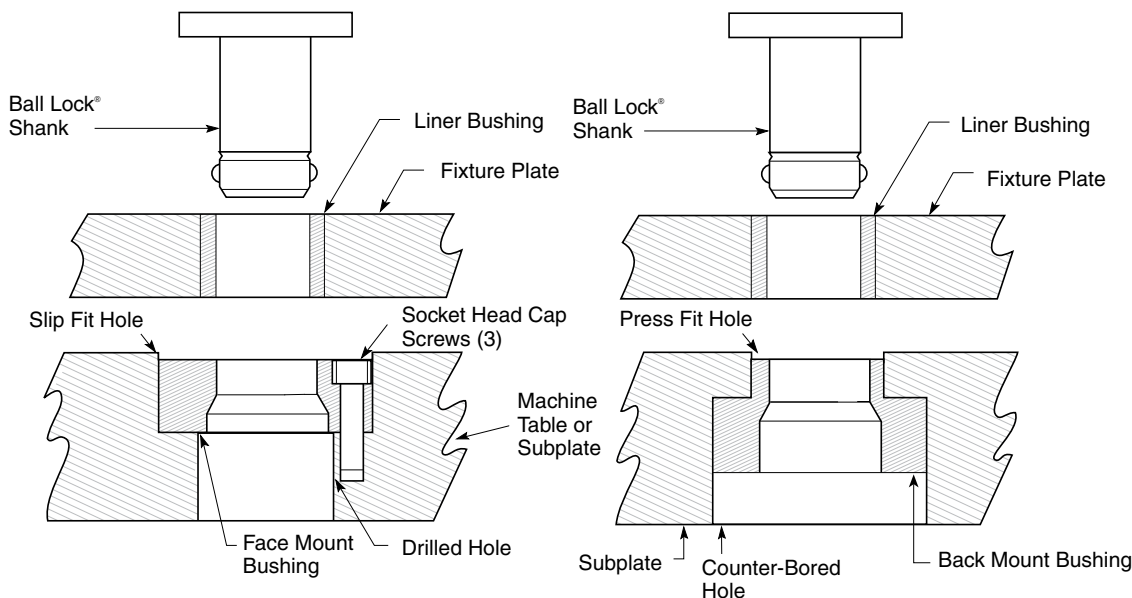
**A.** Similar to locating pins, two Ball Lock® shanks (pins) pass through two precision liner bushings on the fixture plate and into two precision receiver bushings on the subplate.

### Q. How does it lock?

**A.** Inside the shank are three balls that expand into a tapered groove in the receiver bushing. This action draws the plates together. The locking balls are activated by turning a setscrew in the head of the shank, which pushes a 4th ball to distribute the clamping forces between the 3 locking balls.

### Q. How many shanks are required to locate and lock each fixture?

**A.** Only two shanks, passing through bushings in the fixture plates, are required for location. However, additional shanks passing through clearance holes in the fixture plate will provide additional holding force distributed across the plate.



**Mounting Method With  
Face Mount Bushing**

**Mounting Method With  
Back Mount Bushing**

locating points. If more than two flanged shanks are required to provide additional hold-down force, omit liner bushings in the additional holes in the fixture plate and allow 0.030" (0.76mm) over the nominal size. The additional clearance will insure that these holes have no influence on the locating holes.

**How accurate should positioning be?**

The center distance of the receiver bushings in the machine table, tombstone, or subplate should be as accurate as possible  $\pm 0.0002"$  ( $\pm 0.005\text{mm}$ ) recommended. Accurate location will assure interchangeability of numerous fixture plates. For accurate repeatability within  $\pm 0.0005"$  ( $\pm 0.013\text{mm}$ )

of true position, both liner bushings in the fixture plate should be *primary* liners and the center distance tolerance should be  $\pm 0.0002"$  ( $\pm 0.005\text{mm}$ ). For a slightly looser fit, repeatability within 0.0015" (0.04mm) of true position, use one *primary* and one *secondary* liner with a center distance tolerance of  $\pm 0.001"$  ( $\pm 0.003\text{mm}$ ).

**Q. Is there a preferable location for the liner bushing?**

**A.** System repeatability is improved if the liners are located at opposite corners of a rectangular fixture plate. For consistency, we recommend locating the liner bushings at top left and bottom right.

**Q. What are the advantages of using the Ball Lock® System over the conventional method of dowel pins and cap screws?**

**A.** Both locating and locking are accomplished in the same motion. Ball Lock® shanks require only 2.5 turns to lock a 1/2–13 (M12) screw with 3/4"

(18mm) of thread engagement require 10 turns to lock. On CNC machines, the repeatability of fixture locations makes indicating of the fixture unnecessary.

**Q. How do I recess the fixture plate for a clear surface?**

**A.** Counterbore the fixture plate to a diameter large enough to allow easy removal of the shank.

**Note:** The thickness of the plate section under the head of the shank is critical and must conform to mounting instructions.

**Q. What if my plate is thinner than the recommended thickness?**

**A.** By adjusting the depth of the counterbore for the receiver bushing in the subplate, you can still use the Ball Lock® System. If there are any questions on this type of application, please call 1-800-JERGENS.

**Q. Can I use the shanks in a heated environment?**

**A.** The shank is made of alloy steel, heat treated to 40-45Rc and should with stand temperatures up to 400°F. (200°C).

**Note:** Thermal expansion of fixture plates may affect the center distance tolerance and repeatability.

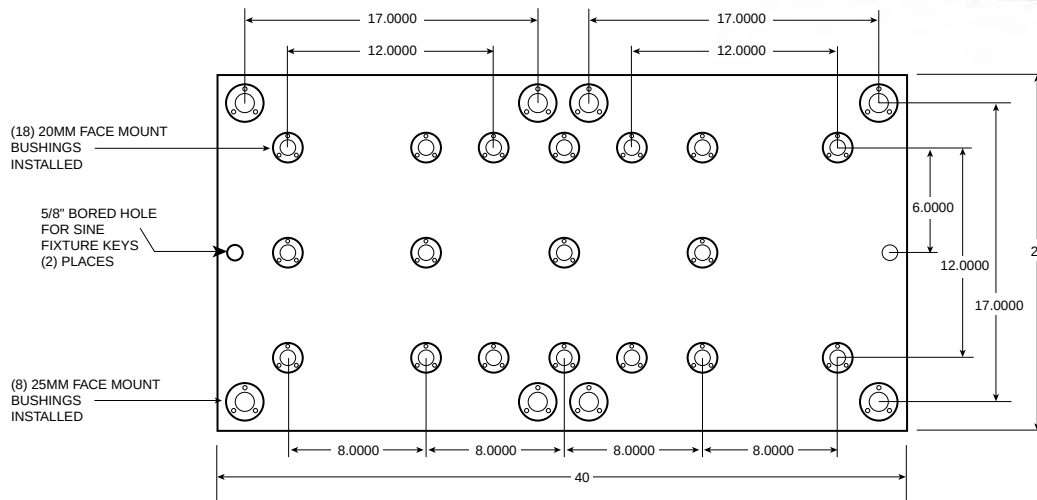
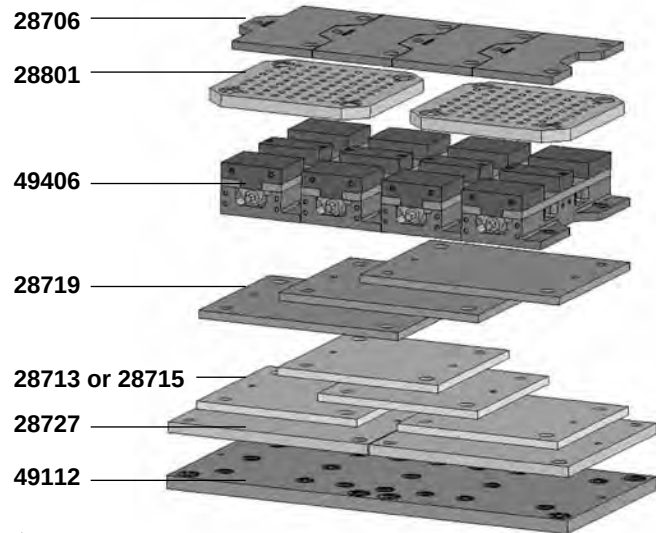
## Multi-Purpose Subplates

### 40x20 Multi-Purpose Subplate

| Part Number | Wt. (lbs) |
|-------------|-----------|
| 49112       | 285       |

The Jergens Multi-Purpose Subplate accommodates a wide variety of fixture plates and vises. This versatility facilitates using the same VMC for diverse products in repetitive runs, long and short batch sizes.

- FreMax™ 15 Steel or Equivalent
- Thickness: 1 1/4" ±0.005"
- Parallel within 0.001"



### Fixture Plate Options for Multi-Purpose Subplates – Aluminum or Steel

| Fixture Plate*/Vise Part Number    | Thickness of Fixture Plate | Number of Fixture Plates/Vises That Mount on Multi-Purpose Subplate | Receiver Bushing Center Distance | Receiver Bushing Size | Required Ball Lock® Shank Part Number | Number of Shanks Required Per Fixture Plate/Vise |
|------------------------------------|----------------------------|---------------------------------------------------------------------|----------------------------------|-----------------------|---------------------------------------|--------------------------------------------------|
| 28713 (14 x 14) Fixture Plate      | 3/4"                       | 2                                                                   | 12 x 12                          | 20 mm                 | 49601                                 | 4                                                |
| 28715 (16 x 16) Fixture Plate      | 3/4"                       | 2                                                                   | 12 x 12                          | 20 mm                 | 49601                                 | 4                                                |
| 28801 (16 x 16) Modular Grid Plate | 1 1/8"***                  | 2                                                                   | 12 x 12                          | 20 mm                 | 49602                                 | 4                                                |
| 28706 Jigsaw Interlocking Plate    | 3/4"                       | 4                                                                   | 8 x 12                           | 20 mm                 | 49601                                 | 3                                                |
| 28727 (20 x 20) Fixture Plate      | 1"                         | 2                                                                   | 17 x 17                          | 25 mm                 | 49612                                 | 4                                                |
| 28719 (20 x 16) Fixture Plate      | 3/4"                       | 1                                                                   | 16 x 12                          | 20 mm                 | 49601                                 | 4                                                |
| 49406 6" Jigsaw Base Vise          | 3/4"                       | 4                                                                   | 8 x 12                           | 20 mm                 | 49601                                 | 3                                                |

\* See next page for dimensional data on fixture plates. Part numbers shown for aluminum plates, also available in steel.

\*\* Counterbored to 1" at mounting holes.



## Fixture Plates for Multi-Purpose Subplate

### 14x14x3/4" Fixture Plate

| Aluminum Plate<br>Part Number | Wt. (lbs) |
|-------------------------------|-----------|
| 28713                         | 14        |

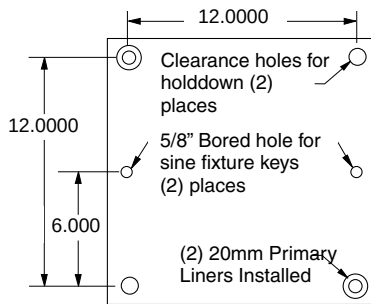
| Steel Plate<br>Part Number | Wt. (lbs) |
|----------------------------|-----------|
| 28813                      | 42        |

### 16x16x3/4" Fixture Plate

| Aluminum Plate<br>Part Number | Wt. (lbs) |
|-------------------------------|-----------|
| 28715                         | 18        |

| Steel Plate<br>Part Number | Wt. (lbs) |
|----------------------------|-----------|
| 28815                      | 55        |

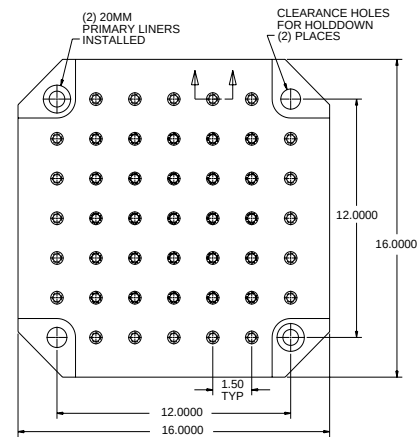
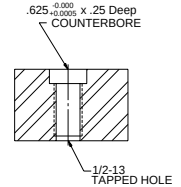
- Cast Aluminum or FreMax™ 15 Steel or equivalent
- Thickness: 3/4" ±0.005"
- Parallel within 0.001" Steel
- Mounts to subplates with Ball Lock® Shank 49601 (20 X 3/4")



### 16x16 Modular Grid Fixture Plate

| Steel Plate<br>Part Number | Wt. (lbs) |
|----------------------------|-----------|
| 28801                      | 80        |

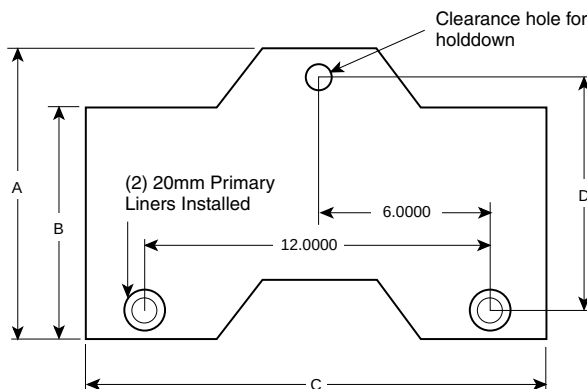
- FreMax™ 15 Steel or equivalent
- Thickness: 1 1/8" ±0.005"
- Parallel within 0.001"
- Mounts to subplates with Ball Lock® Shank 49602 (20 x 1")



### Jigsaw Interlocking Fixture Plate

| Aluminum<br>Plate Part No | Wt. | Steel Plate<br>Part No | Wt. | A    | B    | C     | Jergens<br>D | Vise<br>P/N |
|---------------------------|-----|------------------------|-----|------|------|-------|--------------|-------------|
| 28705                     | 6   | -                      | -   | 7.97 | 5.97 | 15.00 | 6.0000       | 49401       |
| 28706                     | 11  | 28806                  | 34  | 9.97 | 7.97 | 16.00 | 8.0000       | 49402       |

- Cast Aluminum or FreMax™ 15 Steel or equivalent
- Thickness: 3/4" ±0.005"
- Parallel within 0.001" Steel
- For use with narrow base 4" or 6" vise models
- Design allows close vise spacing for more parts per run
- Easily mounts to Subplates using the Ball Lock® Shank 49601 (20 x 3/4")
- Useful for high density fixturing of small parts

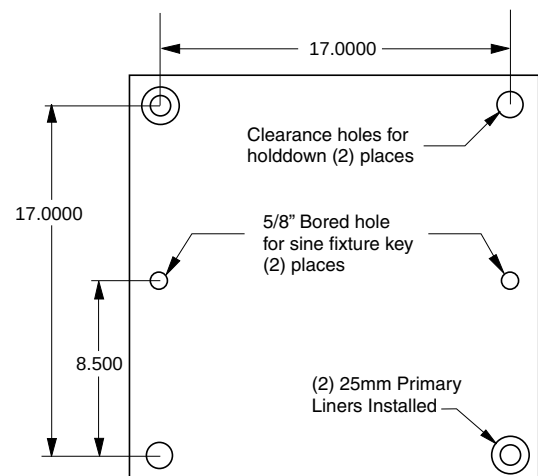


### 20x20x1" Fixture Plate

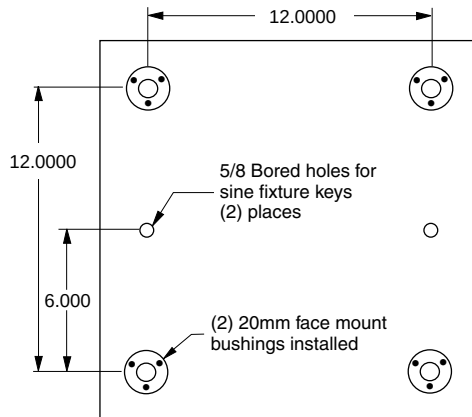
| Aluminum Plate<br>Part Number | Wt. (lbs) |
|-------------------------------|-----------|
| 28727                         | 38        |

| Steel Plate<br>Part Number | Wt. (lbs) |
|----------------------------|-----------|
| 28827                      | 114       |

- Cast Aluminum or FreMax™ 15 Steel or equivalent
- Thickness: 1" ±0.005"
- Parallel within 0.001" Steel
- Mounts to subplates with Ball Lock® Shank 49612 (25 X 1")



## Ball Lock® Standard Subplates

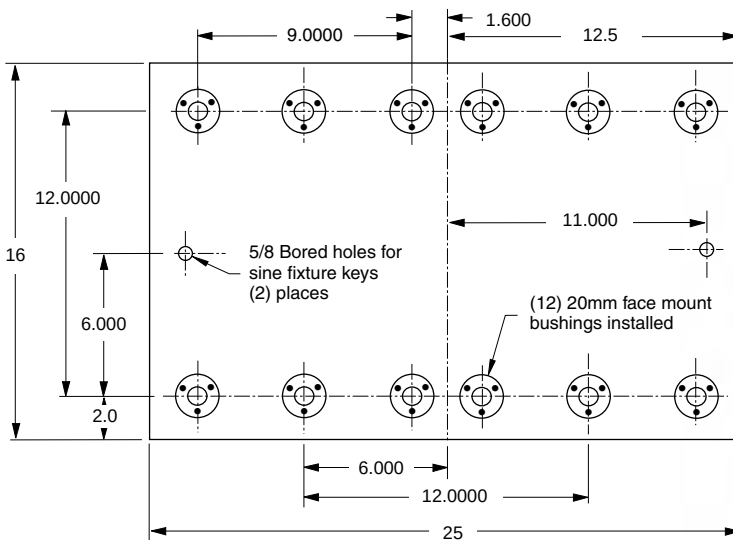


### 16x16 Subplate

| Part Number  | Wt (lbs) |
|--------------|----------|
| <b>49101</b> | 81       |

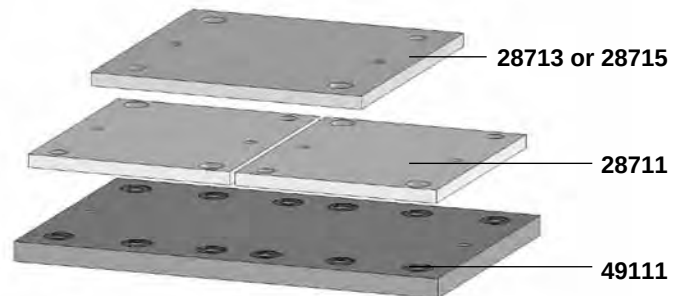
Equipped with four 20mm receiver bushings for use with 14x14 or 16x16 fixture plates. Ideal for horizontal machining centers or multiple pallet machining centers.

- Fremax™ 15 steel plate or equivalent
- Thickness: 1-1/8" ±0.005"
- Parallel within 0.001"



### 25x16 Dual Station Subplate

| Part Number  | Wt (lbs) |
|--------------|----------|
| <b>49111</b> | 128      |



Equipped with twelve installed 20mm receiver bushings to easily locate and mount Jergens Standard Fixture Plates:

- Fremax™ 15 steel plate or equivalent
- Thickness: 1-1/8" ±0.005"
- Parallel within 0.001"

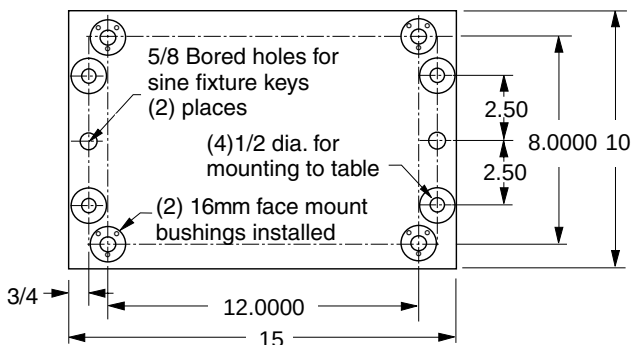
| Aluminum Plate Part Number | Steel Plate Part Number | Number of Fixture Plates | Plate Width and Length |
|----------------------------|-------------------------|--------------------------|------------------------|
| <b>28713</b>               | <b>28813</b>            | 1                        | 14"x14"                |
| <b>28715</b>               | <b>28815</b>            | 1                        | 16"x16"                |
| <b>28711</b>               | <b>28811</b>            | 2                        | 12"x14"                |

### 15x10 Bridgeport™ - Style Subplate

| Part Number  | Wt (lbs) |
|--------------|----------|
| <b>49121</b> | 32       |

Equipped with four installed 16mm receiver bushings and 1/2" mounting holes. Used with the Bridgeport™ style fixture plates 28731 or 28831.

- Thickness: 3/4" ±0.005"
- Parallel within 0.001"



Ball Lock® Quick Change Kits include all components needed in a single package. See page 1.13 for details.

## Ball Lock® Fixture Plates

- Cast Aluminum or FreeMax™ 15 Steel or equivalent
- Thickness tolerance  $\pm 0.005$ "
- Parallel within 0.001" Steel
- 6061-T-651 Aluminum plates, within .001 available upon request

### Aluminum Ball Lock® Fixture Plates with 2 Primary Liners Installed

| Plate Part Number<br>Aluminum | Weight (lbs) | Plate Part Number<br>Steel | Weight (lbs) | Plate Dimensions (in.) | Plate Thickness (in.) $\pm .005$ | Ball Lock®           |                   |
|-------------------------------|--------------|----------------------------|--------------|------------------------|----------------------------------|----------------------|-------------------|
|                               |              |                            |              |                        |                                  | Shank Size Dia. (mm) | Shank Part Number |
| 28706                         | 9            | 28806                      | 34           | 9.97 x 16              | 3/4                              | 20                   | 49601             |
| 28711                         | 12           | 28811                      | 36           | 12 x 14                | 3/4                              | 20                   | 49601             |
| 28713                         | 14           | 28813                      | 42           | 14 x 14                | 3/4                              | 20                   | 49601             |
| 28715                         | 18           | 28815                      | 55           | 16 x 16                | 3/4                              | 20                   | 49601             |
| 28722                         | 16           | 28822                      | 48           | 12 x 14                | 1                                | 25                   | 49612             |
| 28724                         | 19           | 28824                      | 56           | 14 x 14                | 1                                | 25                   | 49612             |
| 28726                         | 24           | 28826                      | 73           | 16 x 16                | 1                                | 25                   | 49612             |
| 28719                         | 23           | 28819                      | 68           | 20 x 16                | 3/4                              | 20                   | 49601             |
| 28727                         | 38           | 28827                      | 114          | 20 x 20                | 1                                | 25                   | 49612             |
| 28731                         | 11           | 28831                      | 32           | 15 x 10                | 3/4                              | 16                   | 49608             |
| —                             | —            | 28801                      | 80           | 16 x 16                | 1 1/8                            | 20                   | 49602             |

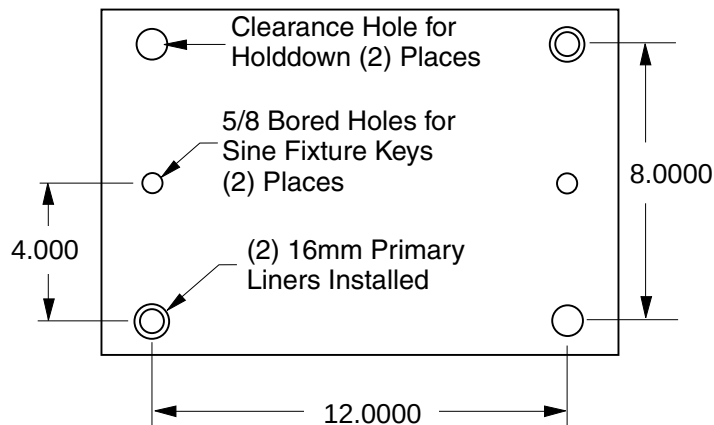
- Machined to close tolerances
- Repeatability  $\pm 0.0005$ " or better
- Reduces fixture set-up and assembly time
- Provided with 5/8" bored holes for sine fixture keys
- For horizontal or vertical machining centers, Tool Room Mills, or multiple pallet machining centers

#### Custom Sizes Available

Jergens will make Ball Lock® fixture plate or subplates to your specifications. Call 1-800-JERGENS for further information.

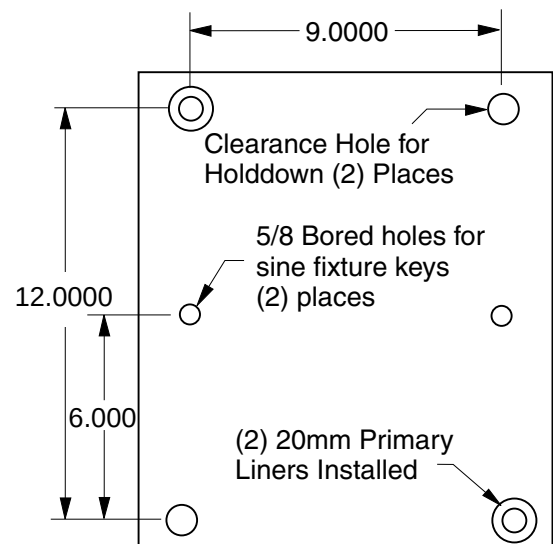
### 15x10x3/4" Fixture Plate Bridgeport™ Style

| Aluminum Plate Part Number | Wt. (lbs) | Steel Plate Part Number | Wt. (lbs) |
|----------------------------|-----------|-------------------------|-----------|
| 28731                      | 11        | 28831                   | 32        |



### 12x14x3/4" Fixture Plate

| Aluminum Plate Part Number | Wt. (lbs) | Steel Plate Part Number | Wt. (lbs) |
|----------------------------|-----------|-------------------------|-----------|
| 28711                      | 12        | 28811                   | 36        |



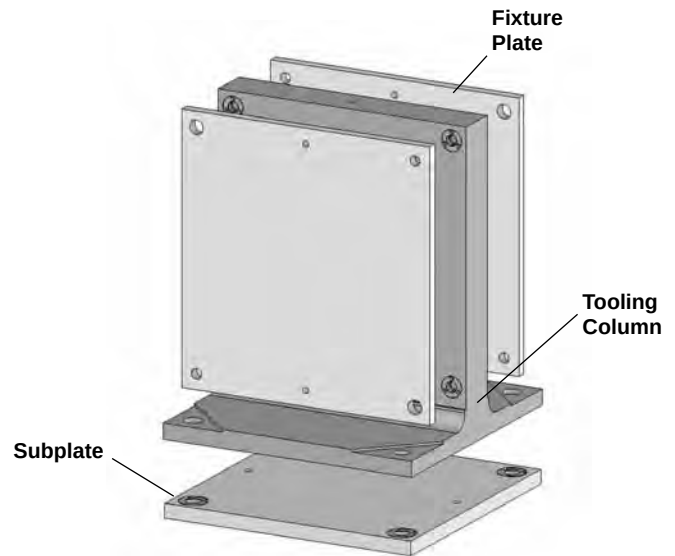


## Ball Lock® T-Columns

- Class 40 Cast Iron
- Also available in Aluminum
- Ball Lock® Receiver Bushings and Liner Bushings installed
- Perpendicularity is 0.001" per foot

### Custom Sizes Available with or without Ball Lock®

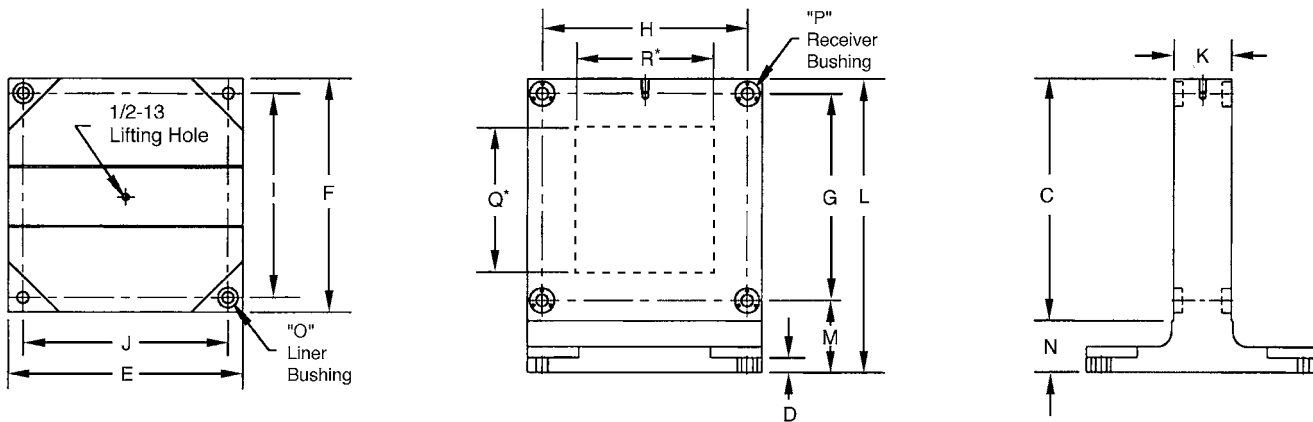
We are able to quote you on your special requirement with or without the Ball Lock® Mounting System.  
 Call 1-800-JERGENS for design specification information.



### Cast Iron T-Columns With Ball Lock® Receiver Bushings Installed

See page 1.12 for Fixture Plates and Subplates

| Pallet Size (mm) | Part Number  | C      | D   | E  | F  | G  | H  | I  | J  | K   | L      | M     | N   | O (mm) | P (mm) | Wt. (lbs) |
|------------------|--------------|--------|-----|----|----|----|----|----|----|-----|--------|-------|-----|--------|--------|-----------|
| 400              | <b>69101</b> | 16.375 | 1   | 16 | 16 | 14 | 14 | 14 | 14 | 4   | 19.875 | 4.875 | 3.5 | 20     | 20     | 425       |
| 500              | <b>69111</b> | 22.375 | 1   | 20 | 20 | 19 | 17 | 17 | 17 | 4.7 | 25.875 | 5.375 | 3.5 | 25     | 25     | 700       |
| 630              | <b>69121</b> | 26.375 | 1.5 | 25 | 25 | 23 | 22 | 21 | 21 | 4   | 29.875 | 5.375 | 3.5 | 35     | 25     | 1125      |



**\*Note:** Window sections are also available on T-Columns. Specify window size and location (Q and R Dimensions).

### Corresponding Fixture Plates, Subplates and Ball Lock® Shanks

| Pallet Size (mm) | T-Column Part Number | Aluminum Fixture Plate Part Number | Steel Fixture Plate Part Number | Fixture Plate Size | Fixture Plate Ball Lock® Shank Part Number | Shank Size | Subplate Part Number | Subplate Ball Lock® Shank Part Number | Shank Size   |
|------------------|----------------------|------------------------------------|---------------------------------|--------------------|--------------------------------------------|------------|----------------------|---------------------------------------|--------------|
| 400              | <b>69101</b>         | <b>28717</b>                       | <b>28817</b>                    | 16 x 16            | <b>49601</b>                               | 20mm x 3/4 | <b>49102</b>         | <b>49602</b>                          | 20mm x 1     |
| 500              | <b>69111</b>         | <b>28745</b>                       | <b>28845</b>                    | 20 x 22            | <b>49612</b>                               | 25mm x 1   | <b>49103</b>         | <b>49612</b>                          | 25mm x 1     |
| 630              | <b>69121</b>         | <b>28746</b>                       | <b>28846</b>                    | 25 x 26            | <b>49612</b>                               | 25mm x 1   | <b>49104</b>         | <b>49633</b>                          | 35mm x 1-1/2 |

Use Hoist Ring **23411**, see page 11.8 for lifting and handling – Order separately.

### Engineering Changes

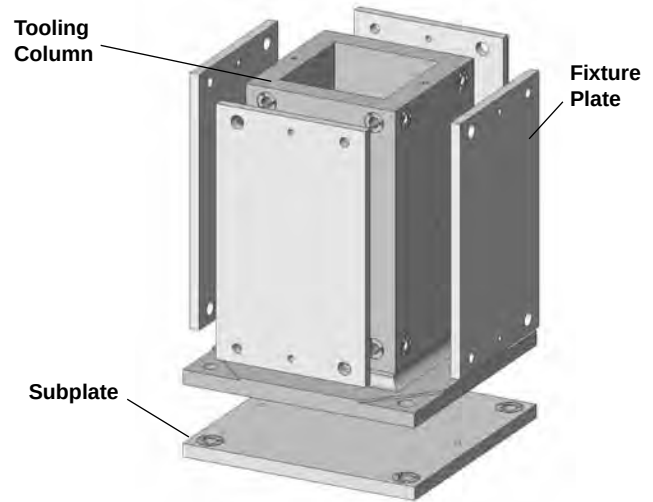
Product improvement is a continuing process at Jergens. Specifications and engineering data are subject to change after publishing. Contact Jergens Technical Sales Department to verify any dimensions or specifications.

## Ball Lock® 4-Sided Tooling Columns

- Class 40 Cast Iron
- Also available in Aluminum
- Ball Lock® Receiver Bushings and Liners installed
- Provides accurate fixturing base for CNC machining centers
- Perpendicularity is 0.001" per foot

### Custom Sizes Available with or without Ball Lock®

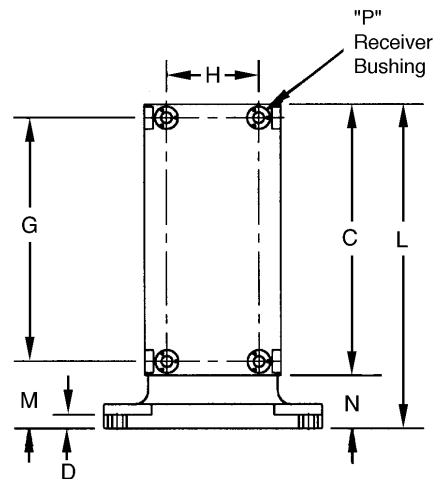
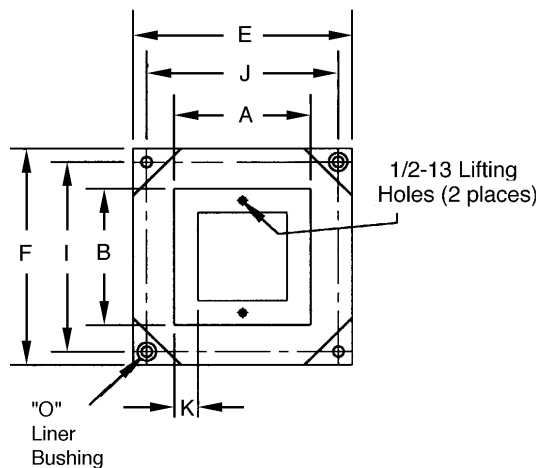
We are able to quote you on your special requirement with or without the Ball Lock® Mounting System.  
Call 1-800-JERGENS for design specification information.



### Cast Iron 4-Sided Tooling Columns With Ball Lock® Receiver Bushings Installed

See page 1.12 for Fixture Plates and Subplates

| Pallet Size (mm) | Part Number | A  | B  | C  | D   | E  | F  | G  | H     | I  | J  | K     | L      | M     | N     | O (mm) | P (mm) | Wt. (lbs) |
|------------------|-------------|----|----|----|-----|----|----|----|-------|----|----|-------|--------|-------|-------|--------|--------|-----------|
| 400              | 69001       | 10 | 10 | 20 | 1   | 16 | 16 | 18 | 6.75  | 14 | 14 | 1.75  | 23.875 | 4.875 | 3.875 | 20     | 20     | 510       |
| 500              | 69011       | 12 | 12 | 25 | 1   | 20 | 20 | 22 | 8     | 17 | 17 | 1.625 | 28.875 | 5.375 | 3.875 | 25     | 25     | 736       |
| 630              | 69021       | 16 | 16 | 26 | 1.5 | 25 | 25 | 23 | 11.50 | 21 | 21 | 2     | 29.875 | 5.375 | 3.875 | 35     | 25     | 1122      |



### Corresponding Fixture Plates, Subplates and Ball Lock® Shanks

| Pallet Size (mm) | T-Column Part Number | Aluminum Fixture Plate Part Number | Steel Fixture Plate Part Number | Fixture Plate Size | Fixture Plate Ball Lock® Shank Part Number | Shank Size | Subplate Part Number | Subplate Ball Lock® Shank Part Number | Shank Size   |
|------------------|----------------------|------------------------------------|---------------------------------|--------------------|--------------------------------------------|------------|----------------------|---------------------------------------|--------------|
| 400              | 69001                | 28741                              | 28841                           | 10 x 20            | 49601                                      | 20mm x 3/4 | 49102                | 49602                                 | 20mm x 1     |
| 500              | 69011                | 28742                              | 28842                           | 12 x 25            | 49612                                      | 25mm x 1   | 49103                | 49612                                 | 25mm x 1     |
| 630              | 69021                | 28743                              | 28843                           | 16 x 26            | 49612                                      | 25mm x 1   | 49104                | 49633                                 | 35mm x 1-1/2 |

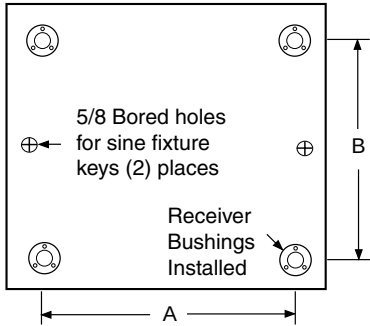
Use Hoist Ring **23411**, see page 11.8 for lifting and handling – Order separately.

### Engineering Changes

Product improvement is a continuing process at Jergens. Specifications and engineering data are subject to change after publishing. Contact Jergens Technical Sales Department to verify any dimensions or specifications.

# Subplates For Tooling Columns and Fixture Plates

INCH PRE-MACHINED FIXTURE/SUBPLATES

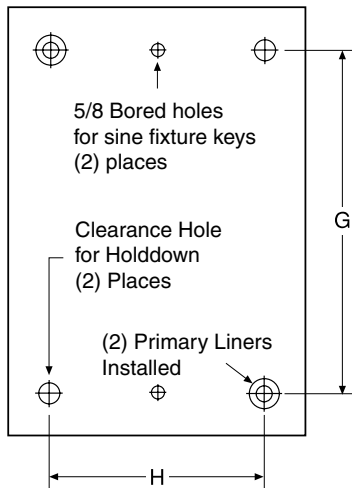


## Standard Steel Subplates for Tooling Columns

Subplate Mounting holes can be provided per customer specification.  
 Supplied with Ball Lock® Receiver Bushings installed.

| Part Number | Pallet Size (mm) | For Tooling Columns          | Ball Lock® Pattern |               | Receiver Size (mm) | Thickness of Subplate (in.) ±.005 | Wt (lbs) |
|-------------|------------------|------------------------------|--------------------|---------------|--------------------|-----------------------------------|----------|
|             |                  |                              | A (in.)            | B (in.)       |                    |                                   |          |
| 49102       | 400              | 69001, 69101                 | 14                 | 14            | 20                 | 1 1/8                             | 79       |
| 49103       | 500              | 69011, 69111                 | 17                 | 17            | 25                 | 1 1/4                             | 137      |
| 49103-C*    | 500              | 69101, 69001<br>69111, 69011 | 14/17<br>Dual      | 14/17<br>Dual | 20/25<br>Dual      | 1 1/4<br>1 1/4                    | 137      |
| 49104       | 630              | 69021, 69121                 | 21                 | 21            | 35                 | 1 3/8                             | 240      |

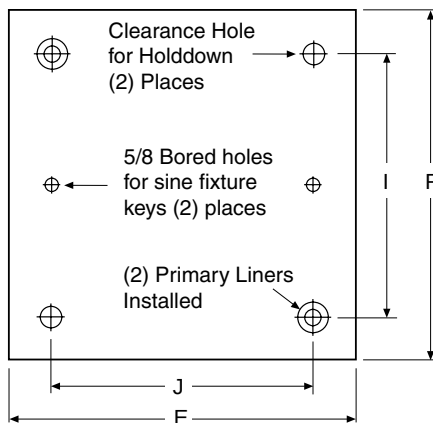
\*49103-C is a dual pattern subplate. Please contact Jergens Technical Service at 1-800-Jergens for design specific information.



## Fixture Plates for Standard Tooling Columns and T-Columns

Supplied with 2 primary Ball Lock® Liner Bushings installed.

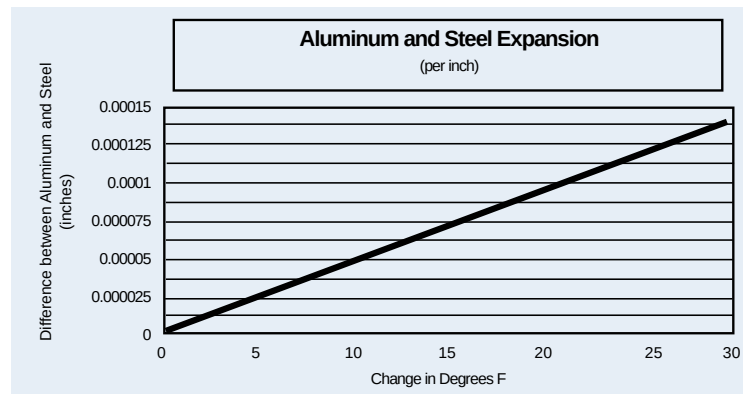
| Pallet Size (mm) | Part Number |       |       |       | For Tooling Columns | Type | Fixture Plate Size (in.) | Fixture Plate Thickness ±0.005" | Ball Lock® Pattern |         | Liner Size (mm) |
|------------------|-------------|-------|-------|-------|---------------------|------|--------------------------|---------------------------------|--------------------|---------|-----------------|
|                  | Aluminum    | (lbs) | Steel | (lbs) |                     |      |                          |                                 | H (in.)            | G (in.) |                 |
| 400              | 28741       | 14    | 28841 | 43    | 69001               | 4-S  | 10x20                    | 3/4                             | 6.75               | 18      | 20              |
| 500              | 28742       | 28    | 28842 | 85    | 69011               | 4-S  | 12x25                    | 1                               | 8                  | 22      | 25              |
| 630              | 28743       | 39    | 28843 | 118   | 69021               | 4-S  | 16x26                    | 1                               | 11.50              | 23      | 25              |
| 400              | 28717       | 18    | 28817 | 55    | 69101               | T    | 16x16                    | 3/4                             | 14                 | 14      | 20              |
| 500              | 28745       | 41    | 28845 | 125   | 69111               | T    | 20x22                    | 1                               | 17                 | 19      | 25              |
| 630              | 28746       | 61    | 28846 | 184   | 69121               | T    | 25x26                    | 1                               | 22                 | 23      | 25              |



## Fixture Plates for Tooling Column Subplates

Supplied with 2 primary Ball Lock® Liner Bushings installed.

| Pallet Size (mm) | Part Number |       |       |       | For Subplate | Plate Dim. |         | Fixture Plate Thickness ±0.005" | Ball Lock® Pattern |         | Liner Size (mm) |
|------------------|-------------|-------|-------|-------|--------------|------------|---------|---------------------------------|--------------------|---------|-----------------|
|                  | Aluminum    | (lbs) | Steel | (lbs) |              | E (in.)    | F (in.) |                                 | I (in.)            | J (in.) |                 |
| 400              | 28717       | 18    | 28817 | 55    | 49102        | 16         | 16      | 3/4                             | 14                 | 14      | 20              |
| 500              | 28727       | 38    | 28827 | 114   | 49103        | 20         | 20      | 1                               | 17                 | 17      | 25              |
| 630              | 28732       | 58    | 28832 | 177   | 49104        | 25         | 25      | 1                               | 21                 | 21      | 35              |



NOTE: Aluminum and steel expand at different rates. Please take this information into consideration when creating your own Ball Lock® fixture and subplates.

## Quick Change Kits

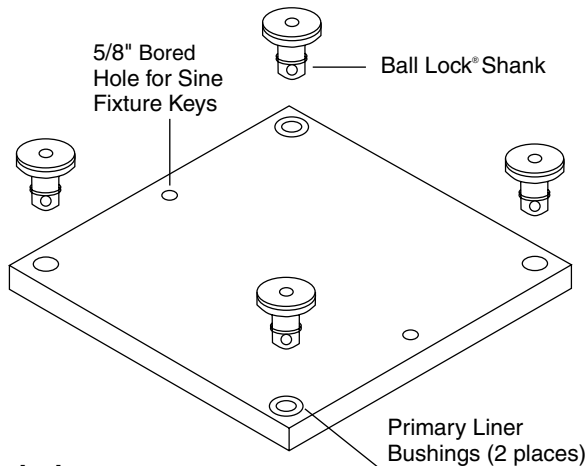


The Jergens Ball Lock® Quick Change Kits speed fixture changeover in all types of manufacturing operations. Each kit includes two aluminum fixture plates with two primary liner bushings installed; one steel subplate with receiver bushings installed, and four 20mm Ball Lock® shanks with working loads of 3000 lbs. each. While one fixture plate is on the machine, the operator can load parts on the other. This minimizes downtime for true set-up reduction. To enable the subplate to be mounted on a slotted table without the need to indicate the subplate, sine fixture keys can be used. The sine fixture key bored holes are oriented parallel to the receiver bushings on the subplate and to the liner bushings on the fixture plate. These also allow the fixture plate to be mounted on a toolroom mill without the need to indicate it. This is extremely useful when machining location points on your fixture.

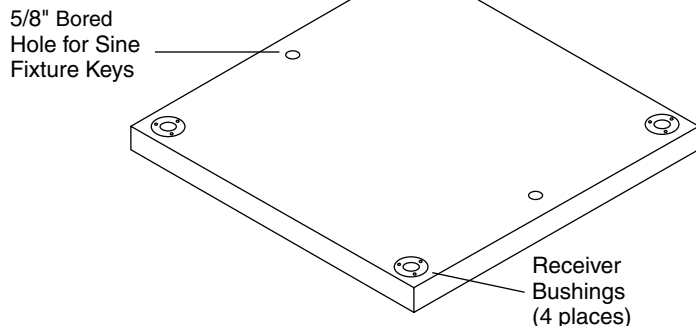


**Everything You Need to Change Fixtures in Less Than One Minute**

### Aluminum Fixture Plate



### Steel Subplate

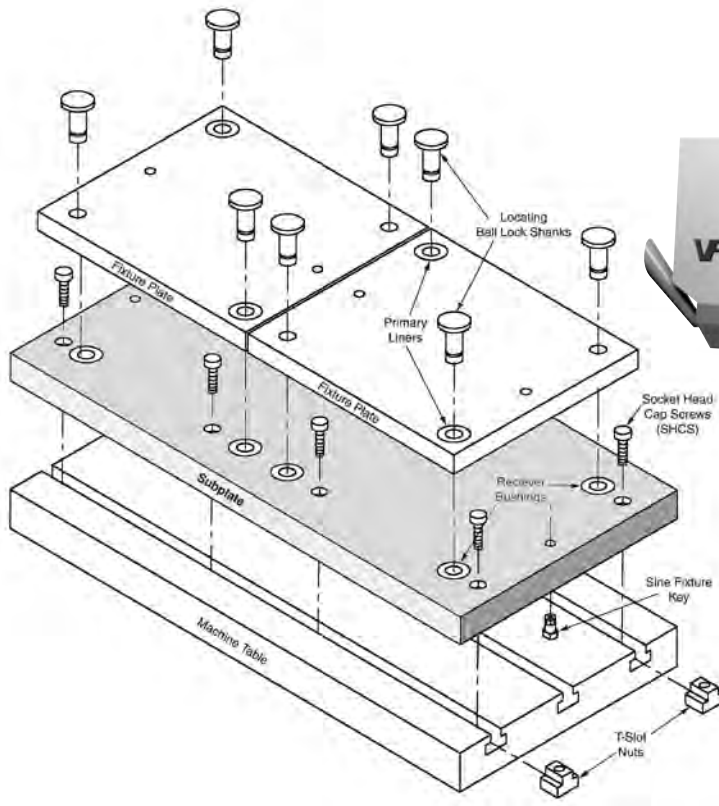


### Quick Change Kits

| Part No.     | Kit Includes                                                                                                                                                                                                               |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>49001</b> | 2 - 28713 (14"x14"x3/4") aluminum fixture plates with 20mm liner bushings installed<br>1 - 49101 (16"x16"x1-1/8") steel subplate with receiver bushings installed<br>4 - 49601 (20mm) Ball Lock® Shanks                    |
| <b>49002</b> | 2 - 28715 (16"x16"x3/4") aluminum fixture plates with 20mm liner bushings installed<br>1 - 49101 (16"x16"x1-1/8") steel subplate with receiver bushings installed<br>4 - 49601 (20mm) Ball Lock® Shanks                    |
| <b>49004</b> | Bridgeport™-Style<br>2 - 28731 (10"x15"x3/4") aluminum fixture plates with 16mm liner bushings installed<br>1 - 49121 (10"x15"x3/4") steel subplate with receiver bushings installed<br>4 - 49608 (16mm) Ball Lock® Shanks |



## Pre-Engineered Ball Lock® Fixture Kits for HAAS\*



**Pre-Engineered HAAS Kits available. PDF Catalog Available at**  
[www.jergensinc.com](http://www.jergensinc.com)

### These kits include:

- Steel Subplate with receiver bushings
- Aluminum Fixture Plate(s) with 2 primary liner bushings
- Pre installed receiver and Liner Bushings
- Ball Lock® Shanks
- T-Slot nuts for mounting subplate to machine table
- 2 Sine Fixture Keys for accurate subplate locating
- Socket head cap screws

### Benefits:

- Save time specifying and ordering
- Saves installation time and cost
- Eliminates potential installation errors

**Ask about these other machine manufacturers where Ball Lock® kits can be utilized.**

**Call customer support at 1-800-537-4367**

|            |                 |             |                |
|------------|-----------------|-------------|----------------|
| Acer       | Fanuc Robodrill | Kira Mill   | Miyano         |
| Bridgeport | HAAS            | Kitamura    | Mori-Seiki     |
| Brother    | Hardinge        | Leadwell    | OKK            |
| Chevalier  | Hitachi         | MAG         | Okuma          |
| Chiron     | Hitachi Seiki   | Makino      | Republic Lagun |
| DMG        | Hurco           | Matsuura    | Toyoda         |
| Enshu      | Hyundai-Kia     | Mazak       | Tree           |
| Excel      | Johnsford       | Milltronics | YCI            |

\*HAAS is a trademark of HAAS Automation, Inc.

## Set-Up Reduction Worksheet

### Benefits of Set-Up Reduction (Capacity)

|                                                                                  |                 |                                     |
|----------------------------------------------------------------------------------|-----------------|-------------------------------------|
| <b>Current Method</b>                                                            |                 | <b>Example (actual case study):</b> |
| Minutes per set-up                                                               | = _____ minutes | 60 minutes                          |
| Number of set-ups per 8 hour shift                                               | = _____ set-ups | 1.5 set-ups                         |
| Total minutes of set-up per shift<br>(set-up minutes x number of set-ups)        | = _____ minutes | 90 minutes                          |
| <b>Using the Ball Lock® System</b>                                               |                 |                                     |
| Minutes per set-up                                                               | = _____ minutes | 8 minutes                           |
| Number of set-ups per 8 hour shift                                               | = _____ set-ups | 1.5 set-ups                         |
| Total minutes of set-up per shift<br>(set-up minutes x number of set-ups)        | = _____ minutes | 12 minutes                          |
| Increased capacity per machine per shift<br>(current method - Ball Lock® method) | = _____ minutes | 78 minutes                          |
| Savings per machine per shift                                                    | = _____ minutes | 78 minutes                          |
| Increased capacity<br>(number of minutes / 60)                                   | = _____ hours   | 1.3 hours                           |

### Benefits of Set-Up Reduction (Profit)

|                                                                                                |                                  |                                |
|------------------------------------------------------------------------------------------------|----------------------------------|--------------------------------|
| Machine cost per hour                                                                          | = \$ _____                       | \$80.00                        |
| Increased production hours per shift<br>(increased capacity from above)                        | = _____ hours                    | 1.3 hours                      |
| Savings (profit) per machine per shift<br>(machine cost per hour x increased production hours) | = \$ _____ per machine per shift | \$104.00 per machine per shift |

## Ball Lock® For 4th Axis Rotary Indexers

### Problem:

Rotary indexers increase the versatility of vertical machining centers, yet they offer one major challenge: set-up is so time-consuming that it may limit a machine's flexibility. In many cases, machinists dedicate their 4th Axis tool to a single machine to avoid the agony of an extended set-up and changeover.

### Benefits:

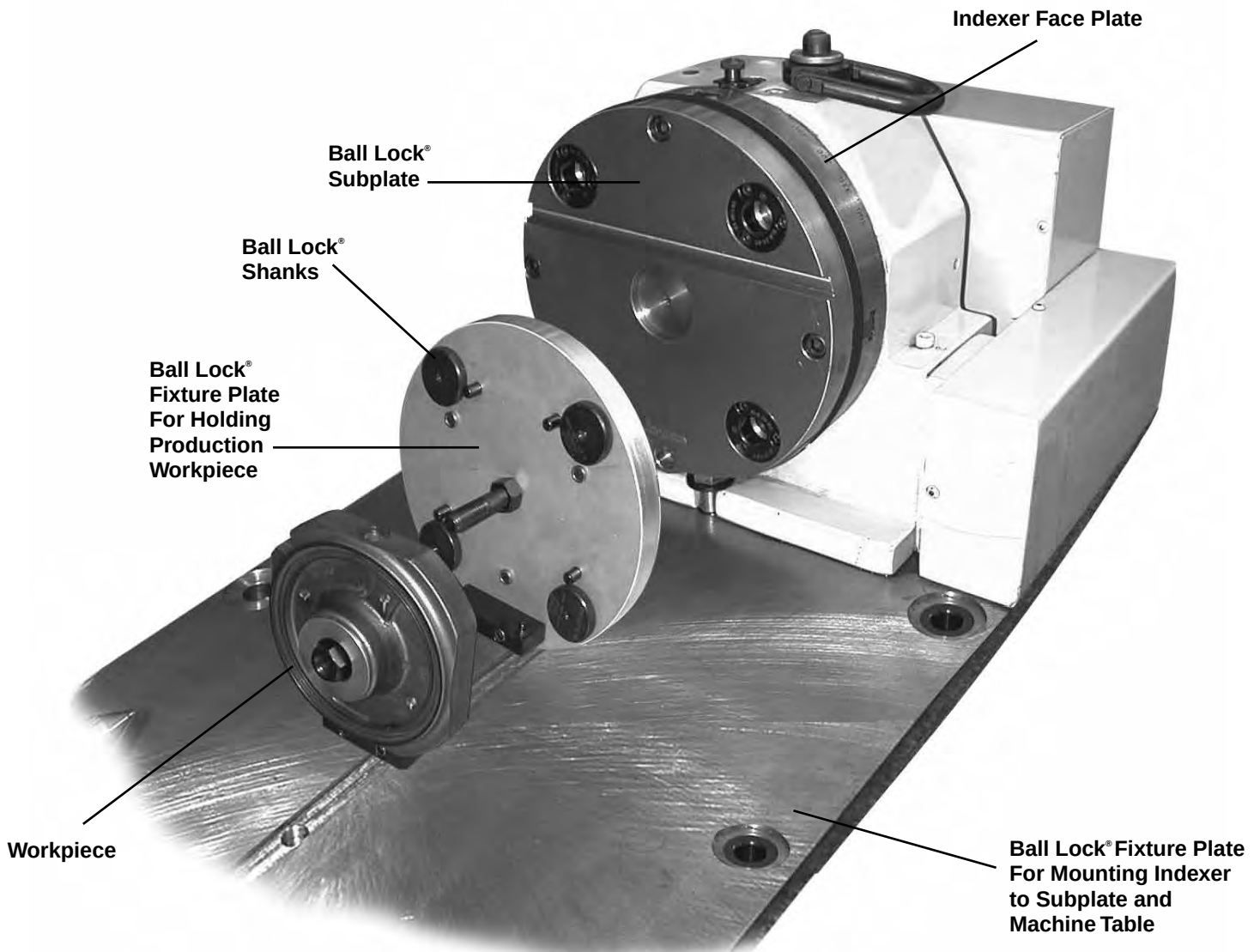
- Maximize indexer utilization
- Eliminate lengthy set-ups
- Accurate fixture plate changeover in seconds

### Jergen's Solution:

Ball Lock® Mounting System for Indexers provides a double solution.

First, Ball Lock® mounting plates free up your machine for additional work by allowing a fast and accurate installation and removal of the complete indexer. Avoid hours of set up. The Ball Lock® System does it in minutes, with repeatability at  $\pm .0005"$  ( $\pm .013\text{mm}$ ). Low profile, positive clamping, proven in over many years of field use.

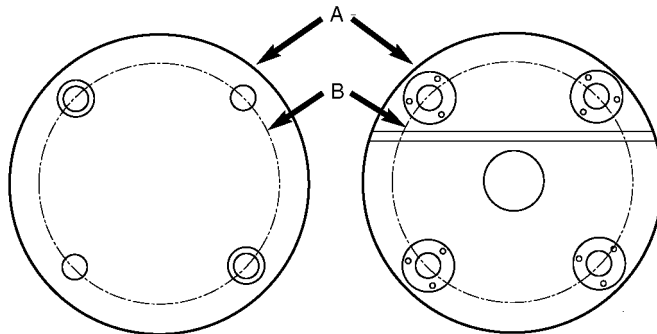
Second, the Ball Lock® System provides your fixture plate changeover. By mounting the round subplate to the indexer faceplate, you'll "plug-in" new fixtures in record time (less than 60 seconds).



Subplates and fixture plates come with bushings pre-installed.

## Round Ball Lock® Fixture Plates and Subplates

### Standard Round



Fixture Plate

Subplate

Cast Aluminum, FreeMax™ or Steel equivalent

### Fixture Plate

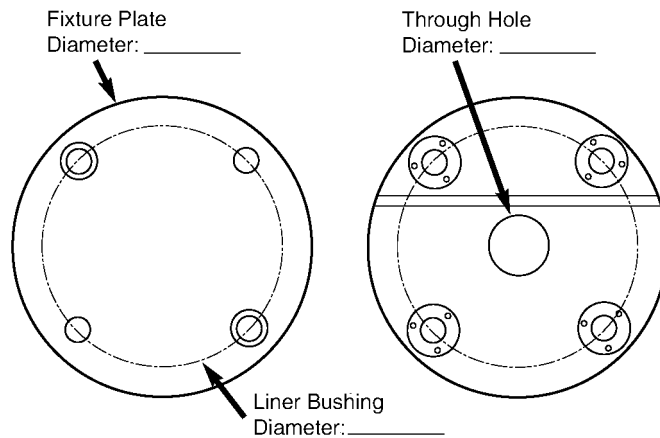
| Part No. | A   | B   | Thickness<br>±0.005" | Ball Lock®<br>Liner | Ball Lock®<br>Shank | Weight<br>(lbs) |
|----------|-----|-----|----------------------|---------------------|---------------------|-----------------|
| 28707    | 8"  | 6"  | 3/4                  | 16mm                | 49608               | 3.5             |
| 28708    | 10" | 8"  | 1                    | 20mm                | 49602               | 7.0             |
| 28709    | 12" | 10" | 1                    | 20mm                | 49602               | 11.0            |

### Subplate

| Part No. | A   | B   | Thickness<br>±0.005" | Ball Lock®<br>Receiver | Center<br>Hole | Weight<br>(lbs) |
|----------|-----|-----|----------------------|------------------------|----------------|-----------------|
| 49107    | 8"  | 6"  | 3/4                  | 16mm                   | 1.00"          | 11.0            |
| 49108    | 10" | 8"  | 1                    | 20mm                   | 2.00"          | 21.0            |
| 49109    | 12" | 10" | 1                    | 20mm                   | 2.00"          | 33.0            |

Metric sizes also available; please call for information.

### Custom Round Plates



#### Indexer:

Make: \_\_\_\_\_

Model: \_\_\_\_\_

Diameter: \_\_\_\_\_

Light Duty or Heavy Duty: \_\_\_\_\_

Through Hole Bore: \_\_\_\_\_

#### CNC Machine:

Make: \_\_\_\_\_

Model: \_\_\_\_\_

Weight Capacity: \_\_\_\_\_

#### Indexer Faceplate:

T-Slot Size: \_\_\_\_\_

Configuration/Orientation: \_\_\_\_\_

or

Drilled Tapped Hole Size:

Configuration/Orientation: \_\_\_\_\_

### Engineering Changes

Product improvement is a continuing process at Jergens. Specifications and engineering data are subject to change without notice. If current information is critical to your design, it is suggested that you contact Jergens Technical Sales Department to verify any dimensions or specifications.

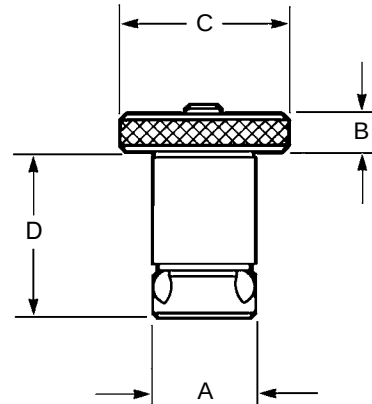


## Locating and Clamping Shanks



- Material: Shank/Bushing, 4340  
Liner, 52100
- Finish: Black Oxide
- Heat Treat: Shanks, RC 40-45  
Bushings, RC 50-54  
Liners, RC 62-64
- Operating Temperature Range  
-20° to 400°F, -30° to 200°C

**Stainless Steel available**



### Ball Lock® Repair Kits



Each Kit Includes:

- Replacement Screw
- Locking Balls
- Drive Ball
- O-Ring

Any Ball Lock® application requires at least two sets of shanks, receiver bushings and liners. The liners are placed into the fixture plate to insure extremely accurate positioning. If more than two shanks are required (to provide additional hold down force), omit the liner bushing so that these additional holes will not interfere with your primary locating holes.

**See page 1.20 for Fast Acting Shanks.**

### Locating and Clamping Shank Dimensions

| Shank Diameter (mm)<br>A | Fixture Plate Thickness<br>± 0.005 | Shank Part Number | Head of Shank |            | Length Under Head<br>D | Hex Wrench Size for Set Screw | Maximum              |                       | Recommended          |                       | Shank Repair Kit Part Number |
|--------------------------|------------------------------------|-------------------|---------------|------------|------------------------|-------------------------------|----------------------|-----------------------|----------------------|-----------------------|------------------------------|
|                          |                                    |                   | Height B      | Diameter C |                        |                               | Screw Torque (Ft/lb) | Hold-Down Force (lbs) | Screw Torque (Ft/lb) | Hold-Down Force (lbs) |                              |
| 13                       | 0.50                               | 49605             | 0.25          | 0.87       | 1.08                   | 3/32                          | 1.2                  | 750                   | 1                    | 625                   | 49905                        |
|                          | 0.75                               | 49606             |               |            | 1.33                   |                               |                      |                       |                      |                       | 49906                        |
| 16                       | 0.50                               | 49607             | 0.32          | 1.50       | 1.15                   | 1/8                           | 3                    | 1200                  | 2                    | 800                   | 49907                        |
|                          | 0.75                               | 49608             |               |            | 1.40                   |                               |                      |                       |                      |                       | 49908                        |
| 20                       | 0.75                               | 49601             | 0.38          | 1.75       | 1.53                   | 1/8                           | 4                    | 3000                  | 3                    | 2250                  | 49901                        |
|                          | 1.00                               | 49602             |               |            | 1.78                   |                               |                      |                       |                      |                       | 49902                        |
| 25                       | 0.75                               | 49611             | 0.38          | 2.00       | 1.70                   | 5/32                          | 9                    | 7000                  | 7                    | 5444                  | 49911                        |
|                          | 1.00                               | 49612             |               |            | 1.95                   |                               |                      |                       |                      |                       | 49912                        |
| 30                       | 0.75                               | 49621             | 0.50          | 2.25       | 1.88                   | 3/16                          | 15                   | 10000                 | 12                   | 8000                  | 49921                        |
|                          | 1.00                               | 49622             |               |            | 2.13                   |                               |                      |                       |                      |                       | 49922                        |
| 35                       | 0.75                               | 49631             | 0.50          | 2.25       | 1.97                   | 1/4                           | 25                   | 15500                 | 19                   | 11780                 | 49931                        |
|                          | 1.00                               | 49632             |               |            | 2.22                   |                               |                      |                       |                      |                       | 49932                        |
|                          | 1.50                               | 49633             |               |            | 2.72                   |                               |                      |                       |                      |                       | 49933                        |
|                          | 2.00                               | 49634             |               |            | 3.22                   |                               |                      |                       |                      |                       | 49934                        |
| 50                       | 0.75                               | 49641             | 0.75          | 3.00       | 2.45                   | 3/8                           | 50                   | 20000                 | 38                   | 15200                 | 49941                        |
|                          | 1.00                               | 49642             |               |            | 2.70                   |                               |                      |                       |                      |                       | 49942                        |
|                          | 1.50                               | 49643             |               |            | 3.20                   |                               |                      |                       |                      |                       | 49943                        |
|                          | 2.00                               | 49644             |               |            | 3.70                   |                               |                      |                       |                      |                       | 49944                        |

## Receiver Bushings



**Back Mount**

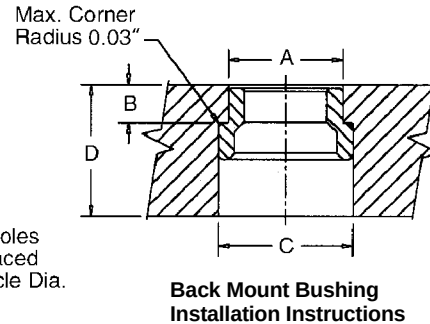
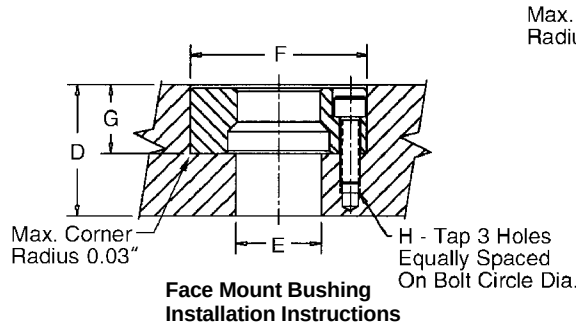


**Face Mount**

Two styles of receiver bushings are available. Generally, the face mount receiver bushing is utilized in blind hole applications (Slip Fit). The back mount receiver bushing is used in through hole applications (Light Press Fit).

Note: Installed bushings should be approximately .012" below subplate surface.

**See reference below for installation of back mount style bushings.**



## Installation Dimensions

### Face Mount

| Shank Dia. (mm) | Face Mount Part Number | Actual O.D. +0.0000 -0.0004 | Clearance Drill Diameter E | Bore +0.0005 -0.0000 F | Depth +0.002 -0.000 G | Tap Size & Depth' H | Bolt Circle Diameter 3 PL Equally Spaced | Min. Subplate Thickness D |
|-----------------|------------------------|-----------------------------|----------------------------|------------------------|-----------------------|---------------------|------------------------------------------|---------------------------|
| 13              | 49506                  | 1.3750                      | 11/16                      | 1.3750                 | 0.469                 | 8-32x5/16           | 0.984                                    | 3/4                       |
| 16              | 49507                  | 1.4370                      | 13/16                      | 1.4370                 | 0.469                 | 8-32x5/16           | 1.125                                    | 3/4                       |
| 20              | 49501                  | 1.6873                      | 13/16                      | 1.6873                 | 0.637                 | 10-32x3/8           | 1.362                                    | 1                         |
| 25              | 49502                  | 2.0623                      | 1                          | 2.0623                 | 0.799                 | 1/4-28x1/2          | 1.644                                    | 1-1/4                     |
| 30              | 49503                  | 2.2654                      | 1 3/16                     | 2.2654                 | 0.871                 | 1/4-28x3/4          | 1.876                                    | 1-3/8                     |
| 35              | 49504                  | 2.6873                      | 1 9/16                     | 2.6873                 | 0.904                 | 5/16-24x7/8         | 2.178                                    | 1-1/2                     |
| 50              | 49505                  | 3.4998                      | 2 5/32                     | 3.4998                 | 1.239                 | 3/8-24x1            | 2.916                                    | 2                         |

\*Cap Screws Supplied with Face Mount Bushings.

### Back Mount

| Shank Dia. (mm) | Back Mount Part Number | Actual O.D. +0.0000 -0.0004 A | Depth +0.000 -0.002 B | C-Bore ±0.006 C | Min. Subplate Thickness D |
|-----------------|------------------------|-------------------------------|-----------------------|-----------------|---------------------------|
| 13              | 49516                  | 0.7870                        | .277                  | 1.000           | 3/4                       |
| 16              | 49517                  | 0.8760                        | .285                  | 1.155           | 3/4                       |
| 20              | 49511                  | 1.0950                        | .345                  | 1.280           | 7/8                       |
| 25              | 49512                  | 1.3763                        | .416                  | 1.593           | 1                         |
| 30              | 49513                  | 1.6264                        | .432                  | 1.906           | 1-1/4                     |
| 35              | 49514                  | 1.8764                        | .493                  | 2.155           | 1-5/16                    |
| 50              | 49515                  | 2.6269                        | .621                  | 2.988           | 1-3/4                     |

## Liner Bushings for Fixture Plates



Locating repeatability will determine if one primary and one secondary or two primary liners are needed. With two primary liners, repeatability of ±.0005" can be maintained if the two holes for receiver bushings are held to a centerline distance of ±.0002" tolerance.

### Note on Installation of Press Fit Liners & Back Mount Style Receiver Bushings:

To alleviate the possibility of binding the shank in the bore, the maximum interference fit between bore and bushing O.D. should not exceed .0005".

### Liner Dimensions

| Fixture Plate Thickness ±0.005 | Shank Diameter (mm) | Primary Liner Part Number | Secondary Liner Part Number | Liner O.D. +0.0000 -0.0004 |
|--------------------------------|---------------------|---------------------------|-----------------------------|----------------------------|
| .50                            | 13                  | 49705                     | 49805                       | 0.7518                     |
| .75                            | 13                  | 49706                     | 49806                       | 0.7518                     |
| .50                            | 16                  | 49707                     | 49807                       | 1.0018                     |
| .75                            | 16                  | 49708                     | 49808                       | 1.0018                     |
| .75                            | 20                  | 49701                     | 49801                       | 1.3772                     |
| 1.00                           | 20                  | 49702                     | 49802                       | 1.3772                     |
| .75                            | 25                  | 49711                     | 49811                       | 1.3772                     |
| 1.00                           | 25                  | 49712                     | 49812                       | 1.3772                     |
| .75                            | 30                  | 49721                     | 49821                       | 1.7523                     |

| Fixture Plate Thickness ±0.005 | Shank Diameter (mm) | Primary Liner Part Number | Secondary Liner Part Number | Liner O.D. +0.0000 -0.0004 |
|--------------------------------|---------------------|---------------------------|-----------------------------|----------------------------|
| 1.00                           | 30                  | 49722                     | 49822                       | 1.7523                     |
| .75                            | 35                  | 49731                     | 49831                       | 1.7523                     |
| 1.00                           | 35                  | 49732                     | 49832                       | 1.7523                     |
| 1.50                           | 35                  | 49733                     | 49833                       | 1.7523                     |
| 2.00                           | 35                  | 49734                     | 49834                       | 1.7523                     |
| .75                            | 50                  | 49741                     | 49841                       | 2.5025                     |
| 1.00                           | 50                  | 49742                     | 49842                       | 2.5025                     |
| 1.50                           | 50                  | 49743                     | 49843                       | 2.5025                     |
| 2.00                           | 50                  | 49744                     | 49844                       | 2.5025                     |

## Accessories

### Tapered Caps and Plugs

Keep debris out of your subplate's receiver bushings when not in use. Polyethylene caps snap in and out easily.



Packaged  
10 per  
pack.

| Receiver Bushing Diameter | Part Number |
|---------------------------|-------------|
| 13                        | 49201       |
| 16                        | 49202       |
| 20                        | 49203       |
| 25                        | 49204       |
| 30                        | 49205       |
| 35                        | 49206       |
| 50                        | 49207       |



### Lifting Handles

For easy handling of fixture plates up to 500 lbs.

| Part Number | Length | Ht.  | W    | Mounting Distance |
|-------------|--------|------|------|-------------------|
| 33701       | 4.21   | 1.42 | 0.83 | 3.68              |

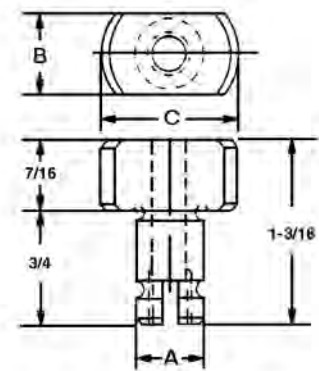
## Sine Fixture Keys



Locate subplates or fixture plates to slotted machine tables without having to slot the plate. Available in inch sizes from 1/2" to 7/8" slots, and in metric sizes from 14mm to 22mm slots.  
NOTE: See page 4.21 for dimensions.

| Part Number | A<br>+0.000<br>-0.0005 | B<br>Table Slot Size<br>+0.000<br>-0.0005 | C     | Part Number | A<br>+0.000<br>-0.013 | B<br>Table Slot Size (mm)<br>+0.000<br>-0.013 | C     |
|-------------|------------------------|-------------------------------------------|-------|-------------|-----------------------|-----------------------------------------------|-------|
| 39501       | .625                   | 1/2                                       | 1     | 39562       | 16                    | 14                                            | 1     |
| 39502       | .625                   | 9/16                                      | 1     | 39563       | 16                    | 16                                            | 1     |
| 39503       | .625                   | 5/8                                       | 1     | 39564       | 16                    | 18                                            | 1     |
| 39504       | .625                   | 11/16                                     | 1     | 39565       | 16                    | 20                                            | 1-1/8 |
| 39505       | .625                   | 3/4                                       | 1-1/8 | 39566       | 16                    | 22                                            | 1-1/8 |
| 39506       | .625                   | 13/16                                     | 1-1/8 |             |                       |                                               |       |
| 39507       | .625                   | 7/8                                       | 1-1/8 |             |                       |                                               |       |

NOTE: All shanks are 5/8" diameter



## Fast Acting Ball Lock® Shanks

| Ball Lock® Shank Diameter (mm) | Fixture Plate Thickness (in.) | FAST ACTING                                    |         |                                            |        |
|--------------------------------|-------------------------------|------------------------------------------------|---------|--------------------------------------------|--------|
|                                |                               | Jergens Ball Lock® Shank w/Jergens Thumb Screw |         | Jergens Ball Lock® Shank Adjustable Handle |        |
|                                |                               | Part Number                                    |         | Part Number                                |        |
|                                |                               | Assembly                                       | T-Screw | Assembly                                   | Handle |
| 16                             | 1/2                           | 49607-S                                        | 43904   | 49607-H                                    | 34314  |
|                                | 3/4                           | 49608-S                                        | 43904   | 49608-H                                    | 34315  |
| 20                             | 3/4                           | 49601-S                                        | 43904   | 49601-H                                    | 34315  |
|                                | 1                             | 49602-S                                        | 43905   | 49602-H                                    | 34316  |
| 25                             | 3/4                           | 49611-S                                        | 43907   | 49611-H                                    | 34328  |
|                                | 1                             | 49612-S                                        | 43908   | 49612-H                                    | 34329  |
| 30                             | 3/4                           | 49621-S                                        | 43910   | 49621-H                                    | 34334  |
|                                | 1                             | 49622-S                                        | 43911   | 49622-H                                    | 34335  |
| 35                             | 3/4                           | 49631-S                                        | 43913   | 49631-H                                    | 34339  |
|                                | 1                             | 49632-S                                        | 43913   | 49632-H                                    | 34339  |
|                                | 1-1/2                         | 49633-S                                        | 43914   | N/A                                        |        |
|                                | 2                             | 49634-S                                        | 43914   | N/A                                        |        |



Thumb Screw

- Fast acting thumb screws 2 1/2 turns. No tools needed.



Adjustable Handle

- Handle can be moved out of the work area to avoid interference.

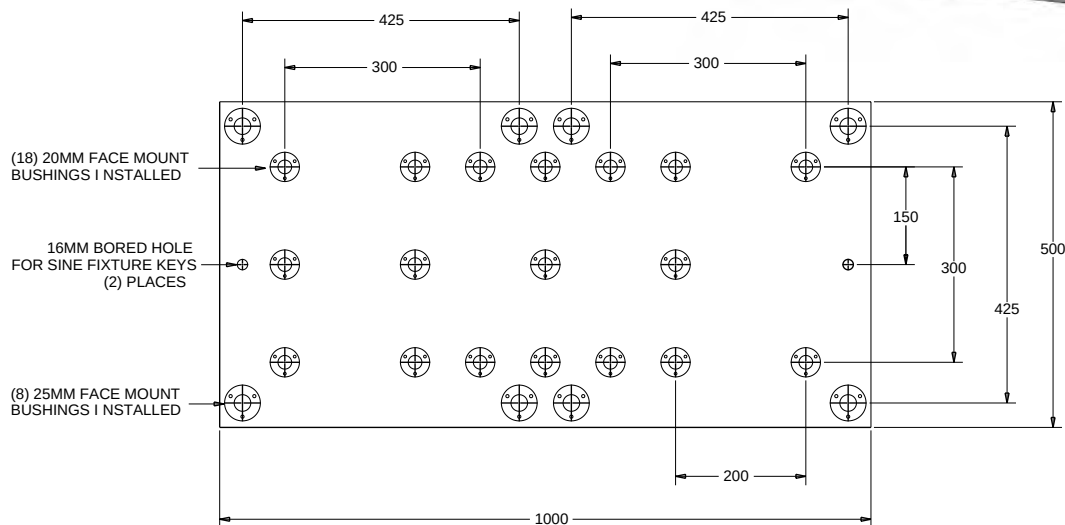
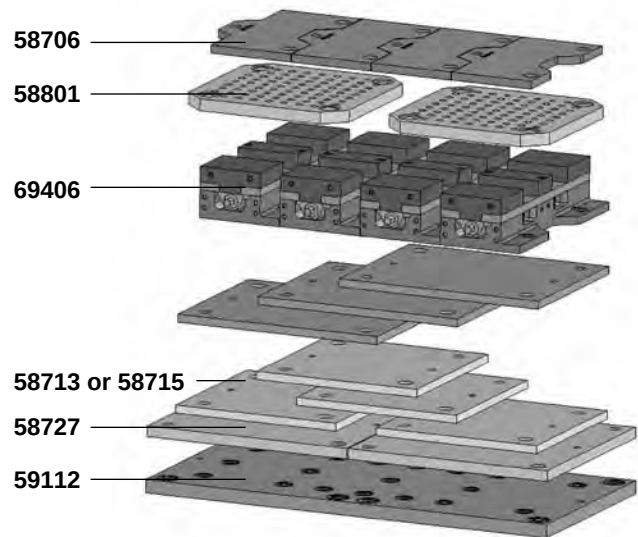
## Multi-Purpose Subplate

### 1000x500 Multi-Purpose Subplate

| Part Number  | Wt. (kg) |
|--------------|----------|
| <b>59112</b> | 130      |

The Jergens Multi-Purpose Subplate accommodates a wide variety of fixture plates and vises. This versatility facilitates using the same VMC for diverse products in repetitive runs-long and short batch sizes.

- FreMax™ 15 Steel or Equivalent
- Thickness: 31.75mm ±0.13mm
- Parallel within 0.025mm



## Fixture Plate Options for Multi-Purpose Subplates – Aluminum or Steel

| Fixture Plate*/Vise Part Number             | Thickness of Fixture Plate | Number of Fixture Plates/Vise That Mount on Multi-Purpose Subplate | Receiver Bushing Center Distance | Receiver Bushing Size | Required Ball Lock® Shank Part Number | Number of Shanks Required Per Fixture Plate/Vise |
|---------------------------------------------|----------------------------|--------------------------------------------------------------------|----------------------------------|-----------------------|---------------------------------------|--------------------------------------------------|
| <b>58713</b> (350 x 350) Fixture Plate      | 20mm                       | 2                                                                  | 300 x 300                        | 20 mm                 | <b>49651</b>                          | 4                                                |
| <b>58715</b> (400 x 400) Fixture Plate      | 20mm                       | 2                                                                  | 300 x 300                        | 20 mm                 | <b>49651</b>                          | 4                                                |
| <b>58801</b> (400 x 400) Modular Grid Plate | 30mm**                     | 2                                                                  | 300 x 300                        | 20 mm                 | <b>49652</b>                          | 4                                                |
| <b>58706</b> Jigsaw Interlocking Plate      | 20mm                       | 4                                                                  | 300 x 200                        | 20 mm                 | <b>49651</b>                          | 3                                                |
| <b>58727</b> (500 x 500) Fixture Plate      | 25mm                       | 2                                                                  | 425 x 425                        | 25 mm                 | <b>49662</b>                          | 4                                                |
| <b>69406</b> 150mm Jigsaw Vise              | 20mm                       | 4                                                                  | 300 x 200                        | 20 mm                 | <b>49651</b>                          | 3                                                |

\* See next page for dimensional data on fixture plates. Part numbers shown for aluminum plates, also available in steel.

\*\* Counterbored to 25mm at mounting holes.

## Fixture Plates for Use on Multi-Purpose Subplate

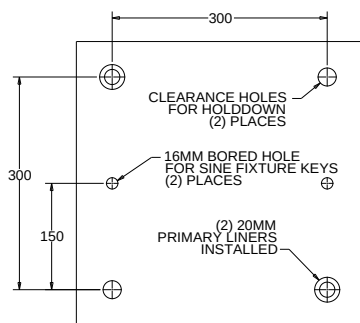
### 350x350x20mm Fixture Plate

| Aluminum Plate<br>Part Number | Wt. (kg) | Steel Plate<br>Part Number | Wt. (kg) |
|-------------------------------|----------|----------------------------|----------|
| 58713                         | 6        | 58813                      | 19       |

### 400x400 Fixture Plate

| Aluminum Plate<br>Part Number | Wt. (kg) | Steel Plate<br>Part Number | Wt. (kg) |
|-------------------------------|----------|----------------------------|----------|
| 58715                         | 8        | 58815                      | 25       |

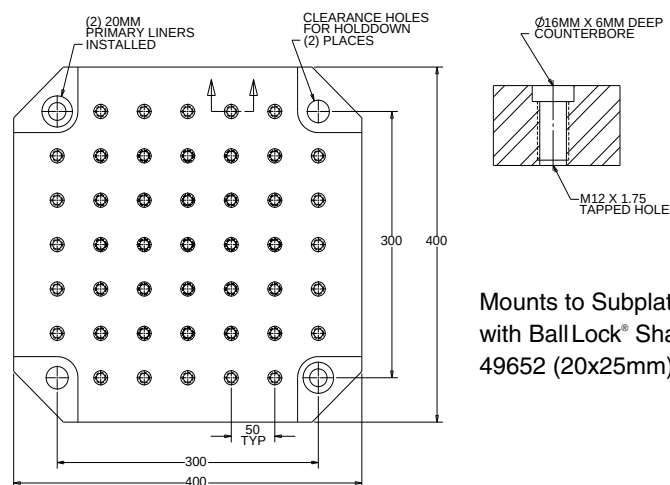
- Cast Aluminum or FreMax™ 15 Steel or equivalent
- Thickness: 20mm ±0.13mm
- Parallel within 0.025mm Steel
- Mounts to subplates with BallLock® Shank 49651 (20x20mm)



### 400x400 Modular Grid Fixture Plate

| Aluminum Plate<br>Part Number | Wt. (kg) |
|-------------------------------|----------|
| 58801                         | 38       |

- FreMax™ 15 Steel or equivalent
- Thickness: 28.57mm ±0.13mm
- Parallel within 0.025mm Steel

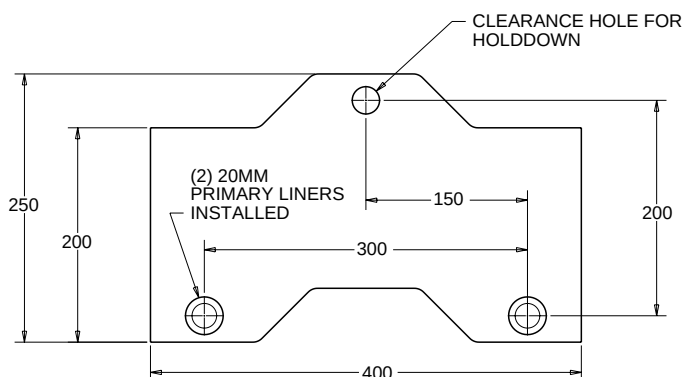


Mounts to Subplate  
with BallLock® Shank  
49652 (20x25mm)

### Jigsaw Interlocking Fixture Plate

| Aluminum Plate<br>Part Number | Wt. (kg) | Steel Plate<br>Part Number | Wt. (kg) |
|-------------------------------|----------|----------------------------|----------|
| 58706                         | 4        | 58806                      | 12       |

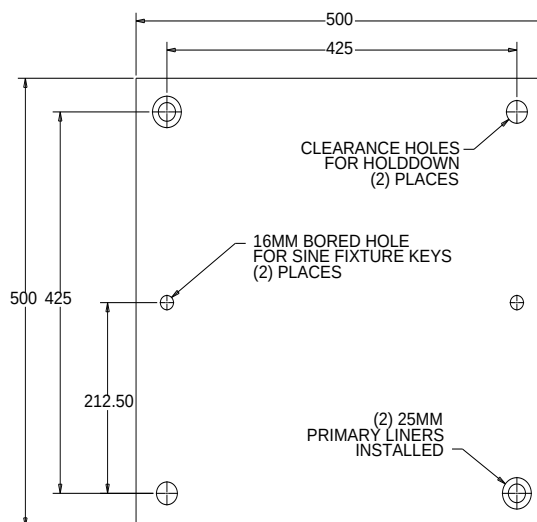
- Material: Cast Aluminum or FreMax™ 15 Steel or equivalent
- Thickness: 20mm ±0.13mm
- Parallel within 0.025mm Steel
- For use with narrow base 100mm or 150mm vise models
- Design allows close spacing of vises for more parts per run
- Mounts to Subplates using Ball Lock® Shank 44651 (20x20mm)
- Useful for high density fixturing



### 500x500x25mm Fixture Plate

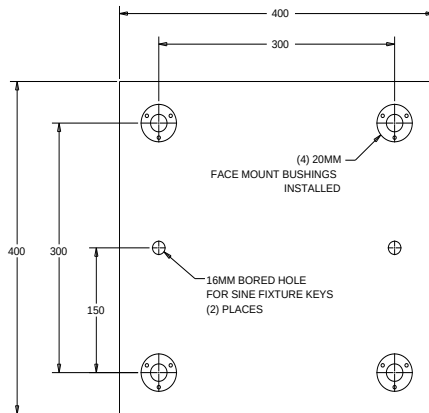
| Aluminum Plate<br>Part Number | Wt. (kg) | Steel Plate<br>Part Number | Wt. (kg) |
|-------------------------------|----------|----------------------------|----------|
| 58727                         | 17       | 58827                      | 48       |

- Cast Aluminum or FreMax™ 15 Steel or equivalent
- Thickness: 25mm ±0.13mm
- Parallel within 0.025mm Steel
- Mounts to Subplates using Ball Lock® Shank 49662 (25x25mm)





## Pre-Machined Ball Lock® Steel Subplate

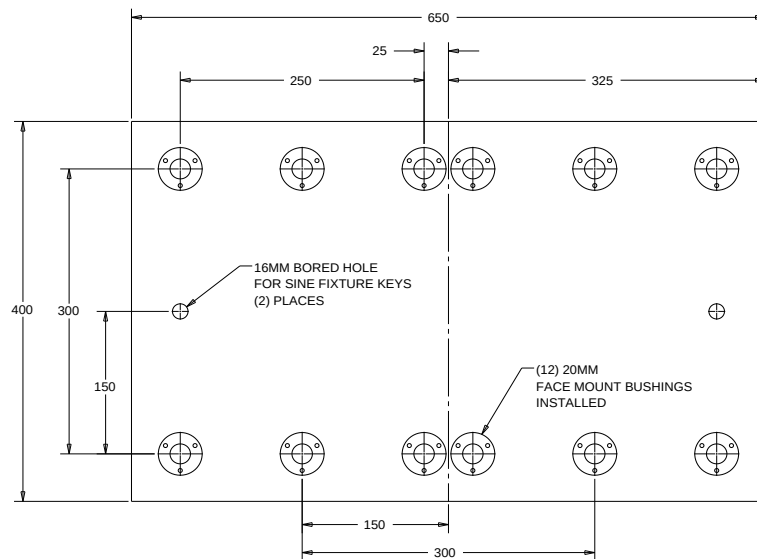


### 400 x400 Subplate

| Part Number  | Wt. (kg)  |
|--------------|-----------|
| <b>59101</b> | <b>37</b> |

Equipped with four 20mm receiver bushings for use with 350x350 or 400x400 (mm) fixture plates. Ideal for horizontal machining centers or multiple pallet machining centers.

- FreMax™ 15 steel plate or equivalent
- Thickness: 28.57mm ±0.13mm
- Parallel within 0.025mm



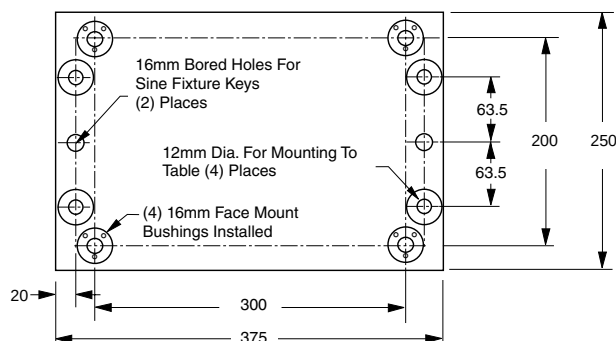
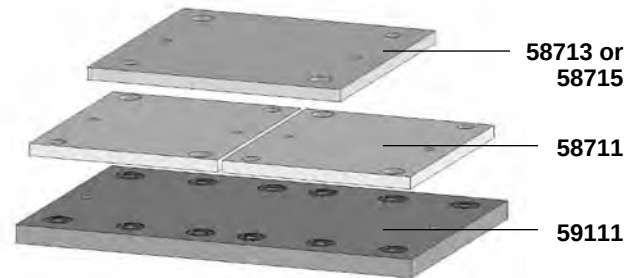
### 650x400 Dual Station Subplate

| Part Number  | Wt. (kg)  |
|--------------|-----------|
| <b>59111</b> | <b>58</b> |

Equipped with twelve installed 20mm receiver bushings to easily locate and mount Jergens Standard Fixture Plates.

- Ideal for vertical machining centers
- Thickness: 28.57mm ±0.13mm
- Parallel within 0.025mm

| Aluminum Plate Part Number | Steel Plate Part Number | Number of Fixture Plates | Plate Width and Length (mm) |
|----------------------------|-------------------------|--------------------------|-----------------------------|
| <b>58713</b>               | <b>58813</b>            | 1                        | 350x350                     |
| <b>58715</b>               | <b>58815</b>            | 1                        | 400x400                     |
| <b>58711</b>               | <b>58811</b>            | 2                        | 300x350                     |



### 250x375 Bridgeport™ - Style Subplate

| Part Number  | Wt. (kg)  |
|--------------|-----------|
| <b>59121</b> | <b>15</b> |

Equipped with four installed 16mm receiver bushings and 12mm mounting holes. Used with the Bridgeport™ style fixture plates 58731 or 58831.

- Thickness: 19.05mm ±0.13mm
- Parallel within 0.025mm

Ball Lock® Quick Change Kits include all components needed in a single package. See page 1.25 for details.

## Ball Lock® Fixture Plates

- Cast Aluminum; or FreMax™ 15 Steel or equivalent
- Thickness  $\pm 0.13\text{mm}$
- Parallel within .025mm Steel
- 6061-T651 plates, flat within 0.03mm available upon request

### Ball Lock® Fixture Plates with 2 Primary Liners Installed

| Part Number |              |       |              | Plate Dimensions (mm) | Plate Thickness $\pm 0.13(\text{mm})$ | Ball Lock® Shank Size (mm) | Ball Lock® Shank Part Number |
|-------------|--------------|-------|--------------|-----------------------|---------------------------------------|----------------------------|------------------------------|
| Aluminum    | Weight (Kgs) | Steel | Weight (Kgs) |                       |                                       |                            |                              |
| 58706       | 4            | 58806 | 12           | 250 x 400             | 20                                    | 20                         | 49651                        |
| 58711       | 5            | 58811 | 16           | 300 x 350             | 20                                    | 20                         | 49651                        |
| 58713       | 6            | 58813 | 19           | 350 x 350             | 20                                    | 20                         | 49651                        |
| 58715       | 8            | 58815 | 25           | 400 x 400             | 20                                    | 20                         | 49651                        |
| 58727       | 17           | 58827 | 48           | 500 x 500             | 25                                    | 25                         | 49662                        |
|             |              | 58801 | 38           | 400 x 400             | 28.57                                 | 20                         | 49652                        |
| 58731       | 5            | 58831 | 15           | 375 x 250             | 20                                    | 16                         | 49657                        |

- Machined to close tolerances
- Repeatability  $\pm 0.013\text{mm}$  or better
- Reduces fixture set-up and assembly time
- Provided with 16mm bored holes for sine fixture keys
- For horizontal or vertical machining centers, Tool Room Mills machines, or multiple pallet machining centers

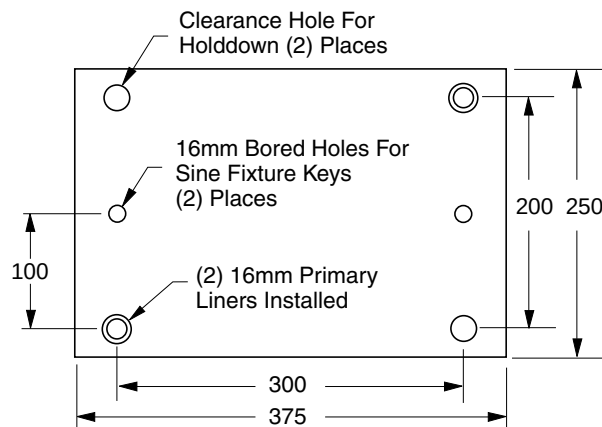
#### Custom Sizes Available

Jergens will make Ball Lock® fixture plates or subplates to your specifications. Call 1-216-486-5540 for further information.

#### 375x250x20mm Fixture Plate Bridgeport™ Style

| Aluminum Plate Part Number | Wt. (kg) |
|----------------------------|----------|
| 58731                      | 5        |

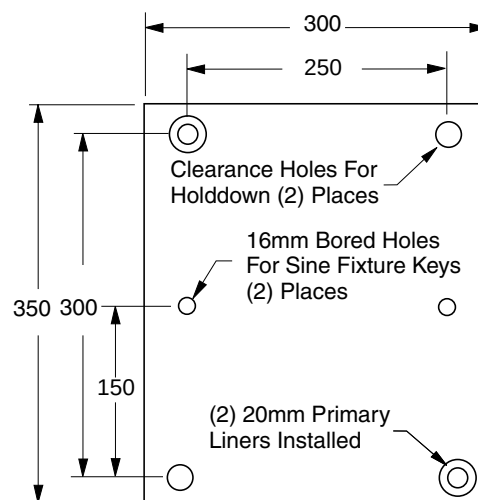
| Steel Plate Part Number | Wt. (kg) |
|-------------------------|----------|
| 58831                   | 15       |



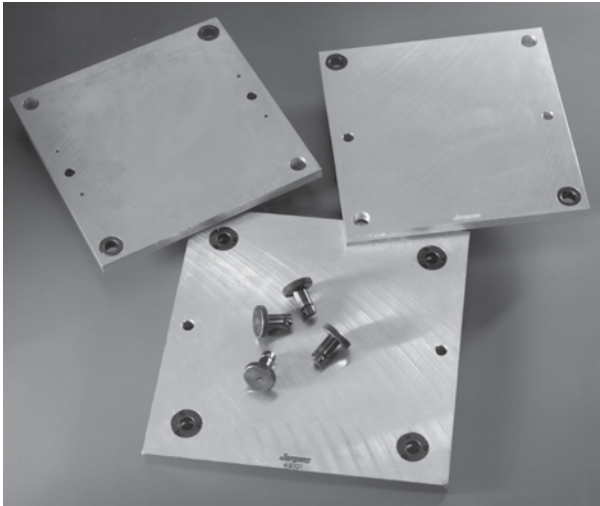
#### 300x350x20mm Fixture Plate

| Aluminum Plate Part Number | Wt. (kg) |
|----------------------------|----------|
| 58711                      | 5        |

| Steel Plate Part Number | Wt. (kg) |
|-------------------------|----------|
| 58811                   | 16       |



## Quick Change Kits

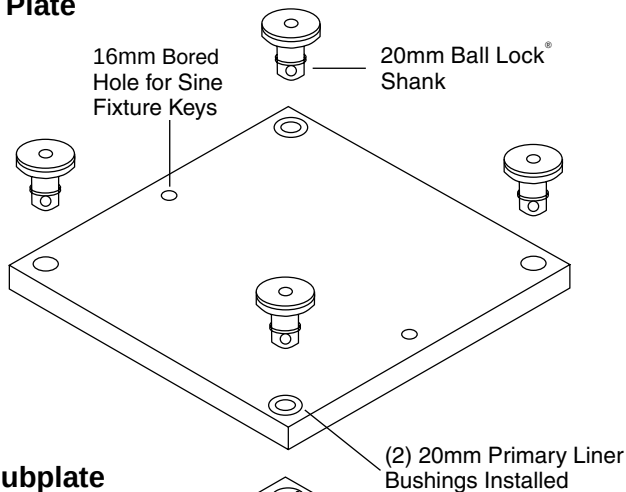


The Jergens Ball Lock® Quick Change Kits speed fixture changeover in all types of manufacturing operations. Each kit includes two aluminum fixture plates with 2 primary liner bushings installed; one steel subplate with receiver bushings installed, and four 20mm Ball Lock® shanks with working loads of 3000 lbs. each. While one fixture plate is on the machine, the operator can load parts on the other. This minimizes downtime for true set-up reduction. To enable the subplate to be mounted on a slotted table without the need to indicate the subplate, sine fixture keys can be used. The sine fixture key reamed holes are oriented parallel to the receiver bushings on the subplate and to the liner bushings on the fixture plate. These also allow the fixture plate to be mounted on a toolroom mill without the need to indicate it. This is extremely useful when machining location points on your fixture.

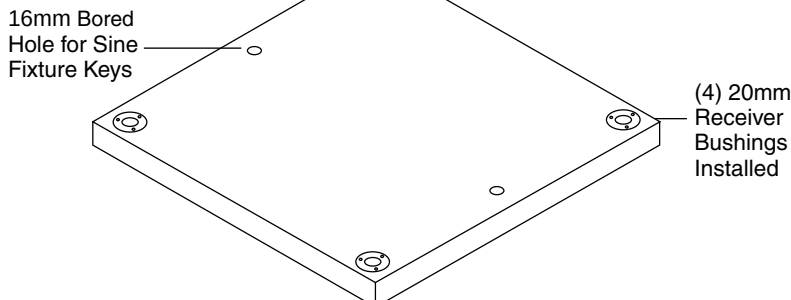


**Everything You Need to Change Fixtures in Less Than One Minute**

### Aluminum Fixture Plate



### Steel Subplate



### Quick Change Kits

| Part No.     | Kit Includes                                                                                                                                                                                      |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>59002</b> | 2 - 58715 (400x400x20) aluminum fixture plates with 20mm liner bushings installed<br>1 - 59101 (400x400x25) steel subplate with receiver bushings installed<br>4 - 20mm Ball Lock® Shanks (49651) |

### Custom Kits Available

Jergens manufactures ready to use kits including Ball Lock® subplate and fixture plates.

For a special kit tailored to your CNC machine, please provide:

Name and Type of Machine \_\_\_\_\_

Travel of Machine Table (x, y, z) \_\_\_\_\_

Dimensions of Machine Table (x and y) \_\_\_\_\_

Maximum Weight allowed on Machine Table \_\_\_\_\_

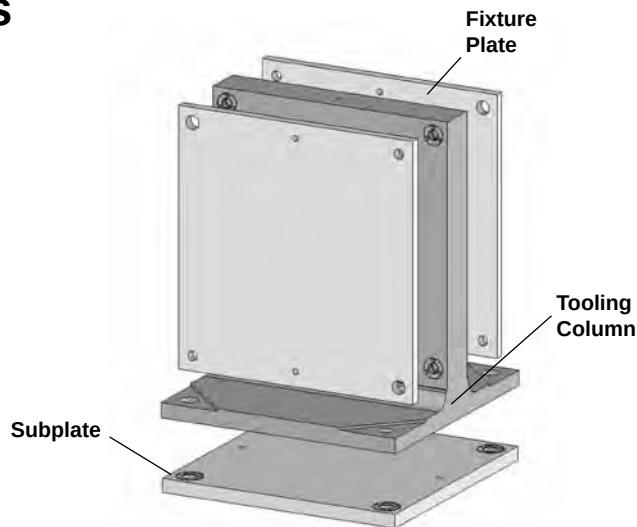
T-slot Width and Center to Center Distance \_\_\_\_\_

## Pre-Machined Ball Lock® T-Columns

- Class 40 Cast Iron
- Also available in Aluminum
- Ball Lock® Receiver Bushings and Liners installed
- Provides accurate fixturing base for CNC machining centers
- Perpendicularity is 0.025 mm per 250 mm

### Custom Sizes Available with or without Ball Lock®

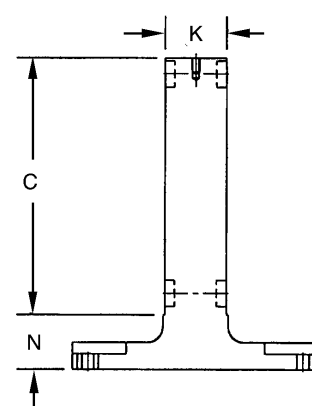
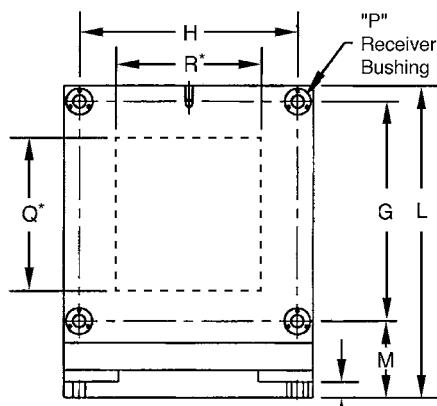
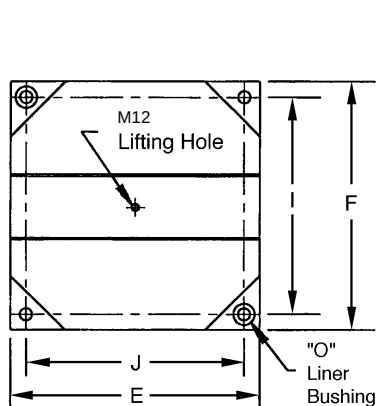
We are able to quote you on your special requirement with or without the Ball Lock® Mounting System.  
 Call 1-216-486-5540 for design specification information.



### Cast Iron T-Columns With Ball Lock® Receiver Bushings Installed

See page 1.28 for Metric Fixture Plates and Subplates

| Pallet Size (mm) | Part Number  | C   | D  | E   | F   | G   | H   | I   | J   | K   | L   | M     | N  | O (mm) | P (mm) | Wt. (kg) |
|------------------|--------------|-----|----|-----|-----|-----|-----|-----|-----|-----|-----|-------|----|--------|--------|----------|
| 400              | <b>69151</b> | 410 | 25 | 400 | 400 | 350 | 350 | 350 | 350 | 100 | 500 | 125   | 90 | 20     | 20     | 190      |
| 500              | <b>69161</b> | 560 | 25 | 500 | 500 | 475 | 425 | 425 | 425 | 120 | 650 | 137.5 | 90 | 25     | 25     | 310      |
| 630              | <b>69171</b> | 660 | 40 | 630 | 630 | 575 | 550 | 525 | 525 | 100 | 750 | 137.5 | 90 | 35     | 25     | 500      |



**\*Note:** Window sections are also available on T-Columns. Specify window size and location (Q and R Dimensions).

### Corresponding Fixture Plates, Subplates and Ball Lock® Shanks

| Pallet Size (mm) | T-Column Part Number | Aluminum Fixture Plate Part Number | Steel Fixture Plate Part Number | Fixture Plate Size | Fixture Plate Ball Lock® Shank Part Number | Shank Size | Subplate Part Number | Subplate Ball Lock® Shank Part Number | Shank Size |
|------------------|----------------------|------------------------------------|---------------------------------|--------------------|--------------------------------------------|------------|----------------------|---------------------------------------|------------|
| 400              | <b>69151</b>         | <b>58717</b>                       | <b>58817</b>                    | 400 x 400          | <b>49651</b>                               | 20 x 20    | <b>59102</b>         | <b>49652</b>                          | 20 x 25    |
| 500              | <b>69161</b>         | <b>58745</b>                       | <b>58845</b>                    | 500 x 550          | <b>49662</b>                               | 25 x 25    | <b>59103</b>         | <b>49662</b>                          | 25 x 25    |
| 630              | <b>69171</b>         | <b>58746</b>                       | <b>58846</b>                    | 625 x 650          | <b>49662</b>                               | 25 x 25    | <b>59104</b>         | <b>49683</b>                          | 35 x 40    |

Use Hoist Ring **23462**, see page 11.9 for lifting and handling – Order separately.

### Engineering Changes

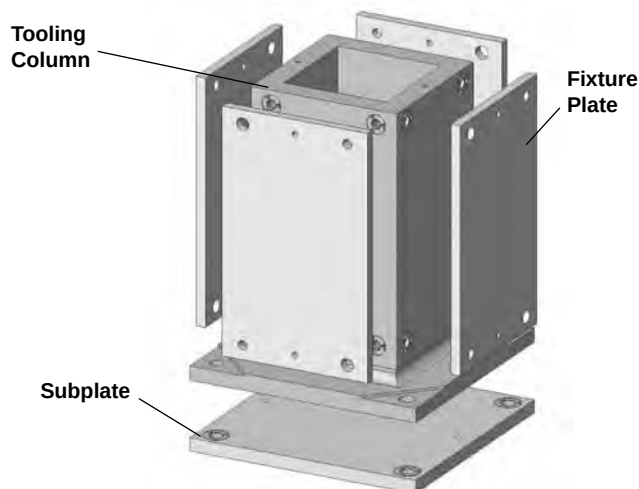
Product improvement is a continuing process at Jergens. Specifications and engineering data are subject to change after publishing. Contact Jergens Technical Sales Department to verify any dimensions or specifications.

## Pre-Machined Ball Lock® 4-Sided Tooling Columns

- Class 40 cast iron
- Also available in Aluminum
- Ball Lock® Receiver Bushings and Liner Bushings installed
- Provides accurate fixturing base for CNC machining centers
- Perpendicularity is 0.025 mm per 250 mm

### Custom Sizes Available with or without Ball Lock®

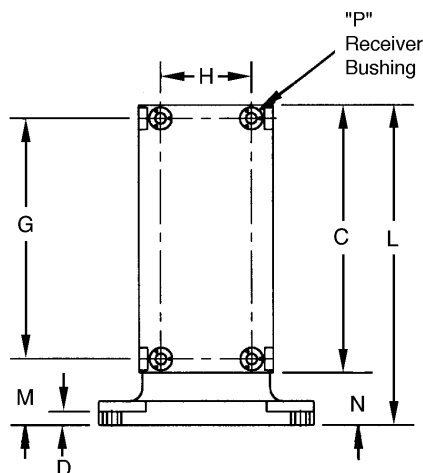
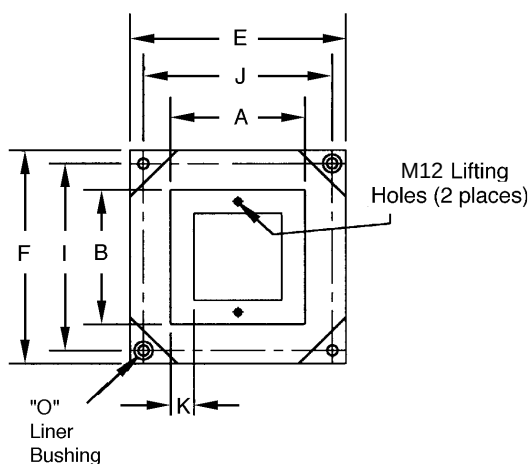
We are able to quote you on your special requirement with or without the Ball Lock® Mounting System.  
Call 1-216-486-5540 for design specification information.



### Cast Iron 4-Sided Tooling Columns With Ball Lock® Receiver Bushings Installed

See page 1.26 for Metric Fixture and Subplates

| Pallet Size (mm) | Part Number | A   | B   | C   | D  | E   | F   | G   | H   | I   | J   | K  | L   | M     | N  | O (mm) | P (mm) | Wt. (kg) |
|------------------|-------------|-----|-----|-----|----|-----|-----|-----|-----|-----|-----|----|-----|-------|----|--------|--------|----------|
| 400              | 69051       | 250 | 250 | 505 | 25 | 400 | 400 | 450 | 150 | 350 | 350 | 40 | 600 | 125   | 95 | 20     | 20     | 225      |
| 500              | 69061       | 300 | 300 | 630 | 25 | 500 | 500 | 550 | 175 | 425 | 425 | 40 | 725 | 137.5 | 95 | 25     | 25     | 320      |
| 630              | 69071       | 400 | 400 | 655 | 40 | 630 | 630 | 575 | 275 | 525 | 525 | 45 | 750 | 137.5 | 95 | 35     | 25     | 495      |



### Corresponding Fixture Plates, Subplates and Ball Lock® Shanks

| Pallet Size (mm) | T-Column Part Number | Aluminum Fixture Plate Part Number | Steel Fixture Plate Part Number | Fixture Plate Size | Fixture Plate Ball Lock® Shank Part Number | Shank Size | Subplate Part Number | Subplate Ball Lock® Shank Part Number | Shank Size |
|------------------|----------------------|------------------------------------|---------------------------------|--------------------|--------------------------------------------|------------|----------------------|---------------------------------------|------------|
| 400              | 69051                | 58741                              | 58841                           | 250 x 500          | 49651                                      | 20 x 20    | 59102                | 49652                                 | 20 x 25    |
| 500              | 69061                | 58742                              | 58842                           | 300 x 625          | 49662                                      | 25 x 25    | 59103                | 49662                                 | 25 x 25    |
| 630              | 69071                | 58743                              | 58843                           | 400 x 650          | 49662                                      | 25 x 25    | 59104                | 49683                                 | 35 x 40    |

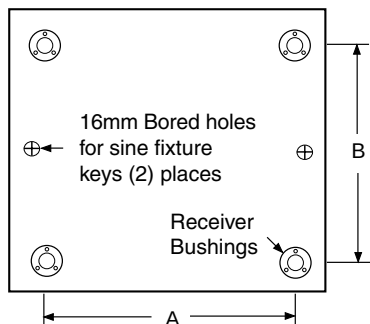
Use Hoist Ring **23462**, see page 11.9 for lifting and handling – Order separately.

### Engineering Changes

Product improvement is a continuing process at Jergens. Specifications and engineering data are subject to change after publishing. Contact Jergens Technical Sales Department to verify any dimensions or specifications.



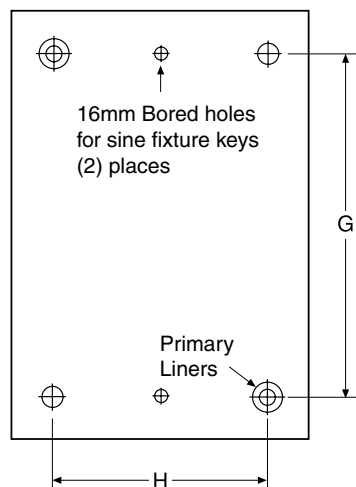
## Subplates for Tooling Columns and Fixture Plates



### Standard Steel Subplates for Tooling Columns

Subplate Mounting holes can be provided per customer specification.  
 Supplied with Ball Lock® Receiver Bushings installed.

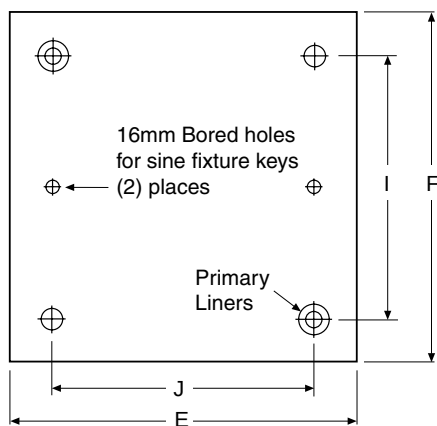
| Part Number | Pallet Size (mm) | For Tooling Columns | Ball Lock® Pattern |         | Receiver Size (mm) | Thickness of Subplate (mm) ±0.13 | Wt (Kgs) |
|-------------|------------------|---------------------|--------------------|---------|--------------------|----------------------------------|----------|
|             |                  |                     | A (mm)             | B (mm)  |                    |                                  |          |
| 59102       | 400              | 69151/69051         | 350                | 350     | 20                 | 28.57                            | 31       |
| 59103       | 500              | 69161/69061         | 425                | 425     | 25                 | 31.75                            | 59       |
| 59103-C*    | 500              | 69151, 69051        | 350/425            | 350/425 | 20/25              | 31.75                            | 59       |
|             |                  | 69161, 69061        | Dual               | Dual    | Dual               |                                  |          |
| 59104       | 630              | 69171/69071         | 525                | 525     | 35                 | 34.92                            | 124      |



### Fixture Plates for Standard Tooling Columns and T-Columns

Supplied with 2 primary Ball Lock® Liner Bushings installed.

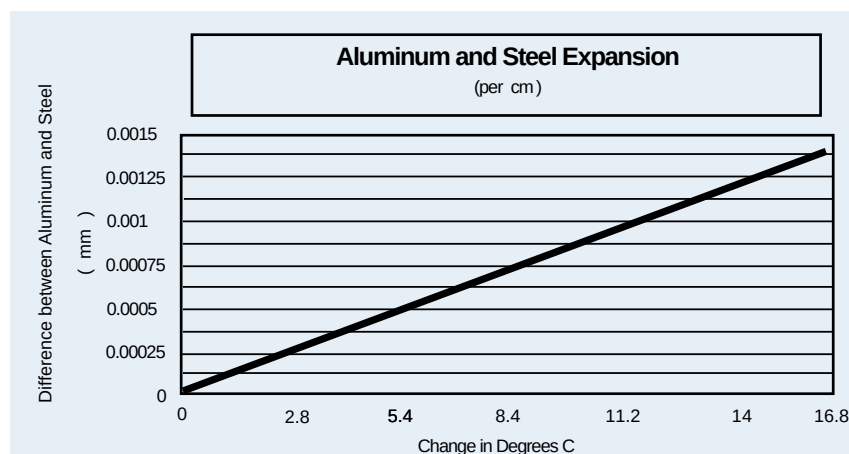
| Pallet Size (mm) | Part Number |      |       |      | For Tooling Columns | Type | Fixture Plate Size (mm) | Fixture Plate Thickness (mm) ±0.13 | Ball Lock® Pattern |        | Liner Size (mm) |
|------------------|-------------|------|-------|------|---------------------|------|-------------------------|------------------------------------|--------------------|--------|-----------------|
|                  | Aluminum    | (kg) | Steel | (kg) |                     |      |                         |                                    | H (mm)             | G (mm) |                 |
| 400              | 58741       | 7    | 58841 | 19   | 69051               | 4-S  | 250x500                 | 150                                | 450                | 20     | 20              |
| 500              | 58742       | 13   | 58842 | 36   | 69061               | 4-S  | 300x625                 | 175                                | 550                | 25     | 25              |
| 630              | 58743       | 18   | 58843 | 50   | 69071               | 4-S  | 400x650                 | 275                                | 575                | 25     | 25              |
| 400              | 58717       | 8    | 58817 | 25   | 69151               | T    | 400x400                 | 350                                | 350                | 20     | 20              |
| 500              | 58745       | 19   | 58845 | 53   | 69161               | T    | 500x550                 | 425                                | 475                | 25     | 25              |
| 630              | 58746       | 27   | 58846 | 63   | 69171               | T    | 625x650                 | 550                                | 575                | 25     | 25              |



### Fixture Plates for Tooling Column Subplates

Supplied with 2 primary Ball Lock® Liner Bushings installed.

| Pallet Size (mm) | Part Number |      |       |      | For Subplate | Plate Dim. |        | Fixture Plate Thickness ±0.13 (mm) | Ball Lock® Pattern |        | Liner Size (mm) |
|------------------|-------------|------|-------|------|--------------|------------|--------|------------------------------------|--------------------|--------|-----------------|
|                  | Aluminum    | (kg) | Steel | (kg) |              | E (mm)     | F (mm) |                                    | I (mm)             | J (mm) |                 |
| 400              | 58717       | 8    | 58817 | 25   | 59102        | 400        | 400    | 20                                 | 350                | 350    | 20              |
| 500              | 58727       | 17   | 58827 | 48   | 59103        | 500        | 500    | 25                                 | 425                | 425    | 25              |
| 630              | 58732       | 27   | 58832 | 76   | 59104        | 630        | 630    | 25                                 | 525                | 525    | 35              |



NOTE: Aluminum and steel expand at different rates. Please take this information into consideration when creating your own Ball Lock® fixture and subplates.

## Ball Lock® For 4th Axis Rotary Indexers

### Problem:

Rotary indexers increase the versatility of vertical machining centers, yet they offer one major challenge: set-up is so time-consuming that it may limit a machine's flexibility. In many cases, machinists dedicate their 4th Axis tool to a single machine to avoid the agony of an extended set-up and changeover.

### Benefits:

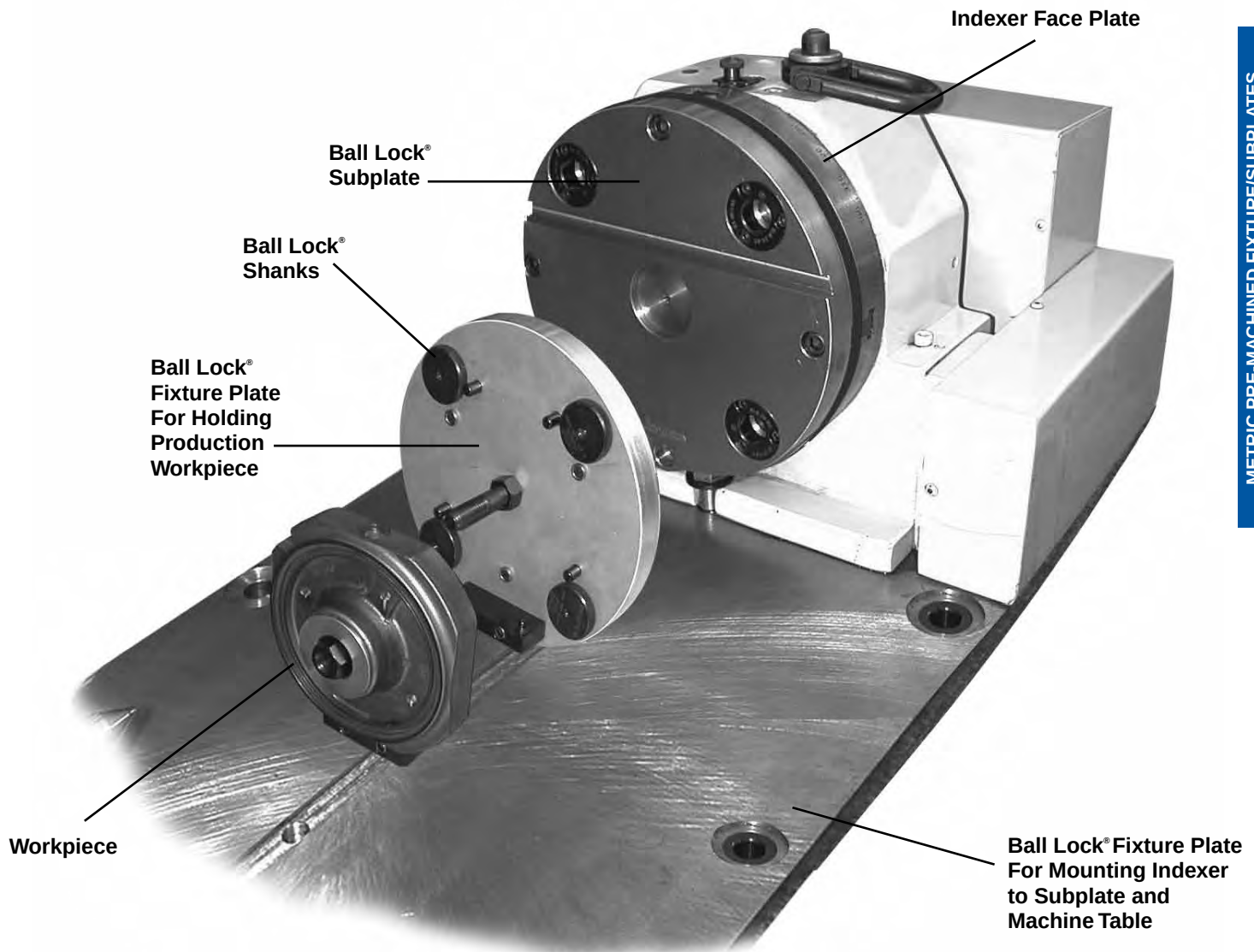
- Maximize indexer utilization
- Eliminate lengthy set-ups
- Accurate fixture plate changeover in seconds

### Jergen's Solution:

Ball Lock® Mounting System for Indexers provides a double solution.

First, Ball Lock® mounting plates free up your machine for additional work by allowing a fast and accurate installation and removal of the complete indexer. Avoid hours of set up. The Ball Lock® System does it in minutes, with repeatability at  $\pm .0005"$  ( $\pm .013\text{mm}$ ). Low profile, positive clamping, proven in over many years of field use.

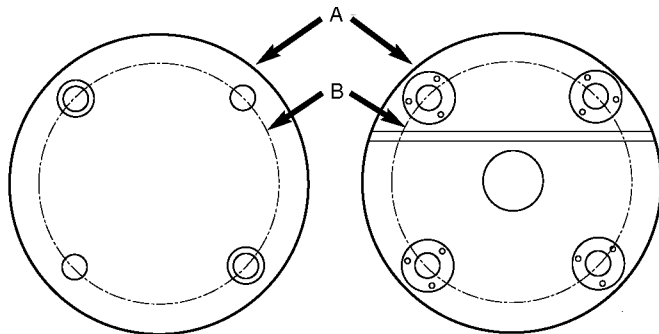
Second, the Ball Lock® System provides your fixture plate changeover. By mounting the round subplate to the indexer faceplate, you'll "plug-in" new fixtures in record time (less than 60 seconds).



Subplates and fixture plates come with bushings pre-installed.

## Round Ball Lock® Fixture Plates and Subplates

### Standard Round



Fixture Plate

Subplate

Cast Aluminum, FreeMax™ or Steel equivalent

### Fixture Plate (mm)

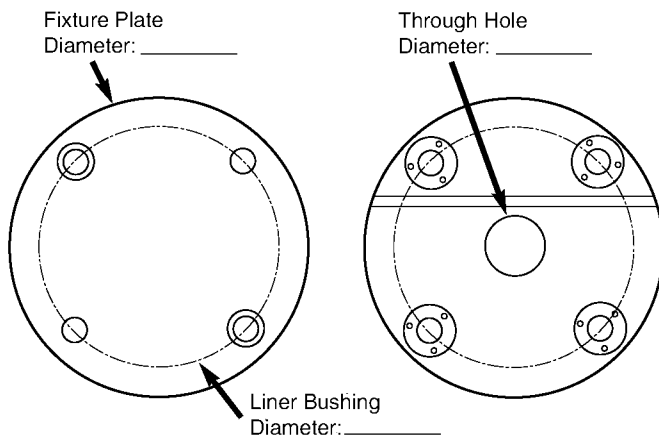
| Part No. | A   | B   | Thickness | Ball Lock®<br>Liner | Ball Lock®<br>Shank | Weight<br>(Kgs) |
|----------|-----|-----|-----------|---------------------|---------------------|-----------------|
| 58707    | 200 | 150 | 20        | 16                  | 49657               | 1.6             |
| 58708    | 250 | 200 | 25        | 20                  | 49652               | 3.2             |
| 58709    | 300 | 250 | 25        | 20                  | 49652               | 5.0             |

### Subplate(mm)

| Part No. | A   | B   | Thickness | Ball Lock®<br>Receiver | Center<br>Hole | Weight<br>(Kgs) |
|----------|-----|-----|-----------|------------------------|----------------|-----------------|
| 59107    | 200 | 150 | 20        | 16                     | 25             | 5.0             |
| 59108    | 250 | 200 | 25        | 20                     | 50             | 9.6             |
| 59109    | 300 | 250 | 25        | 20                     | 50             | 15.0            |

Note: Equivalent system available in inch dimensions.

### Custom Round Plates



#### Indexer:

Make: \_\_\_\_\_

Model: \_\_\_\_\_

Diameter: \_\_\_\_\_

Light Duty or Heavy Duty: \_\_\_\_\_

Through Hole Bore: \_\_\_\_\_

#### CNC Machine:

Make: \_\_\_\_\_

Model: \_\_\_\_\_

Weight Capacity: \_\_\_\_\_

#### Indexer Faceplate:

T-Slot Size: \_\_\_\_\_

Configuration/Orientation: \_\_\_\_\_

or

Drilled Tapped Hole Size: \_\_\_\_\_

Configuration/Orientation: \_\_\_\_\_

### Engineering Changes

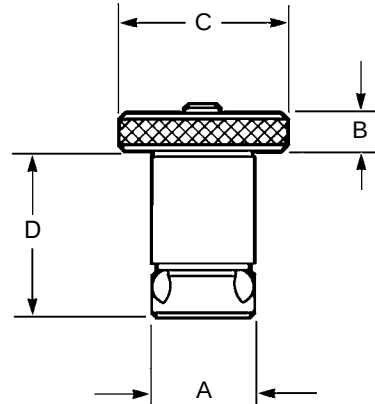
Product improvement is a continuing process at Jergens. Specifications and engineering data are subject to change without notice. If current information is critical to your design, it is suggested that you contact Jergens Technical Sales Department to verify any dimensions or specifications.

## Locating and Clamping Shanks



U.S. Patents: 3,498,653  
4,135,418

- Material: Shank/Bushing, AISI 4340  
Liner, 52100
- Finish: Black Oxide
- Heat Treat: Shanks, RC 40-45  
Bushings, RC 50-54  
Liners, RC 62-64
- Operating Temperature Range:  
-30°C to 200°C
- Stainless Steel available



## Replacement Kits



### Each Kit Includes:

- Replacement Screw
- Locking Balls
- Drive Ball
- O-Ring

Any Ball Lock® application requires at least two sets of shanks, receiver bushings and liners. The liners are placed into the fixture plate to insure extremely accurate positioning. If more than two shanks are required (to provide additional hold down force), omit the liner bushing so that these additional holes will not interfere with your primary locating holes.

See page 1.33 for Fast Acting Shanks.

## Locating and Clamping Shank Dimensions

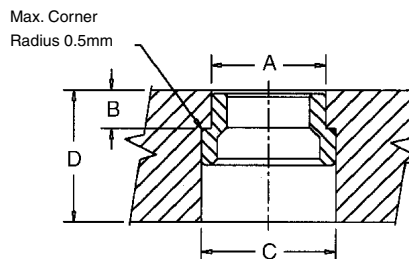
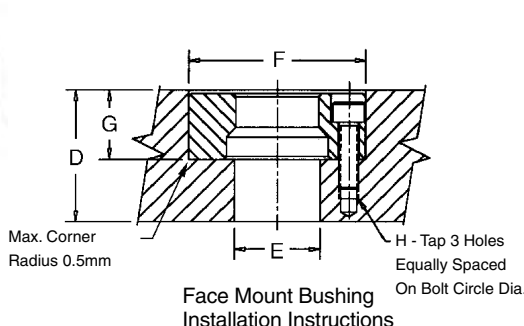
| Shank Diameter (mm)<br>A | Fixture Plate Thickness ±0.13mm | Shank Part Number | Head of Shank |               | D    | Hex Wrench Size For Set Screw | Maximum            |                     | Recommended        |                     | Shank Repair Kit Part Number |
|--------------------------|---------------------------------|-------------------|---------------|---------------|------|-------------------------------|--------------------|---------------------|--------------------|---------------------|------------------------------|
|                          |                                 |                   | Height<br>B   | Diameter<br>C |      |                               | Screw Torque (N.m) | Holddown Force (KN) | Screw Torque (N.m) | Holddown Force (KN) |                              |
| 13                       | 13                              | 49655             | 6             | 22            | 27.6 | 2.5                           | 1.2                | 3.3                 | 1                  | 2.7                 | 49955                        |
|                          | 20                              | 49656             |               |               | 34.6 |                               |                    |                     |                    |                     | 49956                        |
| 16                       | 20                              | 49657             | 8             | 32            | 36.5 | 3                             | 4.5                | 5.3                 | 3                  | 3.5                 | 49957                        |
|                          | 25                              | 49658             |               |               | 41.5 |                               |                    |                     |                    |                     | 49958                        |
| 20                       | 20                              | 49651             | 10            | 40            | 39.5 | 3                             | 5.3                | 13.3                | 4                  | 10                  | 49951                        |
|                          | 25                              | 49652             |               |               | 44.5 |                               |                    |                     |                    |                     | 49952                        |
| 25                       | 20                              | 49661             | 10            | 45            | 44.0 | 4                             | 11                 | 30                  | 9                  | 23                  | 49961                        |
|                          | 25                              | 49662             |               |               | 49.0 |                               |                    |                     |                    |                     | 49962                        |
| 30                       | 20                              | 49671             | 13            | 50            | 49.0 | 5                             | 18                 | 44                  | 15                 | 35                  | 49971                        |
|                          | 25                              | 49672             |               |               | 54.0 |                               |                    |                     |                    |                     | 49972                        |
| 35                       | 20                              | 49681             | 13            | 60            | 51.0 | 6                             | 33                 | 68                  | 25                 | 52                  | 49981                        |
|                          | 25                              | 49682             |               |               | 56.0 |                               |                    |                     |                    |                     | 49982                        |
|                          | 40                              | 49683             |               |               | 71.0 |                               |                    |                     |                    |                     | 49983                        |
|                          | 50                              | 49684             |               |               | 81.0 |                               |                    |                     |                    |                     | 49984                        |
| 50                       | 20                              | 49691             | 20            | 75            | 64.0 | 10                            | 65                 | 88                  | 50                 | 67                  | 49991                        |
|                          | 25                              | 49692             |               |               | 69.0 |                               |                    |                     |                    |                     | 49992                        |
|                          | 40                              | 49693             |               |               | 84.0 |                               |                    |                     |                    |                     | 49993                        |
|                          | 50                              | 49694             |               |               | 94.0 |                               |                    |                     |                    |                     | 49994                        |

## Receiver Bushings

Two styles of receiver bushings are available. Installed bushings should be approximately 0.3mm below subplate surface.



**Face Mount**



**Back Mount**

Generally, the face mount receiver bushing is utilized in blind hole applications (Slip Fit).

The back mount receiver bushing is used in through hole applications (Light Press Fit).

## Installation Dimensions

### Face Mount

| Shank Dia. (mm) | Face Mount Part Number | Actual O.D. -0.01 -0.02 | Clearance Drill Diameter E | Bore +0.010 +0.003 F | Depth +0.025 -0.025 G | Tap Size & Depth H | Bolt Circle Diameter 3 PL Equally Spaced | Min. Subplate Thickness D |
|-----------------|------------------------|-------------------------|----------------------------|----------------------|-----------------------|--------------------|------------------------------------------|---------------------------|
| 13              | 49556                  | 35                      | 13.5                       | 35                   | 11.91                 | M4x0.7 x 7         | 25                                       | 20                        |
| 16              | 49557                  | 37                      | 21.0                       | 37                   | 11.91                 | M4x0.7 x 7         | 29                                       | 20                        |
| 20              | 49551                  | 45                      | 21.0                       | 45                   | 16.21                 | M5x0.8 x 9         | 35                                       | 25                        |
| 25              | 49552                  | 55                      | 25.5                       | 55                   | 20.32                 | M6x1.0 x 10        | 42                                       | 30                        |
| 30              | 49553                  | 60                      | 30.5                       | 60                   | 22.15                 | M6x1.0 x 11        | 48                                       | 35                        |
| 35              | 49554                  | 70                      | 40.0                       | 70                   | 22.99                 | M8x1.25 x 17       | 56                                       | 40                        |
| 50              | 49555                  | 92                      | 55.0                       | 92                   | 31.50                 | M10x1.5 x 18       | 75                                       | 50                        |

<sup>1</sup>Cap Screws Supplied with Face Mount Bushings.

### Back Mount

| Shank Dia. (mm) | Back Mount Part Number | Actual O.D. +0.04 +0.03 A | Depth +0.025 -0.025 B | C-Bore ±0.15 C | Min. Subplate Thickness D |
|-----------------|------------------------|---------------------------|-----------------------|----------------|---------------------------|
| 13              | 49566                  | 20                        | 6.92                  | 26             | 20                        |
| 16              | 49567                  | 22                        | 7.24                  | 29             | 20                        |
| 20              | 49561                  | 28                        | 8.74                  | 33             | 25                        |
| 25              | 49562                  | 35                        | 10.54                 | 41             | 25                        |
| 30              | 49563                  | 42                        | 10.95                 | 49             | 30                        |
| 35              | 49564                  | 48                        | 12.50                 | 55             | 35                        |
| 50              | 49565                  | 67                        | 15.75                 | 76             | 45                        |

## Liner Bushings for Fixture Plates



Locating repeatability will determine if one primary and one secondary or two primary liners are needed. With two primary liners, repeatability of  $\pm 0.013$  mm can be maintained if the two holes for receiver bushings are held to a centerline distance of  $\pm 0.005$  mm tolerance.

### Note on Installation of Press Fit Liners & Back Mount Style Receiver Bushings:

To alleviate the possibility of binding the shank in the bore, the maximum interference fit between bore and bushing O.D. should not exceed 0.013 mm.

### Liner Dimensions

| Shank Diameter (mm) | Fixture Plate Thickness +0.13 -0.13 | Primary Liner |       | Secondary Liner |       | Liner O.D. +0.00 -0.01 |
|---------------------|-------------------------------------|---------------|-------|-----------------|-------|------------------------|
|                     |                                     | Part Number   | I.D.  | Part Number     | I.D.  |                        |
| 13                  | 13                                  | 49755         | 13.01 | 49855           | 13.04 | 19.040                 |
|                     | 20                                  | 49756         |       | 49856           |       | 19.040                 |
| 16                  | 20                                  | 49757         | 16.01 | 49857           | 16.04 | 25.042                 |
|                     | 25                                  | 49758         |       | 49858           |       | 25.042                 |
| 20                  | 20                                  | 49751         | 20.01 | 49851           | 20.04 | 35.042                 |
|                     | 25                                  | 49752         |       | 49852           |       | 35.042                 |
| 25                  | 20                                  | 49761         | 25.01 | 49861           | 25.04 | 35.042                 |
|                     | 25                                  | 49762         |       | 49862           |       | 35.042                 |
| 30                  | 20                                  | 49771         | 30.01 | 49871           | 30.04 | 45.042                 |
|                     | 25                                  | 49772         |       | 49872           |       | 45.042                 |
| 35                  | 20                                  | 49781         | 35.01 | 49881           | 35.04 | 45.042                 |
|                     | 25                                  | 49782         |       | 49882           |       | 45.042                 |
|                     | 40                                  | 49783         |       | 49883           |       | 45.042                 |
|                     | 50                                  | 49784         |       | 49884           |       | 45.042                 |
| 50                  | 20                                  | 49791         | 50.01 | 49891           | 50.04 | 63.546                 |
|                     | 25                                  | 49792         |       | 49892           |       | 63.546                 |
|                     | 40                                  | 49793         |       | 49893           |       | 63.546                 |
|                     | 50                                  | 49794         |       | 49894           |       | 63.546                 |



## Accessories

### Tapered Caps and Plugs

Keep debris out of your subplate's receiver bushings when not in use. Polyethylene caps snap in and out easily.



Packaged  
10 per  
pack.

| Receiver Bushing Diameter | Part Number |
|---------------------------|-------------|
| 13                        | 49201       |
| 16                        | 49202       |
| 20                        | 49203       |
| 25                        | 49204       |
| 30                        | 49205       |
| 35                        | 49206       |
| 50                        | 49207       |



### Lifting Handles

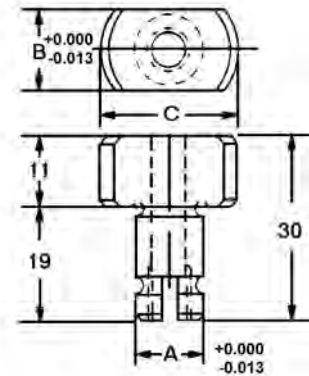
For easy handling of fixture plates up to 500 lbs.

| Part Number | Length | Ht.  | W     | Mounting Distance |
|-------------|--------|------|-------|-------------------|
| 33701       | 107mm  | 36mm | .38kg | 93.47mm           |

## Sine Fixture Keys



| Part Number | Shank Size A | Slot Size B | C  | Wt. (kg) | Recommended Hole Diameter        |
|-------------|--------------|-------------|----|----------|----------------------------------|
| 39551       | 16           | 12          | 25 | .04      | 16mm Shank Size:<br>16.01 ± 0.01 |
| 39552       | 16           | 14          | 25 | .05      |                                  |
| 39553       | 16           | 16          | 25 | .05      |                                  |
| 39554       | 16           | 18          | 29 | .05      |                                  |
| 39555       | 16           | 20          | 29 | .06      |                                  |
| 39556       | 16           | 22          | 29 | .06      | 20mm Shank Size:<br>20.01 ± 0.01 |
| 39557       | 20           | 24          | 35 | .07      |                                  |
| 39558       | 20           | 28          | 35 | .10      |                                  |
| 39559       | 20           | 32          | 40 | .10      |                                  |



Locate subplates or fixture plates to slotted machine tables without having to slot the plate. Available in sizes from 12mm to 32mm slots.

## Fast Acting Ball Lock® Shanks

| Ball Lock® Shank Diameter (mm) | Fixture Plate Thickness (mm) | FAST ACTING BALL LOCK® SHANKS |         |                              |        |
|--------------------------------|------------------------------|-------------------------------|---------|------------------------------|--------|
|                                |                              | Shank with Thumb Screw        |         | Shank with Adjustable Handle |        |
|                                |                              | Part Number                   |         | Part Number                  |        |
|                                |                              | Assembly                      | T-Screw | Assembly                     | Handle |
| 13                             | 13                           | 49655-S                       | 43971   | 49655-H                      | 34360  |
|                                | 20                           | 49656-S                       | 43972   | 49656-H                      | 34361  |
| 16                             | 20                           | 49657-S                       | 43974   | 49657-H                      | 34365  |
|                                | 25                           | 49658-S                       | 43975   | 49658-H                      | 34365  |
| 20                             | 20                           | 49651-S                       | 43974   | 49651-H                      | 34365  |
|                                | 25                           | 49652-S                       | 43975   | 49652-H                      | 34365  |
| 25                             | 20                           | 49661-S                       | 43977   | 49661-H                      | 34378  |
|                                | 25                           | 49662-S                       | 43978   | 49662-H                      | 34379  |
| 30                             | 20                           | 49671-S                       | 43980   | 49671-H                      | 34385  |
|                                | 25                           | 49672-S                       | 43980   | 49672-H                      | 34385  |
| 35                             | 20                           | 49681-S                       | 43985   | 49681-H                      | 34393  |
|                                | 25                           | 49682-S                       | 43985   | 49682-H                      | 34393  |



Thumb Screw

- Fast acting thumb screws 2 1/2 turns. No tools needed.



Adjustable Handle

- Handle can be moved out of the work area to avoid interference.

## Features of the Jergens Zero-Point Mounting System

- Positioning and clamping in one operation
- High repeatability and accuracy
- Low cost solution for quick pallet changing



**Typical applications for the Jergens Zero-Point System:**

- Milling
- Assembly
- Welding
- Injection Molding
- Grinding
- Measuring



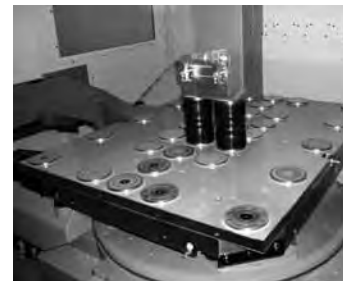
Pull Studs can also be installed directly into the workpieces, making 5-sided processing possible.



Best results with large and heavy workpieces.



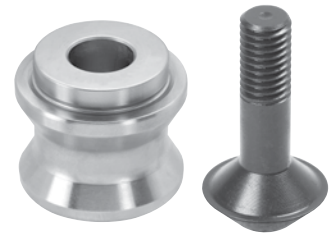
Jergens Zero-Point clamping systems are made exclusively of rust-free materials and so are ideally suited for use in the food-service area as well as in the pharmaceutical and chemical industry.



Through different dimensions, the advantage of the Zero-Point clamping system are optimally used.

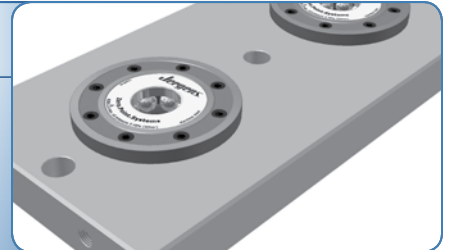
## **Pull Studs and Engagement Screws**

Pages 1.42-1.43



## **Clamping Plates with Built-In Modules**

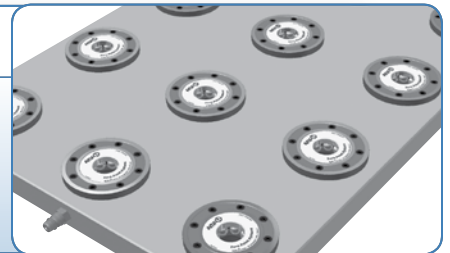
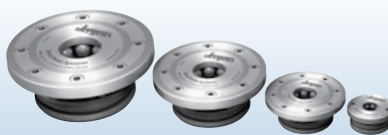
Pages 1.40-1.41



## **Threaded Clamping Modules**

Pages 1.44-1.45

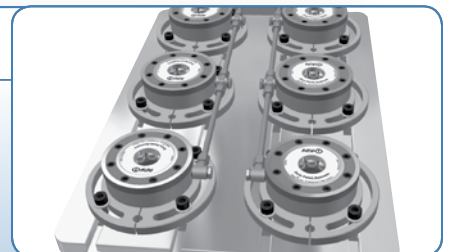
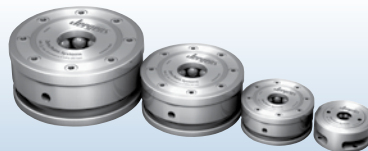
- Machine tables
- Plates
- 4-axis/5-axis machining
- Columns
- Pallets



## **Raised/Mounted Clamping Modules**

Pages 1.46-1.47

- For large & heavy workpieces
- Pull Studs installed directly into workpiece



## **Flange Type Module**

Page 1.49

- Used to fasten surface-mounted clamping modules on the machine table
- Hydraulic release with or without blowout



## **Horizontal Rapid-Clamping Module**

Page 1.50

- For easy handling of heavy fixtures

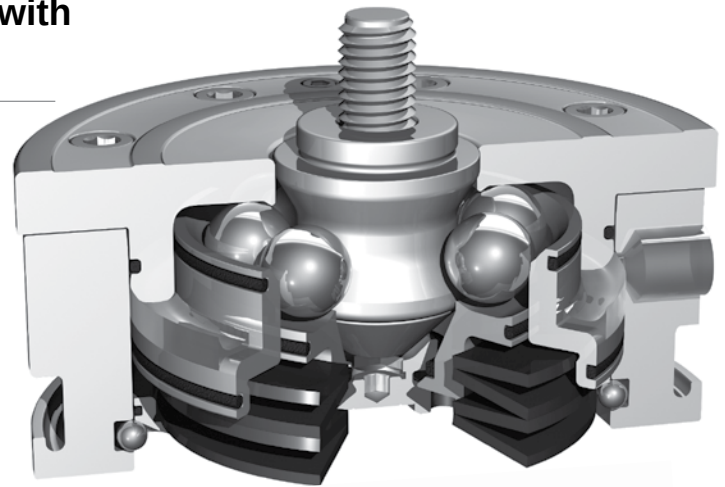


## Jergens' Zero-Point Mounting System – Cut Set-up Times by Up to 90%.

**Fix, Position and Clamp in a Single Step with Jergens' Zero-Point Mounting System.**

Jergens is proud to introduce the best-engineered Zero-Point Mounting System (ZPS) on the market. This revolutionary technology cuts set-up time by up to 90% by combining fixing, positioning and clamping in a single operation. Available with either pneumatic or hydraulic release, these positive locking locating modules allow operators to quickly change out large and small machine fixtures with extreme accuracy and minimal effort. Other features include:

- Repeatability <0.005mm (0.0002")
- Minimizes set-up time
- Hardened stainless (AISI 440B) steel construction
- Integrated safety system
- Compact design
- Positive locking
- High retaining force

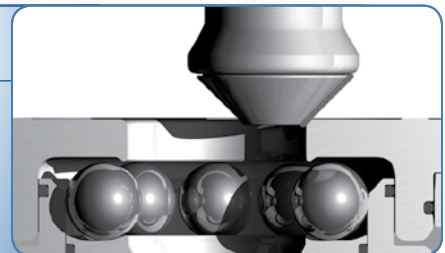


## Smart Features for Process Improvement

Reduce set-up times and increase both accuracy and repeatability with design features exclusive to the Jergens ZPS:

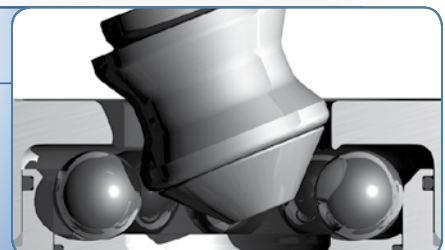
### Self Guiding

The self-guiding, tapered profile of the mounting stud allows heavy plates to be installed more easily.



### Alignment

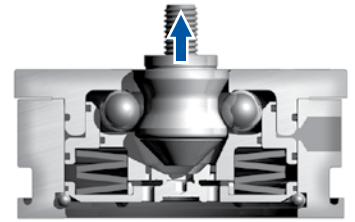
Unique design eliminates the need for perfect lifts on entry and exit.





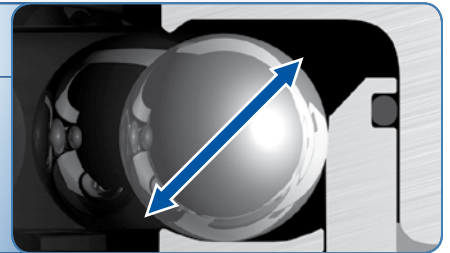
### **Mechanical Locking System**

Experience high holding force without the need to maintain hydraulic pressure.



### **Large Ball Diameter**

Provides increased strength and even load distribution.



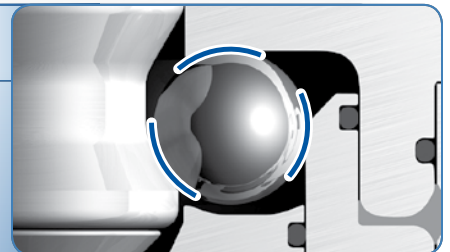
### **No Ball Cage**

Free movement of the bearing balls reduces friction.



### **Form Fit Ball Channel**

Tapered contact areas eliminate point loads and reduce failures.



### **Three-Point Load Distribution**

Equal load spacing optimizes force distribution.



### **Integrated Safety System**

Process-sure clamping module can always be opened, eliminating the need to forcibly remove modules if a failure should occur.

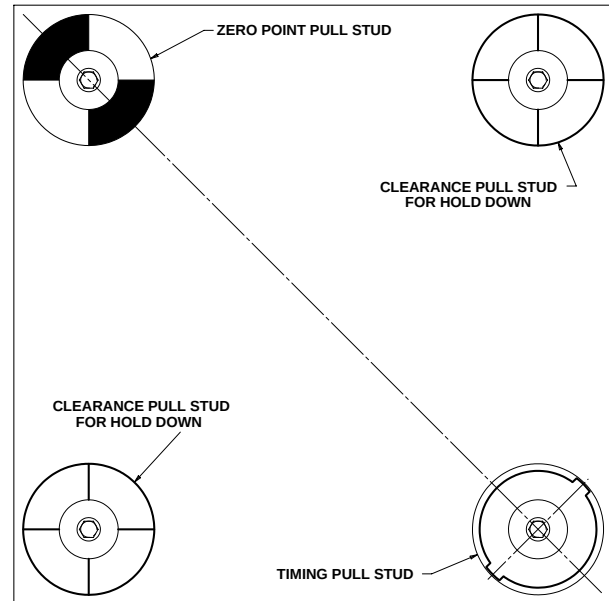




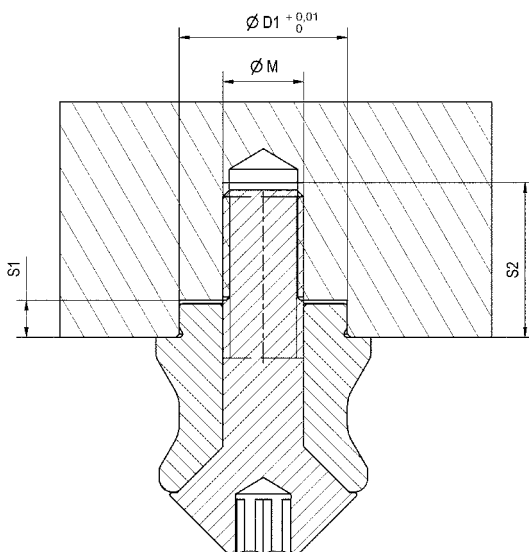
## Clamping and Positioning

### On each fixture use:

- 1 - Zero-Point Pull Stud
- 1 - Timing Pull Stud
- The Zero-Point and Timing Stud should be perpendicular
- Use any combination of clearance and/or protection Pull Stud



## Dimensions for machining pull stud mountings



| Size | ØD1 | ØM  | S1  | S2 |
|------|-----|-----|-----|----|
| K5   | 10  | M6  | 2.5 | 12 |
| K10  | 15  | M8  | 3.5 | 16 |
| K20  | 25  | M12 | 5.5 | 23 |
| K40  | 25  | M16 | 5.5 | 30 |

### Note:

- Pull Stud with internal thread for clamping from above
- Pull Studs with different diameter D1, preventing interchange of the Zero-Point, timing and clearance Pull Stud during installation.
- Pull Stud for series production, (notch type), Floating Pull Stud for compensation of thermal expansion
- Automatic lifting of the pallet / fixture

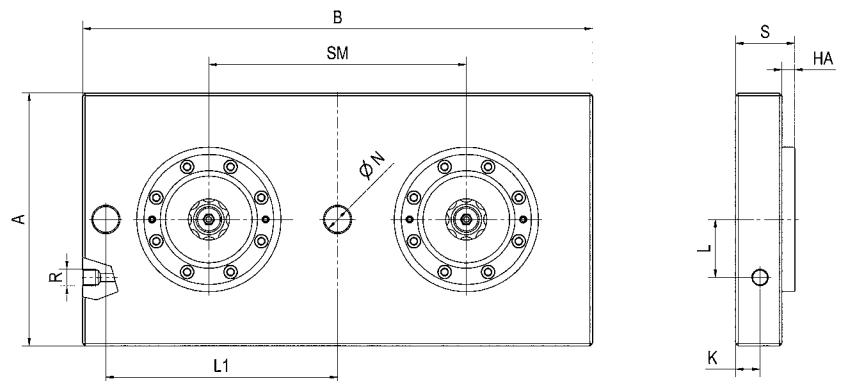
### Figure:

Shown with Pull Stud and engagement screw

## 2-Way Clamping Station

Hydraulic Unlocking

Repeatability < 0.005 mm (0.0002")



| Part Number | Size | Pull-In/Locking Force up to kN / (lbs) | A   | B   | HA | K  | L  | L1  | ØN | R    | S  | SM  | kg   |
|-------------|------|----------------------------------------|-----|-----|----|----|----|-----|----|------|----|-----|------|
| 303289      | 20   | 2 x 20 / (2 x 4500)                    | 196 | 396 | 10 | 19 | 45 | 180 | 20 | G1/4 | 46 | 200 | 21.9 |
| 303297      | 40   | 2 x 40 / (2 x 9000)                    | 296 | 546 | 15 | 26 | 57 | 250 | 25 | G1/4 | 61 | 320 | 59.5 |

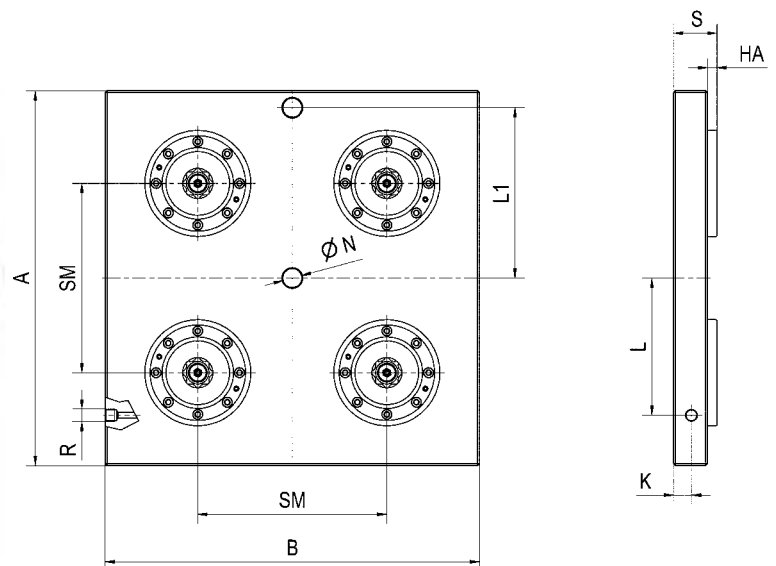
All linear dimensions in (mm)

**Note:** On request, we can incorporate mounting holes to your requirements in the base plate. Other dimensions, gauges and number of clamping module layouts on request.

## 4-way clamping Station

Hydraulic Unlocking

Repeatability < 0.005 mm (0.0002")



| Part Number | Size | Pull-In/Locking Force up to kN / (lbs) | A   | B   | HA | K  | L   | L1  | ØN | R    | S  | SM  | kg    |
|-------------|------|----------------------------------------|-----|-----|----|----|-----|-----|----|------|----|-----|-------|
| 303321      | 20   | 4 x 20 / (4 x 4500)                    | 396 | 396 | 10 | 18 | 148 | 180 | 20 | G1/4 | 46 | 200 | 44.0  |
| 303339      | 40   | 4 x 40 / (4 x 9000)                    | 546 | 546 | 15 | 26 | 217 | 250 | 25 | G1/4 | 61 | 320 | 110.0 |

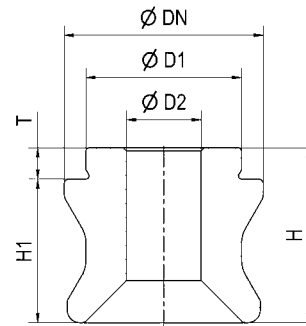
All linear dimensions in (mm)

**Note:** On request, we can incorporate mounting holes to your requirements in the base plate. Other dimensions, gauges and number of clamping module layouts on request.

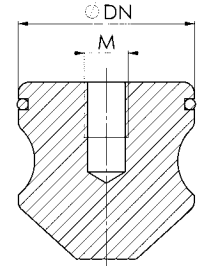
## Pull Studs

### K5 Modules

Hardened Stainless Steel, for hydraulic and pneumatic clamping modules



Zero Point Timing Clearance



Protection Pull Stud

| Part Number | Size | Description     | ØDN  | ØD1 | ØD2 | H    | H1   | M   | T   | g  |
|-------------|------|-----------------|------|-----|-----|------|------|-----|-----|----|
| 306019      | K5   | Zero-Point Stud | 15.0 | 10  | 6   | 12.7 | 10.2 | -   | 2.5 | 15 |
| 306035      | K5   | Timing Stud     | 15.0 | 10  | 6   | 12.7 | 10.2 | -   | 2.5 | 15 |
| 306050      | K5   | Clearance Stud  | 14.8 | 10  | 6   | 12.7 | 10.2 | -   | 2.5 | 15 |
| 306076      | K5   | Protection Plug | 14.8 | -   | -   | 10.2 | -    | M 6 | 8.0 | 12 |

### K10 Modules

Hardened Stainless Steel, for hydraulic and pneumatic clamping modules

| Part Number | Size | Description     | ØDN  | ØD1 | ØD2 | H  | H1 | M   | T  | g  |
|-------------|------|-----------------|------|-----|-----|----|----|-----|----|----|
| 303610      | K10  | Zero-Point Stud | 22.0 | 15  | 8   | 19 | 16 | -   | 3  | 30 |
| 303636      | K10  | Timing Stud     | 22.0 | 15  | 8   | 19 | 16 | -   | 3  | 30 |
| 304519      | K10  | Clearance Stud  | 21.8 | 15  | 8   | 19 | 16 | -   | 3  | 30 |
| 304535      | K10  | Protection Plug | 21.8 | -   | -   | 16 | -  | M 8 | 12 | 30 |

### K20 Modules

Hardened Stainless Steel, for hydraulic and pneumatic clamping modules

| Part Number | Size | Description     | ØDN  | ØD1 | ØD2 | H  | H1 | M  | T  | g   |
|-------------|------|-----------------|------|-----|-----|----|----|----|----|-----|
| 303149      | K20  | Zero-Point Stud | 32.0 | 25  | 12  | 28 | 23 | -  | 5  | 110 |
| 303156      | K20  | Timing Stud     | 32.0 | 25  | 12  | 28 | 23 | -  | 5  | 110 |
| 303164      | K20  | Clearance Stud  | 31.8 | 25  | 12  | 28 | 23 | -  | 5  | 110 |
| 303172      | K20  | Protection Plug | 31.8 | -   | -   | 23 | -  | M8 | 16 | 110 |

### K40 Modules

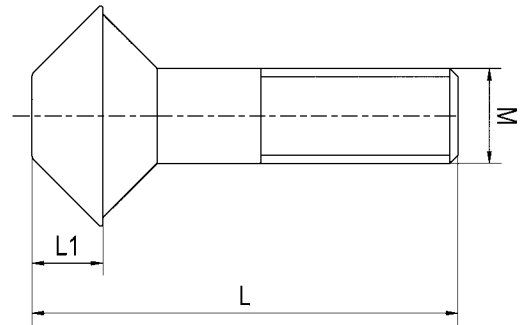
Hardened Stainless Steel, for hydraulic and pneumatic clamping modules

| Part Number | Size | Description     | ØDN  | ØD1 | ØD2 | H  | H1 | M  | T  | g   |
|-------------|------|-----------------|------|-----|-----|----|----|----|----|-----|
| 303180      | K40  | Zero-Point Stud | 40.0 | 25  | 16  | 34 | 29 | -  | 5  | 180 |
| 303198      | K40  | Timing Stud     | 40.0 | 25  | 16  | 34 | 29 | -  | 5  | 180 |
| 303206      | K40  | Clearance Stud  | 39.8 | 25  | 16  | 34 | 29 | -  | 5  | 180 |
| 303214      | K40  | Protection Plug | 39.8 | -   | -   | 29 | -  | M8 | 20 | 180 |

## Engagement Screws

Strength class 10.9

For installation and surface mounted clamping modules

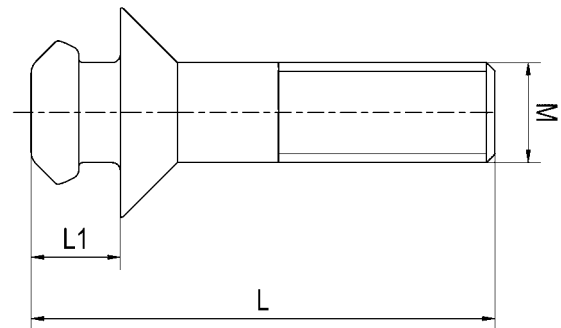


| Part Number | Size | M   | L  | L1   | g   |
|-------------|------|-----|----|------|-----|
| 306092      | K 5  | M 6 | 25 | 3.4  | 18  |
| 303578      | K10  | M 8 | 37 | 6.0  | 30  |
| 303222      | K20  | M12 | 54 | 9.0  | 70  |
| 303230      | K40  | M16 | 69 | 10.0 | 130 |

## Horizontal Engagement Screws

Strength class 10.9

For horizontal rapid clamping cylinder on page 1.46



| Part Number | Size | M   | L  | L1   | g   |
|-------------|------|-----|----|------|-----|
| 303248      | K20  | M12 | 56 | 10.5 | 100 |
| 303255      | K40  | M16 | 73 | 13.0 | 200 |

## Threaded Clamping Modules (K5)

Round, Screw-In Version

Hydraulic Unlocking

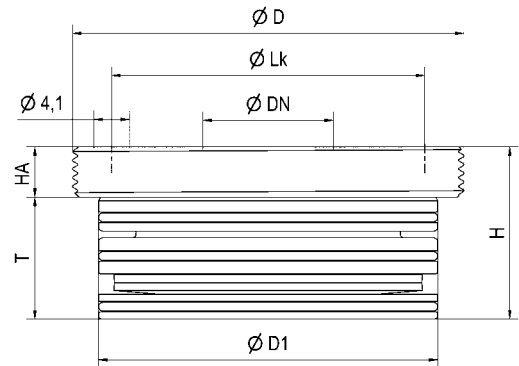
Cover and piston hardened.

Repeatability < 0.005 mm (0.0002")



With a small footprint for installation in base plates, machine tables, clamping profiles, columns and towers, swivel bridges, machine pallets and clamping pallets.

- Installation diagrams on request



### Hardened Stainless Steel

| Part Number | Size | Pull-In/Locking Force up to kN / (lbs) | Holding Force kN / (lbs) | ØD      | ØDN | ØD1 | H    | HA  | ØLK | T  | g   |
|-------------|------|----------------------------------------|--------------------------|---------|-----|-----|------|-----|-----|----|-----|
| 305953      | K5   | 5 / (1100)                             | 13 / (2900)              | M45 x 1 | 15  | 39  | 19.8 | 5.8 | 36  | 14 | 300 |

All linear dimensions in (mm)

**Note:** Threaded clamping module with a low installation height of 19.8 mm and an installation diameter of 45 mm (M45 x 1).

Hydraulic supply and pressure is only needed for unclamping (min. 50 bar / 725psi, max. 60 bar / 870psi). The threaded clamping module is mechanically locked in the clamped position. The unique mechanical locking system results in virtually no vibration even with extensive machining forces. Further more, there are no cumbersome lines or dangers of leakage. The contact surface is the upper surface of the housing. The hydraulic design has 1 connection: 1 x unclamping

## Round, Screw-in Version

Pneumatic Unlocking

Cover and piston hardened.

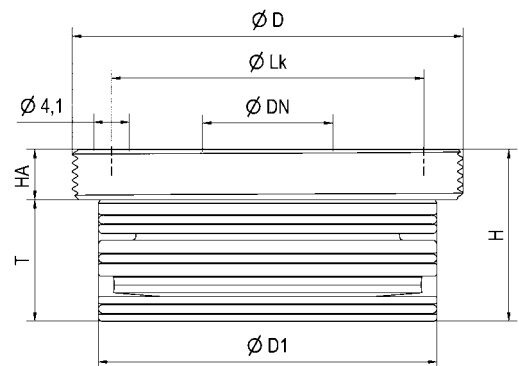
Repeatability < 0.005 mm (0.0002")



With a small footprint for installation in base plates, machine tables, clamping profiles, columns and towers, swivel bridges, machine pallets and clamping pallets.

Pneumatic modules are optimally suited for use in the food, pharmaceutical and chemical industries, as well as in oil-free applications.

- Installation diagrams on request



### Hardened Stainless Steel

| Part Number | Size | Pull-In/Locking Force up to kN / (lbs) | Holding Force kN / (lbs) | ØD      | ØDN | ØD1 | H    | HA  | ØLK | T  | g   |
|-------------|------|----------------------------------------|--------------------------|---------|-----|-----|------|-----|-----|----|-----|
| 305979      | K5   | 1.5 / (330)                            | 13 / (2900)              | M45 x 1 | 15  | 39  | 19.8 | 5.8 | 36  | 14 | 300 |

All linear dimensions in (mm)

**Note:** Threaded clamping module with a low installation height of 19.8 mm and an installation diameter of 45 mm (M45 x 1).

Pneumatic pressure is needed for unclamping (min 8 bar / 116 psi, max 12 bar / 175 psi). For **clamping** process pneumatic pressure of min 5 bar / 75 psi, max 6 bar / 90 psi is required briefly in order to achieve defined pull-in force. The threaded clamping module is mechanically locked in the clamped position. The unique mechanical locking system results in virtually no vibration even with extensive machining forces. Further more, there are no cumbersome lines or dangers of leakage. The pneumatic design has 2 connections: 1 x unclamping / 1 x clamping.



## Threaded Clamping Modules (K10, K20, K40)

### Round, Hydraulic Unlocking

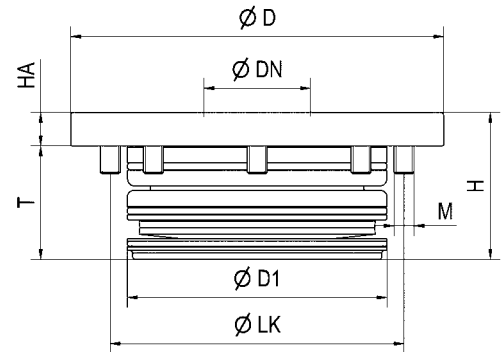
Cover and piston hardened.

Repeatability < 0.005 mm (0.0002")



With a small foot-print for installation in base plates, machine tables, clamping profiles, columns and towers, swivel bridges, machine pallets and clamping pallets.

- Installation diagrams on request



### Hardened Stainless Steel

| Part Number | Size | Pull-in/locking force up to kN / (lbs) | Holding force kN / (lbs) | Blow out | ØD  | ØDN | ØD1 | H  | HA | ØLK | M  | T  | kg   |
|-------------|------|----------------------------------------|--------------------------|----------|-----|-----|-----|----|----|-----|----|----|------|
| 303628      | K10  | 10 / (2250)                            | 25 / (5620)              | -        | 78  | 22  | 50  | 30 | 7  | 60  | M5 | 23 | 0.45 |
| 305367      | K10  | 10 / (2250)                            | 25 / (5620)              | Yes      | 78  | 22  | 50  | 30 | 7  | 60  | M5 | 23 | 0.45 |
| 302984      | K20  | 20 / (4500)                            | 55 / (12350)             | -        | 112 | 32  | 78  | 44 | 10 | 88  | M6 | 34 | 1.40 |
| 302992      | K20  | 20 / (4500)                            | 55 / (12350)             | Yes      | 112 | 32  | 78  | 44 | 10 | 88  | M6 | 34 | 1.40 |
| 303024      | K40  | 40 / (9000)                            | 105 / (23600)            | -        | 148 | 40  | 102 | 57 | 15 | 118 | M8 | 42 | 3.45 |
| 303032      | K40  | 40 / (9000)                            | 105 / (23600)            | Yes      | 148 | 40  | 102 | 57 | 15 | 118 | M8 | 42 | 3.40 |

All linear dimensions in (mm)

**Note:** Threaded installation clamping modules have high holding and pull-in forces with very small installation dimensions.

Hydraulic supply and pressure is only needed for unclamping (min. 50 bar / 725psi, max. 60 bar / 870psi). The threaded clamping module is mechanically locked in the clamped position. The unique mechanical locking system results in virtually no vibration even with extensive machining forces. Further more, there are no cumbersome lines or dangers of leakage. The contact surface is the upper surface of the housing. The hydraulic design has 1 connection: 1 x unclamping

## Pneumatic Unlocking

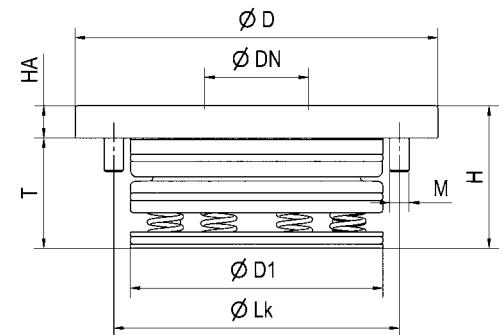
Cover and piston hardened.

Repeatability < 0.005 mm (0.0002")



With a small footprint for installation in base plates, machine tables, clamping profiles, columns and towers, swivel bridges, machine pallets and clamping pallets.

- Installation diagrams on request



### Hardened Stainless Steel

| Part Number | Size | Pull-In/Locking force up to kN / (lbs) | Holding Force kN / (lbs) | Blow out | ØD  | ØDN | ØD1 | H  | HA | ØLK | M  | T  | kg   |
|-------------|------|----------------------------------------|--------------------------|----------|-----|-----|-----|----|----|-----|----|----|------|
| 303602      | K10  | 8 / (1800)                             | 25 / (5620)              | -        | 78  | 22  | 50  | 30 | 7  | 60  | M5 | 23 | 0.45 |
| 305375      | K10  | 8 / (1800)                             | 25 / (5620)              | Yes      | 78  | 22  | 50  | 30 | 7  | 60  | M5 | 23 | 0.45 |
| 303008      | K20  | 17 / (3800)                            | 55 / (12350)             | -        | 112 | 32  | 78  | 44 | 10 | 88  | M6 | 34 | 1.40 |
| 303016      | K20  | 17 / (3800)                            | 55 / (12350)             | Yes      | 112 | 32  | 78  | 44 | 10 | 88  | M6 | 34 | 1.40 |
| 303040      | K40  | 30 / (6700)                            | 105 / (23600)            | -        | 148 | 40  | 102 | 57 | 15 | 118 | M8 | 42 | 3.45 |
| 303057      | K40  | 30 / (6700)                            | 105 / (23600)            | Yes      | 148 | 40  | 102 | 57 | 15 | 118 | M8 | 42 | 3.40 |

All linear dimensions in (mm)

**Note:** The installation clamping modules have high holding and pull-in forces with very small installation dimensions.

Pneumatic pressure is needed for unclamping (min 8 bar/ 116 psi, max 12 bar/ 175 psi). For **clamping** process pneumatic pressure of min 5 bar / 75 psi, max 6 bar / 90 psi is required briefly in order to achieve defined pull-in force. The installation clamping module is mechanically locked in the clamped position. The unique mechanical locking system results in virtually no vibration even with extensive machining forces. Further more, there are no cumbersome lines or dangers of leakage. The pneumatic design has 2 connections: 1 x unclamping / 1 x clamping.

## Raised/Mounted Clamping Modules (K5)

### Round, Hydraulic Unlocking

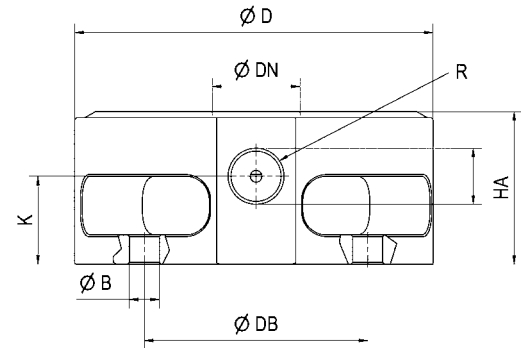
Cover and piston hardened.

Repeatability < 0.005 mm (0.0002")



For mounting on machine tables, clamping profiles, columns and towers, measuring machines, assembly stations.

- Installation diagrams on request



### Stainless Steel

| Part Number | Size | Pull-In/Locking Force up to kN / (lbs) | Holding Force kN / (lbs) | ØB  | ØD | ØDB | ØDN | HA | K  | R    | g   |
|-------------|------|----------------------------------------|--------------------------|-----|----|-----|-----|----|----|------|-----|
| 306159      | K5   | 5 / (1100)                             | 13 / (2900)              | 5.8 | 62 | 54  | 15  | 26 | 15 | G1/8 | 300 |

All linear dimensions in (mm)

**Note:** Hydraulic supply and pressure is only needed for unclamping (min. 50 bar / 725psi, max. 60 bar / 870psi). The installation clamping module is mechanically locked in the clamped position. The unique mechanical locking system results in virtually no vibration even with extensive machining forces. The contact surface is the upper surface of the housing. The hydraulic design has 1 connection: 1 x unclamping

### Round, Pneumatic Unlocking

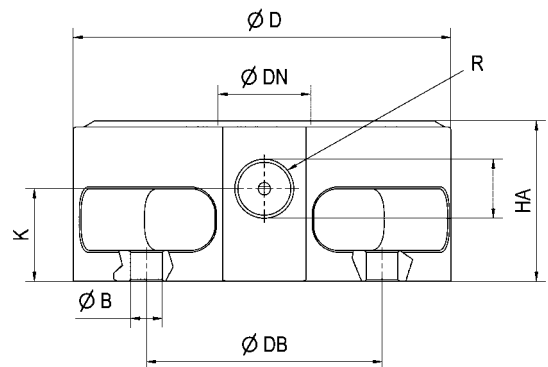
Cover and piston hardened.

Repeatability < 0.005 mm (0.0002")



For mounting on machine tables, clamping profiles, columns and towers, measuring machines, assembly stations.

- Installation diagrams on request



### Hardened Stainless Steel

| Part Number | Size | Pull-In/Locking Force up to kN / (lbs) | Holding Force kN / (lbs) | ØB  | ØD | ØDB | ØDN | HA | K  | R    | g   |
|-------------|------|----------------------------------------|--------------------------|-----|----|-----|-----|----|----|------|-----|
| 306175      | K5   | 1.5 / (330)                            | 13 / (2900)              | 5.8 | 62 | 54  | 15  | 26 | 15 | G1/8 | 300 |

All linear dimensions in (mm)

**Note:** Pneumatic pressure is needed for unclamping ( min 8 bar/ 116 psi, max 12 bar/ 175 psi). For **clamping** process pneumatic pressure of min 5 bar / 75 psi, max 6 bar / 90 psi is required briefly in order to achieve defined pull-in force. The installation clamping module is mechanically locked in the clamped position. The unique mechanical locking system results in virtually no vibration even with extensive machining forces. The pneumatic design has 2 connections: 1 x unclamping / 1 x clamping.

## Raised/Mounted Clamping Modules (K10, K20, K40)

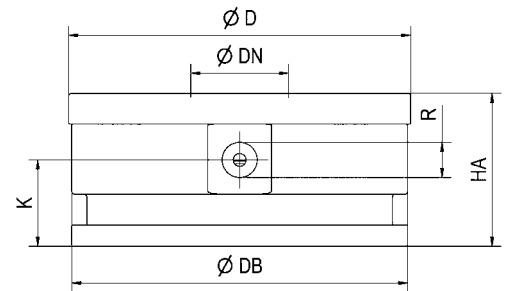
### Round, Hydraulic Unlocking

Cover and piston hardened.

Repeatability < 0.005 mm (0.0002")



For mounting on machine tables, clamping profiles, columns and towers, measuring machines, assembly stations in connection with **clamping bracket** on page 1.48.



### Hardened Stainless Steel

| Part Number | Size | Pull-In/Locking Force up to kN / (lbs) | Holding Force kN / (lbs) | Blow out | ØD  | ØDB   | ØDN | HA | K     | R    | kg   |
|-------------|------|----------------------------------------|--------------------------|----------|-----|-------|-----|----|-------|------|------|
| 303487      | K10  | 10 / (2250)                            | 25 / (5620)              | -        | 78  | 77.5  | 22  | 30 | 16.50 | G1/8 | 0.90 |
| 303545      | K10  | 10 / (2250)                            | 25 / (5620)              | Yes      | 78  | 77.5  | 22  | 30 | 16.50 | G1/8 | 0.90 |
| 302828      | K20  | 20 / (4500)                            | 55 / (12350)             | -        | 112 | 110.0 | 32  | 50 | 28.25 | G1/4 | 2.75 |
| 302836      | K20  | 20 / (4500)                            | 55 / (12350)             | Yes      | 112 | 110.0 | 32  | 50 | 28.25 | G1/4 | 2.70 |
| 302869      | K40  | 40 / (9000)                            | 105 / (23600)            | -        | 148 | 146.0 | 40  | 62 | 32.50 | G1/4 | 3.85 |
| 302877      | K40  | 40 / (9000)                            | 105 / (23600)            | Yes      | 148 | 146.0 | 40  | 62 | 32.50 | G1/4 | 3.80 |

All linear dimensions in (mm)

**Note:** Hydraulic supply and pressure is only needed for unclamping (min. 50 bar / 725psi, max. 60 bar / 870psi). The installation clamping module is mechanically locked in the clamped position. The unique mechanical locking system results in virtually no vibration even with extensive machining forces. Further more, there are no cumbersome lines and no danger of leakage. The contact surface is the upper surface of the housing. The hydraulic design has 1 connection: 1 x unclamping

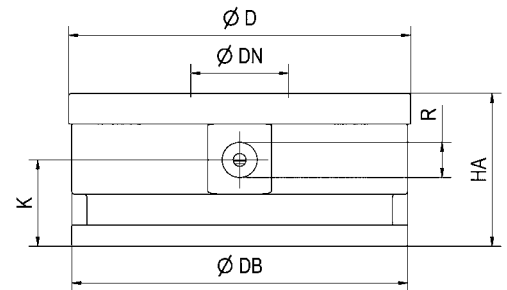
### Round, Pneumatic Unlocking

Cover and piston hardened.

Repeatability < 0.005 mm (0.0002")



For mounting on machine tables, clamping profiles, columns and towers, measuring machines, assembly stations in connection with **clamping bracket** on page 1.48.



### Hardened Stainless Steel

| Part Number | Size | Pull-In/Locking Force up to kN / (lbs) | Holding Force kN / (lbs) | Blow out | ØD  | ØDB   | ØDN | HA | K     | R    | kg   |
|-------------|------|----------------------------------------|--------------------------|----------|-----|-------|-----|----|-------|------|------|
| 303529      | K10  | 8 / (1800)                             | 25 / (5620)              | -        | 78  | 77.5  | 22  | 30 | 16.50 | G1/8 | 0.90 |
| 305193      | K10  | 8 / (1800)                             | 25 / (5620)              | Yes      | 78  | 77.5  | 22  | 30 | 16.50 | G1/8 | 0.90 |
| 302844      | K20  | 17 / (3800)                            | 55 / (12350)             | -        | 112 | 110.0 | 32  | 50 | 28.25 | G1/4 | 2.60 |
| 302851      | K20  | 17 / (3800)                            | 55 / (12350)             | Yes      | 112 | 110.0 | 32  | 50 | 28.25 | G1/4 | 2.60 |
| 302885      | K40  | 30 / (6700)                            | 105 / (23600)            | -        | 148 | 146.0 | 40  | 62 | 32.50 | G1/4 | 6.45 |
| 302893      | K40  | 30 / (6700)                            | 105 / (23600)            | Yes      | 148 | 146.0 | 40  | 62 | 32.50 | G1/4 | 6.40 |

All linear dimensions in (mm)

**Note:** Pneumatic pressure is needed for unclamping ( min 8 bar/ 116 psi, max 12 bar/ 175 psi). For **clamping** process pneumatic pressure of min 5 bar / 75 psi, max 6 bar / 90 psi is required briefly in order to achieve defined pull-in force. The installation clamping module is mechanically locked in the clamped position. The unique mechanical locking system results in virtually no vibration even with extensive machining forces. The pneumatic design has 2 connections: 1 x unclamping / 1 x clamping.

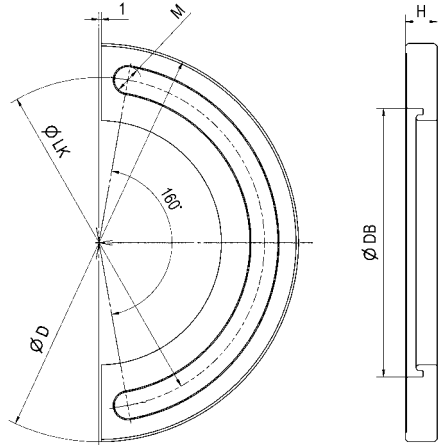
## Clamping Bracket for Raised/Mounted Clamping Modules

Black Nitrided



Clamping flanges are used to fasten raised/mounted clamping modules on the machine table. See page 1.47.

- Special clamping flanges for various T-slot tables
- Clamping flange and housing manufactured as a single piece



### Stainless Steel

| Part Number | Size | Pieces Per Module | ØD  | ØDB   | H     | ØLK | M    | g   |
|-------------|------|-------------------|-----|-------|-------|-----|------|-----|
| 303495      | 10   | 2                 | 114 | 77.5  | 7.75  | 94  | 8.5  | 180 |
| 302901      | 20   | 2                 | 164 | 110.0 | 13.00 | 136 | 11.0 | 400 |
| 302919      | 40   | 2                 | 202 | 146.0 | 16.00 | 172 | 13.0 | 550 |

All linear dimensions in (mm)

## Flange Type Installation Modules



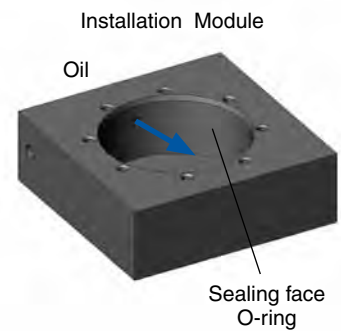
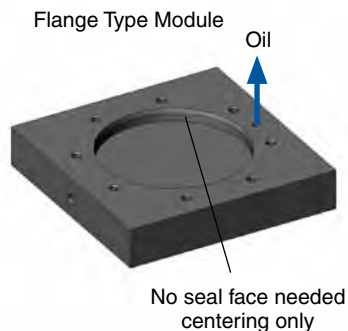
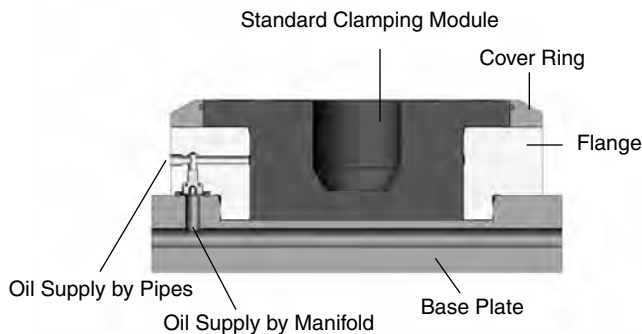
### Features:

- Oil supply by pipes or manifolds
- Integrated centering
- Provided as assembled unit

### Benefits:

- Simple design and manufacturing of adaptor plate
- Weight saving due to less thickness for adaptor plate
- Easy to adapt to existing mounting angles and cubes

### Installation comparison

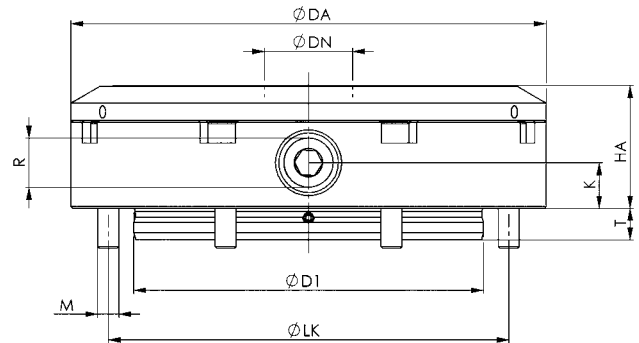


## Flange Type Installation Modules

### Hydraulic Release

Cover and piston hardened.

Repeatability < 0.005 mm (0.0002")



### Hardened Stainless Steel

| Part Number | Size | Pull-In/Locking force up to kN / (lbs) | Holding Force kN / (lbs) | Blow out | ØDA | ØDN | ØD1 | HA | K  | ØLK | M  | R    | T    | kg   |
|-------------|------|----------------------------------------|--------------------------|----------|-----|-----|-----|----|----|-----|----|------|------|------|
| 424069      | K10  | 10 / (2250)                            | 25 / (5620)              | -        | 100 | 22  | 67  | 24 | 9  | 90  | M5 | G1/8 | 5.9  | 1.35 |
| 424085      | K10  | 10 / (2250)                            | 25 / (5620)              | Yes      | 100 | 22  | 67  | 24 | 9  | 90  | M5 | G1/8 | 5.9  | 1.35 |
| 423947      | K20  | 20 / (4500)                            | 55 / (12350)             | -        | 136 | 32  | 100 | 35 | 13 | 124 | M6 | G1/8 | 8.9  | 3.75 |
| 423962      | K20  | 20 / (4500)                            | 55 / (12350)             | Yes      | 136 | 32  | 100 | 35 | 13 | 124 | M6 | G1/8 | 8.9  | 3.76 |
| 424127      | K40  | 40 / (9000)                            | 105 / (23600)            | -        | 180 | 40  | 120 | 45 | 15 | 163 | M8 | G1/8 | 11.9 | 4.97 |
| 424143      | K40  | 40 / (9000)                            | 105 / (23600)            | Yes      | 180 | 40  | 120 | 45 | 15 | 163 | M8 | G1/8 | 11.9 | 4.97 |

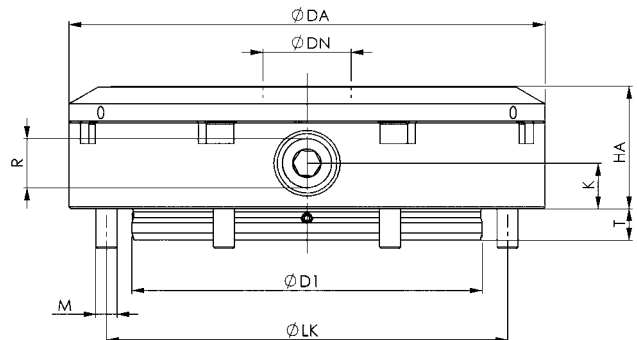
All linear dimensions in (mm)

**Note:** Combines features of the Threaded Module and Raised/Mounted module. Especially designed when installation space is limited and base plate or angle plate has relatively thin dimensions. The positioning of the module is simple and accurate when using the precision flange diameter. Hydraulic supply is possible by manifolds or pipes/hoses. Hydraulic supply and pressure is only needed for unclamping (min. 50 bar / 725psi, max. 60 bar / 870psi). The module is mechanically locked in the clamped position. The unique mechanical locking system results in virtually no vibration even with extensive machining forces. The hydraulic design has 1 connection: 1 x unclamping

### Pneumatic Release

Cover and piston hardened.

Repeatability < 0.005 mm (0.0002")



### Hardened Stainless Steel

| Part Number | Size | Pull-In/Locking force up to kN / (lbs) | Holding Force kN / (lbs) | Blow out | ØDA | ØDN | ØD1 | HA | K  | ØLK | M  | R    | T    | kg   |
|-------------|------|----------------------------------------|--------------------------|----------|-----|-----|-----|----|----|-----|----|------|------|------|
| 424101      | K10  | 8 / (1800)                             | 25 / (5620)              | -        | 100 | 22  | 67  | 24 | 9  | 90  | M5 | G1/8 | 5.9  | 1.35 |
| 423988      | K20  | 17 / (3800)                            | 55 / (12350)             | -        | 136 | 32  | 100 | 35 | 13 | 124 | M6 | G1/8 | 8.9  | 4.97 |
| 424168      | K40  | 30 / (6700)                            | 105 / (23600)            | -        | 180 | 40  | 120 | 45 | 15 | 163 | M6 | G1/8 | 11.9 | 4.97 |

All linear dimensions in (mm)

**Note:** Combines features of the Threaded Module and Raised/Mounted module. Especially designed when installation space is limited and base plate or angle plate has relatively thin dimensions. The positioning of the module is simple and accurate when using the precision flange diameter. Pneumatic supply is possible by manifolds or pipes/hoses. Pneumatic pressure is needed for unclamping (min 8 bar / 116 psi, max 12 bar / 175 psi). For **clamping** process pneumatic pressure of min 5 bar / 75 psi, max 6 bar / 90 psi is required briefly in order to achieve defined pull-in force. The installation clamping module is mechanically locked in the clamped position. The unique mechanical locking system results in virtually no vibration even with extensive machining forces. The pneumatic design has 2 connections: 1 x unclamping / 1 x clamping.



## Horizontal Rapid-Clamping Cylinder

### Hydraulic Unlocking

Cover and piston hardened.

Repeatability < 0.005 mm (0.0002")



- For easy handling of heavy fixtures
- Makes palletization very quick by hooking into a hole at the top and moving downwards
- No searching for the holes
- No damage to Zero-Point bore or pull studs

### Hardened Stainless Steel

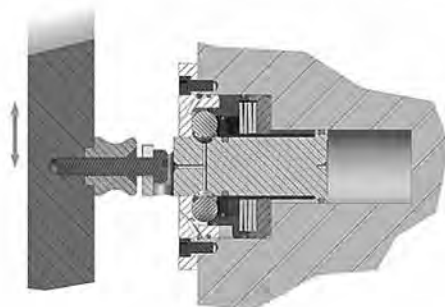
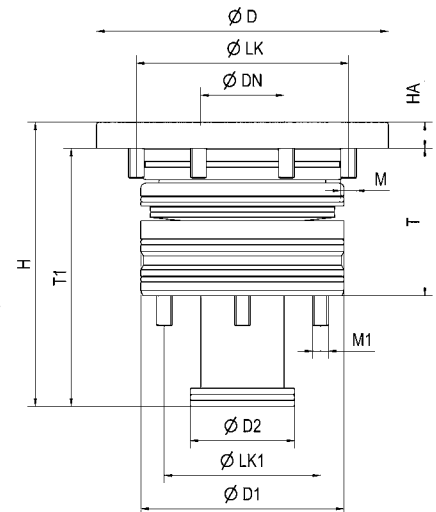
| Part Number | Size | Pull-In/Locking Force up to kN / (lbs) | Holding Force kN / (lbs) | Blow Out | Advance Motion, Hydr. Suspension Piston | kg  |
|-------------|------|----------------------------------------|--------------------------|----------|-----------------------------------------|-----|
| 303065      | K20  | 20 / (4500)                            | 55 / (12350)             |          |                                         | 2.1 |
| 306217      | K20  | 20 / (4500)                            | 55 / (12350)             |          | Yes                                     | 2.1 |
| 303073      | K20  | 20 / (4500)                            | 55 / (12350)             | Yes      |                                         | 2.1 |
| 306233      | K20  | 20 / (4500)                            | 55 / (12350)             | Yes      | Yes                                     | 2.1 |
| 303107      | K40  | 40 / (9000)                            | 105 / (23600)            |          |                                         | 5.2 |
| 306258      | K40  | 40 / (9000)                            | 105 / (23600)            |          | Yes                                     | 5.2 |
| 303115      | K40  | 40 / (9000)                            | 105 / (23600)            | Yes      |                                         | 5.2 |
| 306274      | K40  | 40 / (9000)                            | 105 / (23600)            | Yes      | Yes                                     | 5.2 |

### Dimensions (mm)

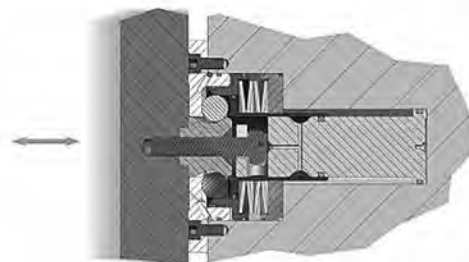
| Part Number | ØD  | ØDN | ØD1 | ØD2 | H   | HA | ØLK | ØLK1 | M  | M1 | T    | T1  |
|-------------|-----|-----|-----|-----|-----|----|-----|------|----|----|------|-----|
| 303065      | 112 | 32  | 78  | 40  | 109 | 10 | 88  | 60   | M6 | M6 | 56.5 | 99  |
| 306217      | 112 | 32  | 78  | 40  | 109 | 10 | 88  | 60   | M6 | M6 | 56.5 | 99  |
| 303073      | 112 | 32  | 78  | 40  | 109 | 10 | 88  | 60   | M6 | M6 | 56.5 | 99  |
| 306233      | 112 | 32  | 78  | 40  | 109 | 10 | 88  | 60   | M6 | M6 | 56.5 | 99  |
| 303107      | 148 | 40  | 102 | 48  | 144 | 15 | 118 | 76   | M8 | M6 | 73   | 129 |
| 306258      | 148 | 40  | 102 | 48  | 144 | 15 | 118 | 76   | M8 | M6 | 73   | 129 |
| 303115      | 148 | 40  | 102 | 48  | 144 | 15 | 118 | 76   | M8 | M6 | 73   | 129 |
| 306274      | 148 | 40  | 102 | 48  | 144 | 15 | 118 | 76   | M8 | M6 | 73   | 129 |

All linear dimensions in (mm)

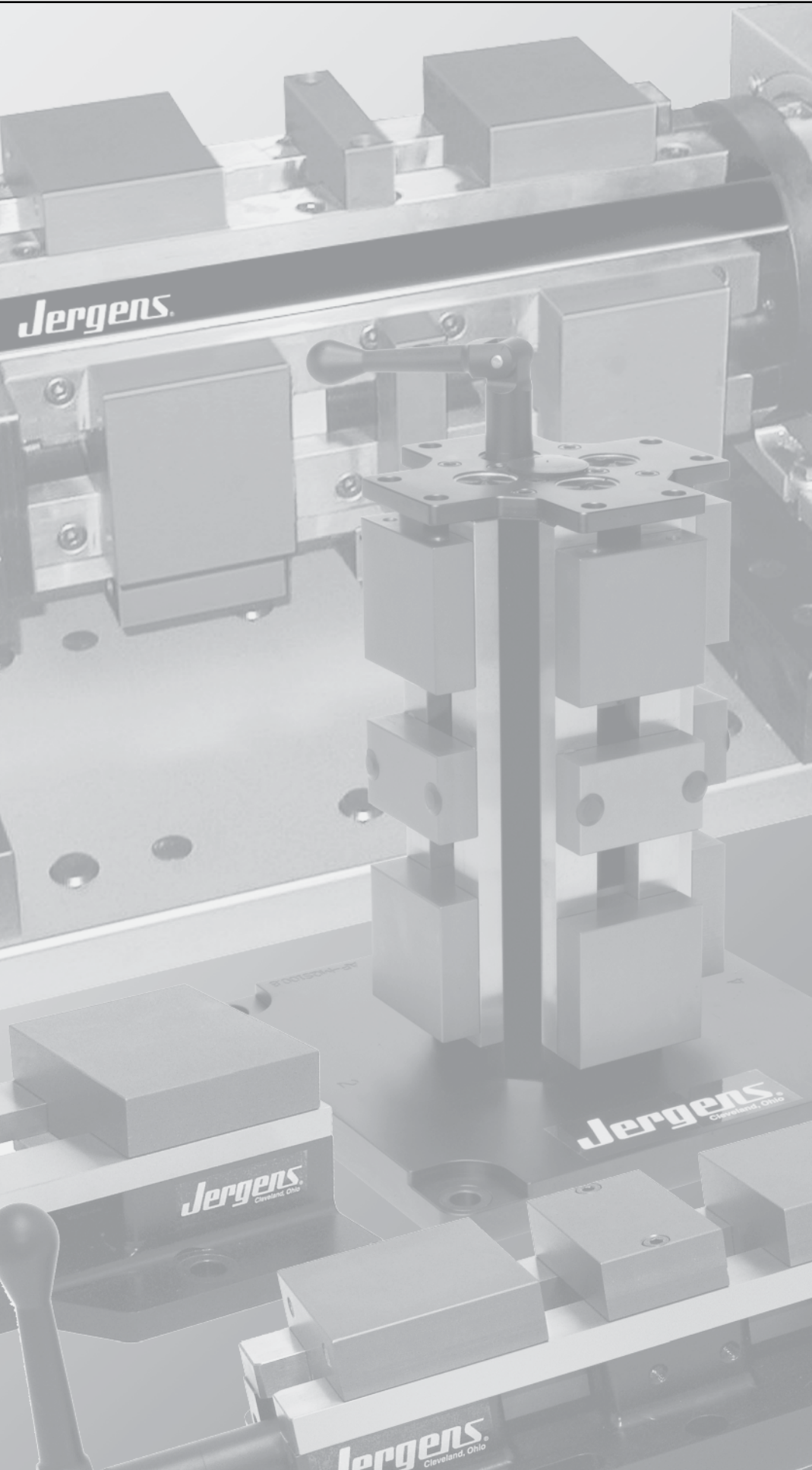
**Note:** As standard, there is a manual or hydraulic advance motion of the suspension piston.



**Release Mode**



**Clamped Mode**



## Vises

|                                  |         |
|----------------------------------|---------|
| Introduction to Design.....      | 2.2-2.3 |
| VMC/HMC Solutions.....           | 2.4-2.5 |
| Ball Lock® Mounting System ..... | 2.6-2.7 |

## Production Vises

|                                   |           |
|-----------------------------------|-----------|
| 4" (100 mm) Production Vises..... | 2.8-2.9   |
| 6" (150 mm) Production Vises...   | 2.10-2.11 |

## Self Centering Vises ..... 2.12

|                   |      |
|-------------------|------|
| 4" (100 mm) ..... | 2.13 |
| 6" (150 mm) ..... | 2.14 |
| Accessories ..... | 2.15 |

## Production Vise Columns

|                             |      |
|-----------------------------|------|
| 4" (100 mm) Production Vise |      |
| 4 Sided .....               | 2.16 |
| 3 Sided .....               | 2.17 |

## 6" (150 mm) Production Vise

|               |      |
|---------------|------|
| 4 Sided ..... | 2.18 |
| 3 Sided ..... | 2.19 |

## 12 Station Hex ..... 2.20

## 12 & 16 Station Multi Quads..... 2.21-2.22

## Hydraulic Production Vises ..... 2.23

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|-------------------|-----------|
| 4" (100 mm) ..... | 2.24      |
| 6" (150 mm) ..... | 2.25-2.26 |

## Hydraulic Vise Columns..... 2.27

|                          |      |
|--------------------------|------|
| 4" (100 mm) 4 sided..... | 2.28 |
| 4" (100 mm) 3 sided..... | 2.29 |
| 6" (150 mm) 4 sided..... | 2.30 |
| 6" (150 mm) 3 sided..... | 2.31 |

## Column Subplates ..... 2.32

## Hydraulic Vise Accessories ..... 2.33-2.34

## Vise Accessories ..... 2.35-2.40

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| Jaw Selections.....                 | 2.35-2.37 |
| Ball Lock® Shanks/Plates .....      | 2.38-2.39 |
| Sine Fixture Keys/T-Slot Nuts ..... | 2.40      |

## Cast Iron Shop Vises ..... 2.41-2.42

## Bock Quick Change Fixturing

|                           |           |
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| DexLoc™ Locator Pins..... | 2.49      |
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## 5 Axis Production Vises

|                           |           |
|---------------------------|-----------|
| Introduction.....         | 2.51      |
| Self Centering.....       | 2.52      |
| Jaws /Accessories .....   | 2.53-2.54 |
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| Jaws/Accessories .....    | 2.56      |
| Quick Clamping Block..... | 2.57      |
| Super Compact Clamp ..... | 2.58      |
| Jaws/Accessories .....    | 2.59-2.60 |

## Jergens Production Vise System

### Self-Centering Vises



- Quick, simple fixturing for concentric machining

### Dual Station Vises



### Maximum Holding Power

- Jaws machined to the contour of your workpiece maximizing holding force.

### Production Vise Columns

2, 4, 6, 8, 12 and 16 station models available.

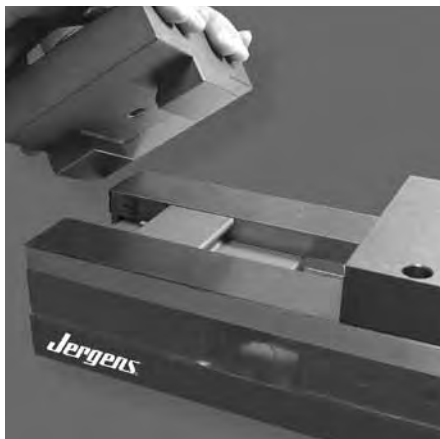


6" (150mm) MonoQuad

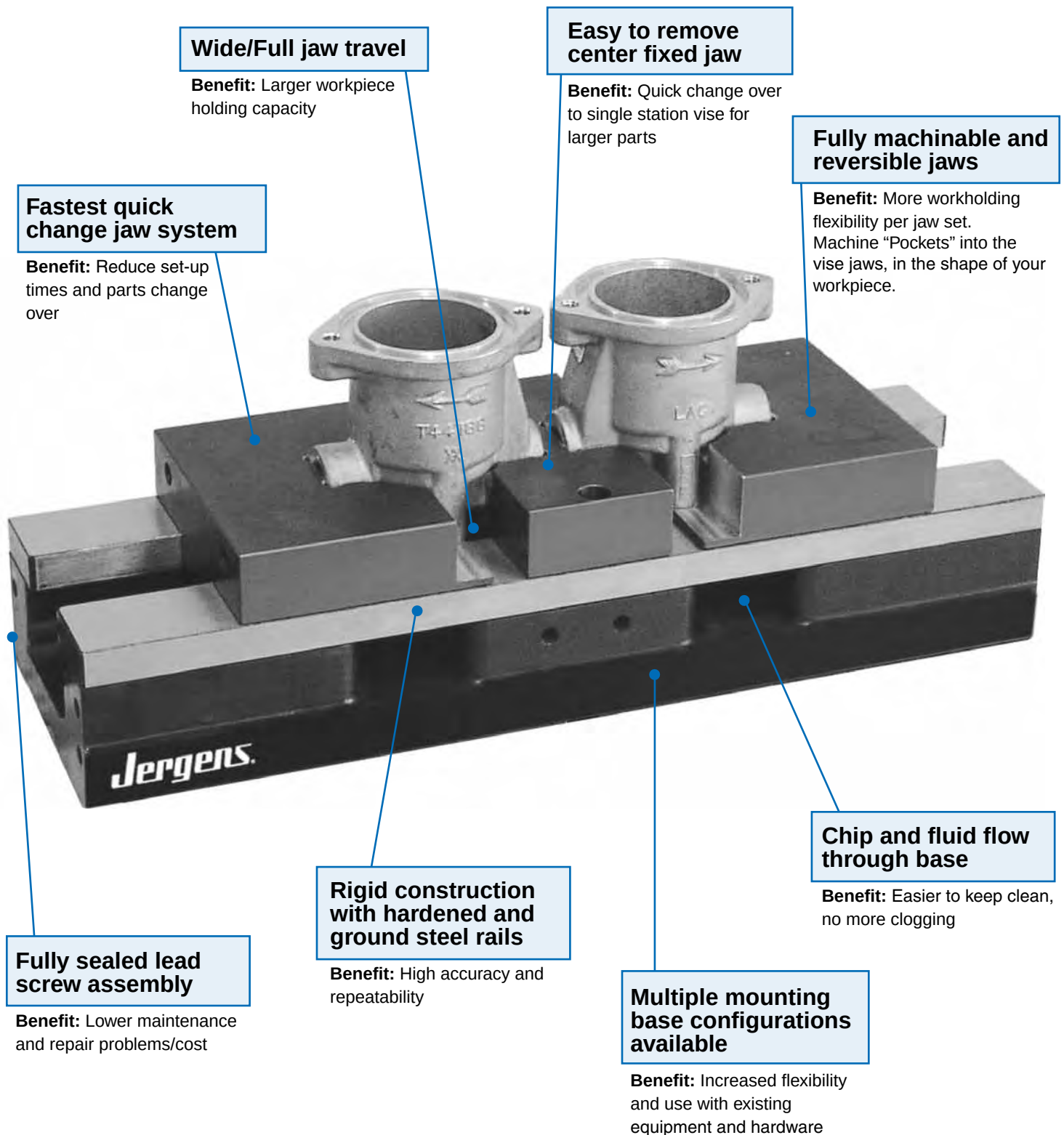
4" (100mm) MonoQuad

- Quick change reverseable soft jaws
- Single station adapter plate included
- Multiple base designs to meet any requirement

### Fastest Quick Change Jaw System



## Jergens Production Vises Features and Benefits:





## Vertical Machine Solutions



### Narrow Base Production Vises Pages 2.9; 2.11

The small footprint allows maximum density of vises on your fixture or table. Best choice for applications where parts are held in multiple vises.



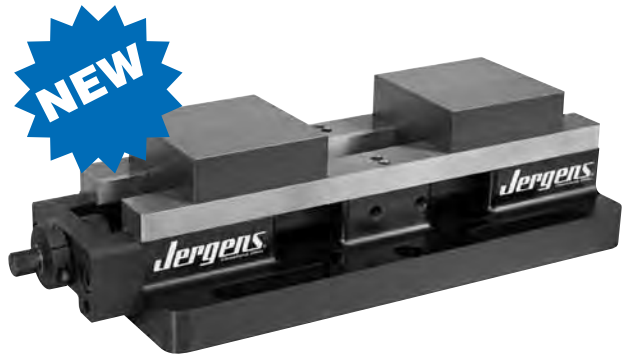
### Ball Lock® Base Production Vises Pages 2.8; 2.10

The mounting flange is cut into a jigsaw pattern to allow vises to nest closely together. Designed for use with Jergens Ball Lock® Mounting System.



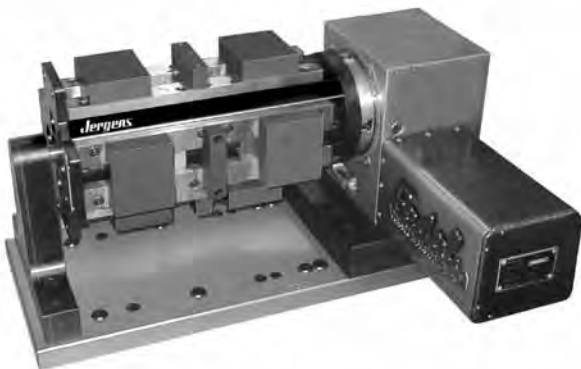
### Universal Base Production Vises Pages 2.9; 2.11

The mounting flange has slotted holes to allow mounting on any machine table.



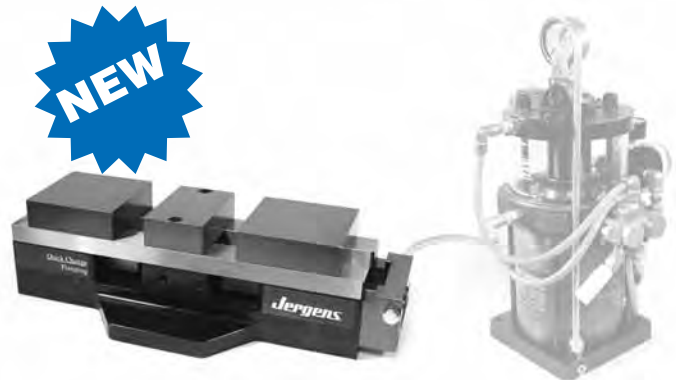
### Self Centering Vises (3 Base Styles) Pages 2.12-2.15

Self-Centering vises provide quick, simple fixturing for concentric machining of different sized workpieces.



### Indexer Systems Page 2.17

Indexer solutions can be customized to your requirements. Choose either three or four sided columns.



### Hydraulic Vise Pages 2.24-2.26

Innovative compact design. Reduced set-up time. Internal Slide Assembly with Hydraulic Clamping Cylinder.

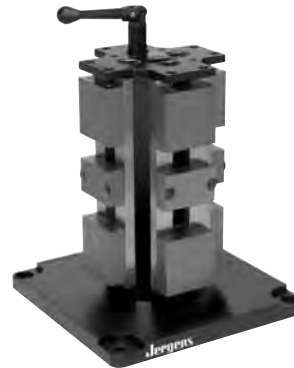


## Horizontal Machine Solutions



### 3-Sided Production Vise Columns Pages 2.17; 2.19

For machining 3 faces of production parts on HMC's. Large spindle noses can access the workpiece. **Allows for up to 240° workpiece accessibility.**



### 4-Sided Production Vise Columns Pages 2.16; 2.18

Available with bases to fit directly onto machine table pallets or to a Ball Lock® sub-plate.



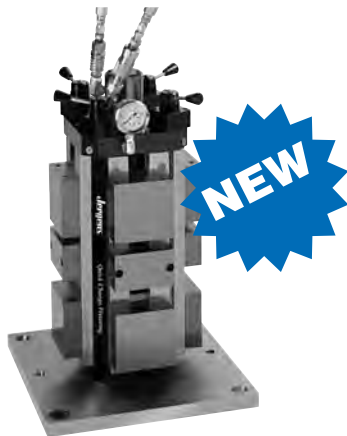
### 6-Sided Production Vise Columns Page 2.20

Increase the number of parts per load, while maintaining a small footprint. Available with bases to fit directly onto machine tables or to a Ball Lock® sub-plate.



### 4-Sided Production Vise Multi-Columns Pages 2.21 & 2.22

Multiple columns mounted on a single base provide 12 or 16 workstations. Available with bases to fit directly onto your machine table or to a Ball Lock® sub-plate.



### Hydraulic Vise Columns Pages 2.27-2.33

Innovative compact design. Reduced set-up times, faster workpiece change overs.



### Multi-Vise Fixtures Pages 2.9; 2.11; 2.13; 2.15; 2.25

To maximize productivity, mount multiple narrow body vises onto a single fixture plate. Mount the fixture plate onto the tombstones with the Jergens Ball Lock® Mounting System.

## Ball Lock® Fixture Mounting System for Jergens Production Vises



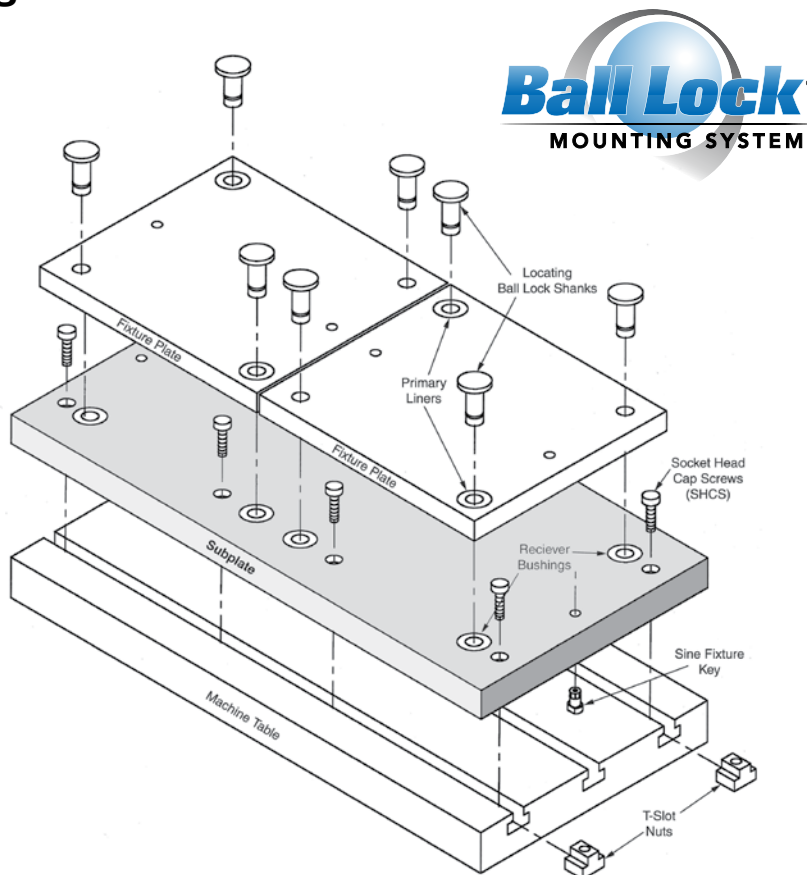
### Locates

The Ball Lock® System accurately positions your fixture plate...to within  $\pm 0.0005"$  ( $\pm 0.013\text{mm}$ ) repeatability or better, minimizing the need to indicate your fixture.



### Locks

The Ball Lock® System securely holds fixture plates to subplates with up to 20,000 lbs. (88kN) of hold-down force per shank.



The Ball Lock® Mounting System provides a method of quickly and accurately locating fixtures onto machine tables. The Ball Lock® Mounting System has done for machining centers what the Japanese SMED (Single Minute Exchange of Die) concept did for presses. Instead of SMED, Ball Lock® provides single minute exchange of fixtures. Fixtures can often be exchanged in less than a minute with position repeatability of  $\pm 0.0005"$  ( $\pm 0.013\text{mm}$ ). Fixtures can be exchanged between different machines when both are using the Jergens Ball Lock® Mounting System.

### Commonly Asked Questions

#### Q. What is the Ball Lock® Mounting System?

**A.** It is a means of locating and locking two flat surfaces together, normally a fixture plate to a sub-plate.

#### Q. How does it locate?

**A.** Similar to locating pins, two Ball Lock® shanks (pins) pass through two precision liner bushings on the fixture plate and into two precision receiver bushings on the subplate.

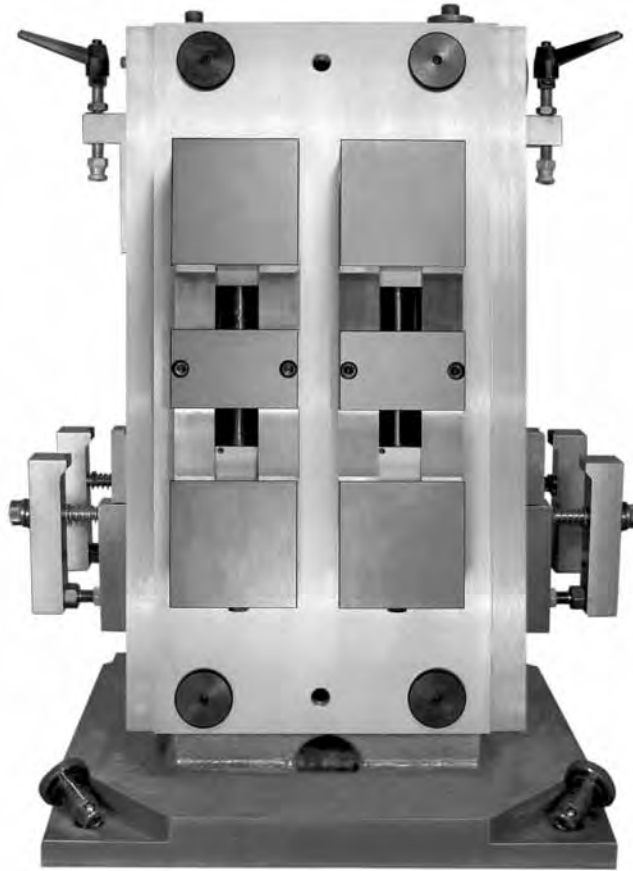
#### Q. How does it lock?

**A.** Inside the shank are three balls that expand into a tapered groove in the receiver bushing. This action draws the plates together. The locking balls are activated by turning a setscrew in the head of the shank, which pushes a 4th ball to distribute the clamping forces between the 3 locking balls.

#### Q. How many shanks are required to locate and lock each fixture?

**A.** Only two shanks, passing through bushings in the fixture plates, are required for location. However, additional shanks passing through clearance holes in the fixture plate will provide additional holding force distributed across the plate.

## Unmatched Setup Speed and Workholding Flexibility



**Q. Is there a preferable location for the liner bushing?**

**A.** System repeatability is improved if the liners are located at opposite corners of a rectangular fixture plate. For consistency, we recommend locating the liner bushings at top left and bottom right.

**Q. What are the advantages of using the Ball Lock® System over the conventional method of dowel pins and cap screws?**

**A.** Both locating and locking are accomplished in the same motion. Ball Lock® shanks require only 2.5 turns to lock a 1/2–13 (M12) screw

with 3/4" (18mm) of thread engagement requires 10 turns to lock. On CNC machines, the repeatability of fixture locations makes indicating of the fixture unnecessary.

**Q. How do I recess the fixtureplate for a clear surface ?**

**A.** Counterbore the fixture plate to a diameter large enough to allow easy removal of the shank.

**Note:** The thickness of the plate section under the head of the shank is critical and must conform to mounting instructions .

**Q. What if my plate is thinner than the recommended thickness?**

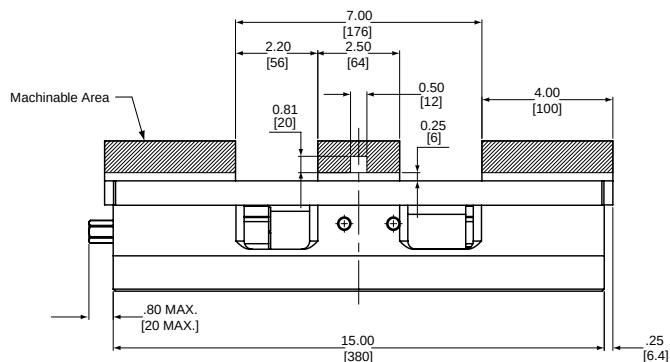
**A.** By adjusting the depth of the counterbore for the receiver bushing in the subplate, you can still use the Ball Lock® System. If there are any questions on this type of application, please call 1-800-JERGENS.

**Q. Can I use the shanks in a heated environment?**

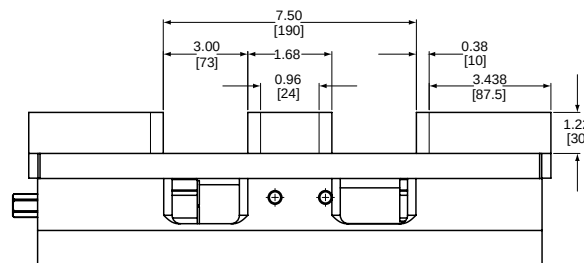
**A.** The shank is made of alloy steel, heat treated to 40-45Rc and should with stand temperatures up to 400°F. (200°C).

**Note:** Thermal expansion of fixture plates may affect the center distance tolerance and repeatability.

## Production Vises - 4" (100mm)



Vise With Machinable Soft Jaws



Vise With Hard Jaw Carrier Set  
and hardened steel inserts

### Features and Benefits:

- Compact design in 3 extruded aluminum base styles for easy setup and to reduce weight on worktable.
- Fully sealed, patented lead screw assembly for long maintenance free service. Openings allow chips to flow out of the vise base.
- Hardened steel rails, ground within  $\pm 0.001"$  (0.025mm) provide precise location, resist wear and provide strong support to jaws.
- Supplied with aluminum soft jaws, fully machineable and reversible. Additional jaws can be ordered separately, see page 2.36. Alternate jaw types can be ordered with the vise base by adding the following suffix to the part numbers:
  - H for Jaw Carrier Set with Hardened Steel Inserts
  - S for machineable Steel Jaws
  - T for extra Tall aluminum jaws sets
  - W for extra Wide aluminum jaw sets

### Clamping Force Jergens 4" (100mm)

| Torque   |     | Clamping Force |        |
|----------|-----|----------------|--------|
| ft. lbs. | N•m | lbs.           | kgf    |
| 20       | 27  | 3,600          | 1,630  |
| 30       | 41  | 4,500          | 2,040  |
| 40       | 54  | 5,300          | 2,400  |
| 50       | 68  | 6,200          | 2,800  |
| 60       | 81  | 7,200*         | 3,250* |

\*Recommended Maximum

### Maximum Clamping Range With Shaped Jaws

Dual Station: 6.75" (170mm)

Single Station: 14.40" (365mm)

## Ball Lock® Base

The **Ball Lock® Base Vise** is for use with the Jergens Ball Lock® Quick Change Mounting System. The base has a "jig saw" pattern to allow the vises to be mounted close to each other. For more information about Ball Lock®, see page 2.6-2.7

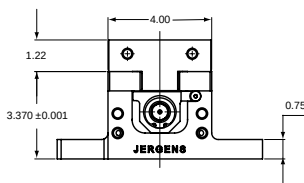
### Inch

| Part No. | Wt.     | Ball Lock® Shank Part No. | Shank Size  |
|----------|---------|---------------------------|-------------|
| 49405    | 31 lbs. | 49601                     | 20mm X 3/4" |

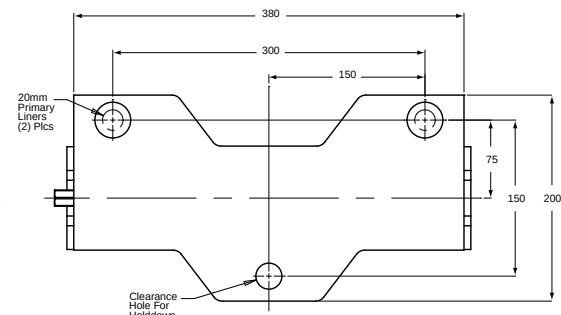
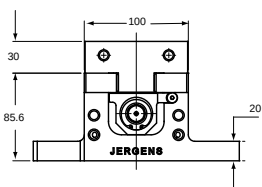
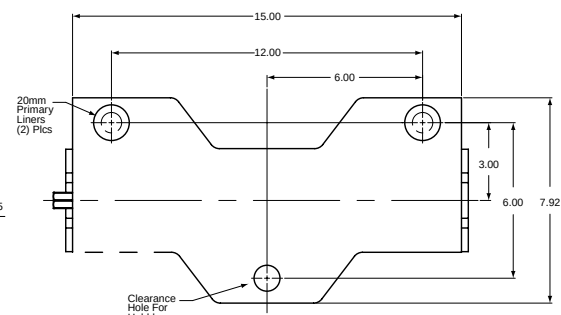


### Metric

| Part No. | Wt.   | Ball Lock® Shank Part No. | Shank Size  |
|----------|-------|---------------------------|-------------|
| 69405    | 14 kg | 49651                     | 20mm X 20mm |



### Mounting Dimensions

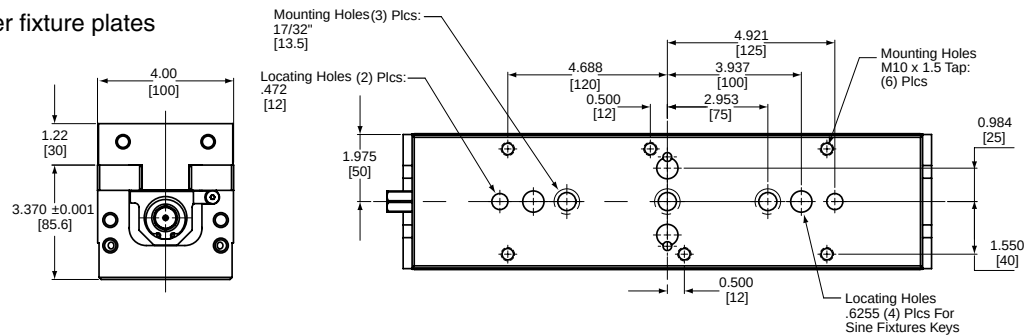


## Production Vises - 4" (100mm) Narrow Base

| Part Number | Wt. lbs/kg |
|-------------|------------|
| 49401       | 30/14      |

The **Narrow Base Vise** can be mounted as a stand-alone vise with traditional strap clamps. The narrow base has 2 locating holes for 12mm dowel pins and 2 locating holes for sine fixture keys to align vise in T-slots. Keys for inch and metric T-slots shown on page 2.40. Recessed mounting holes (3) are also provided for top mounting to fixture plates with socket head cap screws. Tapped mounting holes (6) are provided for bottom mounting. The slim design allows a high density of vises on machine tables, tombstones, or columns. Maximize flexibility by utilizing the Jergens Ball Lock® Quick Change Mounting System. See page 2.6

- Easy to mount to Ball Lock® or other fixture plates



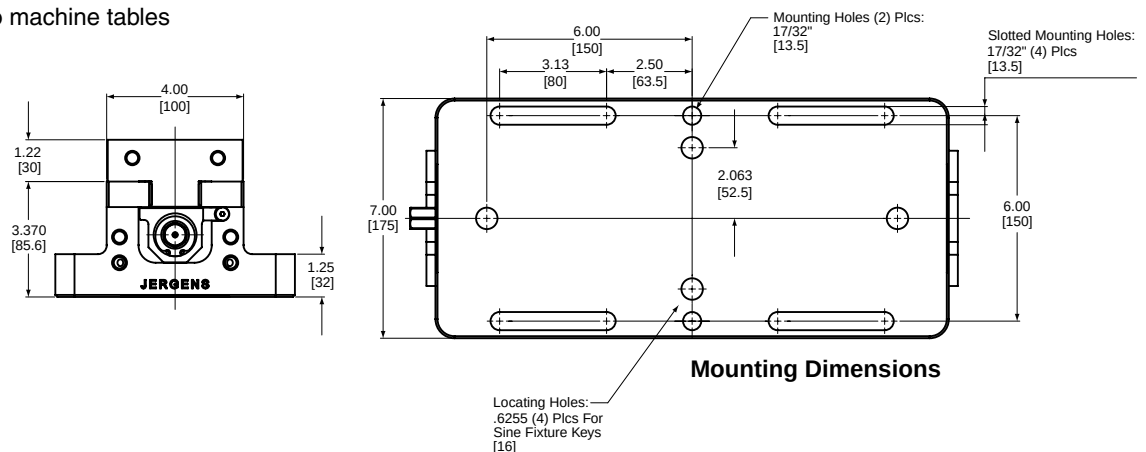
Mounting Dimensions

## Universal Base

| Part Number | Wt. lbs/kg |
|-------------|------------|
| 49471       | 31/14      |

The **Universal Base Vise** is easily mounted directly to machine tool tables. Slotted mounting holes will match almost any table slot pattern. Location holes are provided for Jergens Sine Fixture Keys, to provide easy and accurate alignment with table slots.

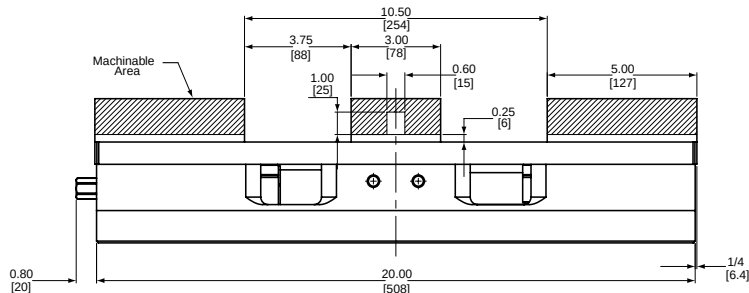
- Easy to mount directly to machine tables



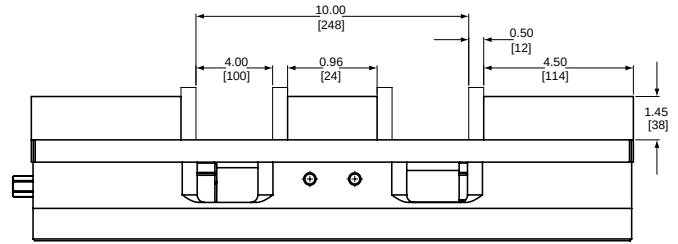
Mounting Dimensions



## Production Vises - 6" (150mm)



Vise With Machinable Soft Jaws



Vise With Hard Jaws Carrier Set  
and hardened steel inserts

### Features and Benefits:

- Compact design in 3 extruded aluminum base styles for easy setup and to reduce weight on worktable.
- Fully sealed, patented lead screw assembly for long maintenance free service. Openings allow chips to flow out of the vise base.
- Hardened steel rails, ground within  $\pm 0.001"$  (0.025mm) provide precise location, resist wear and provide strong support to jaws.

- Supplied with aluminum soft jaws, fully machineable and reversible. Additional jaws can be ordered separately, see page 2.36. Alternate jaw types can be ordered with the vise base by adding the following suffix to the part numbers:  
 -H for Jaw Carrier Set with Hardened Steel Inserts  
 -S for machineable Steel Jaws  
 -T for extra Tall aluminum jaws sets  
 -W for extra Wide aluminum jaw sets

### Clamping Force Jergens 6" (150mm)

| Torque   |     | Clamping Force |        |
|----------|-----|----------------|--------|
| ft. lbs. | N•m | lbs.           | kgf    |
| 20       | 27  | 3,600          | 1,630  |
| 30       | 41  | 4,500          | 2,040  |
| 40       | 54  | 5,300          | 2,400  |
| 50       | 68  | 6,200          | 2,800  |
| 60       | 81  | 7,200          | 3,250  |
| 70       | 95  | 8,400          | 3,800  |
| 80       | 108 | 9,200          | 4,150  |
| 90       | 122 | 10,100*        | 4,550* |

\*Recommended Maximum

### Maximum Clamping Range With Shaped Jaws

Dual Station: 9.2" (233mm)

Single Station: 19.5" (495mm)

## Ball Lock® Base

The **Ball Lock® Base Vise** is for use with the Jergens Ball Lock® Quick Change Mounting System. The base has a "jigsaw" pattern to allow the vises to be mounted close to each other. For more information about Ball Lock®, see page 2.6-2.7.

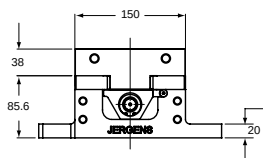
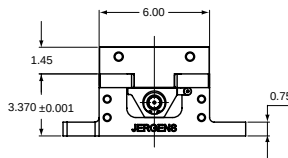
### Inch

| Part No. | Wt.     | Ball Lock® Shank Part No. | Shank Size  |
|----------|---------|---------------------------|-------------|
| 49406    | 68 lbs. | 49601                     | 20mm X 3/4" |

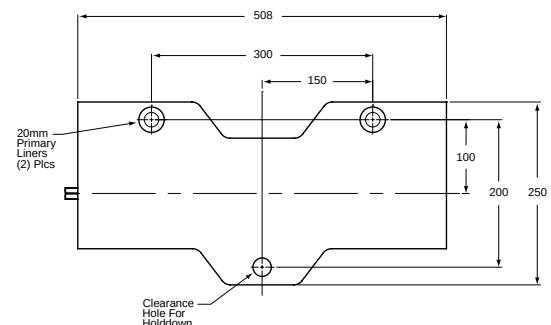
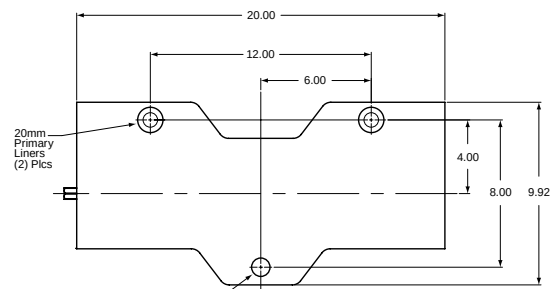


### Metric

| Part No. | Wt.   | Ball Lock® Shank Part No. | Shank Size  |
|----------|-------|---------------------------|-------------|
| 69406    | 31 kg | 49651                     | 20mm X 20mm |



### Mounting Dimensions

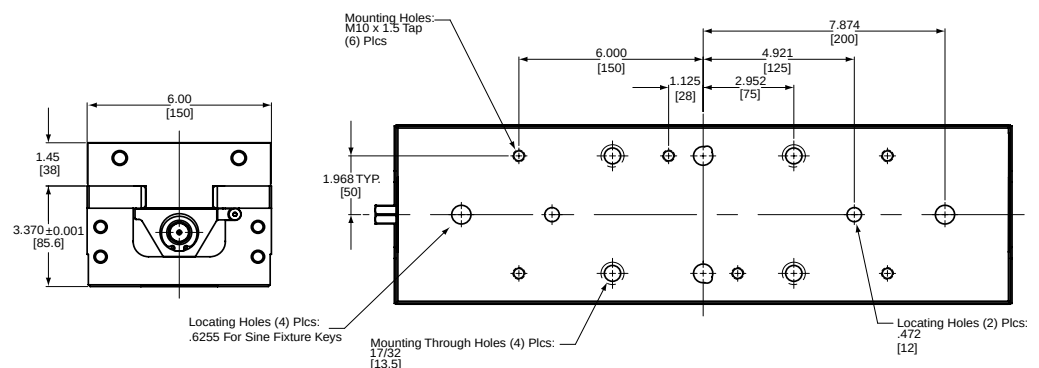


## Production Vises - 6" (150mm) Narrow Base

| Part Number | Wt. lbs/kg |
|-------------|------------|
| 49402       | 66/30      |

The **Narrow Base Vise** can be mounted as a stand-alone vise or mounted to a fixture plate. The slim design allows a high density of vises on machine tables, tombstones, or columns. Maximize flexibility by utilizing the Jergens Ball Lock® Quick Change Mounting System. See page 2.6-2.7.

- Easy to mount to Ball Lock® or other fixture plates



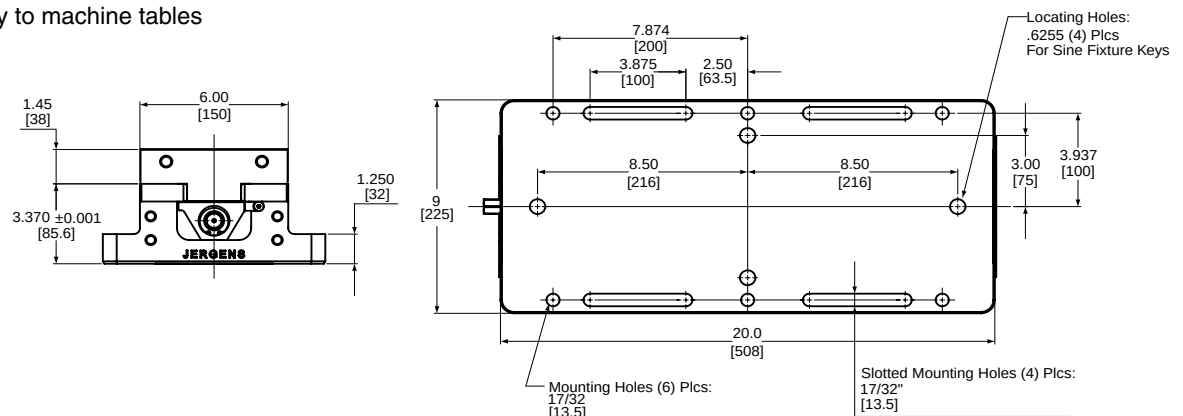
Mounting Dimensions

## Universal Base

| Part Number | Wt. lbs/kg |
|-------------|------------|
| 49472       | 68/31      |

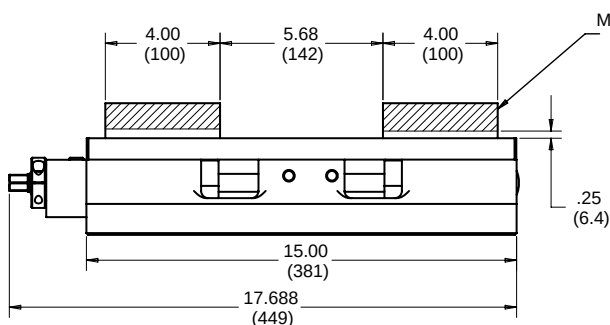
The **Universal Base Vise** is easily mounted directly to machine tool tables. Slotted mounting holes will match almost any table slot pattern. Location holes are provided for Jergens Sine Fixture Keys, to provide easy and accurate alignment with table slots.

- Easy to mount directly to machine tables

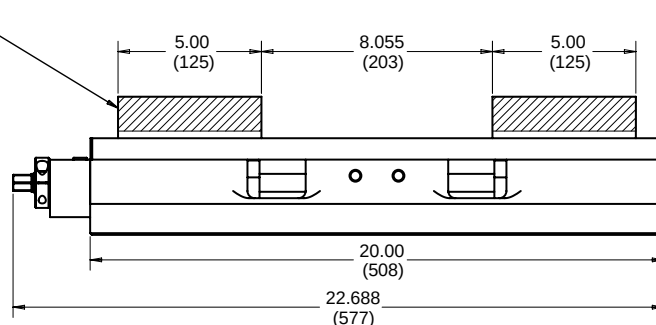


Mounting Dimensions

## Self-Centering Precision Production Vises



4" (100mm) Self-Centering Vises



6" (150mm) Self-Centering Vises

### Features and Benefits:

- Self-Centering vises provide quick, simple fixturing for concentric machining of different sized workpieces.
- Adjustable gib design increases accuracy.
- Compact design in 3 extruded aluminum base styles for easy setup and to reduce weight on worktable.
- Fully sealed, patented lead screw assembly for long maintenance free service. Openings allow chips to flow out of the vise base.
- Hardened steel rails, ground within  $\pm 0.001"$  (0.025mm) provide precise location, resist wear and provide strong

### Technical Specifications:

Maximum jaw opening (Unmachined jaws)  
 4" (100mm) model: 5.6" (142mm)  
 6" (150mm) model: 8" (200mm)  
 Centering accuracy from minimum to maximum opening: 0.0006" (0.015mm)  
 Repeatability: 0.0002" (0.005mm)  
 Maximum Clamping Force: 4600lbs (2000kgf)

### Maximum Clamping Range

With Shaped Jaws  
 4" Vise: 13" (330mm)  
 6" Vise: 17.5" (440mm)

### Clamping Force

Jergens 4" (100mm) & 6" (150mm)  
 Self-Centering Vises

| Torque   |     | Clamping Force |       |
|----------|-----|----------------|-------|
| ft. lbs. | N•m | lbs.           | kgf   |
| 20       | 27  | 1100           | 500   |
| 30       | 41  | 1500           | 680   |
| 40       | 54  | 2200           | 1000  |
| 50       | 68  | 2700           | 1220  |
| 60       | 81  | 3100           | 1400  |
| 70       | 95  | 3800           | 1720  |
| 80       | 108 | 4200*          | 1900* |

\*Recommended Maximum

support to jaws.

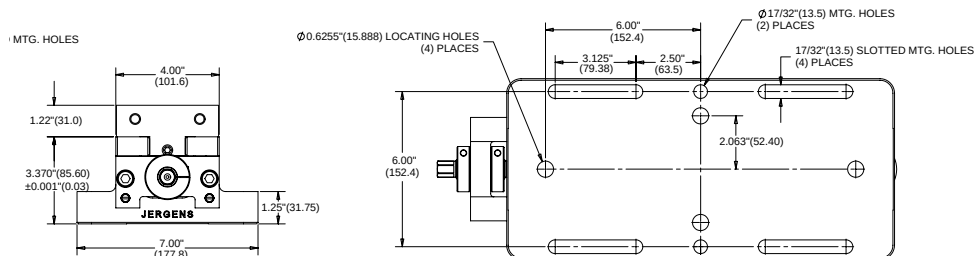
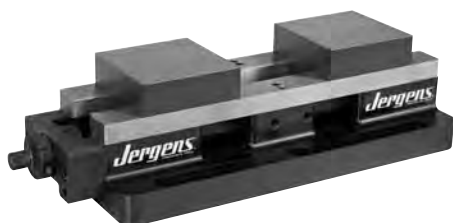
- Supplied with aluminum soft jaws, fully machineable and reversible. Additional jaws can be ordered separately, see page 2.36. Alternate jaw types can be ordered with the vise base by adding the following suffix to the part numbers:
  - H for Jaw Carrier Set with Hardened Steel Inserts
  - S for machineable Steel Jaws
  - T for extra Tall aluminum jaws sets
  - W for extra Wide aluminum jaw sets

## Self-Centering Vises - 4" (100mm)

### Universal Base

- Easy to mount directly to machine tables
- Slotted mounting holes fit most machinable centers

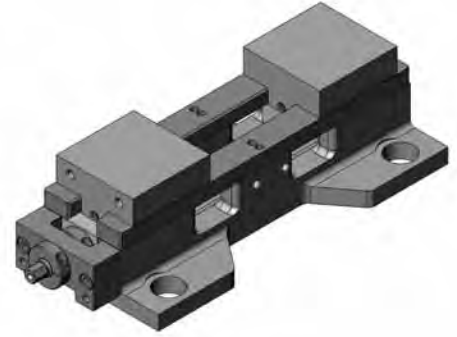
| Part Number | Wt. (lbs) |
|-------------|-----------|
| 49471SC     | 38        |



- Shown in Universal Base, also available in Narrow Bases and Ball Lock® Mounting Base.

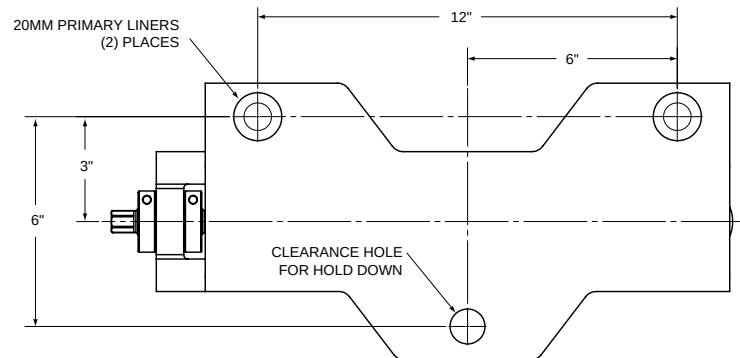
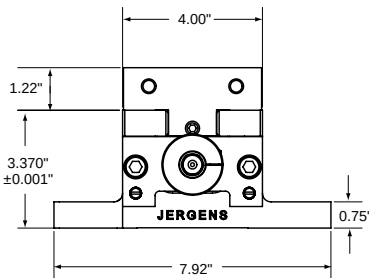
## Self-Centering Vises - 4" (100mm) Ball Lock®

- Integrates with the Jergens Ball Lock® mounting system
- Jigsaw pattern allows for "nesting" on Jergens Ball Lock® subplates



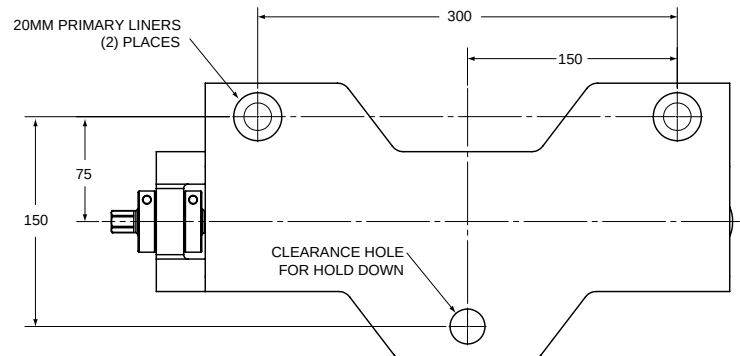
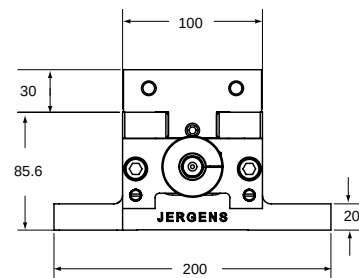
### Inch

| Part Number | Wt. lbs |
|-------------|---------|
| 49405SC     | 36      |



### Metric

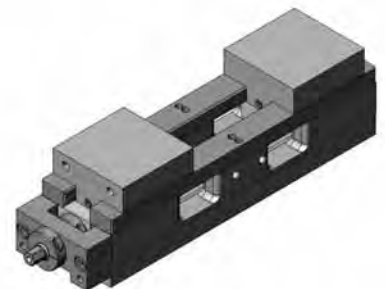
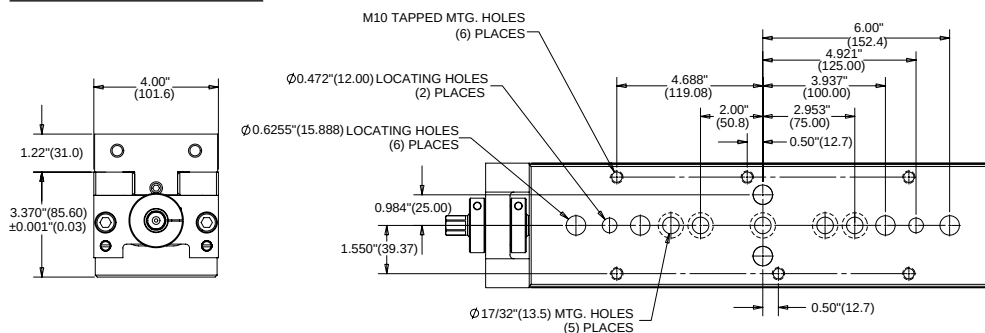
| Part Number | Wt. kg |
|-------------|--------|
| 69405SC     | 17     |



## Narrow Base

- Designed for stand alone or fixture plate mounting
- Slim design enables high density mounting

| Part Number | Wt. (lbs) |
|-------------|-----------|
| 49401SC     | 34        |

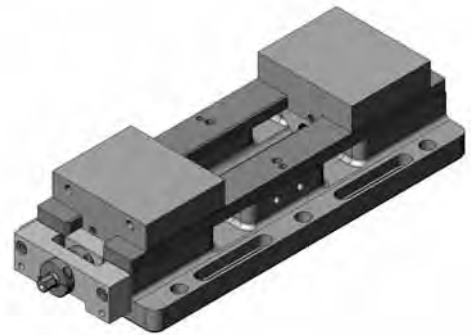
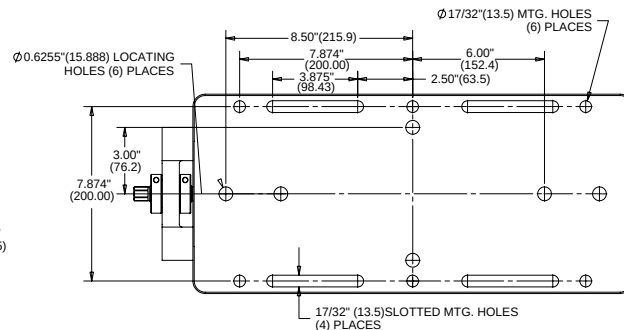
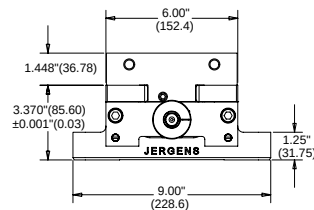


## Self-Centering Vises - 6" (150mm)

## Universal Base

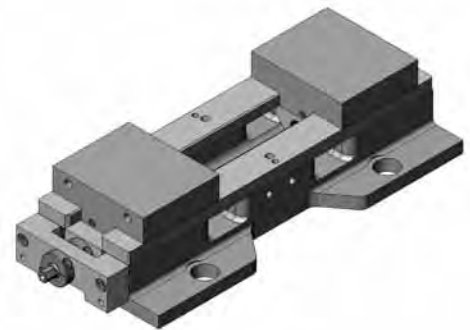
- Easy to mount directly to machine tables
- Slotted mounting holes fit most machinable centers

| Part Number | Wt. (lbs) |
|-------------|-----------|
| 49472SC     | 70        |



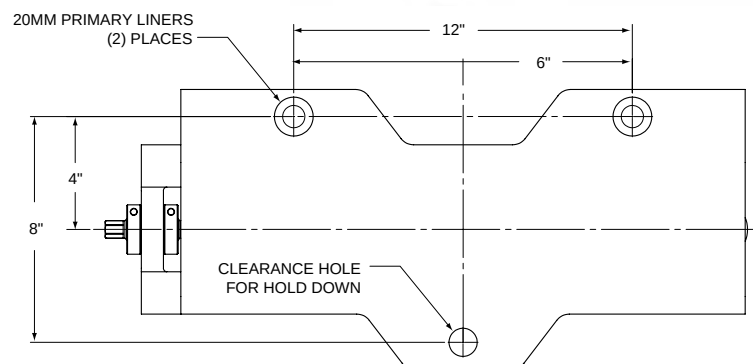
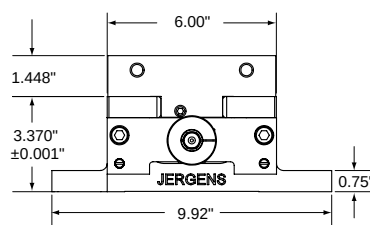
## Ball Lock® Base

- Integrates with the Jergens Ball Lock® mounting system
- Jigsaw pattern allows for “nesting” on Jergens Ball Lock® subplates



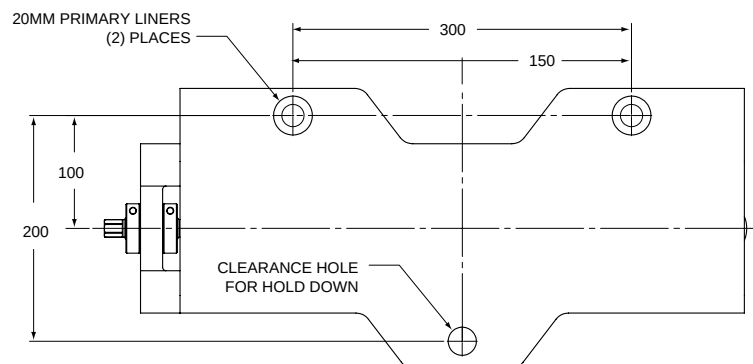
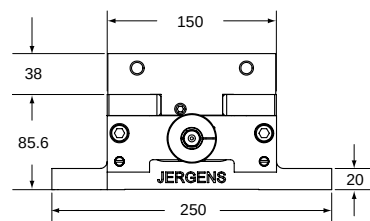
## Inch

| Part No. | Wt. lbs |
|----------|---------|
| 49406SC  | 66      |



## Metric

| Part No. | Wt. kg |
|----------|--------|
| 69406SC  | 30     |



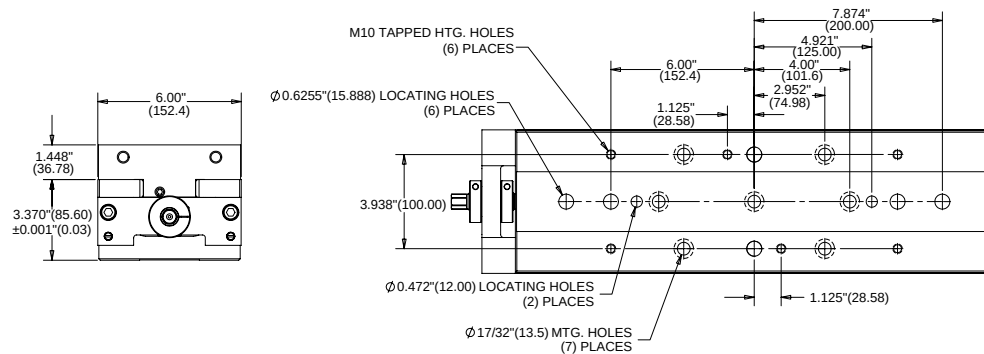
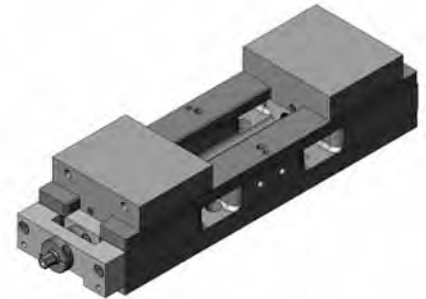


## Self-Centering Vises - 6" (150mm)

### Narrow Base

| Part Number    | Wt. (lbs) |
|----------------|-----------|
| <b>49402SC</b> | 64        |

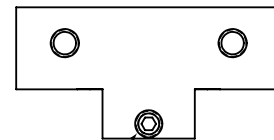
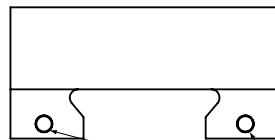
- Designed for stand alone or fixture plate mounting
- Slim design enables high density mounting



## Self Centering Vise Accessories

### Jaws with Adjustable Gib Screw\*

- Better location accuracy than conventional Jergens Quick Change Vise Jaws



GIB PINS

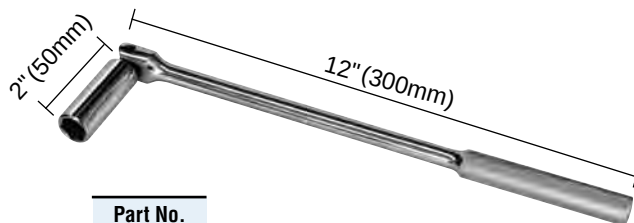
GIB ADJUSTMENT SCREW (BOTH ENDS)  
3/16" HEX.

\*Jergens Standard Jaws fully compatible, see complete selection on page 2.36  
To order Jergens Production Vise Jaws with Adjustable Gib Screw, use standard jaw part no. followed by "SC".

## Handle

### Self-Centering Vise Handle

One Piece Included with 4" (100mm) & 6" (150mm) Self-Centering Vises



| Part No.       |
|----------------|
| <b>49442SC</b> |

- Ergonomic hinge handle.
- Specification: Chrome Plated Steel, 9/16 Hex Socket

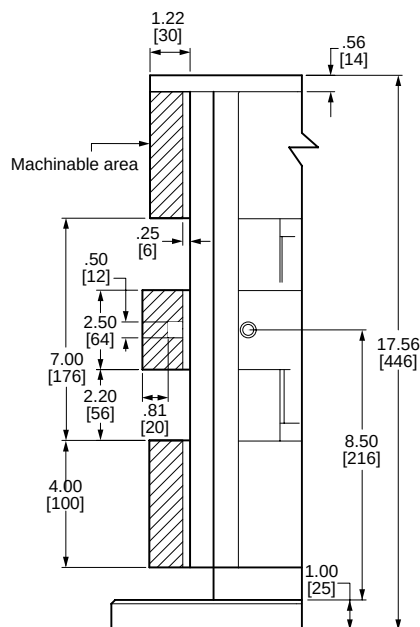
## Production Vise Columns - 4" (100mm)

- 3 or 4-Sided Columns
- Multiple mounting systems
- Fastest quick-change jaw system
- Full jaw travel
- Hardened and ground steel rails support jaws and resist wear
- Fully sealed lead screw assembly
- Supplied with machinable soft jaws
- Available with hard jaws

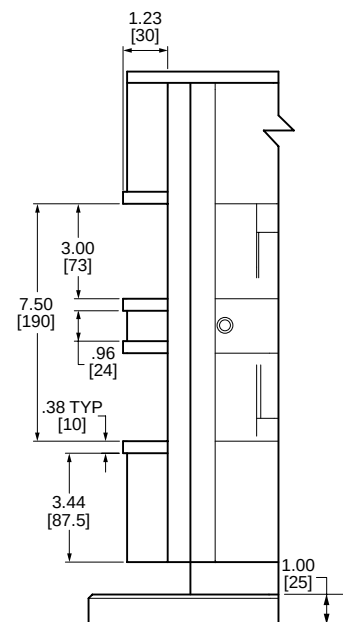
### Clamping Force Jergens 4" (100mm)

| Torque   |     | Clamping Force |        |
|----------|-----|----------------|--------|
| ft. lbs. | N•m | lbs.           | kgf    |
| 20       | 27  | 3,600          | 1,630  |
| 30       | 41  | 4,500          | 2,040  |
| 40       | 54  | 5,300          | 2,400  |
| 50       | 68  | 6,200          | 2,800  |
| 60       | 81  | 7,200*         | 3,250* |

\*Recommended Maximum



Column With Soft Jaws

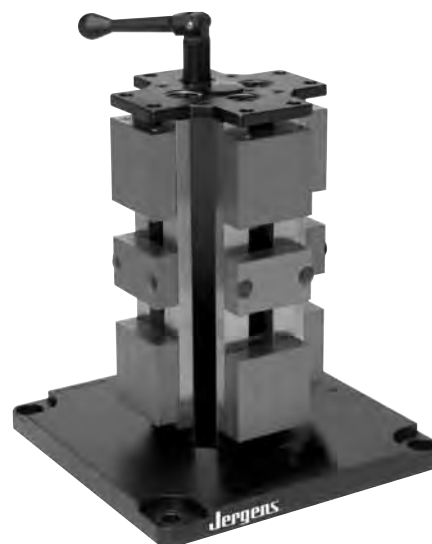
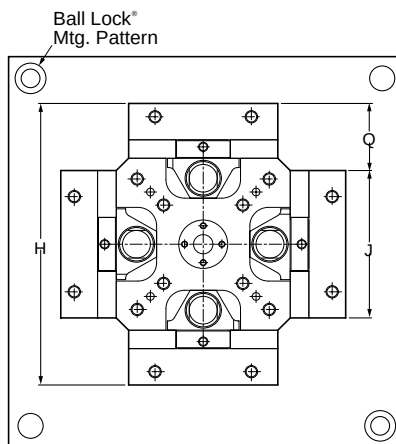


Column With Hard Jaws

## Production Vise Columns - 4" (100mm) 4-Sided

The 4-Sided Columns have eight stations for holding parts. Two standard bases and custom mounting patterns are available. The universal base mounts directly to most HMC tables using the provided mounting holes on 80MM or 100MM centers.

Further reduce set-up times by adding the Jergens Ball Lock® Mounting System to your HMC. Exchange your vise columns and any other fixture in less than a minute. Location of all fixtures will repeat within  $\pm 0.0005"$  ( $\pm 0.013\text{mm}$ ) or better. Please contact Jergens Customer Service for more information.



### 4-Sided 4" Vise Columns

| Mounting   | Part No.     | H    | J    | Q    | Base Width | Base Length | Ball Lock® Mtg Pattern | Mounting Pattern 1* | Mounting Pattern 2* | Wt. (lbs) | Ball Lock® Part No. | Shank Size |
|------------|--------------|------|------|------|------------|-------------|------------------------|---------------------|---------------------|-----------|---------------------|------------|
| Ball Lock® | <b>49403</b> | 9.56 | 4.00 | 2.80 | 15.75      | 15.75       | 14 x 14                | n/a                 | n/a                 | 132       | <b>49602</b>        | 20mm x 1"  |
| Universal  | <b>49475</b> | 9.56 | 4.00 | 2.80 | 11.81      | 11.81       | n/a                    | 80MM                | 100MM               | 122       | -                   | -          |

### 4-Sided 100mm Vise Columns Metric Bases

| Mounting   | Part No.     | H   | J   | Q  | Base Width | Base Length | Ball Lock® Mtg Pattern | Mounting Pattern 1* | Mounting Pattern 2* | Wt. (kg) | Ball Lock® Part No. | Shank Size  |
|------------|--------------|-----|-----|----|------------|-------------|------------------------|---------------------|---------------------|----------|---------------------|-------------|
| Ball Lock® | <b>69403</b> | 240 | 100 | 70 | 400        | 400         | 350 x 350              | n/a                 | n/a                 | 60       | <b>49652</b>        | 20mm x 25mm |
| Universal  | <b>69475</b> | 240 | 100 | 70 | 300        | 300         | n/a                    | 80MM                | 100MM               | 55       | -                   | -           |

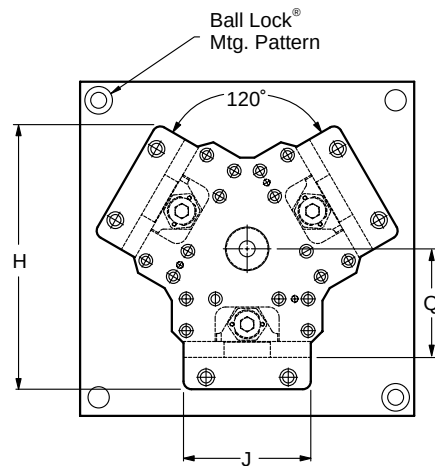
\* Bases on Universal Columns are provided with two sets of mounting holes, to fit grids or T-Slots on 80MM and 100MM centers. Custom mounting patterns and base sizes are available upon request.

## Production Vise Columns - 4" (100mm)

### 3-Sided

The 3-Sided Columns have six workstations, and may provide greater access to three or more sides of your work pieces. This design is especially beneficial on machining centers with large spindles. No need to sacrifice tool rigidity for access, by having tools extended too far from the tool holders. The universal base mounts directly to most HMC tables using the provided mounting holes on 80MM or 100MM centers.

Further reduce set-up time with the Jergens Ball Lock® Mounting System to your HMC. Exchange your vise columns and all other fixtures in less than a minute. Location of all fixtures will repeat within  $\pm 0.0005"$  ( $\pm 0.013\text{mm}$ ) or better.



Tri-column design allows up to 240° accessibility



### 3-Sided 4" Vise Columns

| Mounting   | Part No.     | H    | J    | Q    | Base Width | Base Length | Ball Lock® Mtg Pattern | Mounting Pattern 1* | Mounting Pattern 2* | Wt. (lbs) | Ball Lock® Part No. | Shank Size |
|------------|--------------|------|------|------|------------|-------------|------------------------|---------------------|---------------------|-----------|---------------------|------------|
| Ball Lock® | <b>49409</b> | 9.55 | 4.00 | 4.22 | 15.75      | 15.75       | 14 x 14                | n/a                 | n/a                 | 125       | <b>49602</b>        | 20mm x 1"  |
| Universal  | <b>49473</b> | 9.55 | 4.00 | 4.22 | 11.81      | 11.81       | n/a                    | 80MM                | 100MM               | 115       | -                   | -          |

### 3-Sided 100mm Vise Columns Metric Bases

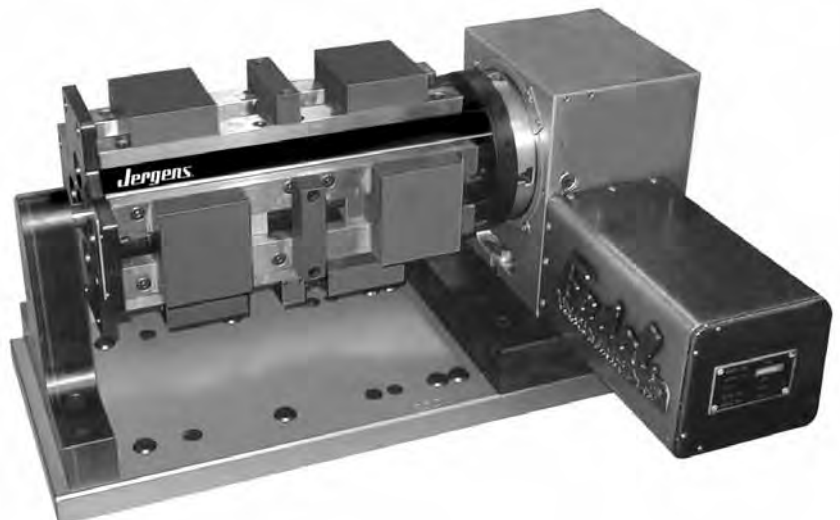
| Mounting   | Part No.     | H   | J   | Q  | Base Width | Base Length | Ball Lock® Mtg Pattern | Mounting Pattern 1* | Mounting Pattern 2* | Wt. (kg) | Ball Lock® Part No. | Shank Size  |
|------------|--------------|-----|-----|----|------------|-------------|------------------------|---------------------|---------------------|----------|---------------------|-------------|
| Ball Lock® | <b>69409</b> | 225 | 100 | 90 | 400        | 400         | 350 x 350              | n/a                 | n/a                 | 57       | <b>49652</b>        | 20mm x 25mm |
| Universal  | <b>69473</b> | 225 | 100 | 90 | 300        | 300         | n/a                    | 80MM                | 100MM               | 52       | -                   | -           |

\* Bases on Universal Columns are provided with two sets of mounting holes, to fit grids or T-Slots on 80MM and 100MM centers. Custom mounting patterns and base sizes are available upon request.

## Indexer Systems

Maximize the productivity of your Vertical Machining Center. Jergens Production Columns can be mounted onto most any indexer. Columns can be attached directly to an indexer or become part of a quick-change system by adding the Jergens Ball Lock® Mounting System. **Contact Jergens Technical Service for help designing a system for your application.**

- Add capabilities to your VMC
- Reduce set-ups
- Mounts to most rotary table/indexer
- Hold 4, 6, or 8 parts in each load.
- Use standard jaws and accessories



## Production Vise Columns - 6" (150mm)

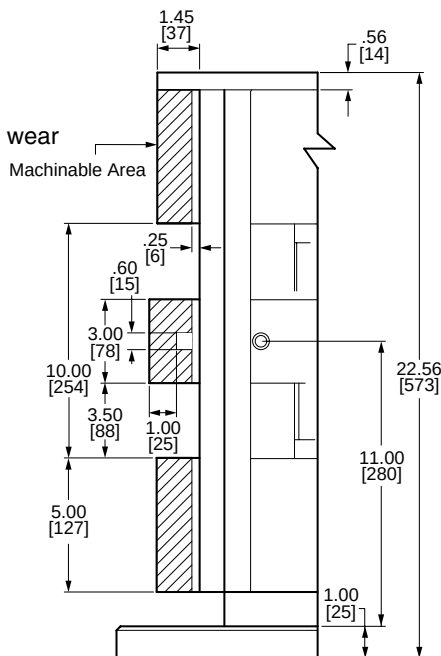
- 3 or 4-Sided Columns
- Multiple mounting systems
- Fastest quick-change jaw system
- Full jaw travel
- Hardened and ground steel rails support jaws and resist wear
- Fully sealed lead screw assembly
- Supplied with machinable soft jaws
- Available with hard jaws

### Clamping Force

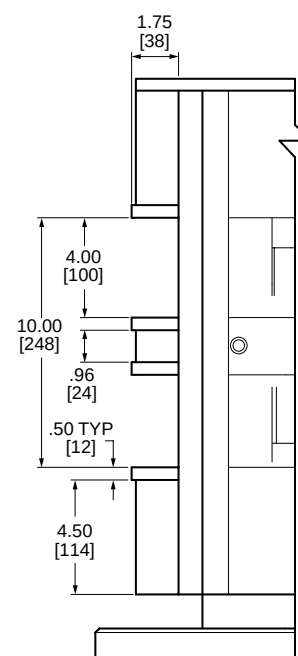
Jergens 6" (150mm)

| Torque   |     | Clamping Force |        |
|----------|-----|----------------|--------|
| lbs. ft. | N•m | lbs.           | kgf    |
| 20       | 27  | 3,600          | 1,630  |
| 30       | 41  | 4,500          | 2,040  |
| 40       | 54  | 5,300          | 2,400  |
| 50       | 68  | 6,200          | 2,800  |
| 60       | 81  | 7,200          | 3,250  |
| 70       | 95  | 8,400          | 3,800  |
| 80       | 108 | 9,200          | 4,150  |
| 90       | 122 | 10,100*        | 4,550* |

\*Recommended Maximum



Column With Soft Jaws



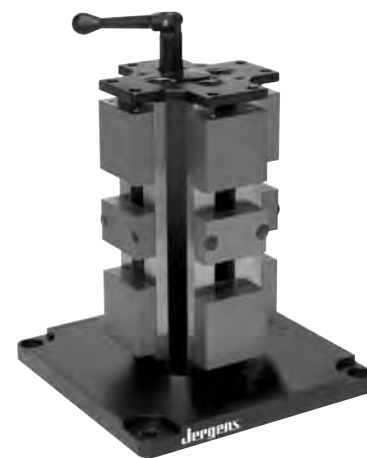
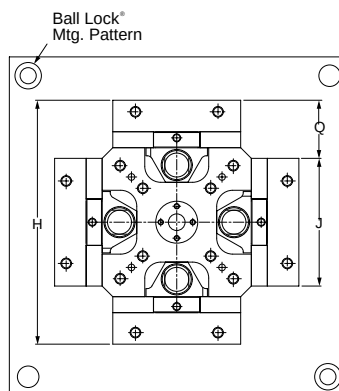
Column With Hard Jaws

## Production Vise Columns - 6" (150mm)

### 4-sided

The 4-Sided Columns are the workhorses of the Jergens Production Vise Columns. They have eight stations for holding your parts. Two standard bases are available. The universal base will mount directly to most HMC tables, using the provided mounting holes on 80MM or 100MM centers.

Further reduce set-up times by adding the Jergens Ball Lock® Mounting System to your HMC. Exchange your vise columns and any other fixture in less than a minute. Location of all fixtures will repeat within  $\pm 0.0005"$  ( $\pm 0.013\text{mm}$ ) or better.



### 4-Sided 6" (150mm) Vise Columns

| Mounting   | Part No. | H     | J    | Q    | Base Width | Base Length | Ball Lock® Mtg Pattern | Mounting Pattern 1* | Mounting Pattern 2* | Wt. (lbs) | Ball Lock® Part No. | Shank Size |
|------------|----------|-------|------|------|------------|-------------|------------------------|---------------------|---------------------|-----------|---------------------|------------|
| Ball Lock® | 49412    | 11.50 | 6.00 | 2.75 | 15.75      | 15.75       | 14 x 14                | n/a                 | n/a                 | 244       | 49602               | 20mm x 1"  |
| Ball Lock® | 49404    | 11.50 | 6.00 | 2.75 | 19.68      | 19.68       | 17 x 17                | n/a                 | n/a                 | 258       | 49612               | 25mm x 1"  |
| Universal  | 49476    | 11.50 | 6.00 | 2.75 | 15.75      | 15.75       | n/a                    | 80MM                | 100MM               | 235       | -                   | -          |

### 4-Sided 150mm Vise Columns Metric Bases

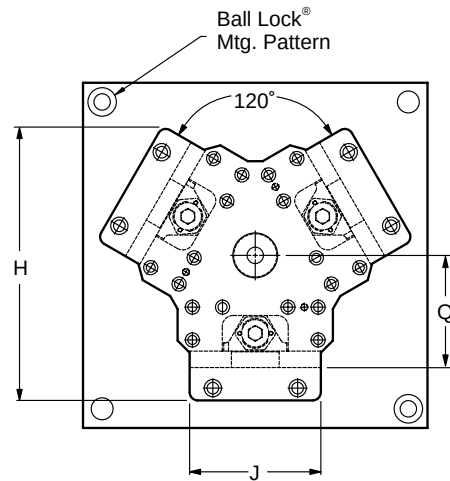
| Mounting   | Part No. | H   | J   | Q  | Base Width | Base Length | Ball Lock® Mtg Pattern | Mounting Pattern 1* | Mounting Pattern 2* | Wt. (kg) | Ball Lock® Part No. | Shank Size  |
|------------|----------|-----|-----|----|------------|-------------|------------------------|---------------------|---------------------|----------|---------------------|-------------|
| Ball Lock® | 69412    | 290 | 150 | 70 | 400        | 400         | 350 x 350              | n/a                 | n/a                 | 111      | 49652               | 20mm x 25mm |
| Ball Lock® | 69404    | 290 | 150 | 70 | 500        | 500         | 425 x 425              | n/a                 | n/a                 | 117      | 49662               | 20mm x 25mm |
| Universal  | 69476    | 290 | 150 | 70 | 400        | 400         | n/a                    | 80MM                | 100MM               | 107      | -                   | -           |

\* Bases on Universal Columns are provided with two sets of mounting holes, to fit grids or T-Slots on 80MM and 100MM centers. Custom mounting patterns and base sizes are available upon request.

## Production Vise Columns - 6" (150mm) 3-Sided

The 3-Sided Columns have only six workstations, but provide much greater access to three or more sides of your work pieces. This design is especially beneficial on machining centers with large spindle noses. No need to sacrifice tool rigidity for access, by having tools extended too far from the tool holders. The universal base will mount directly to most HMC tables, using the provided mounting holes on 80MM or 100MM centers.

Further reduce your set-up time by adding the Jergens Ball Lock® Mounting system to your HMC. Exchange your vise columns and all other fixtures in less than a minute. Location of all fixtures will repeat within  $\pm 0.0005"$  ( $\pm 0.013\text{mm}$ ) or better.



Tri-column design allows up to 240° accessibility



### 3-Sided 6" Vise Columns

| Mounting   | Part No.     | H     | J    | Q    | Base Width | Base Length | Ball Lock® Mtg Pattern | Mounting Pattern 1* | Mounting Pattern 2* | Wt. (lbs) | Ball Lock® Part No. | Shank Size |
|------------|--------------|-------|------|------|------------|-------------|------------------------|---------------------|---------------------|-----------|---------------------|------------|
| Ball Lock® | <b>49408</b> | 12.57 | 6.00 | 5.12 | 15.75      | 15.75       | 14 x 14                | n/a                 | n/a                 | 252       | <b>49602</b>        | 20mm x 1"  |
| Ball Lock® | <b>49410</b> | 12.57 | 6.00 | 5.12 | 19.68      | 19.68       | 17 x 17                | n/a                 | n/a                 | 266       | <b>49612</b>        | 25mm x 1"  |
| Universal  | <b>49474</b> | 12.57 | 6.00 | 5.12 | 19.68      | 19.68       | n/a                    | 80MM                | 100MM               | 240       | -                   | -          |

### 3-Sided 150mm Vise Columns Metric Bases

| Mounting   | Part No.     | H   | J   | Q   | Base Width | Base Length | Ball Lock® Mtg Pattern | Mounting Pattern 1* | Mounting Pattern 2* | Wt. (kg) | Ball Lock® Part No. | Shank Size  |
|------------|--------------|-----|-----|-----|------------|-------------|------------------------|---------------------|---------------------|----------|---------------------|-------------|
| Ball Lock® | <b>69408</b> | 318 | 150 | 130 | 400        | 400         | 350 x 350              | n/a                 | n/a                 | 115      | <b>49652</b>        | 20mm x 25mm |
| Ball Lock® | <b>69410</b> | 318 | 150 | 130 | 500        | 500         | 425 x 425              | n/a                 | n/a                 | 121      | <b>49662</b>        | 25mm x 25mm |
| Universal  | <b>69474</b> | 318 | 150 | 130 | 500        | 500         | n/a                    | 80MM                | 100MM               | 109      | -                   | -           |

\* Bases on Universal Columns are provided with two sets of mounting holes, to fit grids or T-Slots on 80MM and 100MM centers. Custom mounting patterns and base sizes are available upon request. .

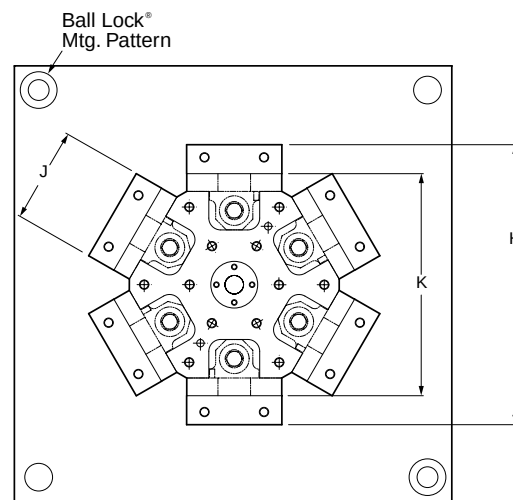
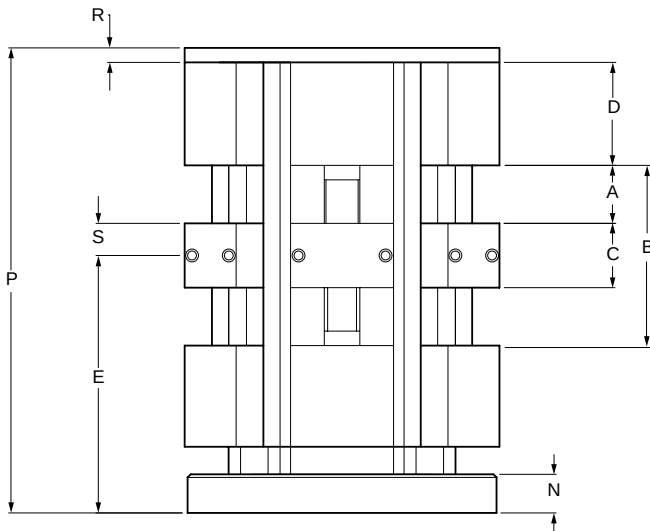


## Production Vise Columns

### 12 Station Hex

Jergens Hex Production Vise Columns provide 12 stations to maximize the number of parts per load. Available with bases to fit directly onto your machine table, or to a Ball Lock® sub-plate.

- Reduce part processing costs by machining 3 sides of 12 parts
- Increase unattended machine time
- Improve part throughput
- One piece column with hardened steel guide ways
- Full jaw travel permits clamping a larger variety of parts



### Hex Production Vise Columns (Inch & Metric)

| Dimensions                  |                              | Ball Lock® Base |          | Universal Base |          | Ball Lock® Base |         | Universal Base |        |
|-----------------------------|------------------------------|-----------------|----------|----------------|----------|-----------------|---------|----------------|--------|
|                             |                              | 49413           | 49414    | 49477          | 49478    | 69413           | 69414   | 69477          | 69478  |
| Vise Size                   |                              | 4"/100mm        | 6"/150mm | 4"/100mm       | 6"/150mm | 100mm           | 150mm   | 100mm          | 150mm  |
| A                           | Max Jaw Opening*             | 2.25            | 3.50     | 2.25           | 3.50     | 56              | 88      | 56             | 88     |
| B                           | Max Jaw Opening (1 station)* | 7.00            | 10.00    | 7.00           | 10.00    | 178             | 254     | 178            | 254    |
| C                           | Fixed Jaw Width              | 2.50            | 3.00     | 2.50           | 3.00     | 64              | 78      | 64             | 78     |
| D                           | Moveable Jaw Length          | 4.00            | 5.00     | 4.00           | 5.00     | 100             | 127     | 100            | 127    |
| E                           | Base to Center of Fixed Jaw  | 8.50            | 11.00    | 8.50           | 11.00    | 241             | 305     | 241            | 305    |
| H                           | Overall Width                | 11.81           | 16.91    | 11.81          | 16.91    | 300             | 432     | 300            | 432    |
| J                           | Jaw Width                    | 4.00            | 6.00     | 4.00           | 6.00     | 100             | 150     | 100            | 150    |
| K                           | Outside Rail to Rail         | 9.37            | 14.01    | 9.37           | 14.01    | 238             | 356     | 238            | 356    |
| N                           | Base Plate Thickness         | 1.00            | 1.00     | 1.00           | 1.00     | 25              | 25      | 25             | 25     |
| P                           | Overall Height               | 17.56           | 22.56    | 17.56          | 22.56    | 446             | 573     | 446            | 573    |
| R                           | Top Plate Thickness          | 0.56            | 0.56     | 0.56           | 0.56     | 14              | 14      | 14             | 14     |
| S                           | Center to Face               | 1.25            | 1.50     | 1.25           | 1.50     | 32              | 39      | 32             | 39     |
| Base Length & Width         |                              | 15.75           | 19.68    | 15.75          | 19.68    | 400             | 500     | 400            | 500    |
| Ball Lock® Mounting Pattern |                              | 14x14           | 17x17    | n/a            | n/a      | 350x350         | 425x425 | n/a            | n/a    |
| Mounting Pattern 1**        |                              | n/a             | n/a      | 80MM           | 80MM     | n/a             | n/a     | 80MM           | 80MM   |
| Mounting Pattern 2**        |                              | n/a             | n/a      | 100MM          | 100MM    | n/a             | n/a     | 100MM          | 100MM  |
| Weight                      |                              | 206 lbs         | 355 lbs  | 206 lbs        | 355 lbs  | 94 kg           | 161 kg  | 94 kg          | 161 kg |

\* Larger parts can be clamped by machining jaws to fit workpiece.

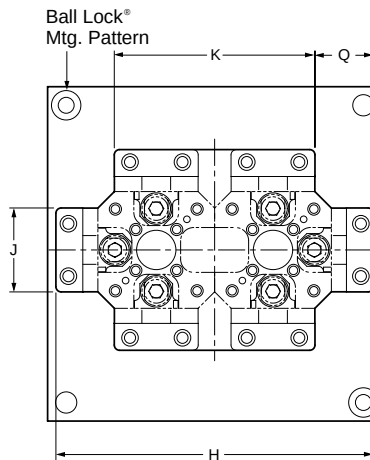
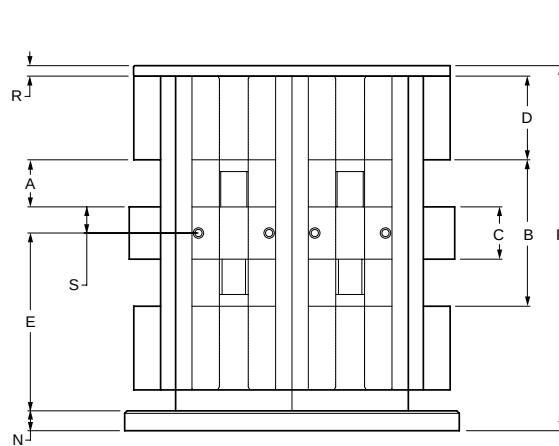
\*\*Bases on Universal Columns are provided with two sets of mounting holes, to fit grids or T-Slots on 80MM and 100MM centers.

Custom mounting patterns and base sizes are available upon request.

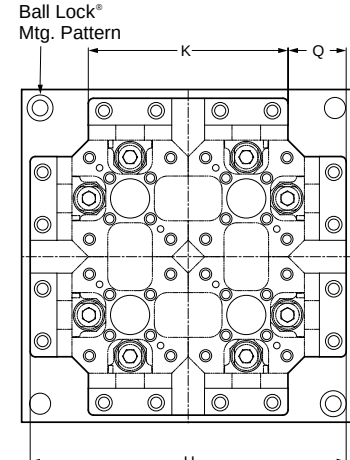
## Production Vise Columns 12 & 16 Station Multi-Quads

Jergens Multi-Quad Production Vise Columns provide 12 or 16 stations to maximize the number of parts per load. Available with bases to fit directly onto your machine table, or to a Ball Lock® sub-plate.

- Machine more parts per set-up
- Reduce changeover time
- Hold larger parts
- Reduce cost per part
- Run longer without operator involvement



12 Station



16 Station

## Inch Multi-Quad Production Vise Columns

| Dimensions |                              | 12 Station      |          |                |          |
|------------|------------------------------|-----------------|----------|----------------|----------|
|            |                              | Ball Lock® Base |          | Universal Base |          |
|            |                              | 49415           | 49416    | 49479          | 49480    |
|            | Vise Size                    | 4"/100mm        | 6"/150mm | 4"/100mm       | 6"/150mm |
| A          | Max Jaw Opening (2 station)* | 2.25            | 3.50     | 2.25           | 3.50     |
| B          | Max Jaw Opening (1 station)* | 7.00            | 10.00    | 7.00           | 10.00    |
| C          | Fixed Jaw Width              | 2.50            | 3.00     | 2.50           | 3.00     |
| D          | Moveable Jaw Length          | 4.00            | 5.00     | 4.00           | 5.00     |
| E          | Base to Center of Fixed Jaw  | 8.50            | 11.00    | 8.50           | 11.00    |
| H          | Overall Width                | 11.81           | 16.91    | 11.81          | 16.91    |
| J          | Jaw Width                    | 4.00            | 6.00     | 4.00           | 6.00     |
| K          | Outside Rail to Rail         | 9.37            | 14.01    | 9.37           | 14.01    |
| N          | Base Plate Thickness         | 1.00            | 1.00     | 1.00           | 1.00     |
| P          | Overall Height               | 17.56           | 22.56    | 17.56          | 22.56    |
| Q          | Clearance                    | 2.80            | 2.75     | 2.80           | 2.75     |
| R          | Top Plate Thickness          | 0.56            | 0.56     | 0.56           | 0.56     |
| S          | Center to Face               | 1.25            | 1.50     | 1.25           | 1.50     |
|            | Base Length & Width          | 15.75           | 19.68    | 15.75          | 19.68    |
|            | Ball Lock® Mounting Pattern  | 14x14           | 17x17    | n/a            | n/a      |
|            | Mounting Pattern 1**         | n/a             | n/a      | 80MM           | 80MM     |
|            | Mounting Pattern 2**         | n/a             | n/a      | 100MM          | 100MM    |
|            | Weight (lbs)                 | 190             | 380      | 190            | 380      |

|  |                              | 16 Station      |          |                |          |
|--|------------------------------|-----------------|----------|----------------|----------|
|  |                              | Ball Lock® Base |          | Universal Base |          |
|  |                              | 49417           | 49418    | 49481          | 49482    |
|  | Vise Size                    | 4"/100mm        | 6"/150mm | 4"/100mm       | 6"/150mm |
|  | Max Jaw Opening (2 station)* | 2.25            | 3.50     | 2.25           | 3.50     |
|  | Max Jaw Opening (1 station)* | 7.00            | 10.00    | 7.00           | 10.00    |
|  | Fixed Jaw Width              | 2.50            | 3.00     | 2.50           | 3.00     |
|  | Moveable Jaw Length          | 4.00            | 5.00     | 4.00           | 5.00     |
|  | Base to Center of Fixed Jaw  | 8.50            | 11.00    | 8.50           | 11.00    |
|  | Overall Width                | 11.81           | 16.91    | 11.81          | 16.91    |
|  | Jaw Width                    | 4.00            | 6.00     | 4.00           | 6.00     |
|  | Outside Rail to Rail         | 9.37            | 14.01    | 9.37           | 14.01    |
|  | Base Plate Thickness         | 1.00            | 1.00     | 1.00           | 1.00     |
|  | Overall Height               | 17.56           | 22.56    | 17.56          | 22.56    |
|  | Clearance                    | 2.80            | 2.75     | 2.80           | 2.75     |
|  | Top Plate Thickness          | 0.56            | 0.56     | 0.56           | 0.56     |
|  | Center to Face               | 1.25            | 1.50     | 1.25           | 1.50     |
|  | Base Length & Width          | 15.75           | 19.68    | 15.75          | 19.68    |
|  | Ball Lock® Mounting Pattern  | 14x14           | 17x17    | n/a            | n/a      |
|  | Mounting Pattern 1**         | n/a             | n/a      | 80MM           | 80MM     |
|  | Mounting Pattern 2**         | n/a             | n/a      | 100MM          | 100MM    |
|  | Weight (lbs)                 | 360             | 720      | 360            | 720      |

\* Larger parts can be clamped by machining jaws to fit workpiece.

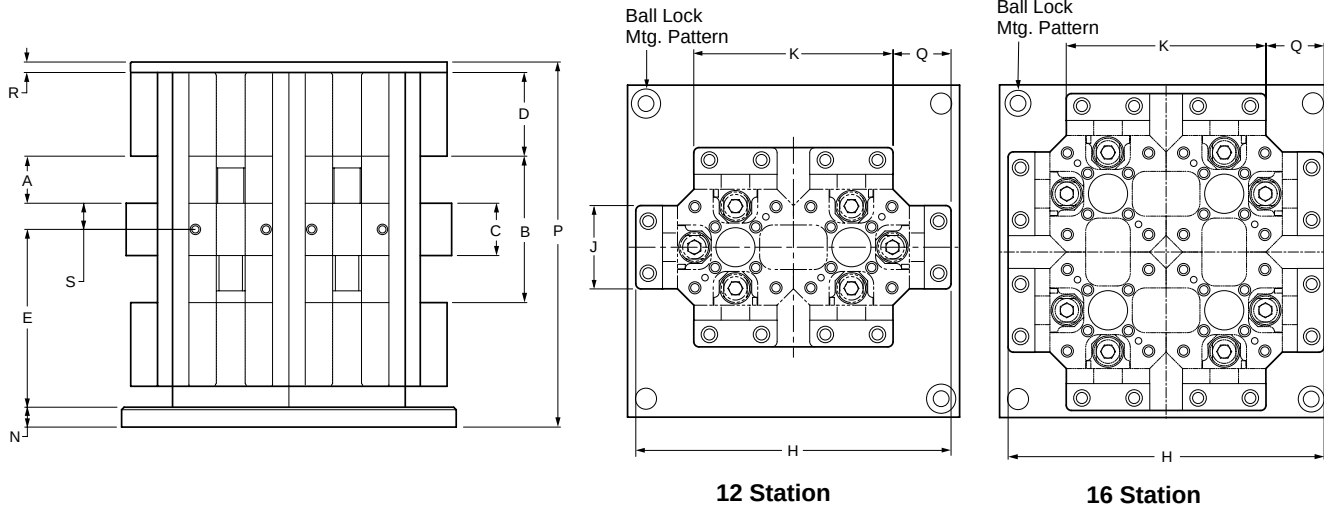
\*\* Bases on Universal Columns are provided with two sets of mounting holes, to fit grids or T-Slots on 80MM and 100MM centers. Custom mounting patterns and base sizes are available upon request. Contact Jergens Technical Service for more information.

## Production Vise Columns

### 12 & 16 Station Multi-Quads

Jergens Multi-Quad Production Vise Columns provide 12 or 16 stations to maximize the number of parts per load. Available with bases to fit directly onto your machine table, or to a Ball Lock® sub-plate.

- Machine more parts per set-up
- Reduce changeover time
- Hold larger parts
- Reduce cost per part
- Run longer without operator involvement



### Metric Multi-Quad Production Vise Columns

| Dimensions                  |                              | 12 Station      |         |                |       | 16 Station      |         |                |       |
|-----------------------------|------------------------------|-----------------|---------|----------------|-------|-----------------|---------|----------------|-------|
|                             |                              | Ball Lock® Base |         | Universal Base |       | Ball Lock® Base |         | Universal Base |       |
|                             |                              | 69415           | 69416   | 69479          | 69480 | 69417           | 69418   | 69481          | 69482 |
| Vise Size                   |                              | 100mm           | 150mm   | 100mm          | 150mm | 100mm           | 150mm   | 100mm          | 150mm |
| A                           | Max Jaw Opening (2 station)* | 56              | 88      | 56             | 88    | 56              | 88      | 56             | 88    |
| B                           | Max Jaw Opening (1 station)* | 176             | 254     | 176            | 254   | 176             | 254     | 176            | 254   |
| C                           | Fixed Jaw Width              | 64              | 78      | 64             | 78    | 64              | 78      | 64             | 78    |
| D                           | Moveable Jaw Length          | 100             | 127     | 100            | 127   | 100             | 127     | 100            | 127   |
| E                           | Base to Center of Fixed Jaw  | 216             | 280     | 216            | 280   | 216             | 280     | 216            | 280   |
| H                           | Overall Width                | 383             | 470     | 383            | 470   | 383             | 470     | 383            | 470   |
| J                           | Jaw Width                    | 100             | 150     | 100            | 150   | 100             | 150     | 100            | 150   |
| K                           | Outside Rail to Rail         | 243             | 330     | 243            | 330   | 243             | 330     | 243            | 330   |
| N                           | Base Plate Thickness         | 25              | 25      | 25             | 25    | 25              | 25      | 25             | 25    |
| P                           | Overall Height               | 446             | 573     | 446            | 573   | 446             | 573     | 446            | 573   |
| Q                           | Clearance                    | 70              | 70      | 70             | 70    | 70              | 70      | 70             | 70    |
| R                           | Top Plate Thickness          | 14              | 14      | 14             | 14    | 14              | 14      | 14             | 14    |
| S                           | Center to Face               | 32              | 39      | 32             | 39    | 32              | 39      | 32             | 39    |
| Base Length & Width         |                              | 400             | 500     | 400            | 500   | 400             | 500     | 400            | 500   |
| Ball Lock® Mounting Pattern |                              | 350x350         | 425x425 | n/a            | n/a   | 350x350         | 425x425 | n/a            | n/a   |
| Mounting Pattern 1**        |                              | n/a             | n/a     | 80mm           | 80mm  | n/a             | n/a     | 80mm           | 80mm  |
| Mounting Pattern 2**        |                              | n/a             | n/a     | 100mm          | 100mm | n/a             | n/a     | 100mm          | 100mm |
| Weight (kgs)                |                              | 86              | 172     | 86             | 172   | 164             | 326     | 164            | 326   |

\* Larger parts can be clamped by machining jaws to fit workpiece.

\*\*Bases on Universal Columns are provided with two sets of mounting holes, to fit grids or T-Slots on 80mm and 100mm centers. Custom mounting patterns and base sizes are available upon request. Contact Jergens Technical Service for more information.

## Hydraulic Production Vises

- Innovative compact design
- Internal hydraulics
- 4,700 lbs (2,100 kg) clamping force
- Operates on lower input pressure
- Fully machinable jaws
- Fastest quick-change jaw system
- Hardened and ground steel wear rails
- Easy-Flow™ base design



### Hydraulic Power Sources Available



### Technical Specifications:

Hydraulic Clamping Stroke: 1/4" (6.3mm)  
Operating Volume: 0.4 Cu In (6.7 cm³)  
Maximum Input Pressure: 4000 P.S.I. (275 bar)  
Minimum Input Pressure: 500 P.S.I. (35 bar)  
Input Port: #4 SAE (7/16-20 UNF-2B)

**Clamping Force (lbs) = Input Pressure x 1.19**  
**Clamping Force (kg) = Input Pressure Bars x 7.67**

### Operation:

Using the Jergens Hydraulic Vise handle part number 49445, tighten vise jaws so the workpieces touch the fixed jaw. Next, turn the handle back 1/2 turn and activate the hydraulic cylinder. Handle included with vise.

**Note: Only use the Jergens Hydraulic Vise Handle Part No. 49445 for adjustment purpose, do not use to operate vise.**

**Jergens hydraulic vises are available in 3 different base configurations. They offer the same unique features as Jergens manual vises.**

### Clamping Force

| Input Pressure |      | Clamping Force |        |
|----------------|------|----------------|--------|
| PSI            | Bars | lbs.           | kgf    |
| 500            | 35   | 595            | 268    |
| 1,000          | 70   | 1,190          | 537    |
| 2,000          | 140  | 2,380          | 1,075  |
| 3,000          | 210  | 3,570          | 1,612  |
| 4,000          | 275* | 4,760*         | 2,110* |

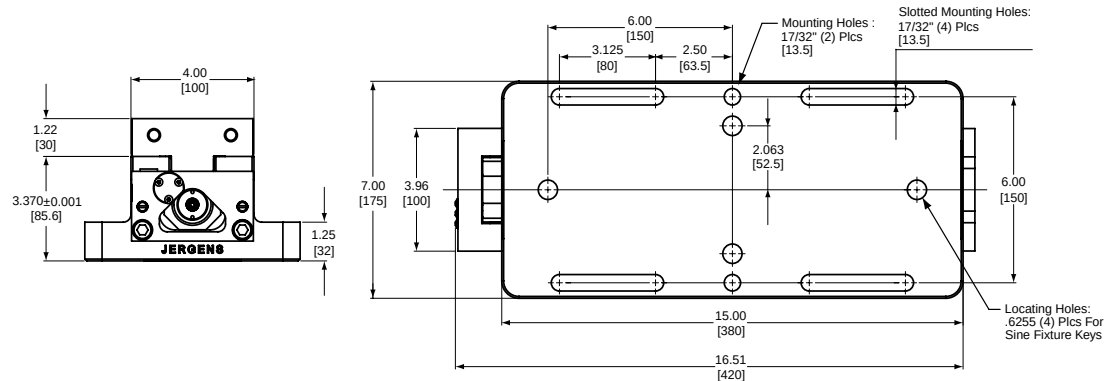
\*Recommended Maximum

## Hydraulic Production Vises - 4" (100mm)

### Universal Base

| Part Number | Wt. lbs/kg |
|-------------|------------|
| 49483       | 35/16      |

- Easy to mount directly to machine tables
- Slotted mounting holes fit most machines



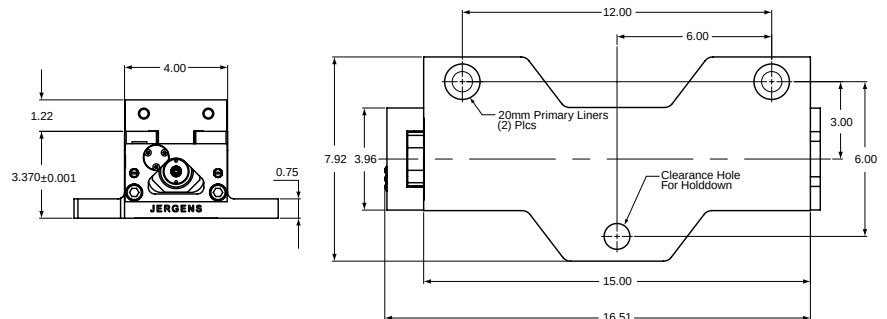
### Ball Lock® Base

- Designed for use with the Jergens Ball Lock® mounting system
- Jigsaw pattern allows for "nesting" on Jergens Ball Lock® subplates



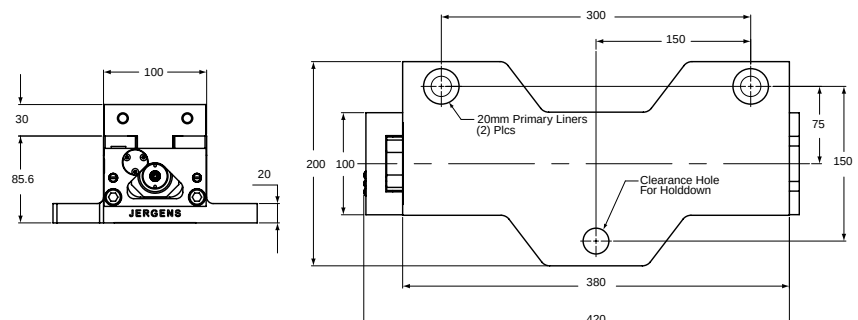
#### Inch

| Part No. | Wt.     | Ball Lock® Shank Part No. | Shank Size  |
|----------|---------|---------------------------|-------------|
| 49485    | 32 lbs. | 49601                     | 20mm x 3/4" |



#### Metric

| Part No. | Wt.   | Ball Lock® Shank Part No. | Shank Size  |
|----------|-------|---------------------------|-------------|
| 69485    | 15 kg | 49651                     | 20mm x 20mm |

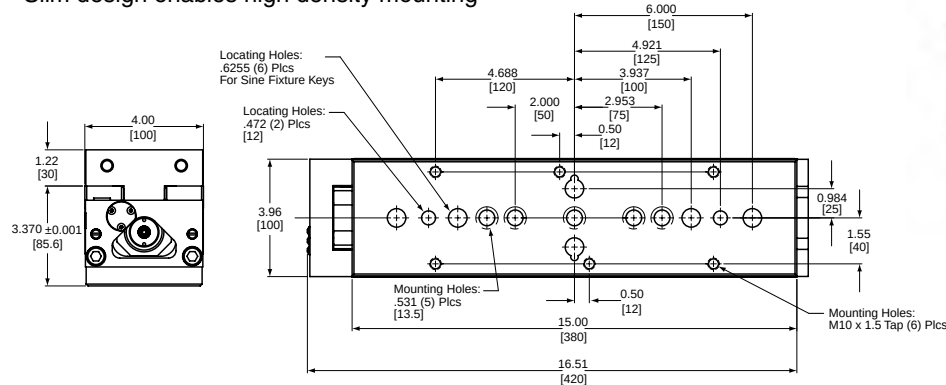




## Hydraulic Production Vises - 4" (100mm)

### Narrow Base

- Designed for stand alone or fixture plate mounting
- Slim design enables high density mounting

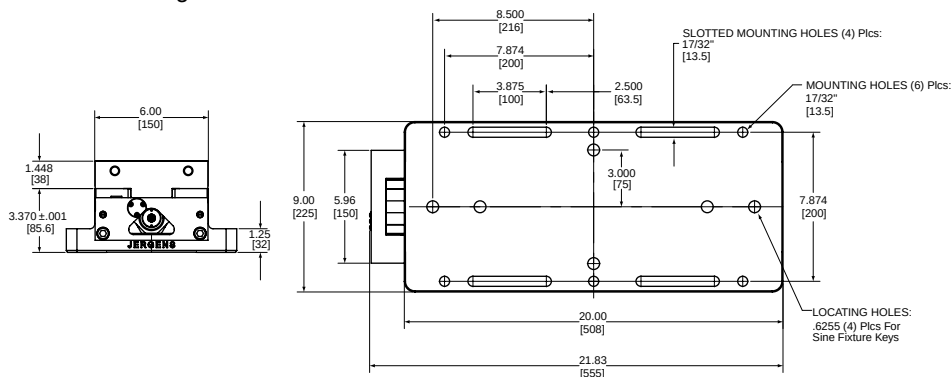


| Part Number | Wt. lbs/kg |
|-------------|------------|
| 49487       | 30/14      |

## Hydraulic Production Vises - 6" (150mm)

### Universal Base

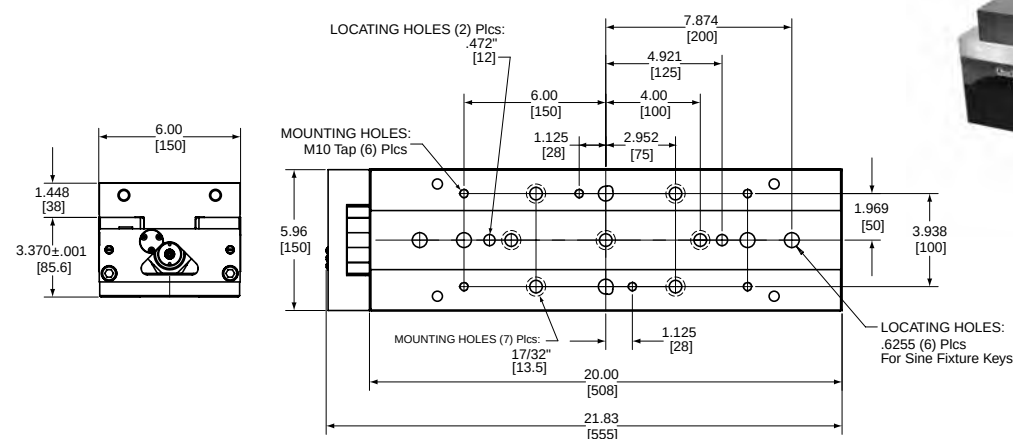
- Easy to mount directly to machine tables
- Slotted mounting holes fit most machines



| Part Number | Wt. lbs/kg |
|-------------|------------|
| 49484       | 65/29      |

### Narrow Base

- Designed for stand alone or fixture plate mounting
- Slim design enables high density mounting on fixture plates



| Part Number | Wt. lbs/kg |
|-------------|------------|
| 49488       | 60/27      |

## Hydraulic Production Vises - 6" (150mm)

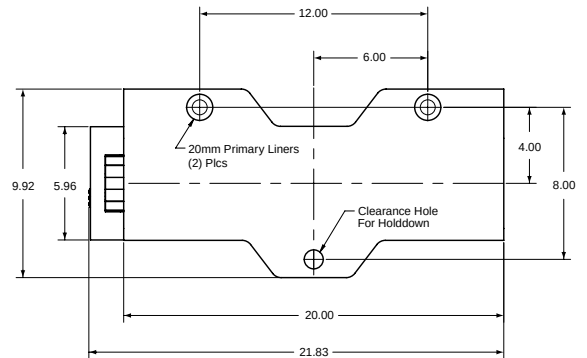
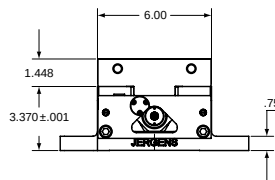
### Ball Lock® Base

- Designed for use with the Jergens Ball Lock® mounting system
- Jigsaw pattern allows for “nesting” on Jergens Ball Lock® subplates



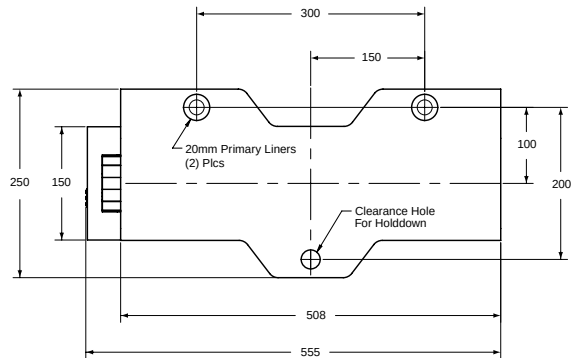
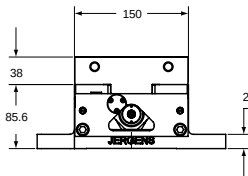
### Inch

| Part No. | Wt.     | Ball Lock® Shank Part No. | Shank Size  |
|----------|---------|---------------------------|-------------|
| 49486    | 62 lbs. | 49601                     | 20mm x 3/4" |



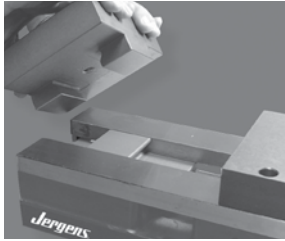
### Metric

| Part No. | Wt.   | Ball Lock® Shank Part No. | Shank Size  |
|----------|-------|---------------------------|-------------|
| 69486    | 28 kg | 49651                     | 20mm x 20mm |



## Hydraulic Vise Column

- Innovative compact design.
- Consistent clamping force:  
595 - 4,760 lbs  
268 - 2,110 kgs
- Available in 4" (100mm) and 6" (150mm) sizes,  
3-sided and 4-sided models.

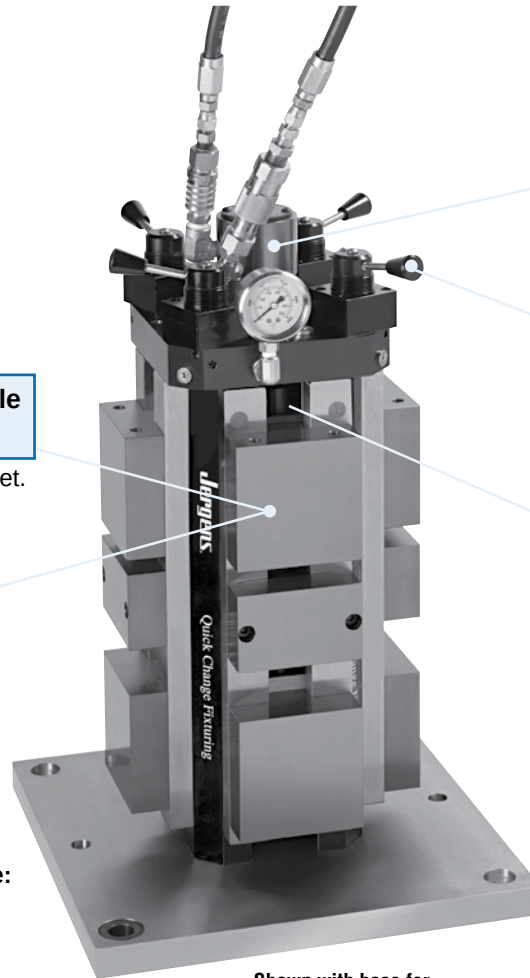


### Fully Machinable and Reversible Aluminum/Steel Jaws

More workholding flexibility per jaw set.

### Fastest Quick-Change Jaw Mechanism.

Reduce set-up times, faster workpiece change over.



Shown with base for



Other bases offered.

### Hydraulic Vise Column Kits Include:

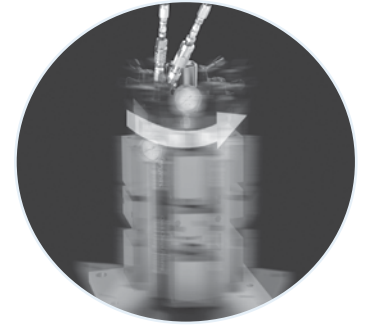
- Control Valves for each side.
- Rotary Coupler Dual Passage.
- Internal Accumulator.
- Pressure Gauge:  
500-4000 PSI (35-275 Bar).
- Adjustment Handle included  
with all columns.

## Technical Specifications:

Hydraulic Clamping Stroke: 1/4" (6.3 mm) total for both sides.  
Operating Volume: 0.4 cu in (6.6 cm<sup>3</sup>) - per station.  
Input Pressure: 500-4000 psi (35-275 bar).  
Dual station with center jaw for location; Cannot be used as a single station vise.

## Setup & Operation:

- 1) Prepare machinable aluminum jaws or steel jaws to fit the workpiece.
- 2) Using the Jergens Hydraulic Vise adjustment handle to tighten vise jaws until the workpieces touch the fixed jaw.
- 3) Next, turn the handle back 1/2 to 2 revolutions to set opening.
- 4) Actuate the hydraulic source to operate control valves for each face.



### Rotary Hydraulic Union Dual Passage

Allows vise to rotate while hoses remain stationary.

### Individual Control Valves

Operate Vises one at a time.

### Built-in Accumulator with Check Valves

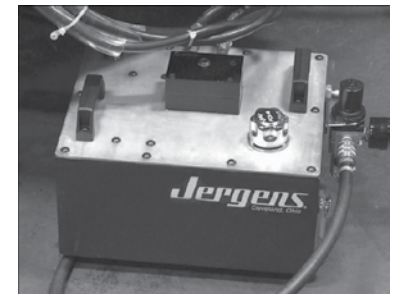
Permits easy disconnection when clamped.

## Clamping Force Measured at Jaws

| Input Pressure |      | Clamping Force |      |
|----------------|------|----------------|------|
| psi            | bars | lbs            | kg   |
| 500            | 35   | 595            | 268  |
| 1,000          | 70   | 1,190          | 537  |
| 2,000          | 140  | 2,380          | 1075 |
| 3,000          | 210  | 3,570          | 1612 |
| 4,000*         | 275* | 4,760          | 2110 |

\*Recommended Maximum

**Download Cad Models!**  
[www.jergensinc.com](http://www.jergensinc.com)

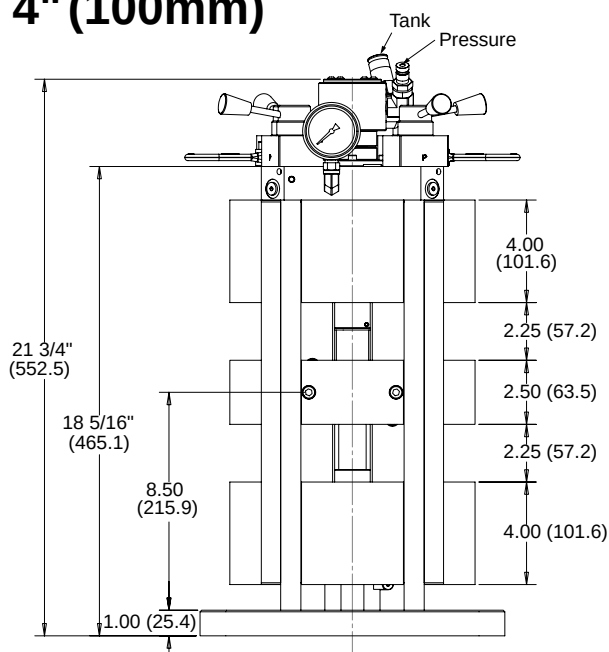


**See page 2.34 for Air Powered Hydraulic Pump**

## Hydraulic Vise Tooling Columns - 4" (100mm)

- Individual valving allows each vise to operate independently.
- Hydraulic vise ensures repeatable results with minimal effort when compared to manual vises.
- Fast quick-change jaw mechanism.
- Hydraulic Vise Columns supplied with 4" (100mm) wide machinable aluminum jaws. Extra wide jaws, extra tall jaws and hardened jaw sets and all steel jaws are standard options. 3-sided and four-sided models available.
- All Jergens vises include machinable, reversible jaws; hardened and ground steel rails; and fully sealed lead screw assembly.

**Standard and Custom  
Bases Available**

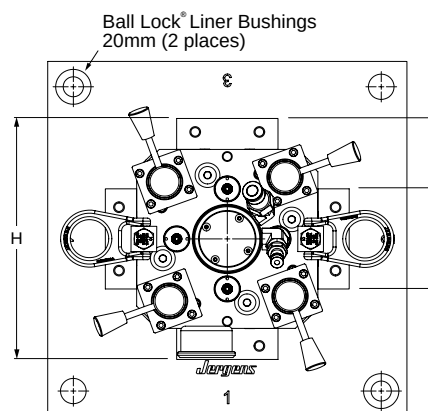


**Column With Soft Jaws  
(Hard Jaws available)**

## 4-Sided - 4" (100mm) wide

The 4-Sided Columns have eight stations for holding workpieces. Two standard bases are shown and custom mounting patterns and special base dimensions available. The universal base will mount directly to most HMC tables, using the provided mounting holes on 80MM or 100MM centers.

Further reduce set-up times by adding the Jergens Ball Lock® Mounting System to your HMC. Exchange your vise columns and any other fixture in less than a minute. Location of fixtures will repeat within  $\pm 0.0005"$  (0.013mm) or better.



**Top View with Ball Lock® Base shown**

### 4-Sided 4"Vise Columns

| Mounting  | Part Number  | H    | J    | Q    | Base Width | Base Length | Ball Lock® Mtg Pattern | Mounting Pattern 1* | Mounting Pattern 2* | Ball Lock® Shank Part No. | Wt. (lbs) |
|-----------|--------------|------|------|------|------------|-------------|------------------------|---------------------|---------------------|---------------------------|-----------|
| Ball Lock | <b>51403</b> | 9.56 | 4.00 | 2.80 | 15.75      | 15.75       | 14 x 14                | n/a                 | n/a                 | <b>49602</b>              | 150       |
| Universal | <b>51475</b> | 9.56 | 4.00 | 2.80 | 11.81      | 11.81       | n/a                    | 80MM                | 100MM               | N/A                       | 148       |

### 4-Sided 100mm Vise Columns Metric Bases

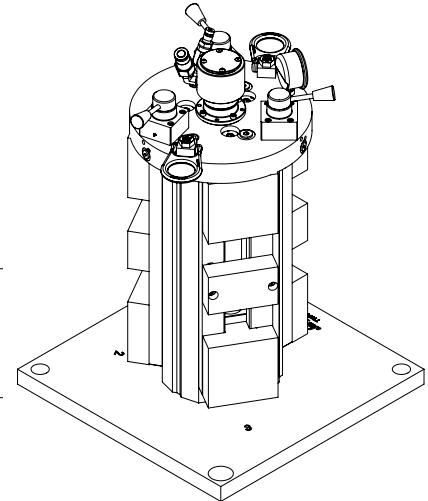
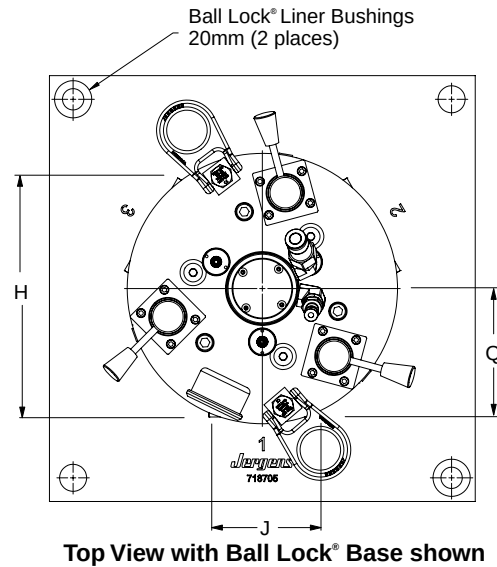
| Mounting  | Part Number  | H     | J     | Q    | Base Width | Base Length | Ball Lock® Mtg Pattern | Mounting Pattern 1* | Mounting Pattern 2* | Ball Lock® Shank Part No. | Wt. (kgs) |
|-----------|--------------|-------|-------|------|------------|-------------|------------------------|---------------------|---------------------|---------------------------|-----------|
| Ball Lock | <b>51453</b> | 242.8 | 101.6 | 71.1 | 400        | 400         | 350 x 350              | n/a                 | n/a                 | <b>49652</b>              | 68        |
| Universal | <b>51475</b> | 242.8 | 101.6 | 71.1 | 300        | 300         | n/a                    | 80MM                | 100MM               | N/A                       | 67        |

\* Bases on Universal Columns are provided with two sets of mounting holes, to fit grids or T-Slots on 80MM and 100MM centers. Custom mounting patterns and base sizes are available upon request.

## Hydraulic Vise Tooling Columns

### 3-Sided - 4" (100mm) wide

- Provide greater access to three or more sides of the workpiece.
- Design is beneficial on machining centers with large spindle noses.
- Reduce any sacrifice of tool rigidity for access.
- The universal base will mount directly to most HMC tables, using the provided mounting holes on 80MM or 100MM centers.
- Further reduce set-up times by adding the Jergens Ball Lock® Mounting System to your HMC. Exchange your vise columns and all other fixtures in less than a minute. Location of all fixtures will repeat within  $\pm 0.0005"$  (0.013mm) or better.



### 3-Sided 4" Vise Columns

| Mounting   | Part Number  | H    | J    | Q    | Base Width | Base Length | Ball Lock® Mtg Pattern | Mounting Pattern 1* | Mounting Pattern 2* | Ball Lock® Shank Part No. | Wt. (lbs) |
|------------|--------------|------|------|------|------------|-------------|------------------------|---------------------|---------------------|---------------------------|-----------|
| Ball Lock® | <b>51409</b> | 9.55 | 4.00 | 4.22 | 15.75      | 15.75       | 14 x 14                | n/a                 | n/a                 | <b>49602</b>              | 160       |
| Universal  | <b>51473</b> | 9.55 | 4.00 | 4.22 | 11.81      | 11.81       | n/a                    | 80MM                | 100MM               | N/A                       | 145       |

### 3-Sided 100mm Vise Columns Metric Bases

| Mounting   | Part Number  | H     | J     | Q     | Base Width | Base Length | Ball Lock® Mtg Pattern | Mounting Pattern 1* | Mounting Pattern 2* | Ball Lock® Shank Part No. | Wt. (kgs) |
|------------|--------------|-------|-------|-------|------------|-------------|------------------------|---------------------|---------------------|---------------------------|-----------|
| Ball Lock® | <b>51459</b> | 242.6 | 101.6 | 107.2 | 400        | 400         | 350 x 350              | n/a                 | n/a                 | <b>49652</b>              | 72        |
| Universal  | <b>51473</b> | 242.6 | 101.6 | 107.2 | 300        | 300         | n/a                    | 80MM                | 100MM               | N/A                       | 66        |

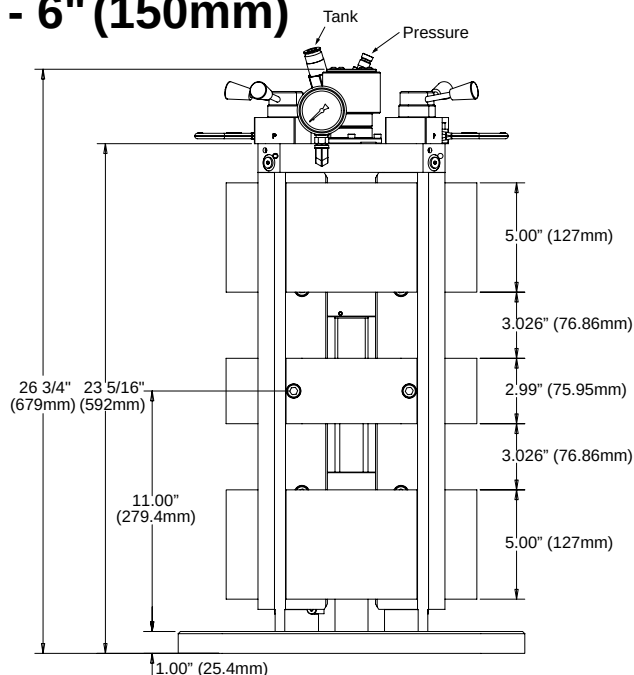
\* Bases on Universal Columns are provided with two sets of mounting holes, to fit grids or T-Slots on 80MM and 100MM centers. Custom mounting patterns and base sizes are available upon request.



## Hydraulic Vise Tooling Columns - 6" (150mm)

- Individual valving allows each vise to operate independently.
- Hydraulic vise ensures repeatable results with minimal effort when compared to manual vises.
- Fast quick-change jaw mechanism.
- Hydraulic Vise Columns supplied with 6" (150mm) wide machinable aluminum jaws. Extra wide jaws, extra tall jaws and hardened jaw sets and all steel jaws are standard options. 3-sided and four-sided models available.
- All Jergens vises include machinable, reversible jaws; hardened and ground steel rails; and fully sealed lead screw assembly.

**Standard and Custom  
Bases Available**

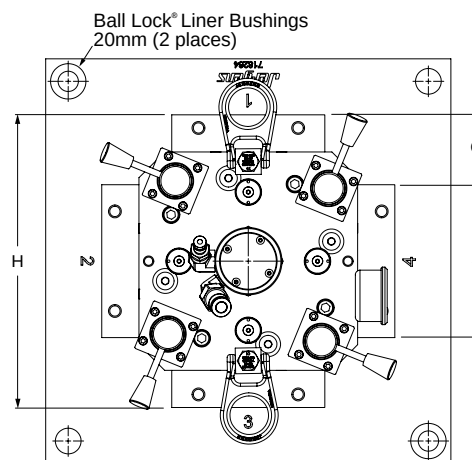


**Column With Soft Jaws  
(Hard Jaws available)**

## 4-Sided - 6" (150mm) wide

The 4-Sided Columns have eight stations for holding workpieces. Two standard bases are available. The universal base will mount directly to most HMC tables, using the provided mounting holes on 80MM or 100MM centers.

Further reduce set-up times by adding the Jergens Ball Lock® Mounting System to your HMC. Exchange your vise columns and any other fixture in less than a minute. Location of fixtures will repeat within  $\pm 0.0005$ " (0.013mm) or better.



**Top View with Ball Lock® Base shown**

### 4-Sided 6" Vise Columns

| Mounting   | Part Number  | H     | J    | Q    | Base Width | Base Length | Ball Lock® Mtg Pattern | Mounting Pattern 1* | Mounting Pattern 2* | Ball Lock® Shank Part No. | Wt. (lbs) |
|------------|--------------|-------|------|------|------------|-------------|------------------------|---------------------|---------------------|---------------------------|-----------|
| Ball Lock® | <b>51412</b> | 11.50 | 6.00 | 2.75 | 15.75      | 15.75       | 14 x 14                | n/a                 | n/a                 | <b>49602</b>              | 270       |
| Ball Lock® | <b>51404</b> | 11.50 | 6.00 | 2.75 | 19.68      | 19.68       | 17 x 17                | n/a                 | n/a                 | <b>49612</b>              | 285       |
| Universal  | <b>51476</b> | 11.50 | 6.00 | 2.75 | 15.75      | 15.75       | n/a                    | 80MM                | 100MM               | N/A                       | 270       |

### 4-Sided 150mm Vise Columns Metric Bases

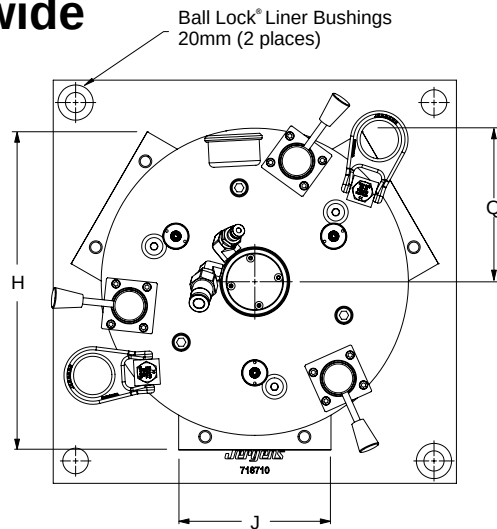
|            |              |       |       |      |     |     |           |      |       |              | (kgs) |
|------------|--------------|-------|-------|------|-----|-----|-----------|------|-------|--------------|-------|
| Ball Lock® | <b>51462</b> | 292.1 | 152.4 | 69.9 | 400 | 400 | 350 x 350 | n/a  | n/a   | <b>49652</b> | 122   |
| Ball Lock® | <b>51454</b> | 292.1 | 152.4 | 69.9 | 500 | 500 | 425 x 425 | n/a  | n/a   | <b>49662</b> | 130   |
| Universal  | <b>51476</b> | 292.1 | 152.4 | 69.9 | 400 | 400 | n/a       | 80MM | 100MM | N/A          | 122   |

\* Bases on Universal Columns are provided with two sets of mounting holes, to fit grids or T-Slots on 80MM and 100MM centers. Custom mounting patterns and base sizes are available upon request.

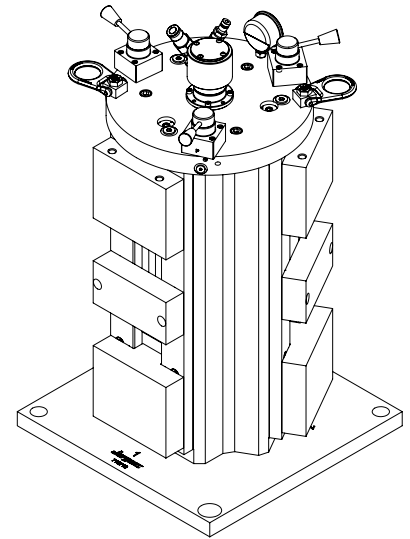
## Hydraulic Vise Tooling Columns 3-Sided - 6" (150mm) wide

The 3-Sided Columns have six workstations to provide greater access to three or more sides of the workpiece. This design is especially beneficial on machining centers with large spindle noses. This can reduce any sacrifice of tool rigidity for access, by having tools extended too far from the tool holders. The universal base will mount directly to most HMC tables, using the provided mounting holes on 80MM or 100MM centers.

Further reduce set-up times by adding the Jergens Ball Lock® Mounting System to your HMC. Exchange your vise columns and all other fixtures in less than a minute. Location of all fixtures will repeat within  $\pm 0.0005"$  (0.013mm) or better.



Top View with Ball Lock® Base shown



Allows for up to 240° accessibility.

### 3-Sided 6" Vise Columns

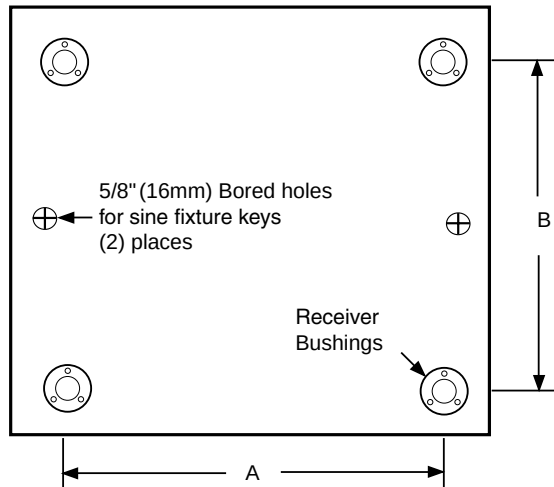
| Mounting  | Part Number | H     | J    | Q    | Base Width | Base Length | Ball Lock® Mtg Pattern | Mounting Pattern 1* | Mounting Pattern 2* | Ball Lock® Shank Part No. | Wt. (lbs) |
|-----------|-------------|-------|------|------|------------|-------------|------------------------|---------------------|---------------------|---------------------------|-----------|
| Ball Lock | 51408       | 12.57 | 6.00 | 5.12 | 15.75      | 15.75       | 14 x 14                | n/a                 | n/a                 | 49602                     | 300       |
| Ball Lock | 51410       | 12.57 | 6.00 | 5.12 | 19.68      | 19.68       | 17 x 17                | n/a                 | n/a                 | 49612                     | 320       |
| Universal | 51474       | 12.57 | 6.00 | 5.12 | 19.68      | 19.68       | n/a                    | 80MM                | 100MM               | N/A                       | 320       |

### 3-Sided 150mm Vise Columns Metric Bases

| Mounting  | Part Number | H     | J     | Q   | Base Width | Base Length | Ball Lock Mtg Pattern | Mounting Pattern 1* | Mounting Pattern 2* | Ball Lock® Shank Part No. | Wt. (kgs) |
|-----------|-------------|-------|-------|-----|------------|-------------|-----------------------|---------------------|---------------------|---------------------------|-----------|
| Ball Lock | 51458       | 319.3 | 152.4 | 130 | 400        | 400         | 350 x 350             | n/a                 | n/a                 | 49652                     | 136       |
| Ball Lock | 51460       | 319.3 | 152.4 | 130 | 500        | 500         | 425 x 425             | n/a                 | n/a                 | 49662                     | 145       |
| Universal | 51474       | 319.3 | 152.4 | 130 | 500        | 500         | n/a                   | 80MM                | 100MM               | N/A                       | 145       |

\* Bases on Universal Columns are provided with two sets of mounting holes, to fit grids or T-Slots on 80MM and 100MM centers. Custom mounting patterns and base sizes are available upon request.

## Hydraulic Vise Tooling Columns Standard Subplates



### Standard Steel Subplates for Vise Columns

| Part Number          | Pallet Size (mm) | For Vise Columns             | A (in.) | B (in.) | Receiver Size (mm) | Thickness of Subplate (in.) | Wt (lbs) |
|----------------------|------------------|------------------------------|---------|---------|--------------------|-----------------------------|----------|
| 49102                | 400              | 51403, 51409<br>51412, 51408 | 14      | 14      | 20                 | 1.125                       | 79       |
| 49103                | 500              | 51404, 51410                 | 17      | 17      | 25                 | 1.25                        | 137      |
| 49103-C              | 500              | All above                    | 14      | 14      | 20                 | 1.25                        | 137      |
| Combination Subplate |                  |                              | 17      | 17      | 25                 |                             |          |

### Metric Steel Subplates for Vise Columns

| Part Number          | Pallet Size (mm) | For Vise Columns             | A (mm) | B (mm) | Receiver Size (mm) | Thickness of Subplate (in.) | Wt (kg) |
|----------------------|------------------|------------------------------|--------|--------|--------------------|-----------------------------|---------|
| 59102                | 400              | 51453, 51459<br>51462, 51458 | 350    | 350    | 20                 | 28.57                       | 31      |
| 59103                | 500              | 51454, 51460                 | 425    | 425    | 25                 | 31.75                       | 59      |
| 59103-C              | 500              | All above                    | 350    | 350    | 20                 | 31.75                       | 59      |
| Combination Subplate |                  |                              | 425    | 425    | 25                 |                             |         |

## Hydraulic Production Vise Accessories

### Pre-Fill Boosters Kit



Patent No. 3839866

**Part Number**  
**61725**

Jergens Booster Kit provides a complete compact power source for hydraulic vises. The kit includes a Jergens 30:1 pre-fill self-bleeding booster with filter regulator, 4 way push button actuation valve, plumbed with all fittings and hoses.

**This air operated booster provides enough hydraulic volume to power up to 8 Jergens Hydraulic vises.**

- Self Bleeding
- Easy View Reservoir
- 30:1 Boost Ratios

#### Kit 61725 Includes

- Jergens Pre-Fill Booster 61705 (see above)
- Filter Regulator
- Actuator Valve

#### Specifications

| Part Number                                      | 61705                              |
|--------------------------------------------------|------------------------------------|
| Reservoir Capacity (cu. in.) / Liters            | 50 / 0.8                           |
| High Pressure Volume (cu. in.) / cm <sup>3</sup> | 3 <sup>3</sup> / <sub>4</sub> / 61 |
| Minimum Input (psi) / bar                        | 40 / 2.7                           |
| Maximum Input (psi) / bar                        | 125 / 8.6                          |
| Boost Ratio                                      | 30:1 / 30:1                        |
| Maximum Output (psi) / bar                       | 3,750 / 258.5                      |
| Weight (lbs.) / kg                               | 28 / 13                            |

## Handle



**Part Number**  
**49445**

- Ergonomic design
- Aluminum handle
- 1/4" Steel Drive Hex for Jergens Hydraulic Vises

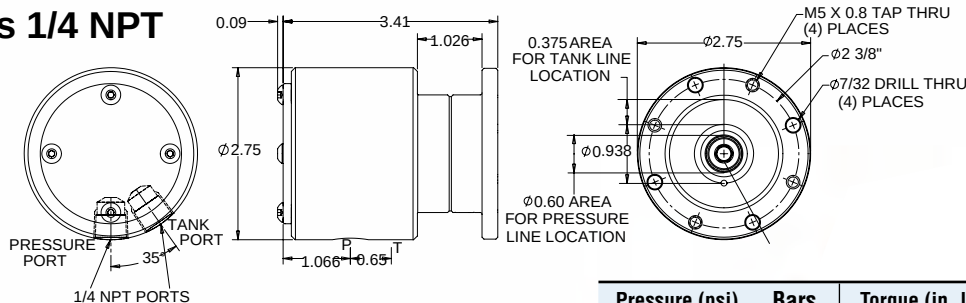
Handle for Hydraulic Vises, 4" (100mm) and 6" (150mm)

## Rotary Hydraulic Union

### Dual Passage, Ports 1/4 NPT



**Part Number**  
**61999**



Max input pressure of Tank Port: 150 psi (10 bar)  
Max input pressure of Pressure Port: 4000 psi (275 bar)  
Max RPM: 30

| Pressure (psi) | Bars | Torque (in. lbs.) | Nm  |
|----------------|------|-------------------|-----|
| 0              | 0    | 10                | 1.1 |
| 2000           | 140  | 25                | 2.8 |
| 4000           | 275  | 40                | 4.5 |

## Hydraulic Production Vise Accessories

### Air-Powered Hydraulic Pumps Shoebox™ Pumps



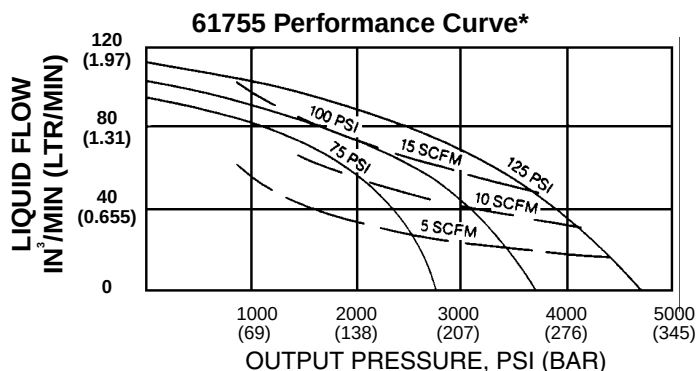
Part Number  
**61757**

The "Shoebox" Pump is a low cost, compact unit used on smaller hydraulic circuits. Its small size offers the versatility of mounting on wheels (such as a workcart) and moving the pump from workstation to workstation. The "Shoebox" is a cost effective power source for hydraulic tooling column vises.

### Specifications

| Part Number         | 61755                  |
|---------------------|------------------------|
| Reservoir Capacity  | 300 cu.in. (4.9 liter) |
| Minimum Input       | 25 psi (1.7 Bar)       |
| Maximum Input       | 125 psi (8.5 Bar)      |
| Boost Ratio         | 36:1                   |
| Maximum Output      | 4500 psi (306 Bar)     |
| Free Flow           | 100 cu.in./min.        |
| @ 100 psi (6.8 Bar) | (1.64 liter/min.)      |
| Weight              | 24 lbs. (11kg)         |

**Note: Do not use more than 4,000 PSI input pressure on Jergens Vises**



### Kit Includes

- 61755** 36:1 Pump
- 61642** Four-way zero-leakage valve
- 61647** Subplate
- 60703** 6000psi (414 Bar) gauge

## Quick Disconnect Couplers

### Hydraulic Coupler

| Sleeve         | Nipple       |
|----------------|--------------|
| 1/4 NPT Female | 1/4 NPT Male |
| <b>61916</b>   | <b>61966</b> |

Hydraulic couplers have dual checks.

### Air Couplers

| Sleeve         | Nipple         |
|----------------|----------------|
| 1/8 NPT Female | 1/8 NPT Male   |
| <b>61904</b>   | <b>61950</b>   |
| 1/4 NPT Female | 1/4 NPT Male   |
| <b>61905</b>   | <b>61951</b>   |
|                | 1/4 NPT Female |
|                | <b>61954</b>   |

Air couplers have checks on sleeves only.

### Adapters & Elbows

| Adapter for BSP | Elbows             |
|-----------------|--------------------|
| 1/4 Male NPT    | 1/4 NPT x 1/4 Tube |
| 1/4 Female BSP  |                    |
| <b>60221</b>    | <b>61004</b>       |

## Air Hose

Low pressure flexible PVC air hose is sold by the foot in bulk lengths. Order the total footage and number of push-on fittings required by using the number to the right.

### Low Pressure Air Hose

| Hose I.D.   | 1/4"         | 3/8"         | 1/2"         |
|-------------|--------------|--------------|--------------|
| Hose        |              |              |              |
| Part Number | <b>61106</b> | <b>61108</b> | <b>61110</b> |
| Fitting     |              |              |              |
| Part Number | <b>61107</b> | <b>61109</b> | <b>61111</b> |

## Hydraulic Hose



High pressure hose is supplied assembled and to lengths indicated. Lengths are measured from end of coupling to end of coupling. Hose is 3/8" ID and available in 4000 psi or 7000 psi rating. 3/8" female tubing fittings on each end.

### High Pressure Hydraulic Hose

| Length      | 12"          | 18"          | 24"          | 36"          | 72"          |
|-------------|--------------|--------------|--------------|--------------|--------------|
| Part Number |              |              |              |              |              |
| 4000 psi    | <b>61201</b> | <b>61202</b> | <b>61203</b> | <b>61204</b> | <b>61205</b> |
| Part Number |              |              |              |              |              |
| 7000 psi    | <b>61211</b> | <b>61212</b> | <b>61213</b> | <b>61214</b> | <b>61215</b> |

\*Also available in 5000 psi.

### Hydraulic Hose (Build Your Own)

| Length      | 25'          | Hose Ends    | Hose Ends                 |
|-------------|--------------|--------------|---------------------------|
| Part Number | <b>61221</b> | <b>61226</b> | <b>61227</b>              |
| 2750 psi    | 1/4 Hose     | 1/4 Npt Male | 1/4 37° JIC Swivel Female |

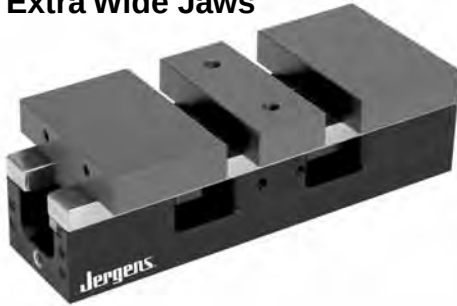


## Jergens Production Vise System Flexible Clamping - Flexible Production

Variable batch sizes? Many different types of workpieces? Frequent set-ups?

The Jergens Production Vise System is the answer for these manufacturing flexibility issues!

### Extra Wide Jaws



### Dual Station with Hard Jaw



### Full Face Vise Plate



### Single Workpiece with Hard Jaws



Aluminum jaws can be completely milled, therefore a high degree of adaptability to the workpiece shape. For clamping, stop, and supporting surfaces.



Hard coated base made of high-strength, light-weight, aluminum extrusion. Guideway Rails made of heat treated Alloy Steel.



Completely sealed lead screw assembly for trouble-free operation, power transmission through inserted steel nut, large slide stroke.



The clamping system consists of only a few components, for quick dismantling and minimum maintenance.

### Aluminum or steel jaws suitable for milling:

- Milling of stop, supporting and clamping surfaces
- Quick set-up for formed parts and workpieces with complex clamping contours
- Significant reduction in expenditure on fixtures

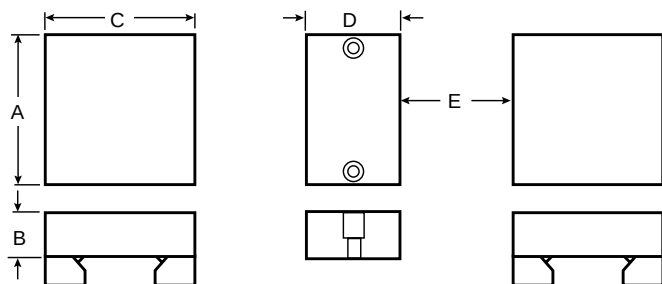
### Jaws change in a few seconds:

- Rapid changeover from one workpiece to the next
- Machine downtimes are minimized

### High versatility:

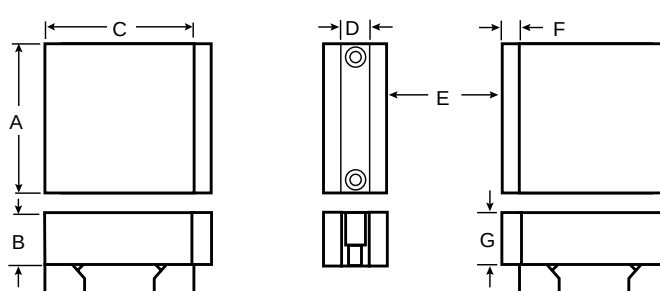
- The clamping element can be made available for simple and complex clamping applications in a very short time

## Production Vise Jaws



**Soft Jaws**

• Standard Jaws are machinable aluminum.



**Hard Jaw Carrier Set  
with hardened steel inserts**

### Jaws for 4" (100mm) Production Vises

| Part Number  | Description                                                                            | A    | B    | C    | D    | E <sup>(1)</sup> | F   | G    |
|--------------|----------------------------------------------------------------------------------------|------|------|------|------|------------------|-----|------|
| <b>49420</b> | Standard Machinable Soft Jaw Set (3pcs.)                                               | 3.95 | 1.22 | 4.00 | 2.50 | 2.20             |     |      |
| 49421*       | Pair of Std Moveable Jaws Only (2pcs.)                                                 | 3.95 | 1.22 | 4.00 |      |                  |     |      |
| 49422        | Std Fixed Jaw Only (1pc.)                                                              | 3.95 | 1.22 |      | 2.50 |                  |     |      |
| <b>49423</b> | Extra Wide Machinable Soft Jaw Set (3pcs.)                                             | 5.95 | 1.22 | 4.00 | 2.50 | 2.20             |     |      |
| 49424*       | Pair of Wide Moveable Jaws Only (2pcs.)                                                | 5.95 | 1.22 | 4.00 |      |                  |     |      |
| 49425        | Wide Fixed Jaw Only (1pc.)                                                             | 5.95 | 1.22 |      | 2.50 |                  |     |      |
| <b>49450</b> | Extra Tall Machinable Soft Jaw Set (3pcs.)                                             | 3.95 | 2.00 | 5.00 | 2.50 | 1.70             |     |      |
| 49451*       | Pair of Tall Moveable Jaws Only (2pcs.)                                                | 3.95 | 2.00 | 5.00 |      |                  |     |      |
| 49452        | Tall Fixed Jaw Only (1pc.)                                                             | 3.95 | 2.00 |      | 2.50 |                  |     |      |
| <b>49426</b> | Hard Jaw Carrier Set <sup>(2)</sup> (3pcs.)                                            | 3.95 | 1.22 | 3.44 | .96  | 2.88             |     |      |
|              | <sup>(2)</sup> Steel Jaw Plates not included                                           |      |      |      |      |                  |     |      |
| 49428*       | Pair of Moveable Hard Jaws Only (2pcs.)                                                | 3.95 | 1.22 | 3.44 |      |                  |     |      |
| 49427        | Fixed Hard Jaw Only (1pc.)                                                             | 3.95 | 1.22 |      | .96  |                  |     |      |
| <b>49429</b> | Hardened Steel Jaw Insert <sup>(3)</sup> (4pcs.)                                       | 4.00 |      |      |      |                  | .35 | 1.23 |
|              | <sup>(3)</sup> Steel Jaw Plates have black-oxide finish, and are hardened to Rc 54/58. |      |      |      |      |                  |     |      |

<sup>(1)</sup> Mounted Dimensions

### Jaws for 6" (150mm) Production Vises

| Part Number  | Description                                                                            | A    | B    | C    | D    | E <sup>(1)</sup> | F   | G    |
|--------------|----------------------------------------------------------------------------------------|------|------|------|------|------------------|-----|------|
| <b>49430</b> | Standard Machinable Soft Jaw Set (3pcs.)                                               | 5.95 | 1.45 | 5.00 | 3.00 | 3.50             |     |      |
| 49431*       | Pair of Std Moveable Jaws Only (2pcs.)                                                 | 5.95 | 1.45 | 5.00 |      |                  |     |      |
| 49432        | Std Fixed Jaw Only (1pc.)                                                              | 5.95 | 1.45 |      | 3.00 |                  |     |      |
| <b>49433</b> | Extra Wide Machinable Soft Jaw Set (3pcs.)                                             | 7.95 | 1.45 | 5.00 | 3.00 | 3.50             |     |      |
| 49434*       | Pair of Wide Moveable Jaws Only (2pcs.)                                                | 7.95 | 1.45 | 5.00 |      |                  |     |      |
| 49435        | Wide Fixed Jaw Only (1pc.)                                                             | 7.95 | 1.45 |      | 3.00 |                  |     |      |
| <b>49455</b> | Extra Tall Machinable Soft Jaw Set (3pcs.)                                             | 5.95 | 2.50 | 6.00 | 3.00 | 3.00             |     |      |
| 49453*       | Pair of Tall Moveable Jaws Only (2pcs.)                                                | 5.95 | 2.50 | 6.00 |      |                  |     |      |
| 49454        | Tall Fixed Jaw Only (1pc.)                                                             | 5.95 | 2.50 |      | 3.00 |                  |     |      |
| <b>49436</b> | Hard Jaw Carrier Set <sup>(2)</sup> (3pcs.)                                            | 5.95 | 1.48 | 4.50 | .96  | 4.00             |     |      |
|              | <sup>(2)</sup> Steel Jaw Plates not included                                           |      |      |      |      |                  |     |      |
| 49438*       | Pair of Moveable Hard Jaws Only (2pcs.)                                                | 5.95 | 1.48 | 4.50 |      |                  |     |      |
| 49437        | Fixed Hard Jaw Only (1pc.)                                                             | 5.95 | 1.48 |      | .96  |                  |     |      |
| <b>49439</b> | Hardened Steel Jaw Insert Set <sup>(3)</sup> (4pcs.)                                   | 6.00 |      |      |      |                  | .48 | 1.75 |
|              | <sup>(3)</sup> Steel Jaw Plates have black-oxide finish, and are hardened to Rc 54/58. |      |      |      |      |                  |     |      |

<sup>(1)</sup> Mounted Dimensions

**Note:** Steel available for all soft jaw sets, add -S to the base part number. Example: 49420-S

\*For Self Centering Vises. Moveable jaw sets available with gibs for tighter tolerances within rails. Add "SC" to part number.

Example: 49421SC

## Production Vise Accessories

### Jaws & Fixture Plates

#### Jaws

- **Standard** fully machinable soft jaws, as supplied on the Production Vises and Columns
- **Extra Wide** fully machinable soft jaws. (-W)
- **Extra Tall** fully machinable soft jaws. (-T)
- **Hard Jaw Carriers** are drilled and tapped to accept hard jaw plates. (-H)
- **Hard Jaw Plates** are hardened steel plates that bolt onto the hard jaw carriers. (-H)

Jaws are offered three ways:

- **Jaw Sets** include two moveable jaws and one fixed jaw.
- **Moveable Jaws** are sold in pairs
- **Fixed Jaws** are sold separately.

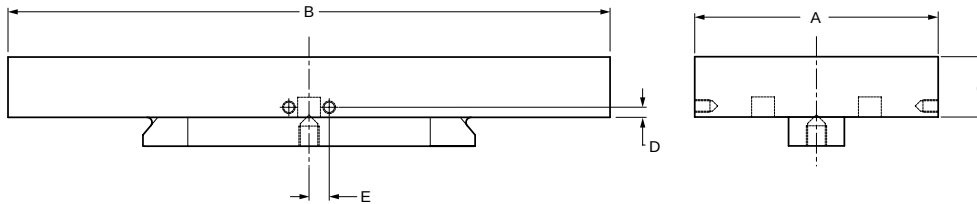


**Machinable Soft Jaws**  
(Standard Sets included with Vises)

**Hard Jaw Carriers**  
With Steel Inserts\*

#### Quick Change Fixture Plates

Fixture plates provide an alternative to holding parts in the jaws. Build dedicated fixtures on the plates, and then just snap onto a vise or column. Switch between jaws and fixture plates without removing the vise or column from the machine.



**Quick Change**  
**Fixture Plate**

#### Quick Change Fixture Plates for 4" (100mm) Production Vises

| Part No. | Description            | A | B     | C     | D   | E   |
|----------|------------------------|---|-------|-------|-----|-----|
| 49446    | Standard Fixture Plate | 4 | 14.90 | 1.475 | .25 | .50 |
| 49448    | Wide Fixture Plate     | 6 | 14.90 | 1.475 | .25 | .50 |

#### Quick Change Fixture Plates for 6" (150mm) Production Vises

| Part No. | Description            | A | B     | C     | D   | E    |
|----------|------------------------|---|-------|-------|-----|------|
| 49447    | Standard Fixture Plate | 6 | 19.90 | 1.475 | .25 | .688 |
| 49449    | Wide Fixture Plate     | 8 | 19.90 | 1.475 | .25 | .688 |



**Vise Handles**

| Part No. | Vise Size |
|----------|-----------|
| 49442    | 4"/100mm  |
| 49443    | 6"/150mm  |

- Ergonomic Design
- 5/8" Hex Size



**Vise Work Stop**

| Part No. |
|----------|
| 49444    |

- Easily mounts to side of twin vise
- Allows for precise part location



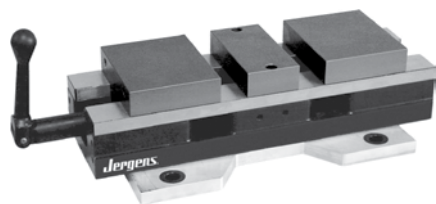
**Vise Conversion Plates**

| Part No. | Vise Size |
|----------|-----------|
| 49440    | 4"/100mm  |
| 49441    | 6"/150mm  |

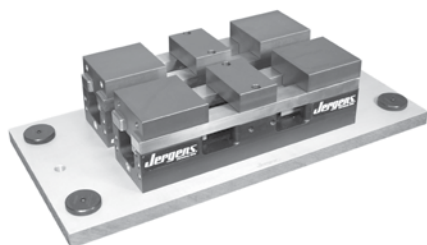
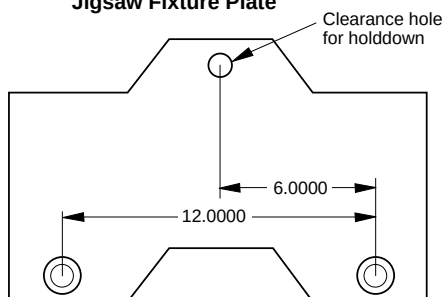
NOTE: Conversion plates include mounting screws.

- Allows for easy conversion from twin station to single station vise
- Hard coat anodized aluminum

## Production Vise Ball Lock® Accessories - Inch



Jigsaw Fixture Plate



### Ball Lock® Shanks

| Shank Diameter | Fixture Plate Thickness | Standard Shank | Shank with Thumbscrew |
|----------------|-------------------------|----------------|-----------------------|
| 20             | 3/4                     | 49601          | 49601-S               |
| 20             | 1"                      | 49602          | 49602-S               |
| 25             | 3/4                     | 49611          | 49611-S               |
| 25             | 1"                      | 49612          | 49612-S               |



Standard Shank

Thumb Screw

### Jigsaw Interlocking Fixture Plates

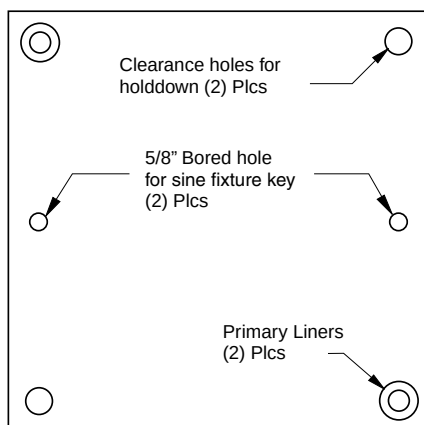
| Plate Part No. | Jig Saw Pattern | Plate Thickness | Outer Dimensions | Use With Vise No. | Wt. (lbs) |
|----------------|-----------------|-----------------|------------------|-------------------|-----------|
| 28705          | 6 x 12          | 3/4             | 8 x 15           | 49401             | 9         |
| 28706          | 8 x 12          | 3/4             | 10 x 16          | 49402             | 9         |

### Ball Lock® Fixture Plates for Multiple Production Vises

Jergens manufactures standard Ball Lock® Fixture Plates for various applications. A small sample is listed below. These fixture plates will accept multiple Jergens Production Vises. However, the Jergens Ball Lock® Mounting System can provide the greatest benefits, when designed for your specific applications and your machine tools. Please contact Jergens Technical Service to select the proper fixture and sub-plate for your applications.

| Plate Part No. | Ball Lock Pattern | Shank Diameter | Plate Thickness | Outer Dimensions | Vises/ Plate | Use With Vise No. | Wt. (lbs) |
|----------------|-------------------|----------------|-----------------|------------------|--------------|-------------------|-----------|
| 28713          | 12 x 12           | 20MM           | 3/4             | 14 x 14          | 2            | 49401             | 14        |
| 28715          | 12 x 12           | 20MM           | 3/4             | 16 x 16          | 2            | 49401             | 18        |
| 28727          | 17 x 17           | 25MM           | 1"              | 20 x 20          | 3            | 49401             | 38        |
| 28727          | 17 x 17           | 25MM           | 1"              | 20 x 20          | 2            | 49402             | 38        |
| *28742         | 8 x 22            | 25MM           | 1"              | 12 x 25          | 2            | 49401             | 28        |

\*Fits Jergens Tooling Column 69011



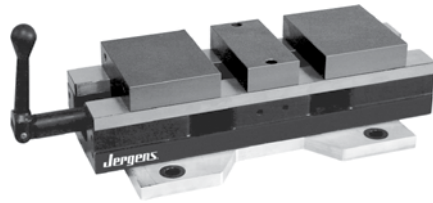
### Ball Lock® Sub-Plates for Ball Lock® Vises, Columns, and Fixture Plates

Jergens manufactures standard sub-plates for popular machine tools. Three standard plates are shown. These sub-plates will accept Jergens Ball Lock® Vises, Columns and Fixture Plates. Some of the sub-plates have multiple mounting patterns that will allow multiple sizes and styles

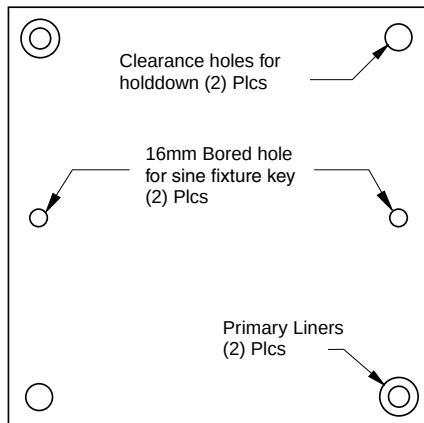
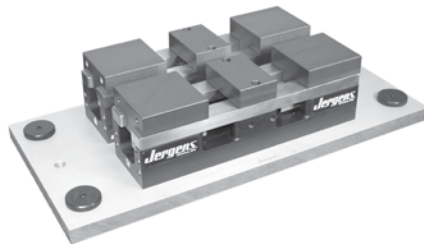
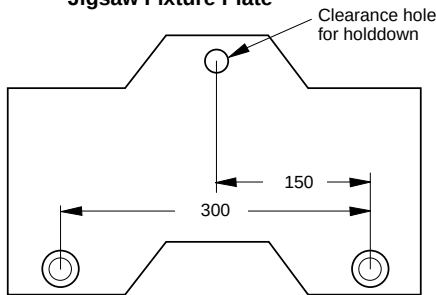
of fixture plates and vises to be used on the same machine. However, the Jergens Ball Lock® Mounting System can provide the greatest benefits, when designed for your specific applications and your machine tools. Please contact Jergens Technical Service to select the proper sub-plate for your machine.

| Plate Part Number | Machine Type | Table Size | Ball Lock Pattern | Applications                                         |
|-------------------|--------------|------------|-------------------|------------------------------------------------------|
| 49102             | HMC          | 400MM      | 14x14             | Vise Columns, Tooling Columns, Other                 |
| 49103-C           | HMC          | 500MM      | 17x17&14x14       | Vise Columns, Tooling Columns, Other                 |
| 49112             | VMC          | 20x40      | Multiple Patterns | Jigsaw Vises & Plates, Multiple Vise Fixtures, Other |

## Production Vise Ball Lock® Accessories - Metric



Jigsaw Fixture Plate



### Ball Lock® Shanks

| Shank Diameter | Fixture Plate Thickness | Standard Shank | Shank with Thumbscrew |
|----------------|-------------------------|----------------|-----------------------|
| 20             | 20                      | 49651          | 49651-S               |
| 20             | 25                      | 49652          | 49652-S               |
| 25             | 20                      | 49661          | 49661-S               |
| 25             | 25                      | 49662          | 49662-S               |



Standard Shank

Thumb Screw

### Jigsaw Interlocking Fixture Plates

| Plate Part No. | Jig Saw Pattern | Plate Thickness | Outer Dimensions | Use With Vise No. | Wt. (kg) |
|----------------|-----------------|-----------------|------------------|-------------------|----------|
| 58706          | 200 x 300       | 20              | 250 x 400        | 49402             | 4        |

### Ball Lock® Fixture Plates for Multiple Production Vises

Jergens manufactures standard Ball Lock® Fixture Plates for various applications. A small sample is listed below. These fixture plates will accept multiple Jergens Production Vises. However, the Jergens Ball Lock® Mounting System can provide the greatest benefits, when designed for your specific applications and your machine tools. Please contact Jergens Technical Service to select the proper fixture and sub-plate for your applications.

| Plate Part No. | Ball Lock Pattern | Shank Diameter | Plate Thickness | Outer Dimensions | Vises/ Plate | Use With Vise No. | Wt. (kg) |
|----------------|-------------------|----------------|-----------------|------------------|--------------|-------------------|----------|
| 58713          | 300 x 300         | 20MM           | 20              | 350 x 350        | 2            | 49401             | 6        |
| 58715          | 300 x 300         | 20MM           | 20              | 400 x 400        | 2            | 49401             | 8        |
| 58727          | 425 x 425         | 25MM           | 25              | 500 x 500        | 3            | 49401             | 18       |
| 58727          | 425 x 425         | 25MM           | 25              | 500 x 500        | 2            | 49402             | 18       |
| 58742          | 175 x 550         | 25MM           | 25              | 300 x 625        | 2            | 49401             | 12       |

### Ball Lock® Sub-Plates for Ball Lock® Vises, Columns, and Fixture Plates

Jergens manufactures standard sub-plates for popular machine tools. Three standard plates are shown. These sub-plates will accept Jergens Ball Lock® Vises, Columns and Fixture Plates. Some of the sub-plates have multiple mounting patterns that will allow multiple sizes and styles

of fixture plates and vises to be used on the same machine. However, the Jergens Ball Lock® Mounting System can provide the greatest benefits, when designed for your specific applications and your machine tools. Please contact Jergens Technical Service to select the proper sub-plate for your machine.

| Plate Part Number | Machine Type | Table Size | Ball Lock Pattern      | Applications                                         |
|-------------------|--------------|------------|------------------------|------------------------------------------------------|
| 59102             | HMC          | 400MM      | 350 x 350              | Vise Columns, Tooling Columns, Other                 |
| 59103-C           | HMC          | 500MM      | 350 x 350<br>425 x 425 | Vise Columns, Tooling Columns, Other                 |
| 59112             | VMC          | 500 x 1000 | Multiple Patterns      | Jigsaw Vises & Plates, Multiple Vise Fixtures, Other |

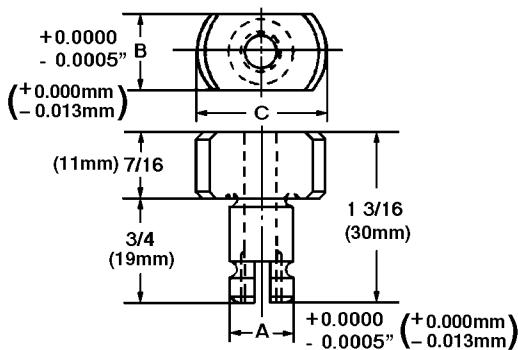


## Production Vise Accessories

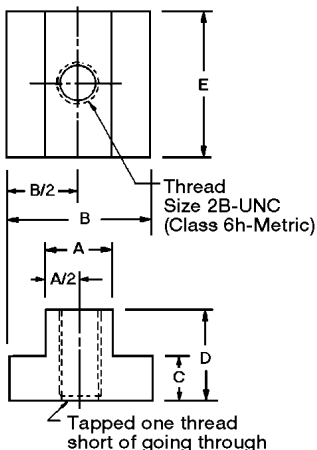
### Sine Fixture Keys for Vises



Locate subplates or fixture plates to T-slotted machine tables. Available in inch sizes for 1/2" to 7/8" slots, and in metric sizes for 12mm to 22mm slots.



### T-Slot Nuts



### Inch - 5/8" Shanks for Inch T-Slots

| Part Number | Shank Size A | Table Slot Size B | C     | Wt. (lbs) |
|-------------|--------------|-------------------|-------|-----------|
| 39501       | 0.625        | 0.4995            | 1     | .09       |
| 39502       | 0.625        | 0.562             | 1     | .11       |
| 39503       | 0.625        | 0.6245            | 1     | .11       |
| 39504       | 0.625        | 0.687             | 1     | .11       |
| 39505       | 0.625        | 0.7495            | 1 1/8 | .13       |
| 39506       | 0.625        | 0.812             | 1 1/8 | .14       |
| 39507       | 0.625        | 0.8745            | 1 1/8 | .15       |

### Metric - 5/8" Shanks for Metric T-Slots

| Part Number | Shank Size A | Table Slot Size (mm) B | C     | Wt. (kg) |
|-------------|--------------|------------------------|-------|----------|
| 39561       | 0.625        | 12                     | 1     | .04      |
| 39562       | 0.625        | 14                     | 1     | .04      |
| 39563       | 0.625        | 16                     | 1     | .05      |
| 39564       | 0.625        | 18                     | 1 1/8 | .05      |
| 39565       | 0.625        | 20                     | 1 1/8 | .06      |
| 39566       | 0.625        | 22                     | 1 1/8 | .07      |

Note: Complete offering of Metric/Metric Sine Fixture Keys available on page 4.21

### Inch

| Part Number | Thread | T-Slot Width A | B     | C     | D   | E     | Wt. (lbs) 10 Pcs. |
|-------------|--------|----------------|-------|-------|-----|-------|-------------------|
| *43302**    | 3/8-16 | 7/16           | 11/16 | 7/32  | 1/2 | 7/8   | 0.50              |
| *43303**    | 3/8-16 | 1/2            | 7/8   | 9/32  | 1/2 | 7/8   | 0.70              |
| 43301       | 3/8-16 | 9/16           | 7/8   | 1/4   | 1/2 | 7/8   | 0.70              |
| *43305**    | 1/2-13 | 9/16           | 7/8   | 11/32 | 5/8 | 1 1/8 | 1.20              |
| *43306      | 1/2-13 | 5/8            | 1     | 11/32 | 5/8 | 1 1/8 | 1.50              |
| *43304      | 1/2-13 | 11/16          | 1 1/8 | 7/16  | 3/4 | 1 1/4 | 2.10              |
| *43308**    | 5/8-11 | 11/16          | 1 1/8 | 7/16  | 3/4 | 1 1/4 | 1.14              |
| *43309      | 5/8-11 | 3/4            | 1 1/4 | 15/32 | 3/4 | 1 1/4 | 1.60              |
| *43307      | 5/8-11 | 13/16          | 1 1/4 | 9/16  | 1   | 1 1/2 | 3.11              |

\*Conforms to TCMA. \*\*Not Hardened

### Metric

| Part Number | Thread     | T-Slot Width A | B  | C  | D  | E  | Wt. (kg) 10 pcs. |
|-------------|------------|----------------|----|----|----|----|------------------|
| 43372       | M10 x 1.5  | 12             | 19 | 7  | 13 | 25 | 0.25             |
| 43373       | M10 x 1.5  | 14             | 22 | 9  | 16 | 29 | 0.35             |
| 43374       | M10 x 1.5  | 16             | 25 | 9  | 16 | 29 | 0.35             |
| 43375       | M12 x 1.75 | 14             | 22 | 9  | 16 | 29 | 0.60             |
| 43376       | M12 x 1.75 | 16             | 25 | 9  | 16 | 29 | 0.75             |
| 43377       | M12 x 1.75 | 18             | 29 | 11 | 19 | 32 | 1.1              |
| 43378       | M16 x 2.0  | 18             | 29 | 11 | 19 | 32 | 0.57             |
| 43379       | M16 x 2.0  | 20             | 32 | 14 | 25 | 38 | 0.80             |
| 43380       | M16 x 2.0  | 22             | 35 | 14 | 25 | 38 | 1.56             |

Note: Complete offering of T-Slot Nuts available on page 6.35

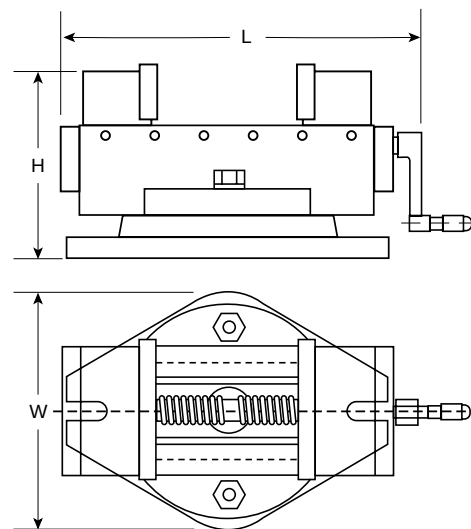
## Cast Iron Shop Vises

### Precision Self Centering Vises with Swivel Base



#### Characteristics

Made of close grained high tensile cast iron. Jaws ground and Hardened 55±3 HRC. Swivel base provided with positive locking and adjustable through 360°. Adjusts work piece to its center. Opposite threads for quick and accurate centering.



#### Technical Data

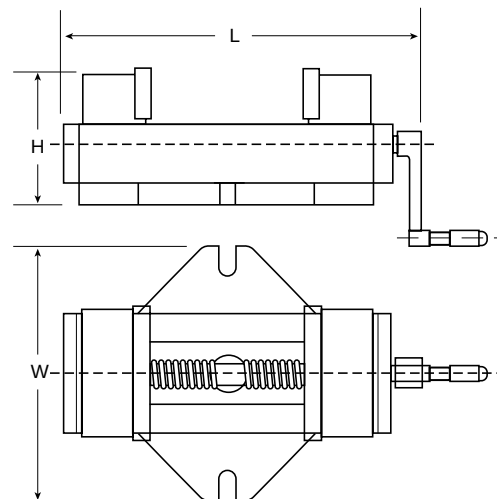
| Part Number | Jaw Width |     | Jaw Opening |     | Jaw Depth |    | Length |     | Width |     | Height |     | Net Weight Kgs. |
|-------------|-----------|-----|-------------|-----|-----------|----|--------|-----|-------|-----|--------|-----|-----------------|
|             | Inch      | mm  | Inch        | mm  | Inch      | mm | Inch   | mm  | Inch  | mm  | Inch   | mm  |                 |
| 110080      | 2         | 50  | 2           | 50  | 1         | 25 | 6 3/4  | 171 | 3 3/4 | 95  | 3 1/8  | 80  | 3.25            |
| 110081      | 4         | 100 | 4           | 100 | 1 5/8     | 42 | 10     | 254 | 6 1/2 | 165 | 5 1/2  | 140 | 16.00           |
| 110082      | 5         | 125 | 5           | 125 | 2         | 50 | 11 1/2 | 292 | 7 3/4 | 195 | 6      | 150 | 22.00           |
| 110083      | 6         | 150 | 6           | 150 | 2         | 50 | 14 1/2 | 367 | 8     | 200 | 6 3/8  | 162 | 32.00           |

## Precision Self Centering Vises (Low Profile)



#### Characteristics

Made of close grained high tensile cast iron. Jaws ground and Hardened 55±3 HRC. Adjusts workpiece to its center. Opposite threads for quick and accurate centering. This is a low profile vise.



#### Technical Data

| Part Number | Jaw Width |     | Jaw Opening |     | Jaw Depth |    | Length |     | Width |     | Height |     | Net Weight Kgs. |
|-------------|-----------|-----|-------------|-----|-----------|----|--------|-----|-------|-----|--------|-----|-----------------|
|             | Inch      | mm  | Inch        | mm  | Inch      | mm | Inch   | mm  | Inch  | mm  | Inch   | mm  |                 |
| 110085      | 3         | 75  | 5           | 127 | 1 3/8     | 35 | 12     | 304 | 6     | 150 | 3      | 75  | 6.75            |
| 110086      | 4         | 100 | 4           | 100 | 1 3/4     | 44 | 10 1/2 | 266 | 8 1/2 | 215 | 4 1/4  | 107 | 13.00           |

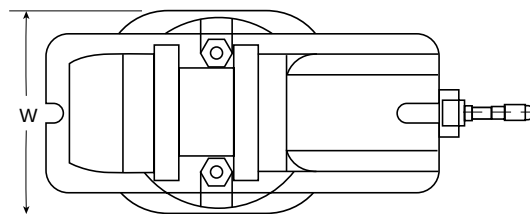
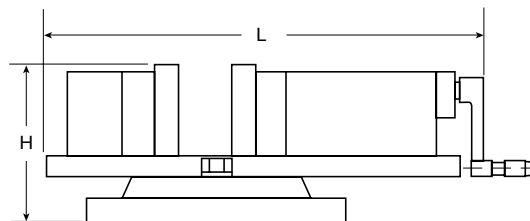
## Cast Iron Shop Vises

### Milling Machine Vises with Swivel Base (Heavy Duty)



#### Characteristics

Manufactured from close grained high tensile cast iron. Swivel is full 360°. This is very useful for heavy duty milling jobs. Vise is low height for maximum clearances. Jaws are fully ground and precision with parallelism of 0.0012 (30 microns) the hardness of jaws is 55±33 HRC.



#### Technical Data

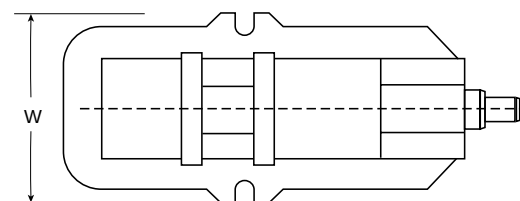
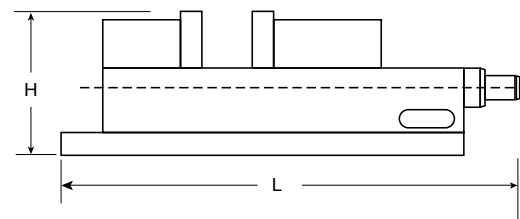
| Part Number | Jaw Width |     | Jaw Opening |     | Jaw Depth |    | Length |     | Width  |     | Height |     | Net Weight Kgs. |
|-------------|-----------|-----|-------------|-----|-----------|----|--------|-----|--------|-----|--------|-----|-----------------|
|             | Inch      | mm  | Inch        | mm  | Inch      | mm | Inch   | mm  | Inch   | mm  | Inch   | mm  |                 |
| 110230      | 4         | 100 | 4           | 100 | 1 3/4     | 45 | 15     | 381 | 8      | 200 | 5      | 125 | 19.00           |
| 110231      | 6         | 150 | 6           | 150 | 2 3/16    | 55 | 19     | 482 | 10 1/2 | 267 | 5 3/4  | 146 | 39.00           |
| 110232      | 8         | 200 | 8           | 200 | 2 3/8     | 60 | 24     | 609 | 12     | 304 | 6 1/4  | 159 | 63.00           |

## Machine Vises



#### Characteristics

Manufactured from graded cast iron and precision ground. These vises have a needle bearing thrust collar. Vise jaws are in pairs and replaceable.

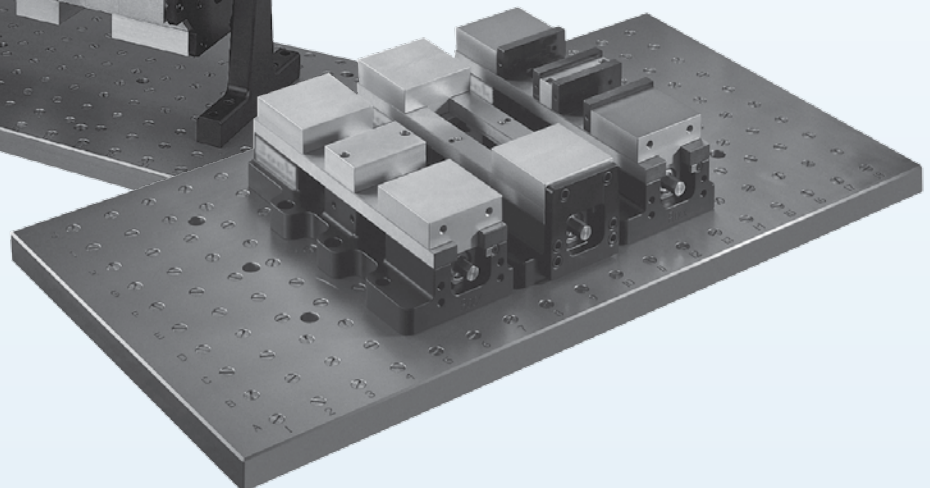
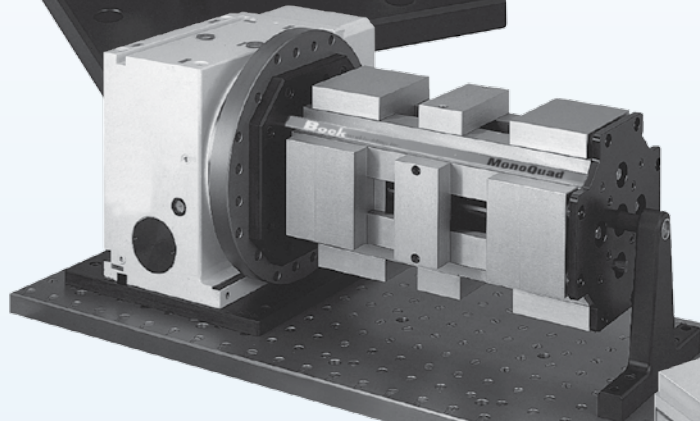
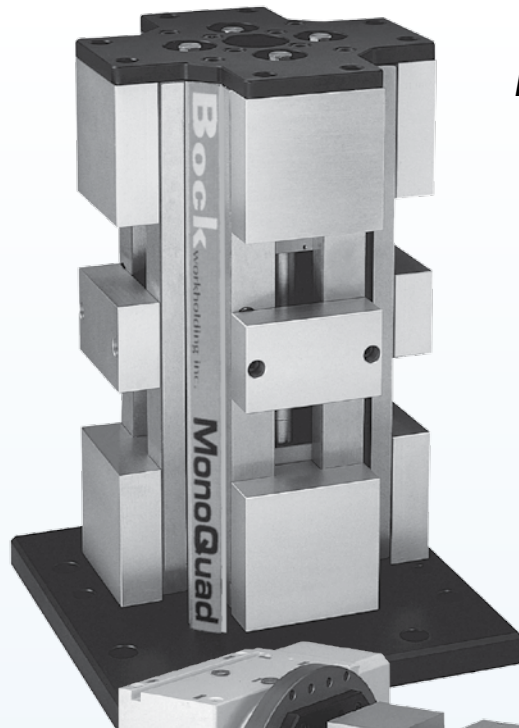


#### Technical Data

| Part Number | Jaw Width |     | Jaw Opening |     | Jaw Depth |    | Length |     | Width  |     | Height |     | Net Weight Kgs. |
|-------------|-----------|-----|-------------|-----|-----------|----|--------|-----|--------|-----|--------|-----|-----------------|
|             | Inch      | mm  | Inch        | mm  | Inch      | mm | Inch   | mm  | Inch   | mm  | Inch   | mm  |                 |
| 110250      | 6         | 150 | 7 1/2       | 188 | 1 1/2     | 38 | 20     | 507 | 9      | 225 | 6 3/4  | 170 | 36.00           |
| 110255      | 8         | 200 | 10          | 250 | 2         | 50 | 21     | 533 | 11 1/2 | 292 | 7      | 175 | 68.00           |

**Jergens**  
**BOCK**  
QUICK CHANGE SYSTEM

BRAND



**FAST • FLEXIBLE • PRODUCTIVE**

Bock Workholding for machining centers is a complete workholding system designed from the ground up to be FAST, FLEXIBLE and PRODUCTIVE.

**FAST** in setting up new and repeat jobs. Bock's Twin Vises can be positioned and repositioned on the Bock Locator Plate with speed and accuracy. Quick change jaws snap on and off in seconds.

**FLEXIBLE** by being able to hold a great variety of part sizes and shapes. Bock's quick change jaws are machined to nest your parts and can hold a great variety of sizes and shapes.

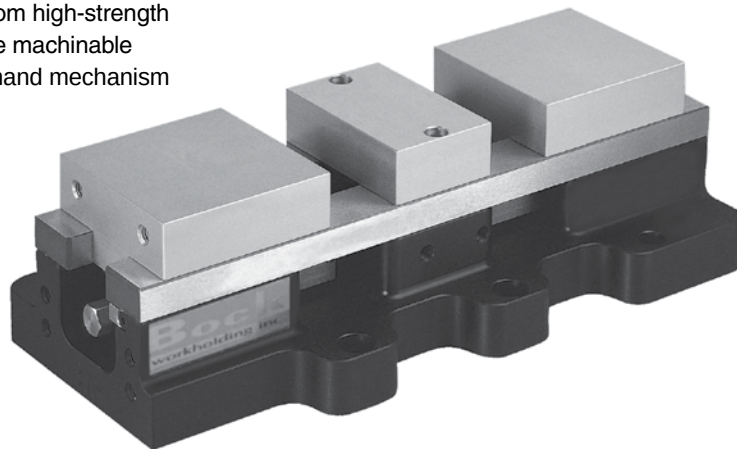
**PRODUCTIVE** by reducing spindle down-time to a minimum. The combination of short setup times, the ability to move setups away from the machine and fast loading keeps your spindle cutting, not waiting.

# System Overview



## 1 Bock Twin Vise System

The Bock Twin Vise is the key component of the complete Bock Workholding system. A variety of body styles made from high-strength aluminum, ground steel guides, snap-on quick-change machinable aluminum jaws and a solid clamping screw and third hand mechanism combine for fast, flexible and productive milling.



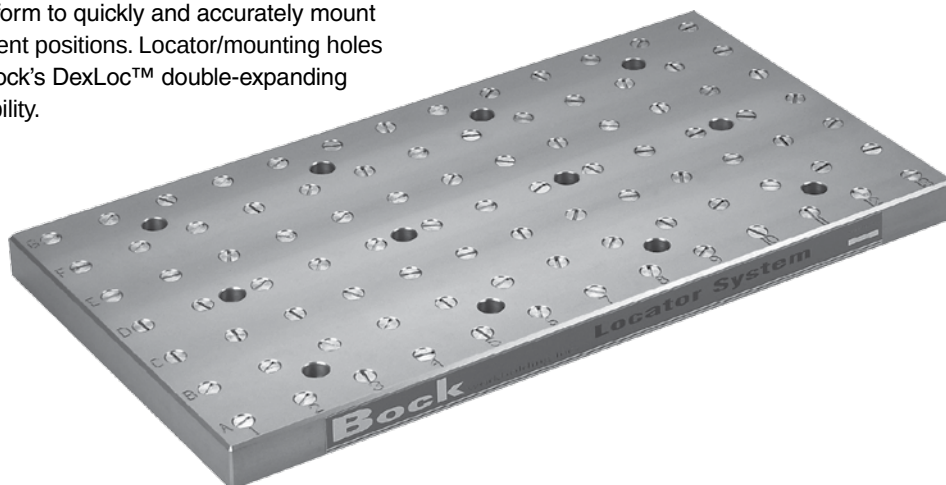
## 2 DexLoc™ Locator Pins

Patented DexLoc™ double-expanding locator pins allow for fast and accurate location of twin vises on locator plates.



## 3 Bock Locator Plate System

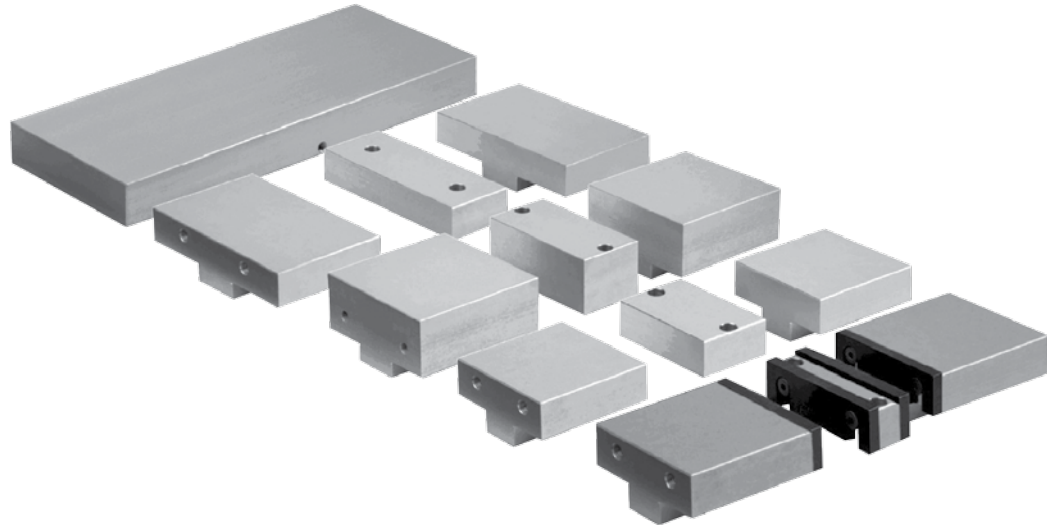
Bock Locator Plates are a great platform to quickly and accurately mount your Twin Visas in a number of different positions. Locator/mounting holes with alpha-numeric identifiers and Bock's DexLoc™ double-expanding locators give you +/- .0005" repeatability.





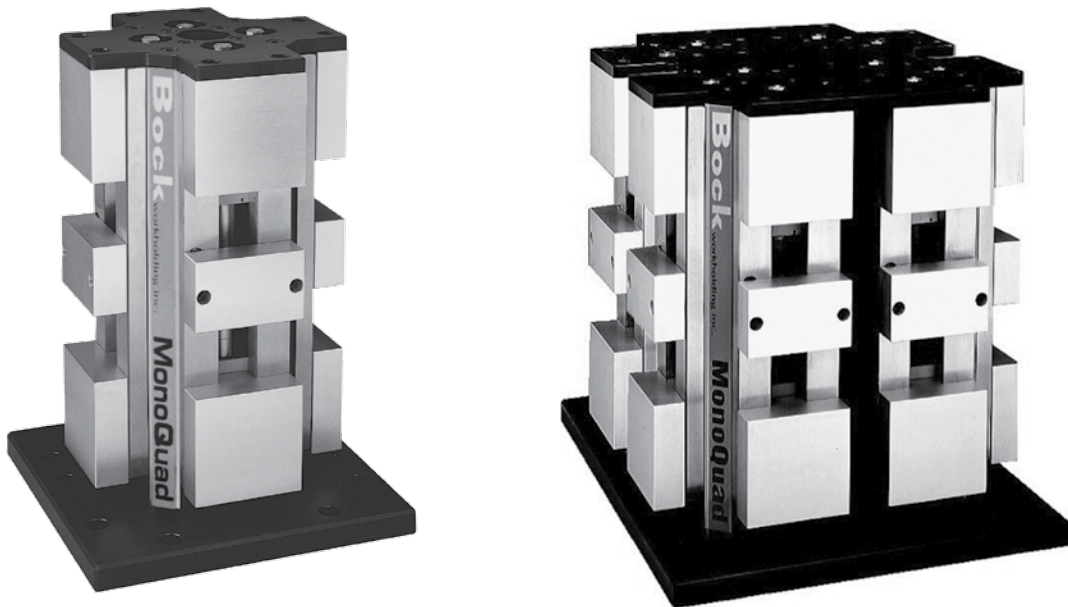
## **4 Bock Jaw System**

An assortment of snap-on jaws and face plates gives you the ability to hold most parts.

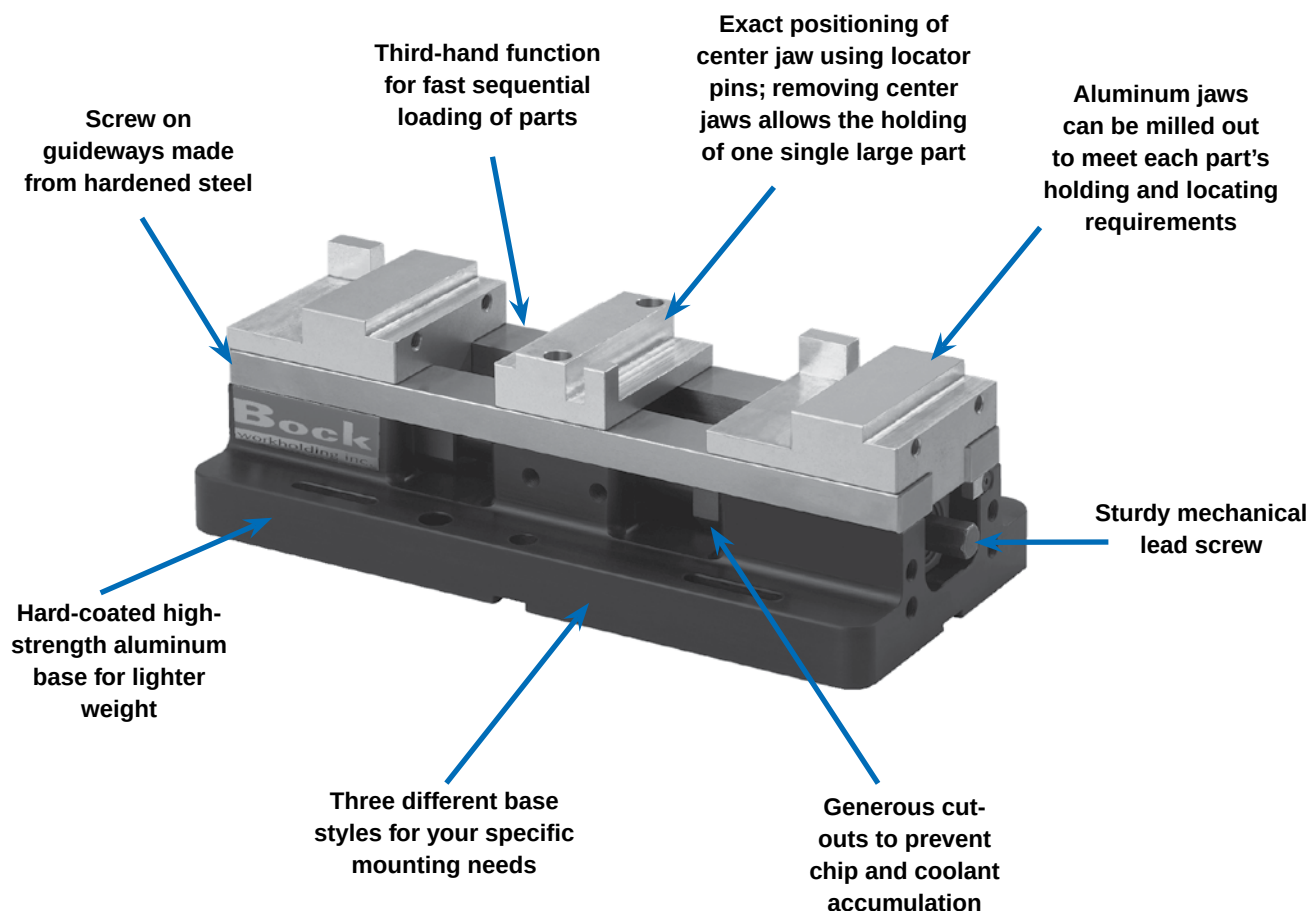


## **5 Bock Mono-Quad System**

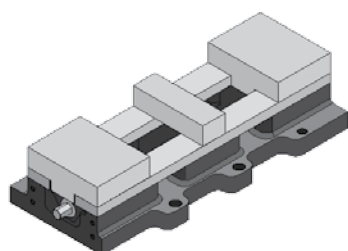
Bock Mono-Quad vises are the extension of the Bock System for horizontal machining centers. Available in models that can hold 6, 8, 12 and 16 parts in one clamping to give you maximum productivity.



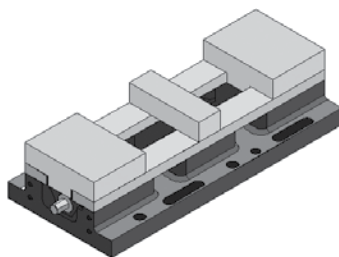
## Bock Twin Vise System



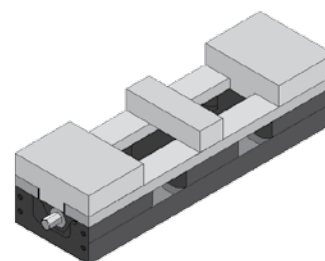
Bock's Twin Vises are available in 100mm (4") and 150mm (6") models, with three different base types:



**Standard interlocking**  
base for fast mounting on  
Bock Locator Plates



**Straight base**  
for use on Bock Locator  
Plates or with toe clamps



**Slim-Line**  
for high density mounting  
on Bock Locator Plates

## Bock Jaw System



1

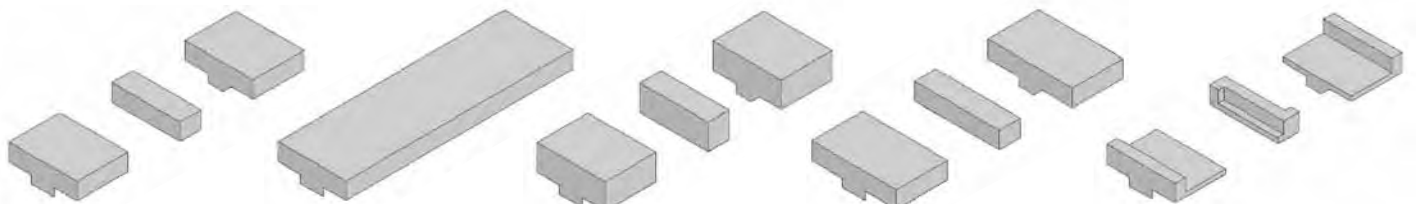


2



3

Bock Machinable Jaws are made from high-strength aircraft grade anodized aluminum. Once machined to hold a specific part they become quick-change dedicated fixtures ideal for holding even complex shapes.



**STANDARD JAWS**  
snap on and off in seconds and can be machined to nest most any part.

**QUICK CHANGE FACE PLATES**  
can be converted to snap-on snap-off fixtures holding many small parts.

**TALL JAWS**  
to hold larger parts.

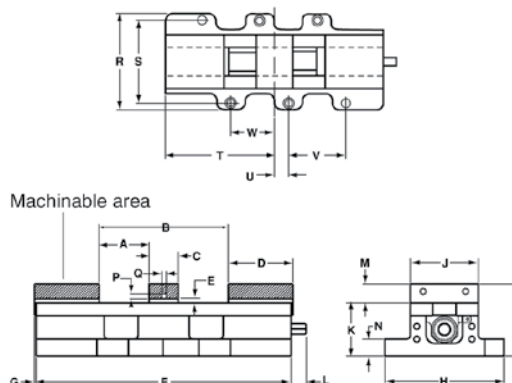
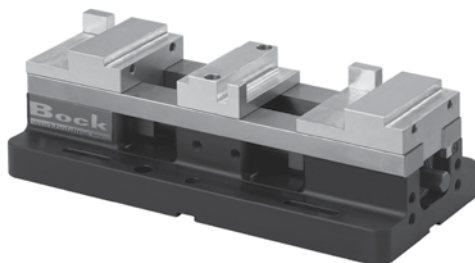
**WIDE JAWS**  
to hold several smaller parts or wide parts.

**UNIQUE SNAP-ON MECHANISM**  
holds the jaws from below the bed and allows the industry's most generous machining area.

To order jaws, please refer to page 2.37.



## Bock Twin Visers



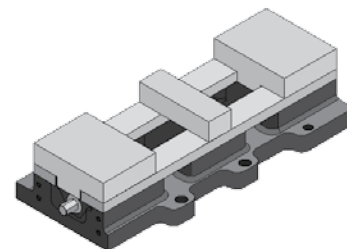
- Screw-on guideways made from hardened steel
- Third-hand function for fast sequential loading of parts
- Exact positioning of center jaw using locator pins; removing center jaws allows the holding of one single large part
- Aluminum jaws can be milled out to meet each part's holding and locating requirements.
- Sturdy mechanical lead screw
- Generous cut-outs to prevent chip and coolant accumulation
- Three different base styles
- Hard-coated, high-strength, lighter weight aluminum base

### Dimensions and Capacities - Soft Jaw

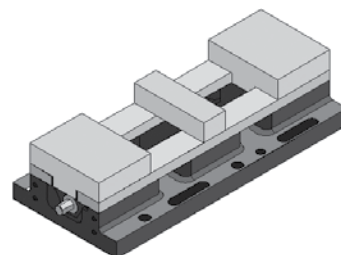
| Dimensions                 | TV4S     | TV100S | TV6S     | TV150S |
|----------------------------|----------|--------|----------|--------|
|                            | in       | mm     | in       | mm     |
| A Jaw Capacity*            | 2.20     | 56     | 3.50     | 89     |
| B Single Station Capacity* | 7.00     | 178    | 10.00    | 254    |
| C Fixed Jaw Width          | 2.50     | 64     | 3.00     | 76     |
| D Jaw Carrier Length       | 4.00     | 102    | 5.00     | 127    |
| E Jaw Plate Thickness      | 0.25     | 6      | 0.25     | 6      |
| F Base Length              | 15.00    | 381    | 20.00    | 508    |
| G Jaw Overhang             | 0.10     | 3      | —        | —      |
| H Base Width               | 7.00     | 177    | 9.00     | 227    |
| O Base Height              | 4.63     | 118    | 4.88     | 124    |
| J Jaw Width                | 4.00     | 102    | 6.00     | 152    |
| K Height Base to Rail      | 3.37     | 86     | 3.37     | 86     |
| L Lead Screw               | 0.80 max | 20 max | 0.80 max | 20 max |
| M Height                   | 1.25     | 32     | 1.50     | 38     |
| N Base Flange Thickness    | 1.25     | 32     | 1.25     | 32     |
| P Non Machineable Area     | 0.81     | 21     | 1.00     | 25     |
| Q Non Machineable Area     | 0.50     | 13     | 0.60     | 15     |
| R Base Width               | 7.00     | 177    | 9.00     | 227    |
| S Center Distance          | 6.00     | 150    | 8.00     | 200    |
| T Center Line to End       | 7.50     | 191    | 10.00    | 254    |
| U Center to Bolt Hole      | 1.00     | 25     | 1.00     | 25     |
| V Center Bolt/dowel        | 4.00     | 100    | 2.00     | 50     |
| W Center Line to bolt hole | 3.00     | 75     | 2.00     | 50     |
| Weight                     | 30 lbs   | 14 kg  | 65 lbs   | 30 kg  |

\* unmachined jaw capacity

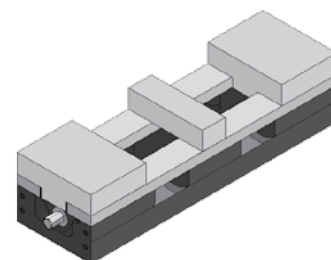
### Base Types:



Standard Interlocking



Straight Base



Slim-Line

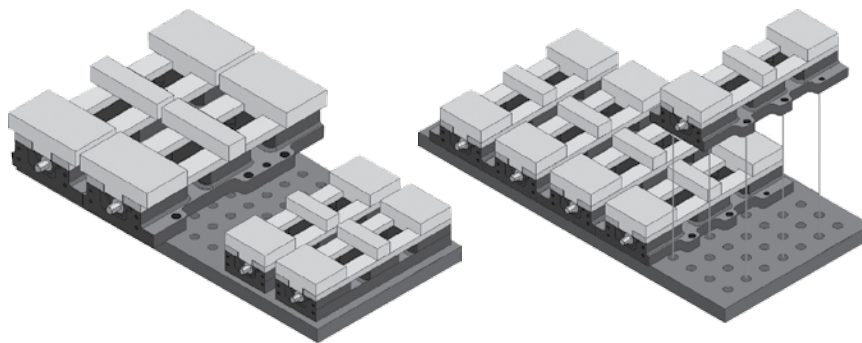
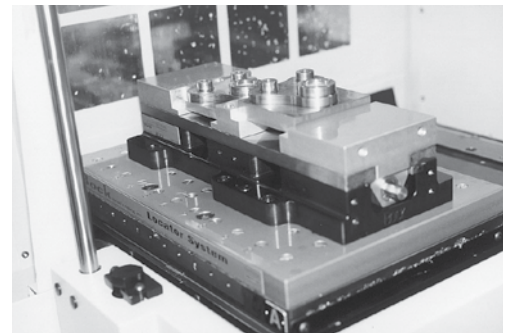
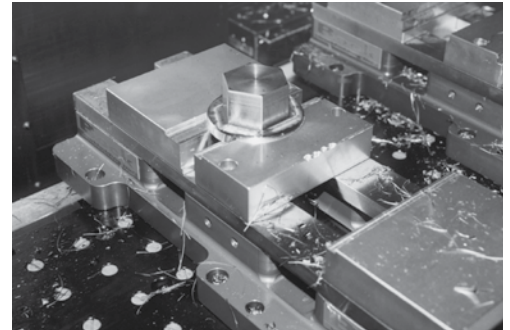
## Bock Locator Plate System

Bock Locator Plates give you the ability to mount and locate Bock Twin Vises, and to change their size, type, number and position in minutes. Using Bock's DexLoc™ Double-Expanding Locator Pins gives you repeatability of  $\pm .0005$ ".

Bock Locator Plates are made from precision machined aluminum or steel with a grid of locating/mounting holes. Each hole is identified by a letter and a number.

Bock Twin Vises with standard interlocking base gives you great flexibility at tremendous setup speeds while Bock SlimLine Twin Vises give you the possibility to mount vises very close to each other for maximum number of parts in the machine.

Each Locator Plate is custom-made for your particular application.  
Need a prompt quote? Call (877) 426-2504 with your specifications.



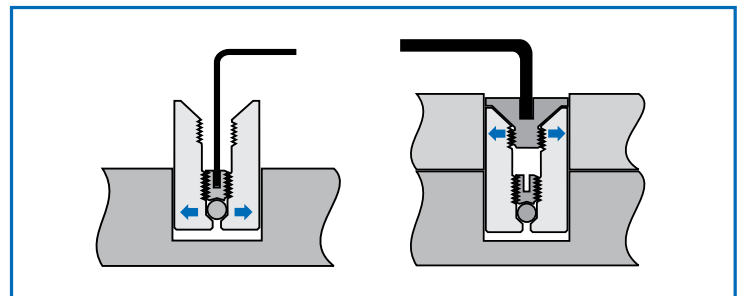
## DexLoc™ Locator Pins



Patented DexLoc™ double-expanding locator pins allow for fast and accurate location of twin vises on locator plates.

- Self-centering pins relocate within  $\pm .0005$ "
- Available in a wide variety of standard sizes and materials

To order DexLoc™ Locator Pins in other sizes, please refer to page 4.7.



### Standard

| Part Number | Diameter | Height | Hex Key Size (in) |        |
|-------------|----------|--------|-------------------|--------|
|             |          |        | Top               | Bottom |
| 29404       | 5/8      | 1-1/4  | 7/32              | 3/16   |

### Metric

| Part Number | Diameter | Height | Hex Key Size (mm) |        |
|-------------|----------|--------|-------------------|--------|
|             |          |        | Top               | Bottom |
| 29454       | 16       | 32     | 6                 | 5      |



## Bock Mono-Quad System

This complete range of Mono-Quad vises are designed to hold a multitude of parts and give access to several part sides in one clamping – a tremendous productivity booster on your horizontal machining center or on an indexer.

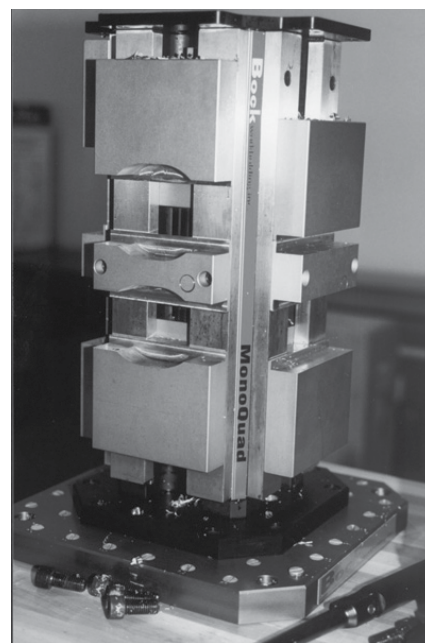
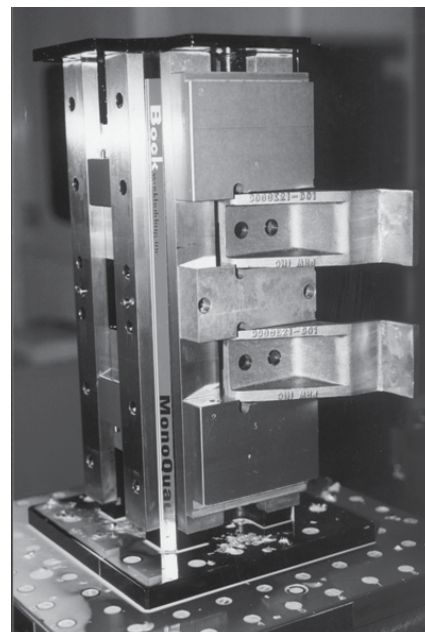
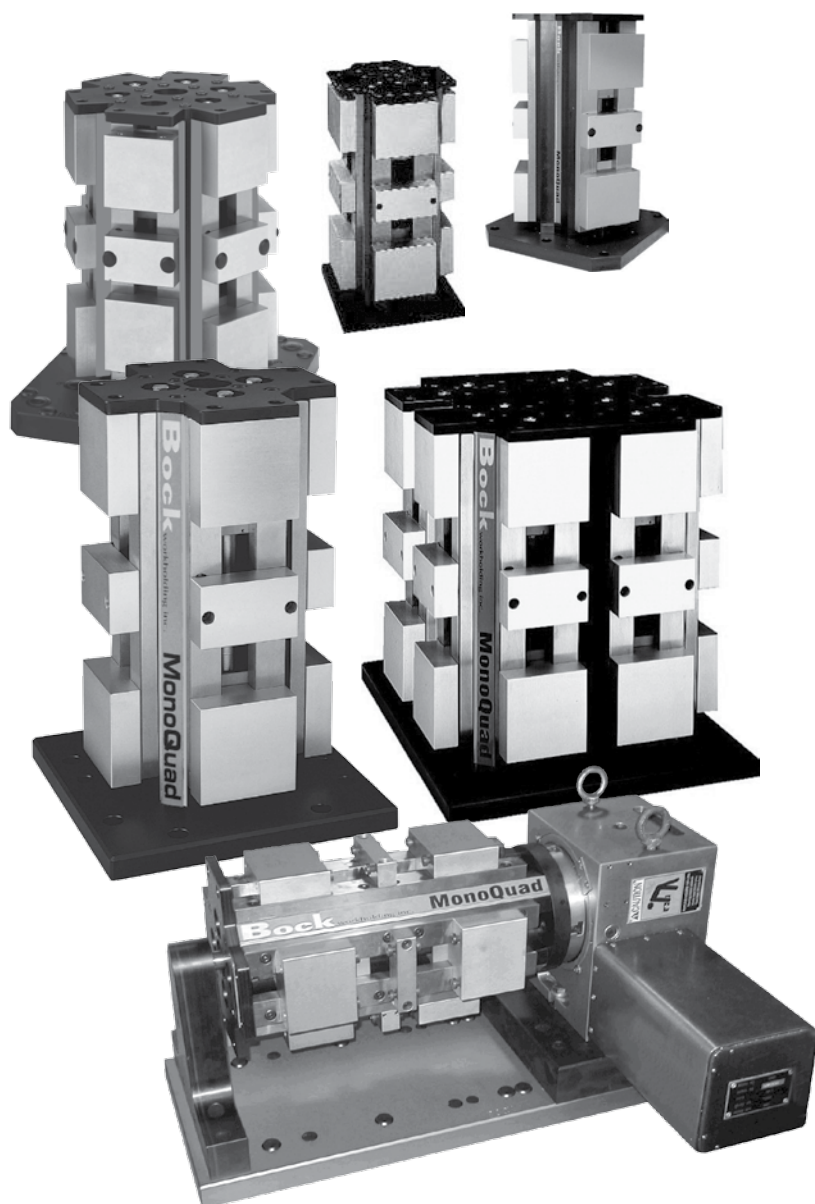
Hold 6 parts with 240°, 8 parts with 180°, 12 parts with 120°, or 16 with 90° tool access.

Mono-Quad vises are made with a high-strength aluminum column and use the same steel guides, screw mechanism and jaws as Bock's Twin Visers.

Available in 100mm (4") and 150mm (6") models and with custom base plates to fit your machine's pallet.

To order, please refer to pages 2.16 -2.22.

**Jergens**  
**BOCK**  
QUICK CHANGE SYSTEM





**5-Axis Machining Designed to Improve Productivity by Providing:**

- High Clamping Force
- Accurate Repeatability
- Fast Set-Up and Changeovers
- High Productivity Capacity
- For Complex Components/Materials

# 5-Axis Workholding Solutions

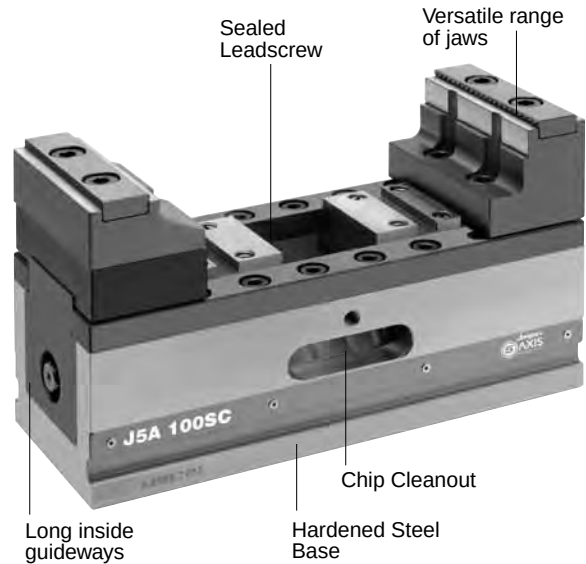
## 5-Axis Self Centering Vises

This series is suitable for many clamping tasks on 5-Axis machining centers and pallet systems. Whether the workpieces are angular or round, the concentric clamping system provides the same zero position.

The compact design, high stability and versatile selection of jaws (grip jaws, plain jaws, soft jaws, pendulum jaws, V-Type jaws) are additional features tailored for 5-Axis machining.

The 60 SC and 100 SC clamping systems are suitable for ID to OD clamping.

- Designed for 5-Axis machining
- Free access to the workpiece, allowing the use of short standard tools
- Simple, robust construction, smooth surfaces for easy cleaning
- Also suitable as a module for standard devices
- Comprehensive jaw selection



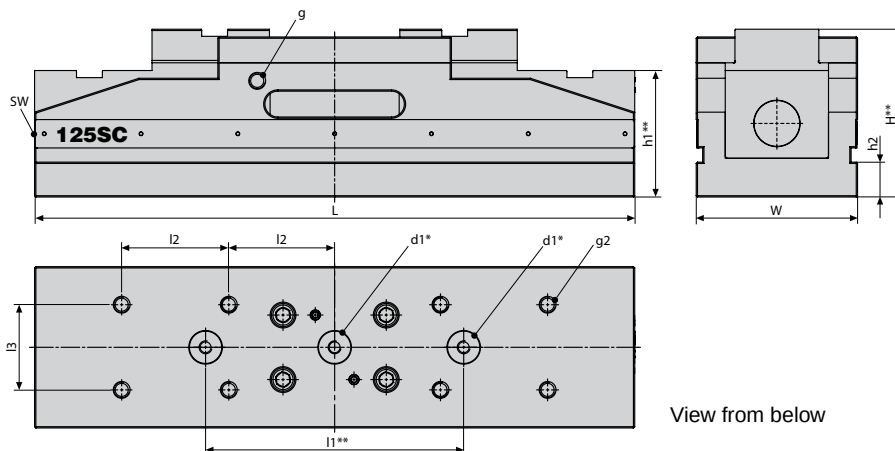
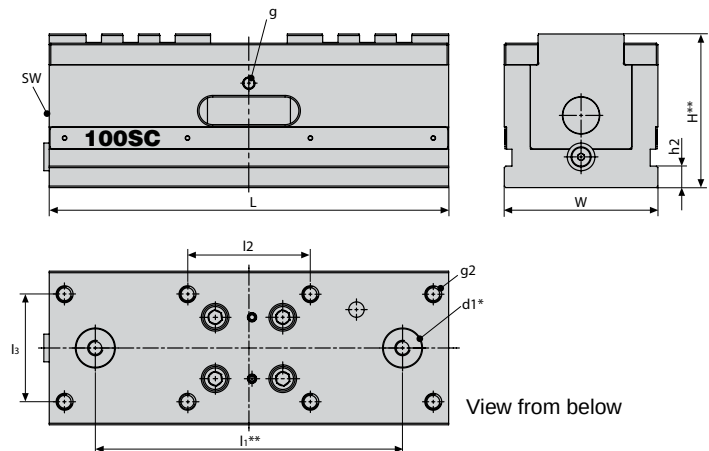
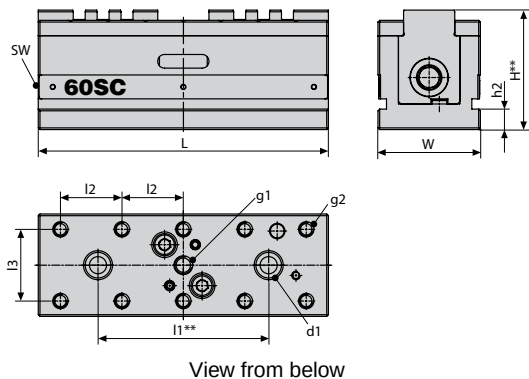
### Customized design for positioning and fastening in the base on request.

| Model | Part Number | Clamping Force (kN/Nm) | Weight (kg) | Dimensions (mm) |     |     |                  |          |          |          |      |    |     |      |    | Socket Wrench (mm) |
|-------|-------------|------------------------|-------------|-----------------|-----|-----|------------------|----------|----------|----------|------|----|-----|------|----|--------------------|
|       |             |                        |             | L               | W   | H** | d1*              | g        | g1       | g2       | h1** | h2 | l1* | l2   | l3 |                    |
| 60SC  | 80000       | 15 / 50                | 3.8         | 170             | 60  | 70  | 10F7             |          | M10 x 11 | M8 x 12  |      | 12 | 100 | 36.0 | 42 | 12                 |
| 100SC | 80100       | 25 / 80                | 18.0        | 260             | 100 | 100 | 25 x 5/ M10 x 14 | M8 x 11  |          | M10 x 14 |      | 14 | 200 | 80.0 | 70 | 14                 |
| 125SC | 80200       | 35 / 200               | 49.0        | 465             | 125 | 130 | 25 x 5/ M10 x 14 | M12 x 16 |          | M12 x 16 | 98   | 27 | 200 | 82.5 | 66 | 19                 |

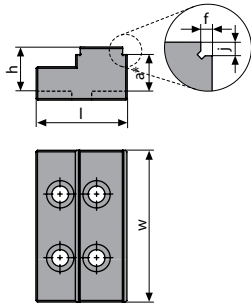
**Note:** Vise handles included with each Jergens 5-Axis Vise

\* Tolerance  $\pm 0.01\text{mm}$

\*\* Tolerance  $\pm 0.02\text{mm}$

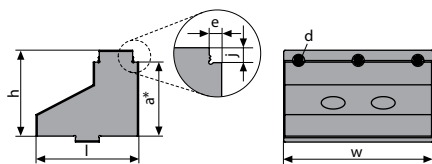


## 5-Axis Self Centering Jaws



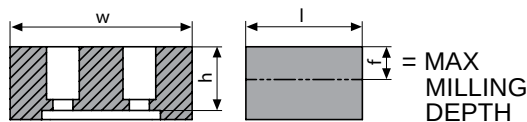
### Reversible step jaw, 2 steps, hardened

| Part Number | Model | Dimensions (mm) |     |    |    |   |   | Clamping range min./max. (mm) |
|-------------|-------|-----------------|-----|----|----|---|---|-------------------------------|
|             |       | l               | w   | h  | a* | f | j |                               |
| 80010       | 60SC  | 49              | 60  | 23 | 18 | 3 | 5 | 6 - 150                       |
| 80110       | 100SC | 60              | 100 | 30 | 25 | 3 | 5 | 6 - 204                       |



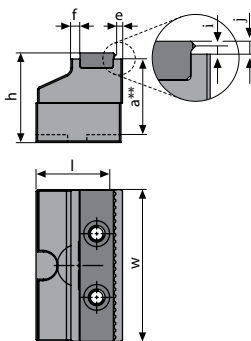
### Reversible step jaw with interchangeable grip insert

| Part Number | Model | Dimensions (mm) |     |    |    |        |   |    | Clamping range min./max. (mm) |
|-------------|-------|-----------------|-----|----|----|--------|---|----|-------------------------------|
|             |       | l               | w   | h  | a* | d      | e | j  |                               |
| 80210       | 125SC | 86              | 125 | 72 | 62 | 6x d10 | 5 | 10 | 10 - 400                      |



### Soft jaw for milling workpiece contours

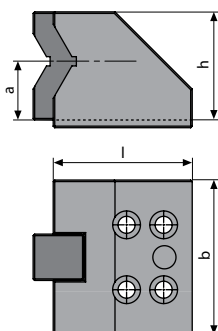
| Part Number | Model | Dimensions (mm) |     |    |    |
|-------------|-------|-----------------|-----|----|----|
|             |       | l               | w   | h  | f  |
| 80015       | 60SC  | 42              | 60  | 25 | 8  |
| 80115       | 100SC | 64              | 100 | 35 | 18 |
| 80215       | 125SC | 88              | 125 | 55 | 32 |



### Pendulum jaw with interchangeable insert, hardened

For safe clamping of one workpiece with non-parallel clamping surfaces or two workpieces with different tolerances.

| Part Number | Model | Dimensions (mm) |     |    |     |     |   |     |   | Clamping range min./max. (mm) |
|-------------|-------|-----------------|-----|----|-----|-----|---|-----|---|-------------------------------|
|             |       | l               | w   | h  | a** | e   | f | i   | j |                               |
| 80120       | 100SC | 56              | 100 | 54 | 50  | 4.5 | 6 | 2.5 | 4 | 12 - 204                      |
| 80220       | 125SC | 88              | 125 | 66 | 62  | 4.5 | 6 | 2.5 | 4 | 12 - 400                      |



### V-Type jaw with clamping inserts

| Part Number | Model | Dimensions (mm) |     |    |    | Clamping range min./max. (mm) |
|-------------|-------|-----------------|-----|----|----|-------------------------------|
|             |       | l               | w   | h  | a  |                               |
| 80030       | 60SC  | 60              | 60  | 70 | 40 | D10-76 (1)                    |
| 80130       | 100SC | 64              | 100 | 70 | 38 | D12-80 (2)                    |

(1) = D10 - 20, D20 - 58, D58 - 76

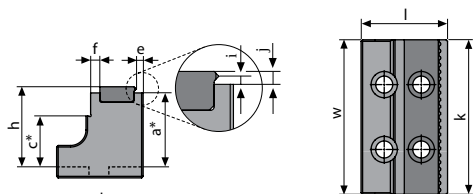
(2) = D12 - 26, D25 - 54, D53 - 80

\* Tolerance  $\pm 0.01$ mm

\*\* Tolerance  $\pm 0.02$ mm

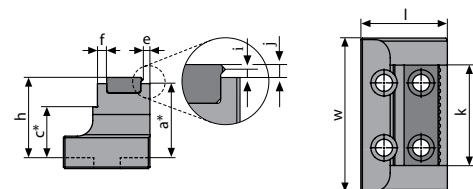


## 5-Axis Self Centering Step Jaws



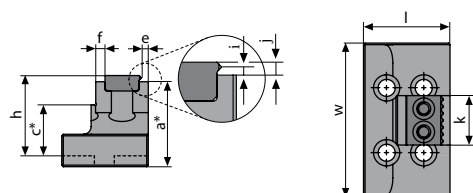
Step Jaw with Hardened Jaw Insert (Wide)

| Part Number | Model | Dimensions (mm) |     |    |    |    |     |   |     |   |     | Clamping Range min./max. |
|-------------|-------|-----------------|-----|----|----|----|-----|---|-----|---|-----|--------------------------|
|             |       | l               | w   | h  | a* | c* | e   | f | i   | j | k   |                          |
| 80035       | 60SC  | 56              | 60  | 34 | 30 |    | 4.5 | 6 | 2.5 | 4 | 60  | 12 - 126                 |
| 80135       | 100SC | 56              | 100 | 54 | 50 | 35 | 4.5 | 6 | 2.5 | 4 | 100 | 12 - 204                 |
| 80235       | 125SC | 88              | 125 | 66 | 62 | 42 | 4.5 | 6 | 2.5 | 4 | 125 | 12 - 400                 |



Step Jaw with Hardened Jaw Insert (Medium)

| Part Number | Model | Dimensions (mm) |     |    |    |    |     |   |     |   |    | Clamping Range min./max. |
|-------------|-------|-----------------|-----|----|----|----|-----|---|-----|---|----|--------------------------|
|             |       | l               | w   | h  | a* | c* | e   | f | i   | j | k  |                          |
| 80040       | 60SC  | 56              | 60  | 34 | 30 |    | 4.5 | 6 | 2.5 | 4 | 35 | 12 - 126                 |
| 80140       | 100SC | 56              | 100 | 54 | 50 | 35 | 4.5 | 6 | 2.5 | 4 | 65 | 12 - 204                 |
| 80240       | 125SC | 88              | 125 | 66 | 62 | 42 | 4.5 | 6 | 2.5 | 4 | 80 | 12 - 400                 |



Step Jaw with Hardened Jaw Insert (Narrow)

| Part Number | Model | Dimensions (mm) |     |    |    |    |     |   |     |   |    | Clamping Range min./max. |
|-------------|-------|-----------------|-----|----|----|----|-----|---|-----|---|----|--------------------------|
|             |       | l               | w   | h  | a* | c* | e   | f | i   | j | k  |                          |
| 80145       | 100SC | 56              | 100 | 54 | 50 | 35 | 4.5 | 6 | 2.5 | 4 | 32 | 12 - 204                 |

\* Tolerance  $\pm 0.01$ mm

## 5 Axis Self Centering Accessories



Positioning Pins, Various Diameters, for Grid Plate, set of 2

| Part Number | Model(s)      | Ø (mm) |
|-------------|---------------|--------|
| 80060       | 60SC          | 10/12  |
| 80160       | 100SC / 125SC | 25/12  |
| 80165       | 100SC / 125SC | 25/16  |



Positioning Pins, Various Diameters, for Table with T-Slots, Set of 2

| Part Number | Model(s)      | Ø (mm) |
|-------------|---------------|--------|
| 80065       | 60SC          | 10/14  |
| 80260       | 100SC / 125SC | 25/14  |
| 80265       | 100SC / 125SC | 25/18  |

### Torque wrench

| Part Number | Model | Torque (Nm) |
|-------------|-------|-------------|
| 80070       | 60SC  | 5 - 60      |
| 80170       | 100SC | 20 - 120    |
| 80270       | 125SC | 40 - 200    |

### Socket

| Part Number | Model | Torque (Nm) |
|-------------|-------|-------------|
| 80071       | 60SC  | 12          |
| 80171       | 100SC | 14          |
| 80271       | 125SC | 19          |

### Clamping Claws, Set of 4, Including Screws

| Part Number | Model | Torque (Nm) |
|-------------|-------|-------------|
| 80050       | 60SC  | M10         |
| 80053       | 60SC  | M12         |
| 80150       | 100SC | M12         |
| 80250       | 125SC | M12         |
| 80253       | 125SC | M16         |



## Jergens 5-Axis Fixed Jaw Vise

Designed especially for multi-face machining with a single clamping operation. Ideal for machining complicated workpieces in a single clamping operation, such as in mold making. These vises are small, but have a large holding capacity. A variety of jaw options increase the range of applications. Grip jaws and V-type jaws enhance the retention force of the workpiece. The hydraulic version provides automatic power clamping with exact force.

- Designed for 5-Axis machining
- Free access to the workpiece, allowing the use of short standard tools
- Simple and robust construction, smooth surfaces, easy cleaning
- Also suitable as a module for standard devices
- Comprehensive jaw selection

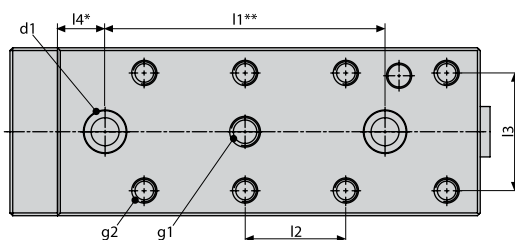
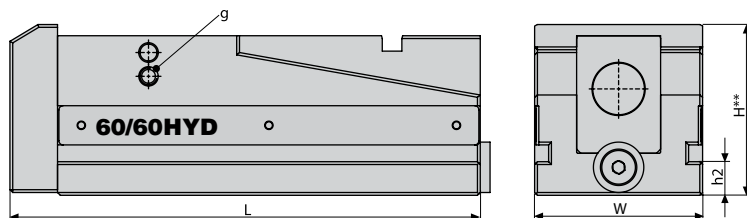
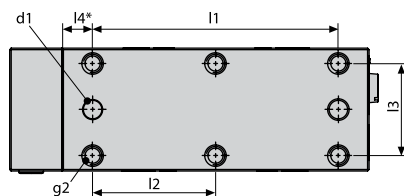
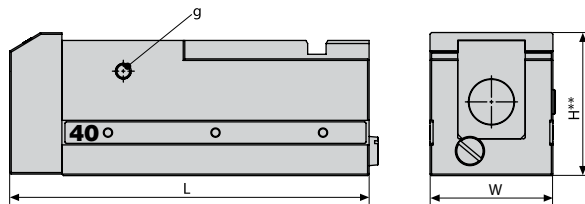


| Model | Part Number | Clamping Force (kN/Nm) | Weight (kg) | Dimensions (mm) |     |    |     |      |         |          |         |    |      |    | Socket |     |             |
|-------|-------------|------------------------|-------------|-----------------|-----|----|-----|------|---------|----------|---------|----|------|----|--------|-----|-------------|
|       |             |                        |             | Stroke          | L   | W  | H** | d1   | g       | g1       | g2      | h2 | l1** | l2 | l3     | l4* | Wrench (mm) |
| 40    | 80300       | 8.0 / 15 Nm            | 1.3         |                 | 117 | 40 | 44  | 6H7  | M5 x 6  |          | M6 x 7  |    | 80   | 40 | 30     | 10  | 6           |
| 60    | 80400       | 15.0 / 25 Nm           | 3.3         |                 | 168 | 60 | 57  | 10F7 | M6 x 10 | M10 x 11 | M8 x 12 | 12 | 100  | 36 | 42     | 17  | 8           |
| 60Hyd | 80500       | 15.0 / 260 bar         | 3.8         | 4               | 185 | 60 | 57  | 10F7 | M6 x 10 | M10 x 11 | M8 x 12 | 12 | 100  | 36 | 42     | 17  | 8           |

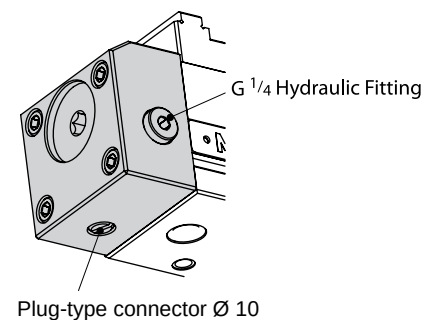
**Note:** Vise handles included with each Jergens 5-Axis Vise

\* Tolerance  $\pm 0.01$ mm

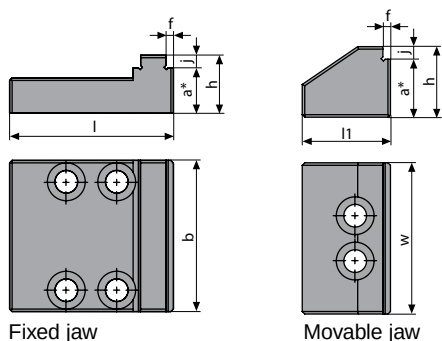
\*\* Tolerance  $\pm 0.02$ mm



Hydraulic Drive Unit  
60 HVD



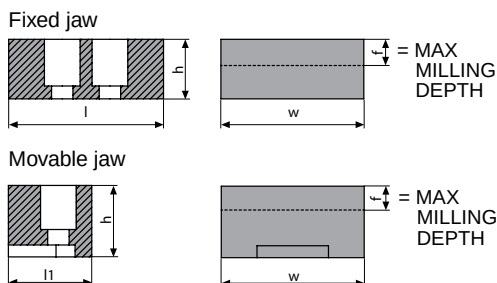
## 5-Axis Jaws for Fixed Jaw Vises



### Step Jaw, Reversible

| Part Number<br>Fixed jaw | Part Number<br>Movable jaw | Dimensions (mm) |    |    |    |    |    |   |   | Clamping<br>Range<br>min./max. |
|--------------------------|----------------------------|-----------------|----|----|----|----|----|---|---|--------------------------------|
|                          |                            | Model           | l  | l1 | w  | h  | a* | f | j |                                |
| 80310                    | 80315                      | 40              | 40 | 34 | 40 | 15 | 12 | 3 | 3 | 6 - 70                         |
| 80410                    | 80415                      | 60              | 65 | 35 | 60 | 23 | 18 | 3 | 5 | 6 - 106                        |

l1 only for movable jaw



### Block Jaw, Soft for Milling Workpiece Contours

| Part Number<br>Fixed jaw | Part Number<br>Movable jaw | Dimensions (mm) |    |    |    |    |    |
|--------------------------|----------------------------|-----------------|----|----|----|----|----|
|                          |                            | Model           | l  | l1 | w  | h  | f  |
| 80420                    | 80425                      | 60              | 65 | 35 | 60 | 25 | 11 |

l1 only for movable jaw

\* Tolerance  $\pm 0.01$ mm

## 5-Axis Fixed Jaw Accessories



### Positioning Pins, Various Diameters, for Grid Plate, set of 2

| Part Number | Model | Ø (mm) |
|-------------|-------|--------|
| 80060       | 60    | 10/12  |



### Positioning Pins, Various Diameters, for Table with T-Slots, Set of 2

| Part Number | Model | Ø (mm) |
|-------------|-------|--------|
| 80065       | 60    | 10/14  |

### Torque Wrench

| Part Number | Model | Torque (Nm) |
|-------------|-------|-------------|
| 80070       | 40/60 | 5 - 60      |

### Socket

| Part Number | Model | SW |
|-------------|-------|----|
| 80380       | 40    | 6  |
| 80430       | 60    | 8  |

### Socket Wrench

| Part Number | Model | SW |
|-------------|-------|----|
| 80531       | 60HYD | 8  |

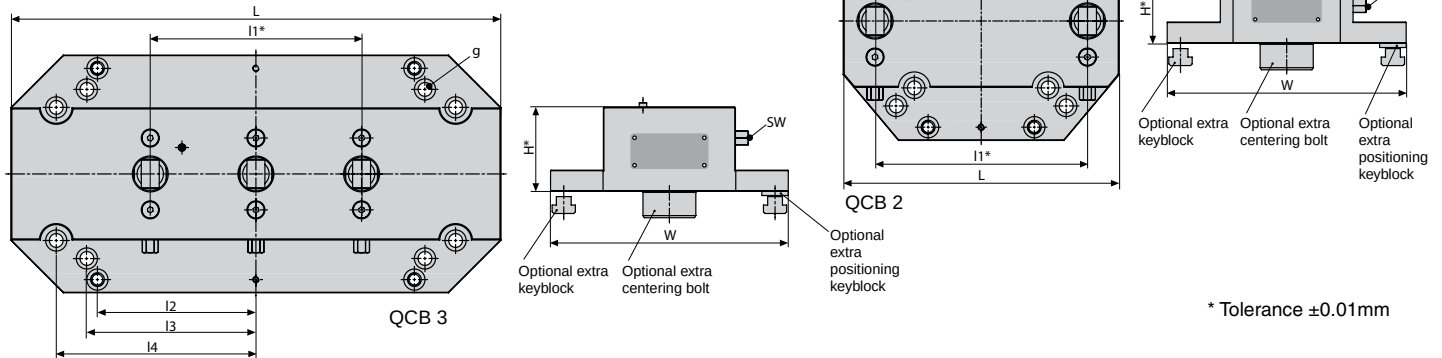
### Clamping Claws, set of 4, Including Screws

| Part Number | Model | Thread |
|-------------|-------|--------|
| 80050       | 60    | M10    |
| 80053       | 60    | M12    |

## 5-Axis Quick Clamping Block

The Jergens 5-Axis Quick Change System (QCB) is an ideal partner for the Jergens 5-Axis Clamping System. The QCB changes the workpiece position on 5-Axis machining centers. This helps reduce interference for the tool.

Rapid and precise change of clamping elements optimize efficiency. The QCB with its integral mechanical Zero-Point Clamping System provides you with the ability to increase productivity and lower costs.



| Model | Part Number | L   | W   | H* | g    | I1* | I2  | I3  | I4  | Socket Wrench | Feeding force (kN / Nm) | Weight (kg) |
|-------|-------------|-----|-----|----|------|-----|-----|-----|-----|---------------|-------------------------|-------------|
| QCB 1 | 80600       | 225 | 80  | 72 | KM12 | 100 | 100 |     |     | 8             | 12 / 60                 | 9           |
| QCB 2 | 80700       | 260 | 225 | 65 | KM12 | 200 | 50  | 80  | 63  | 13            | 2x 20 / 80              | 18          |
| QCB 3 | 80800       | 464 | 225 | 80 | KM12 | 200 | 150 | 160 | 189 | 13            | 3x 20 / 80              | 42          |

### Accessories: Fastening and Positioning

#### Centering Bolts for QCB 1, 2, 3

| Part Number | Ø mm    | L       |
|-------------|---------|---------|
| 80610       | D 30 g6 | 25 / 48 |
| 80615       | D 32 g6 | 25 / 48 |
| 80620       | D 50 g6 | 25 / 48 |
| 80625       | D 50 g6 | 18 / 41 |

#### Centering Bolts, Set

| Part Number | Models                      |
|-------------|-----------------------------|
| 80630       | QCB 1 / 60SC + Compact 80   |
| 80710       | QCB 2 / 100SC + Compact 120 |
| 80810       | QCB 3 / 125SC               |

#### Positioning Keyblock with Screw

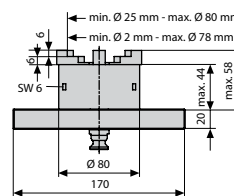
| Part Number |                 | T-Slot (mm) |
|-------------|-----------------|-------------|
| 80640       | DIN 6322, 1 pc. | 14          |

#### Positioning pin for QCB 2, 1 pc.

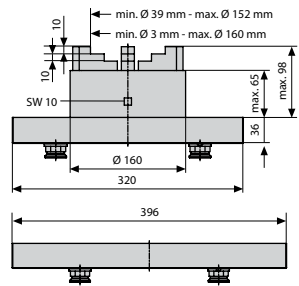
| Part Number |  | Ø (mm) |
|-------------|--|--------|
| 80065       |  | 10/14  |

#### Keyblock with Screws

| Part Number |                 | T-Slot (mm) |
|-------------|-----------------|-------------|
| 80650       | DIN 508, 4 pcs. | 14          |

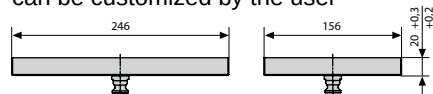


**80655 Adapter Plate for QCB 1 with Self-Centering Chuck DIN 6350-1**  
with pull-in bolt, plate 170 x 80 mm



**80715 Adapter Plate for QCB 2 with Self-Centering Chuck DIN 6350-1**  
with pull-in bolt, plate 320 x 160 mm

**80716 Adapter Plate for QCB 2**  
with pull-in bolt, parallelism 0.008/100 mm  
can be customized by the user



**80656 Adapter Plate for QCB 1**  
with Pull-In Bolt, Parallelism 0.008/100 mm  
can be customized by the user

## 5-Axis Compact Vises

New machining technologies and manufacturing methods call for the development of new solutions in clamping technology. The Jergens 5-Axis Compact Vise, with its short base and easy movement of the fixed jaw, is ideal for 5-sided machining.

The well balanced design of the guide between the base and the moveable jaw allows the use of high clamping jaws, for performing machining operations close to the workpiece.

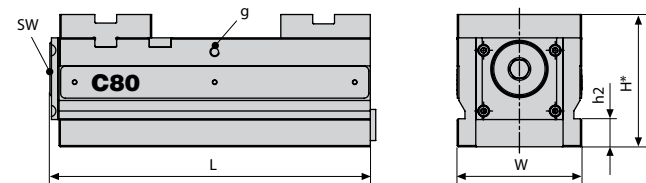
The base is made from cast steel for rigidity and dimensional stability. All sides are hardened and ground.



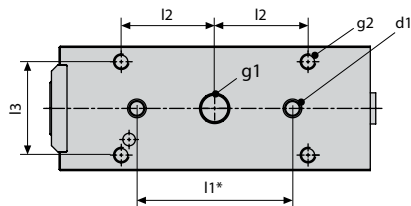
| Model    | Part Number | Clamping Force (kN/Nm) | Weight (kg) | Dimensions (mm) |     |     |     |                     |         |          |          |    |     |     |    | Socket Wrench (mm) |
|----------|-------------|------------------------|-------------|-----------------|-----|-----|-----|---------------------|---------|----------|----------|----|-----|-----|----|--------------------|
|          |             |                        |             | Stroke          | L   | W   | H*  | d1*                 | g       | g1       | g2       | h2 | l1* | l2  | l3 |                    |
| C80 MAN  | 81000       | 25/ 60 Nm              | 8.8         |                 | 206 | 80  | 85  | 10F7                | M6 x 10 | M10 x 11 | M10 x 16 | 18 | 100 | 60  | 60 | 12                 |
| C120 MAN | 81100       | 40/100 Nm              | 18.4        |                 | 260 | 120 | 100 | 25 x 5/<br>M10 x 14 | M8 x 15 |          | M12 x 18 | 18 | 200 | 100 | 80 | 14                 |
| C80 HYD  | 81200       | 20/310 bar             | 9.0         | 4               | 227 | 80  | 85  | 10F7                | M6 x 10 | M10 x 11 | M10 x 16 | 18 | 100 | 60  | 60 | 12                 |
| C120 HYD | 81300       | 40/270 bar             | 20.4        | 4               | 282 | 120 | 100 | 25 x 5/<br>M10 x 14 | M8 x 15 |          | M12 x 18 | 18 | 200 | 100 | 80 | 14                 |

**Note:** Vise handles included with each Jergens 5-Axis Vise

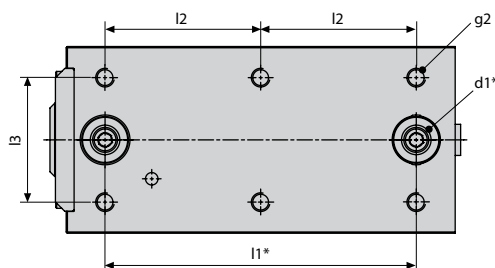
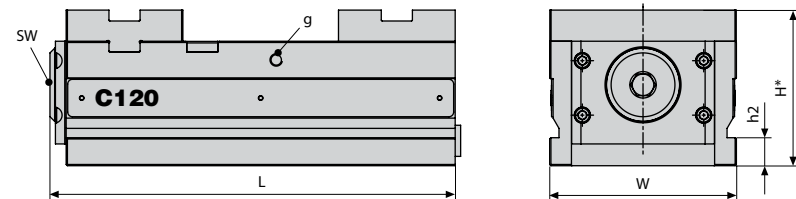
\* Tolerance  $\pm 0.01\text{mm}$



- High degree of freedom for spindle and tools; low risk of collision
- Well suited for short standard tools
- Repeatable and controllable clamping forces of up to 25 kN Compact 80 and 40 kN Compact 120
- Jaw with a special grip for maximum holding force (factor 3 as compared with standard jaw)

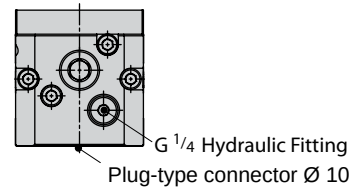


View from below



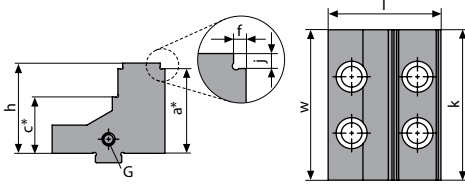
View from below

Figure:  
Hydraulic drive unit  
C80, C120



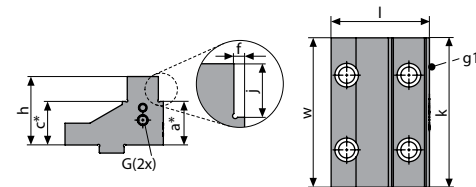
## 5-Axis Compact Vise Jaws

### Precision Step Reversible Jaw for C80



| Part Number | Model | Dimensions mm |    |    |    |    |     |         |   |    | Clamping range min./max. |
|-------------|-------|---------------|----|----|----|----|-----|---------|---|----|--------------------------|
|             |       | l             | w  | h  | a* | c* | f   | G       | j | k  |                          |
| 81010       | C80   | 60            | 50 | 48 | 45 | 30 | 2.5 | M6 x 10 | 3 | 25 | 5 - 155                  |
| 81015       | C80   | 60            | 50 | 48 | 45 | 30 | 2.5 | M6 x 10 | 3 | 50 | 5 - 155                  |
| 81020       | C80   | 60            | 80 | 48 | 45 | 30 | 2.5 | M6 x 10 | 3 | 80 | 5 - 155                  |

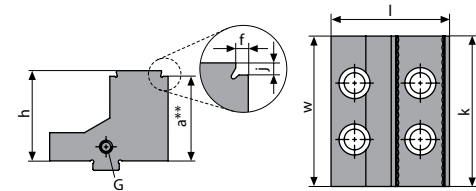
### Precision Step Reversible Jaw for C120



| Part Number | Model | Dimensions (mm) |     |    |    |    |   |         |        |    |     | Clamping<br>Range<br>min./max. |
|-------------|-------|-----------------|-----|----|----|----|---|---------|--------|----|-----|--------------------------------|
|             |       | l               | w   | h  | a* | c* | f | G       | g1     | j  | k   |                                |
| 81110       | C120  | 79              | 84  | 55 | 35 | 35 | 4 | M8 x 14 | M4 x 7 | 20 | 40  | 8 - 200                        |
| 81120       | C120  | 79              | 84  | 55 | 35 | 35 | 4 | M8 x 14 | M4 x 7 | 20 | 84  | 8 - 200                        |
| 81125       | C120  | 79              | 120 | 55 | 35 | 35 | 4 | M8 x 14 | M4 x 7 | 20 | 120 | 8 - 200                        |

### Special Grip Jaw for C80

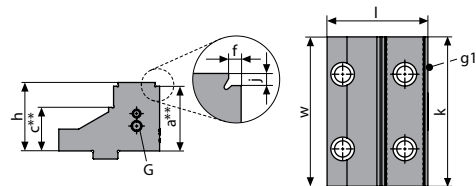
Provides maximum retaining force



| Part Number | Model | Dimensions (mm) |    |    |     |     |         |   |    | Clamping Range<br>min./max. |
|-------------|-------|-----------------|----|----|-----|-----|---------|---|----|-----------------------------|
|             |       | l               | w  | h  | a** | f   | G       | j | k  |                             |
| 81025       | C80   | 63              | 50 | 48 | 45  | 3.5 | M6 x 10 | 3 | 25 | 7 - 151                     |
| 81030       | C80   | 63              | 50 | 48 | 45  | 3.5 | M6 x 10 | 3 | 50 | 7 - 151                     |
| 81040       | C80   | 63              | 80 | 48 | 45  | 3.5 | M6 x 10 | 3 | 80 | 7 - 151                     |

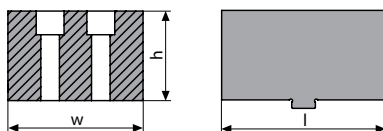
### Special Grip Jaw for C120

Provides maximum retaining force



| Part Number | Model | Dimensions (mm) |     |    |     |     |     |         |        |   |     | Clamping Range |
|-------------|-------|-----------------|-----|----|-----|-----|-----|---------|--------|---|-----|----------------|
|             |       | l               | w   | h  | a** | c** | f   | G       | g1     | j | k   | min./max.      |
| 81130       | C120  | 81              | 84  | 55 | 52  | 35  | 3.5 | M8 x 14 | M4 x 7 | 3 | 40  | 7 - 195        |
| 81135       | C120  | 81              | 84  | 55 | 52  | 35  | 3.5 | M8 x 14 | M4 x 7 | 3 | 84  | 7 - 195        |
| 81140       | C120  | 81              | 120 | 55 | 52  | 35  | 3.5 | M8 x 14 | M4 x 7 | 3 | 120 | 7 - 195        |

### Soft Jaws



| Part Number | Model | Dimensions (mm) |     |    | Material   |
|-------------|-------|-----------------|-----|----|------------|
|             |       | l               | w   | h  |            |
| 81045       | C80   | 97              | 80  | 53 | Steel C 45 |
| 81050       | C80   | 97              | 80  | 53 | Aluminium  |
| 81145       | C120  | 97              | 120 | 53 | Steel C 45 |
| 81150       | C120  | 97              | 120 | 53 | Aluminium  |

\* Tolerance  $\pm 0.01$ mm

\*\* Tolerance  $\pm 0.02$ mm



## 5-Axis Compact Vise Accessories



**Positioning Pins, Various  
Diameters, for Grid Plate, set of 2**

| Part Number | Model | Ø (mm) |
|-------------|-------|--------|
| 80060       | C80   | 10/12  |
| 80160       | C120  | 25/12  |
| 80165       | C120  | 25/16  |



**Positioning Pins, Various Diameters,  
for Table with T-Slots, set of 2**

| Part Number | Model | Ø (mm) |
|-------------|-------|--------|
| 80065       | C80   | 10/14  |
| 80260       | C120  | 25/14  |
| 80265       | C120  | 25/18  |

**Clamping Claws, set  
with M10 Fastening Screws**

| Part Number | Model | Qty. |
|-------------|-------|------|
| 81075       | C80   | 4    |
| 81180       | C120  | 6    |

**Double Clamping Claws, set  
with M10 Fastening Screws**

| Part Number | Model | Qty. |
|-------------|-------|------|
| 81080       | C80   | 4    |
| 81185       | C120  | 6    |

**Torque Wrench**

| Part Number | Model | Clamping<br>Force (Nm) |
|-------------|-------|------------------------|
| 80070       | C80   | 5 - 60                 |
| 80170       | C120  | 20 - 120               |

**Socket for Torque Wrench**

| Part Number | Model | SW       |
|-------------|-------|----------|
| 81060       | C80   | 12, 3/8" |
| 81160       | C120  | 14, 1/2" |



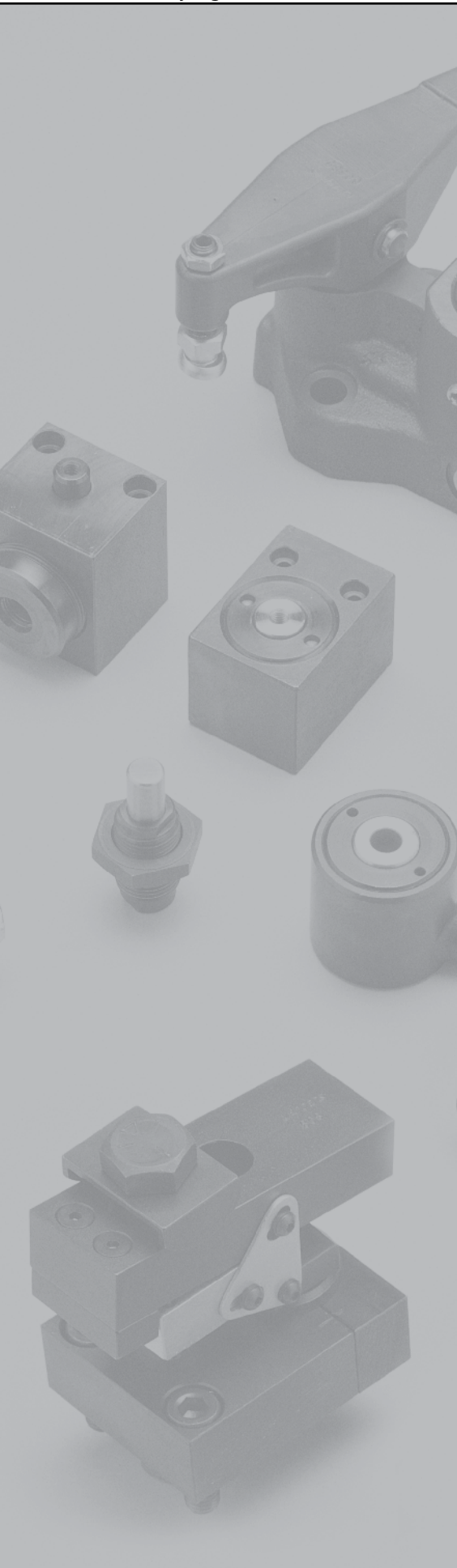
C80



C120

**Workstops**

| Part Number | Model |
|-------------|-------|
| 81090       | C80   |
| 81195       | C120  |

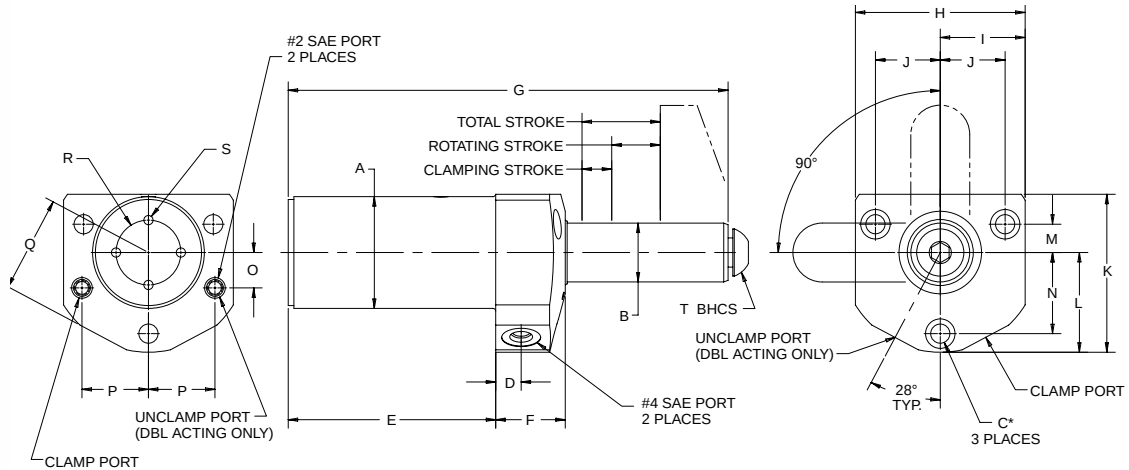


|                                                              |            |
|--------------------------------------------------------------|------------|
| Air Circuit Controls-                                        |            |
| 2-Hand No Tie Down .....                                     | 3.57       |
| Booster Clamping Kit .....                                   | 3.47       |
| Boosters, High Pressure/Volume.....                          | 3.45       |
| Booster Installation Kits .....                              | 3.46       |
| Boosters, Pre-Fill.....                                      | 3.42       |
| Boosters, Pre-Fill Accessories .....                         | 3.43       |
| Boosters, Standard & Accessories.....                        | 3.44       |
| Clamps, Swing .....                                          | 3.8-3.9    |
| Clamps, Toe.....                                             | 3.10-3.11  |
| Cylinders, Block .....                                       | 3.24-3.25  |
| Cylinders, Double Acting.....                                | 3.21       |
| Cylinders, Flange Mount .....                                | 3.26       |
| Cylinders, Hollow Rod.....                                   | 3.14-3.15  |
| Cylinders, Intensifier.....                                  | 3.27-3.28  |
| Cylinders, Miniature.....                                    | 3.16       |
| Cylinders, Single Acting .....                               | 3.20       |
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## Swing Cylinder – Top Flange/Manifold Mount



The piston rotates 90° to the right, but may be ordered with 90° left rotation (add - LH to clamp part no.) or no rotation (add - SP to clamp part no.)



- Clamping capacity from 1,100-5,000 lbs. max.
- Versatile manifold mount or conventionally plumbed
- Single and Double Acting available
- Available in three body sizes
- Assortment of Clamping Arms (sold separately) See page 3.4
- Popular top flange mounting design

These popular and highly adaptable swing style cylinders contain built in features, which allow users to simplify the design process. They are directly interchangeable with competitive products.

| Specifications                   | Single Acting |       |       | Double Acting |       |       |
|----------------------------------|---------------|-------|-------|---------------|-------|-------|
|                                  | 60660         | 60662 | 60664 | 60670         | 60672 | 60674 |
| Maximum Output Force (lbs)       | 1100          | 2600  | 5000  | 1100          | 2600  | 5000  |
| Stroke (in) Total                | .79           | 1.16  | 1.66  | .76           | 1.16  | 1.66  |
| Rotating                         | .48           | .66   | 1.03  | .45           | .64   | 1.03  |
| Clamping                         | .31           | .50   | .63   | .31           | .52   | .63   |
| Operating Volume Clamp (cu in)   | .23           | .72   | 1.95  | .23           | .72   | 1.98  |
| Operating Volume Unclamp (cu in) | N/A           | N/A   | N/A   | 0.46          | 1.43  | 4.00  |
| Minimum Operating Pressure (psi) | 750           | 750   | 750   | 500           | 500   | 500   |
| Maximum Operating Pressure (psi) | 5000          | 5000  | 5000  | 5000          | 5000  | 5000  |
| Effective Piston Area (sq in)    | .30           | .62   | 1.18  | .30           | .62   | 1.18  |

| Part No.    | *Counter Bore Size |
|-------------|--------------------|
| 60660 60670 | 1/4" S.H.C.S.      |
| 60662 60672 | 5/16" S.H.C.S.     |
| 60664 60674 | 3/8" S.H.C.S.      |

\* Mounting Hole Counter Bore

### WARNING:

All swing cylinders must be used with flow limit valves to dampen the rotating action. Please see maximum flow rate shown below. See page 3.8.

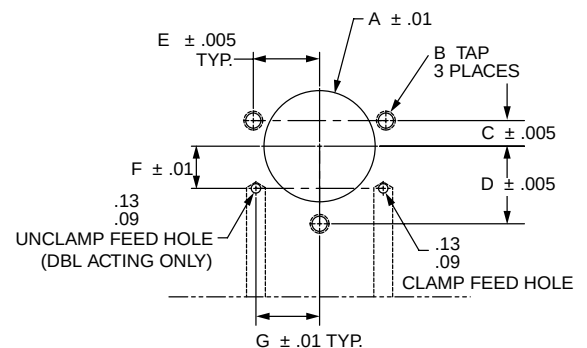
CAUTION! DON'T ALLOW SWING ARM TO CONTACT THE WORKPIECE OR FIXTURE WHILE ROTATING.

### Top Flange Mount

| Single Acting Part No. | Double Acting Part No. | A    | B     | D    | E    | F    | G    | H    | I    | J    | K    | L    | M    | N    | O    | P    | Q    | R    | S     | T            |
|------------------------|------------------------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|--------------|
| 60660                  | 60670                  | 1.43 | 0.623 | 0.38 | 2.57 | 1.03 | 5.28 | 2.31 | 1.16 | 0.88 | 2.06 | 1.32 | 0.34 | 1.03 | 0.56 | .845 | 1.23 | 0.66 | 0.136 | 3/8-24 x 5/8 |
| 60662                  | 60672                  | 1.75 | 0.874 | 0.41 | 3.35 | 1.06 | 6.78 | 2.69 | 1.35 | 1.00 | 2.53 | 1.63 | 0.44 | 1.25 | 0.53 | 1.05 | 1.53 | 1.00 | 0.196 | 1/2-20 x 3/4 |
| 60664                  | 60674                  | 2.37 | 1.247 | 0.54 | 4.40 | 1.48 | 9.33 | 3.60 | 1.80 | 1.38 | 3.35 | 2.12 | 0.60 | 1.72 | 0.75 | 1.41 | 2.04 | 1.38 | 0.196 | 5/8-18 x 1   |

### Manifold Mounting Dimensions - Top Flange

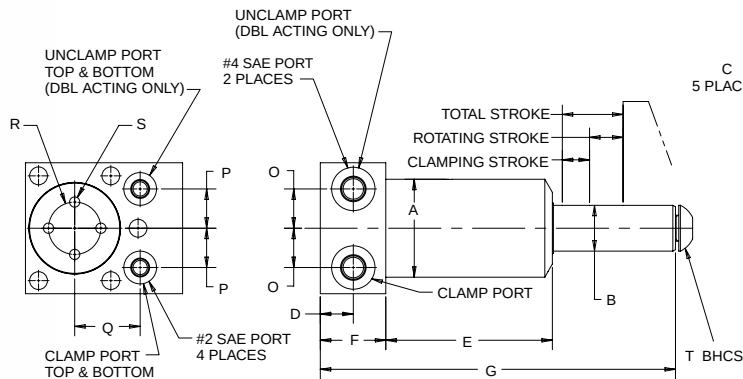
| Single Acting Part No. | Double Acting Part No. | A     | B       | C     | D     | E     | F     | G     |
|------------------------|------------------------|-------|---------|-------|-------|-------|-------|-------|
| 60660                  | 60670                  | 1.476 | 1/4-20  | 0.340 | 1.030 | 0.880 | 0.560 | 0.845 |
| 60662                  | 60672                  | 1.809 | 5/16-18 | 0.440 | 1.250 | 1.000 | 0.530 | 1.050 |
| 60664                  | 60674                  | 2.433 | 3/8-16  | 0.600 | 1.720 | 1.375 | 0.750 | 1.410 |



## Swing Cylinder – Bottom Flange/Manifold Mount



The piston rotates 90° to the right, but may be ordered with 90° left rotation (add - LH to clamp part no.) or no rotation (add - SP to clamp part no.)

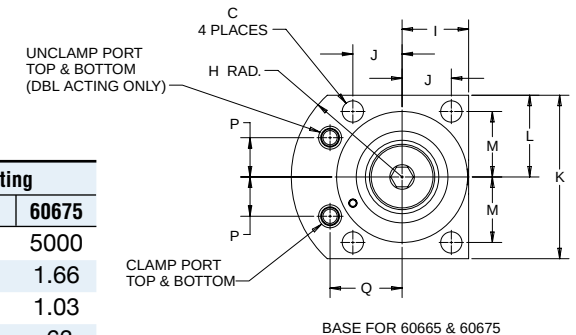


- Clamping capacity from 1,100-5,000 lbs. max.
- Manifold mounting or standard plumbing
- Single and Double Acting available
- Highly adaptable flange mount design (Clamping Arms sold separately)

Bottom Flange Swing Cylinders offer versatility as a through hole bottom mount or top plate mounting device.

| Specifications                    | Single Acting |       |       | Double Acting |       |       |
|-----------------------------------|---------------|-------|-------|---------------|-------|-------|
|                                   | 60661         | 60663 | 60665 | 60671         | 60673 | 60675 |
| <b>Maximum Output Force (lbs)</b> | 1100          | 2600  | 5000  | 1100          | 2600  | 5000  |
| <b>Stroke (in) Total</b>          | .79           | 1.16  | 1.66  | .76           | 1.16  | 1.66  |
| Rotating                          | .48           | .66   | 1.03  | .45           | .64   | 1.03  |
| Clamping                          | .31           | .50   | .63   | .31           | .52   | .63   |
| Operating Volume Clamp (cu in)    | .23           | .72   | 1.96  | .23           | .72   | 1.98  |
| Operating Volume Unclamp (cu in)  | N/A           | N/A   | N/A   | 0.46          | 1.43  | 4.00  |
| Minimum Operating Pressure (psi)  | 750           | 750   | 750   | 500           | 500   | 500   |
| Maximum Operating Pressure (psi)  | 5000          | 5000  | 5000  | 5000          | 5000  | 5000  |
| Effective Piston Area (sq in)     | .30           | .62   | 1.18  | .30           | .62   | 1.18  |

CAUTION! DON'T ALLOW SWING ARM TO CONTACT THE WORKPIECE OR FIXTURE WHILE ROTATING.



BASE FOR 60665 & 60675

### WARNING:

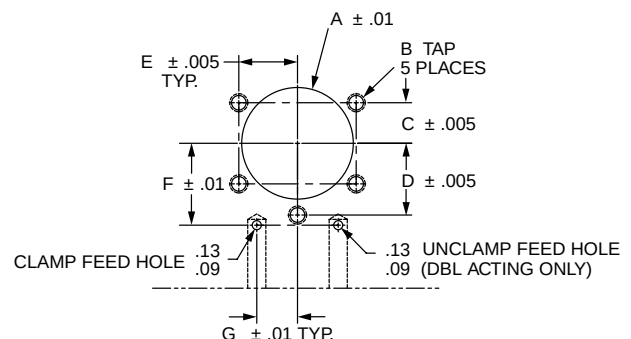
All swing cylinders must be used with flow limit valves to dampen the rotating action. Please see maximum flow rate shown below. See page 3.8.

### Bottom Flange Mount

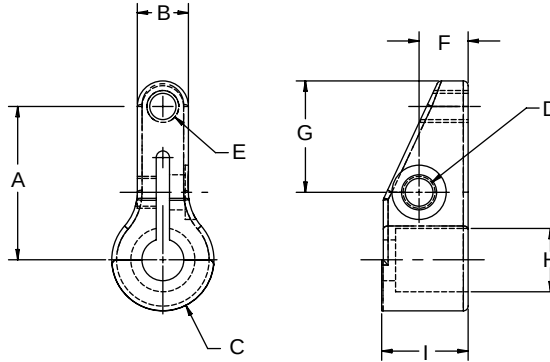
| Single Acting Part No. | Double Acting Part No. | A    | B     | C    | D    | E    | F    | G    | H    | I    | J    | K    | L    | M    | N    | O    | P    | Q    | R    | S     | T            |
|------------------------|------------------------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|--------------|
| 60661                  | 60671                  | 1.50 | 0.623 | 0.28 | 0.63 | 2.40 | 1.25 | 5.29 | 2.50 | 0.75 | 0.56 | 2.00 | 1.00 | 0.81 | 0.99 | 0.56 | 0.56 | 1.13 | 0.66 | 0.136 | 3/8-24 x 5/8 |
| 60663                  | 60673                  | 1.87 | 0.874 | 0.34 | 0.63 | 3.18 | 1.25 | 6.78 | 3.00 | 0.94 | 0.69 | 2.50 | 1.25 | 1.00 | 1.21 | 0.75 | 0.75 | 1.25 | 1.00 | 0.196 | 1/2-20 x 3/4 |
| 60665                  | 60675                  | 2.50 | 1.247 | 0.41 | 0.74 | 4.39 | 1.50 | 9.34 | 3.39 | 1.27 | 0.94 | 3.12 | 1.56 | 1.25 | -    | -    | 0.75 | 1.38 | 1.38 | 0.196 | 5/8-18 x 1   |

### Manifold Mounting Dimensions - Bottom Flange

| Single Acting Part No. | Double Acting Part No. | A     | B       | C     | D     | E     | F     | G     |
|------------------------|------------------------|-------|---------|-------|-------|-------|-------|-------|
| 60661                  | 60671                  | 1.540 | 1/4-20  | 0.560 | 0.990 | 0.810 | 1.130 | 0.562 |
| 60663                  | 60673                  | 1.920 | 5/16-18 | 0.690 | 1.210 | 1.000 | 1.250 | 0.750 |
| 60665                  | 60675                  | 2.550 | 3/8-16  | 0.940 | -     | 1.250 | 1.375 | 0.750 |

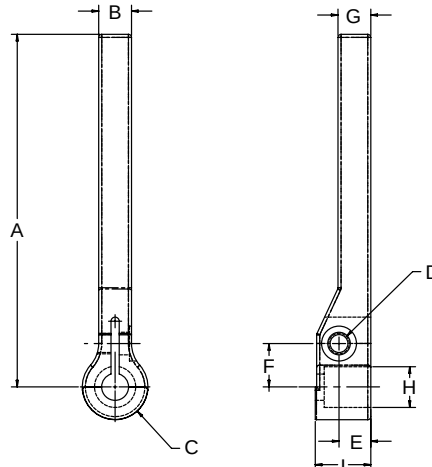


## Swing Cylinder Arms



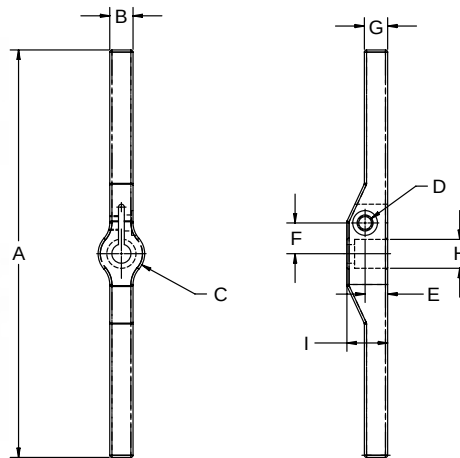
### Single Arms - Standard Length

| Part No. | A     | B     | C     | D       | E       | F     | G      | H             | I       |
|----------|-------|-------|-------|---------|---------|-------|--------|---------------|---------|
| 60930    | 1 1/2 | 1/2   | 1     | 5/16-24 | 5/16-18 | 31/64 | 1 3/32 | .6255/.6275   | 27/32   |
| 60931    | 2     | 3/4   | 1 3/8 | 3/8-24  | 3/8-16  | 43/64 | 1 9/16 | .8755/.8775   | 1 5/32  |
| 60932    | 2 1/2 | 1 1/4 | 1 7/8 | 5/8-18  | 5/8-11  | 7/8   | 1 7/8  | 1.2505/1.2525 | 1 21/32 |



### Single Arms - Long

| Part No. | A     | B     | C     | D       | E     | F     | G   | H             | I       |
|----------|-------|-------|-------|---------|-------|-------|-----|---------------|---------|
| 60933    | 5 3/8 | 1/2   | 1     | 5/16-24 | 31/64 | 21/32 | 1/2 | .6255/.6275   | 27/32   |
| 60934    | 6 3/8 | 3/4   | 1 3/8 | 3/8-24  | 43/64 | 13/16 | 5/8 | .8755/.8775   | 1 5/32  |
| 60935    | 6 1/2 | 1 1/4 | 1 7/8 | 5/8-18  | 7/8   | 1 1/4 | 3/4 | 1.2505/1.2525 | 1 21/32 |



### Double Arms - Long

| Part No. | A      | B     | C     | D       | E     | F     | G   | H             | I       |
|----------|--------|-------|-------|---------|-------|-------|-----|---------------|---------|
| 60936    | 8 3/4  | 1/2   | 1     | 5/16-24 | 31/64 | 21/32 | 1/2 | .6255/.6275   | 7/8     |
| 60937    | 10 3/4 | 3/4   | 1 3/8 | 3/8-24  | 43/64 | 13/16 | 5/8 | .8755/.8775   | 1 13/64 |
| 60938    | 11     | 1 1/4 | 1 7/8 | 5/8-18  | 7/8   | 1 1/4 | 3/4 | 1.2505/1.2525 | 1 45/64 |



## Swing Cylinder - Application Information

- Arm length can effect clamping pressure - See Chart and Data
- Weight should be considered when utilizing modified or special arms, other than those provided by Jergens. Excessive weight and length may damage external rotating components.
- Speed of operation is a major consideration. All swing cylinders **MUST BE USED WITH FLOW LIMIT VALVES** to show the rotation action.
- Full second rotation time is recommended.
- Care should be used when select hydraulic power sources - be aware of maximum operating pressures.

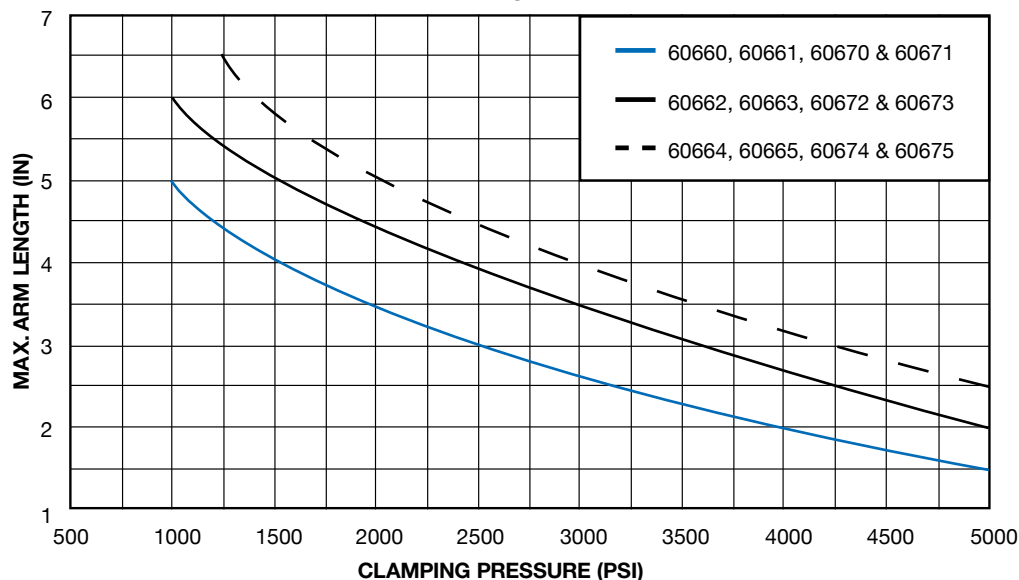
### Swing Cylinder Arm Ratings

| Small Cylinders (1,100#) p/n's 60660, 60670, 60661, & 60671 |                      |
|-------------------------------------------------------------|----------------------|
| input pressure (psi)                                        | max. arm length (in) |
| 1,500                                                       | 5.0                  |
| 1,750                                                       | 4.3                  |
| 2,000                                                       | 3.8                  |
| 2,250                                                       | 3.3                  |
| 2,500                                                       | 3.0                  |
| 2,750                                                       | 2.7                  |
| 3,000                                                       | 2.5                  |
| 3,250                                                       | 2.3                  |
| 3,500                                                       | 2.1                  |
| 3,750                                                       | 2.0                  |
| 4,000                                                       | 1.9                  |
| 4,250                                                       | 1.8                  |
| 4,500                                                       | 1.7                  |
| 4,750                                                       | 1.6                  |
| 5,000                                                       | 1.5                  |

| Medium Cylinders (2,600#) p/n's 60662, 60672, 60663, & 60673 |                      |
|--------------------------------------------------------------|----------------------|
| input pressure (psi)                                         | max. arm length (in) |
| 1,666                                                        | 6.0                  |
| 1,750                                                        | 5.7                  |
| 2,000                                                        | 5.0                  |
| 2,250                                                        | 4.4                  |
| 2,500                                                        | 4.0                  |
| 2,750                                                        | 3.6                  |
| 3,000                                                        | 3.3                  |
| 3,250                                                        | 3.1                  |
| 3,500                                                        | 2.9                  |
| 3,750                                                        | 2.7                  |
| 4,000                                                        | 2.5                  |
| 4,250                                                        | 2.4                  |
| 4,500                                                        | 2.2                  |
| 4,750                                                        | 2.1                  |
| 5,000                                                        | 2.0                  |

| Large Cylinders (5,000#) p/n's 60664, 60674, 60665, & 60675 |                      |
|-------------------------------------------------------------|----------------------|
| input pressure (psi)                                        | max. arm length (in) |
| 1,923                                                       | 6.5                  |
| 2,000                                                       | 6.3                  |
| 2,250                                                       | 5.6                  |
| 2,500                                                       | 5.0                  |
| 2,750                                                       | 4.5                  |
| 3,000                                                       | 4.2                  |
| 3,250                                                       | 3.8                  |
| 3,500                                                       | 3.6                  |
| 3,750                                                       | 3.3                  |
| 4,000                                                       | 3.1                  |
| 4,250                                                       | 2.9                  |
| 4,500                                                       | 2.8                  |
| 4,750                                                       | 2.6                  |
| 5,000                                                       | 2.5                  |

Max. Arm Length vs. Pressure



## Swing Cylinders



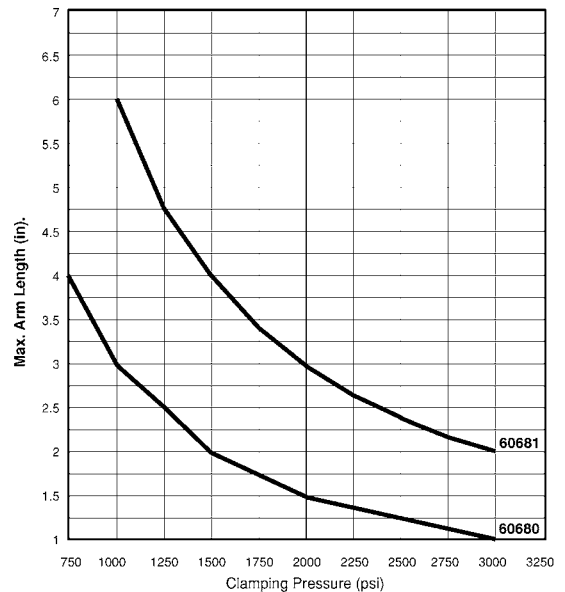
These versatile swing cylinders/clamps can be used as single or double acting rotating clamps, or push/pull cylinders. The piston in the Swing Cylinders rotate 90° to the right, but may easily be changed to 90° left rotation, or to no rotation at all.

**WARNING:**

All swing cylinders must be used with flow limit valves to dampen the rotating action. Please see maximum flow rate shown below. See page 3.8.

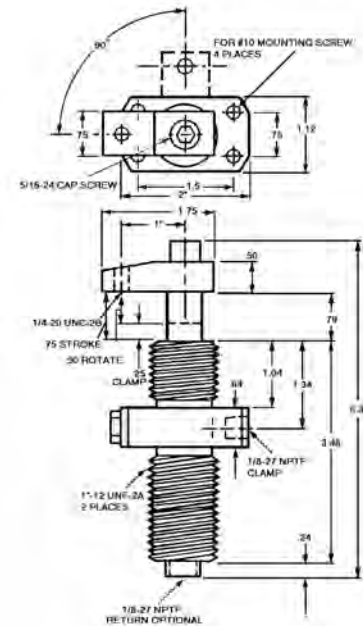
- Can be mounted using four #10 cap screws or the 1"-12 thread on the O.D. of the cylinder
- Optional components include the threaded mounting bracket and jam nut shown below
- Can be used as a non-rotating clamp
- Maximum recommended flow rate is 20 cubic inches per minute per clamp (approximately 1 second clamp time)
- **Note: Arm length can affect clamping pressures.**  
**See chart at right for more information.**
- Available in FixturePro™ Design Software

Maximum Arm Length Vs. Pressure  
Swing Cylinder with Single Arm



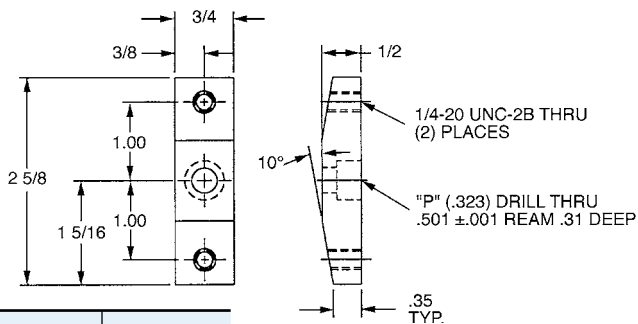
## Specifications

| 60680 Swing Cylinder             | Clamp (pull) | Return (push) |
|----------------------------------|--------------|---------------|
| Operating Volume (cu in)         | .18          | .33           |
| Effective Piston Area (sq in)    | .24          | .44           |
| Minimum Operating Pressure (psi) | 120          | —             |
| Maximum Operating Pressure (psi) | 3000         | 3000          |
| Maximum Output Force (lbs)       | 730          | 1320          |
| Stroke (in): Full                | .75          | .75           |
| Rotating                         | .50          | .50           |
| Clamping                         | .25          | .25           |
| Weight (lbs)                     | 1            | 1             |



## Accessories

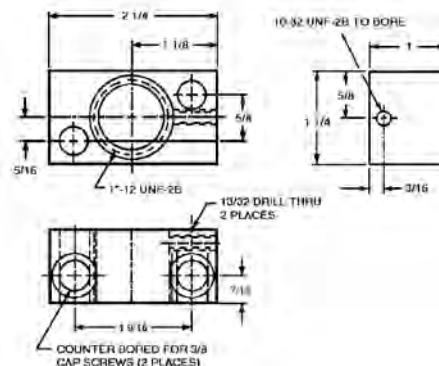
### Double Arm



| Description         | Part Number |
|---------------------|-------------|
| Mounting Block      | 60953       |
| Hex Jam Nut         | 60964       |
| Optional Double Arm | 60923       |

See page 3.21

### Mounting Block



## Swing Cylinders

### Large



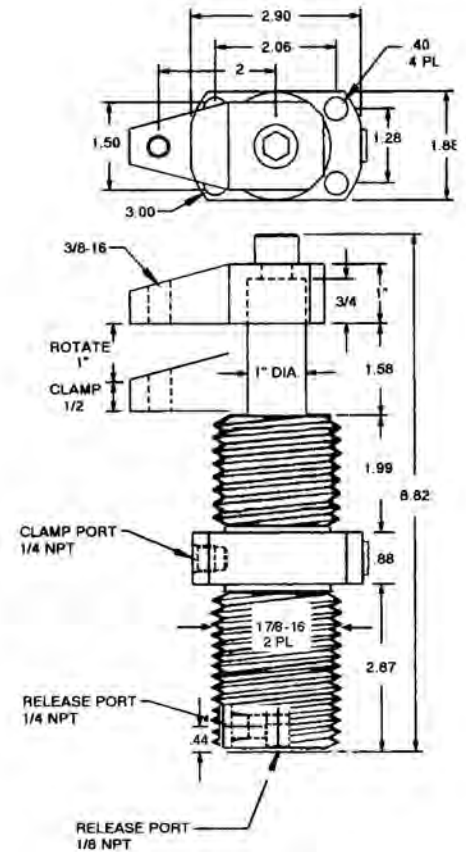
- Standard without an arm.
- Socket Head Cap Screw is included.
- Single or double arms are available.
- Can be mounted using four 3/8" cap screws, or the 1 7/8"-16 O.D. thread of the cylinder.
- Optional components include a jam nut or a mounting bracket to replace old Jergens part number 60621.
- Can be used as a non-rotating clamp.
- Maximum recommended flow rate is 90 cubic inches per minute per clamp. (Approximately 1 second clamp time.)
- **Note: Arm length can affect clamping pressures.**  
**See chart, page 3.6, for more information.**
- Available in FixturePro™ Design Software

### Specifications

| 60681 Swing Cylinder             | Clamp (pull) | Return (push) |
|----------------------------------|--------------|---------------|
| Operating Volume (cu in)         | 1.5          | 2.7           |
| Effective Piston Area (sq in)    | .98          | 1.77          |
| Minimum Operating Pressure (psi) | 200          | —             |
| Maximum Operating Pressure (psi) | 3000         | 3000          |
| Maximum Output Force (lbs)       | 2900         | 5300          |
| Stroke (in): Full                | 1.5          | 1.5           |
| Rotating                         | 1            | 1             |
| Clamping                         | .50          | .50           |
| Weight (lbs)                     | 5            | 5             |

#### WARNING:

All swing cylinders must be used with flow limit valves (see page 3.8) to dampen the rotating action. Please see maximum flow rate shown above.

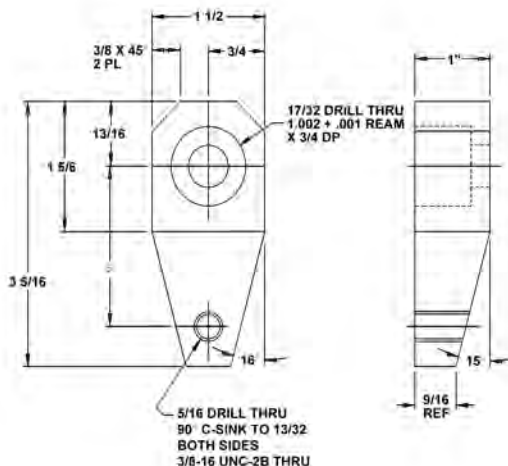


Jam Nut  
Part  
Number  
**60967**

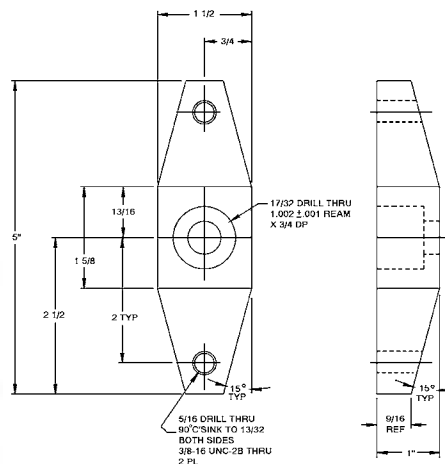
See page 3.21

## Accessories

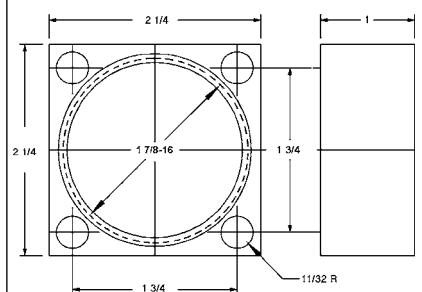
Single Arm  
Part  
Number  
**60921**



Double Arm  
Part  
Number  
**60922**



Mounting Bracket  
Part  
Number  
**60954**



## Swing Clamps



Jergens Swing Clamps are designed to swing 80° away from the workpiece to allow easy accessibility for part insertion or removal. Swing Clamps may be used in any attitude. The clamping arm may be positioned to swing either to the left or right by repositioning one cap screw. The right hand swing is standard.

- Right or Left Hand Swing
- 4800 lbs. Clamping Force
- Operates in any position
- Clamp arm has 1/4" of vertical travel
- Can be used with flood coolant
- Available in FixturePro™ Design Software

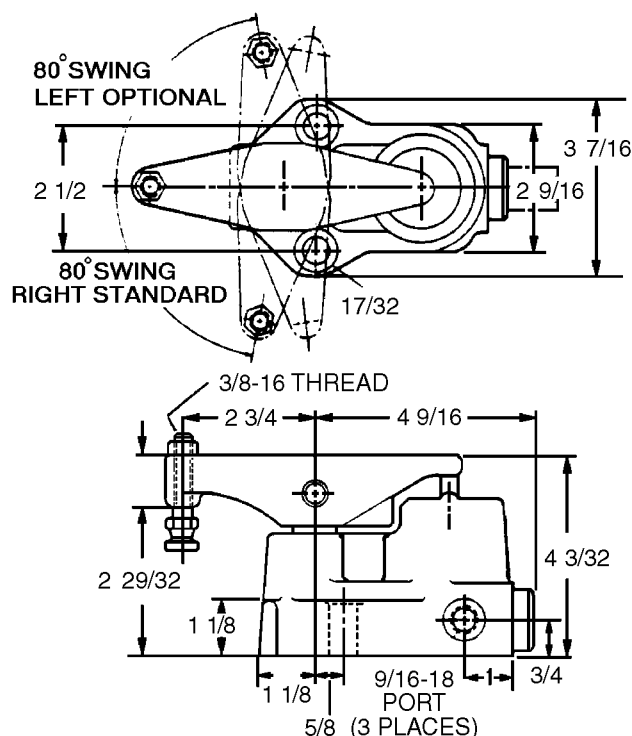
### Specifications

| Part Number                      | 60685 |
|----------------------------------|-------|
| Operating Volume (Cu. In.)       | 1.6   |
| Minimum Operating Pressure (psi) | 80*   |
| Maximum Operating Pressure (psi) | 3000  |
| Maximum Output Force (lbs.)      | 4800  |
| Weight (lbs.)                    | 9.25  |

\*80 psi to swing, 200 psi to clamp.

#### IMPORTANT:

Jergens Swing Clamps are built to operate on pre-fill systems allowing much larger circuits to be used. To use a Jergens Swing Clamp with a standard booster or with any other power source you **must** use the Flow Limit Valve shown below.

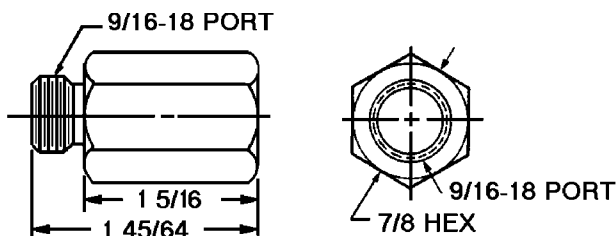


## Flow Limit Valves

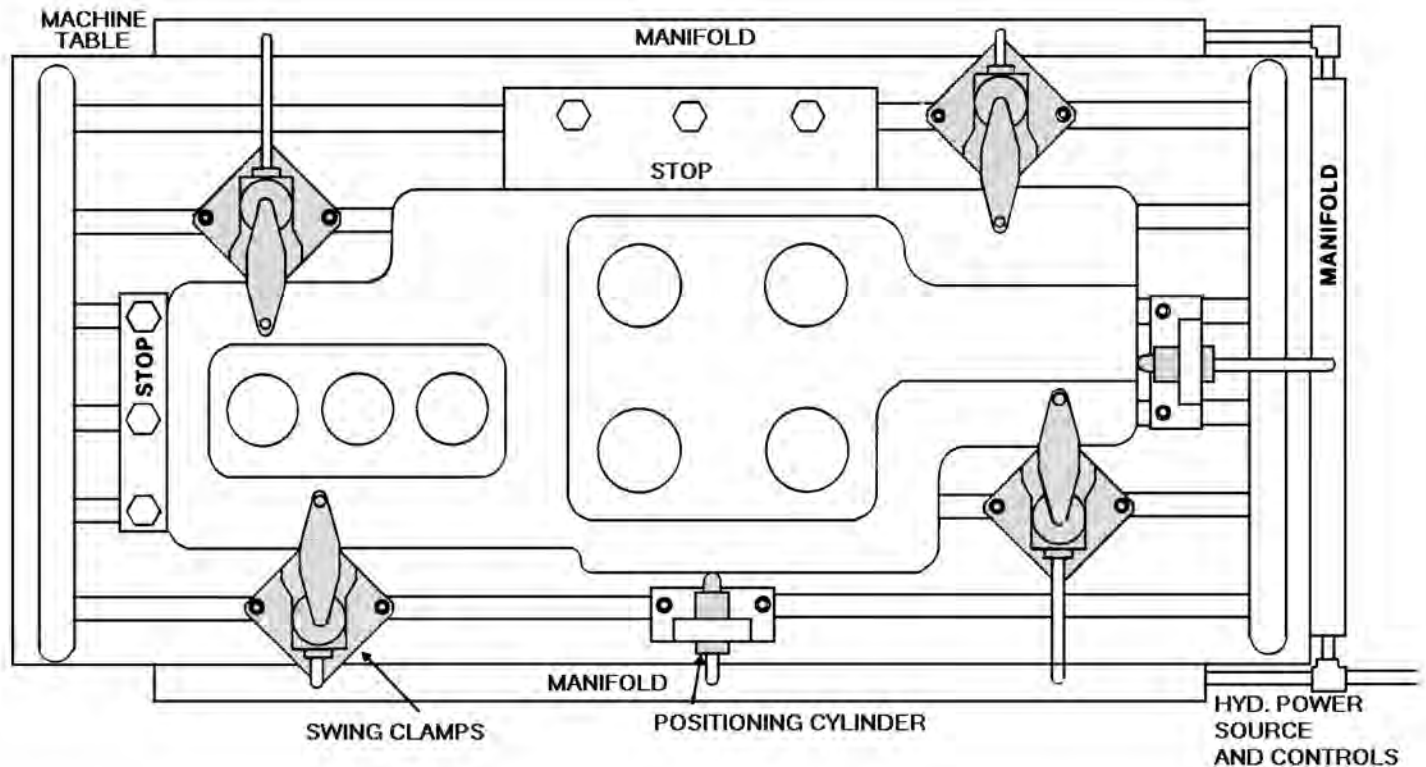


The Flow Limit Valve restricts the flow of oil to dampen the rotating action of the Swing Clamp. Flow Limit Valves are not needed with 36:1 or 71:1 Air Powered Hydraulic Pumps. (Part Number 61755 or 61756).

| Part Number |
|-------------|
| 61648       |



## Swing Clamp Application



For hydraulic clamping directly on the machine table, use Jergens Swing Clamps and Mounting Plates. The workpiece is positioned using Threaded Cylinders and fixed stops. Manifolds at the edges of the table, with hydraulic quick disconnects, allow any number of clamps to be used.

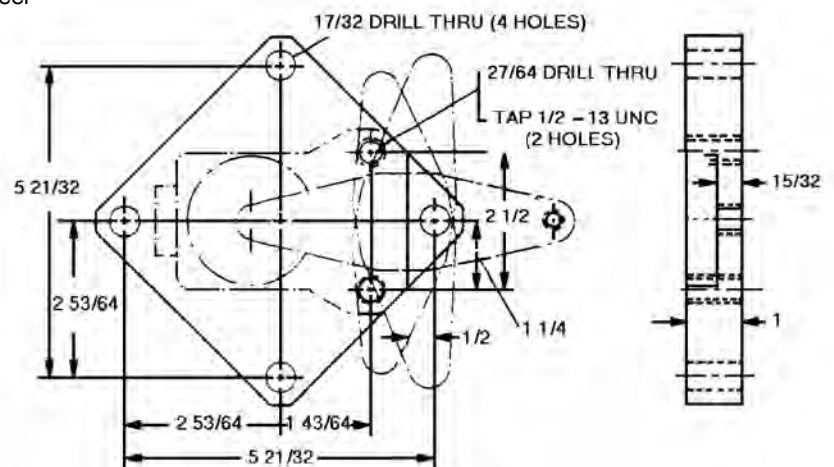
## Mounting Plates



- Material: Low Carbon Steel
- Finish: Black Oxide
- Available in FixturePro™ Design Software

Part  
Number  
**60971**

Mounting plates are subplates for Swing Clamps and are designed to save fixturing cost and allow versatility in set-ups. Mounting Plates may be bolted directly to your machine table and moved to any location on the table. Each mounting plate has pre-drilled mounting holes or can be easily adapted to your machine table or application.





## Toe Clamps



### Features

- Single Acting
- Low Profile
- Direct Mounting
- 3/16" Stroke
- 3000 lbs. Force
- Steel or Brass Toe Insert Available
- Available in FixturePro™ Design Software

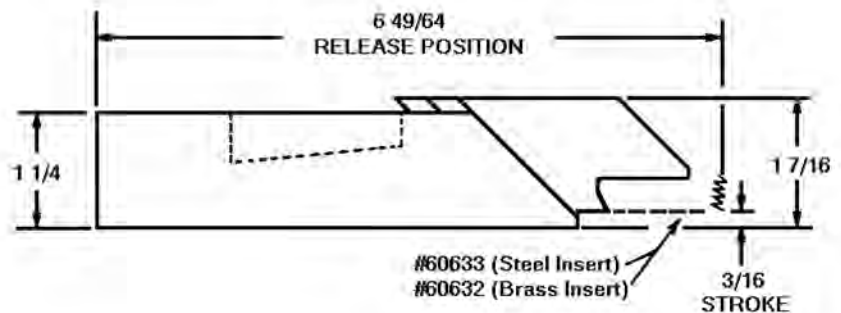
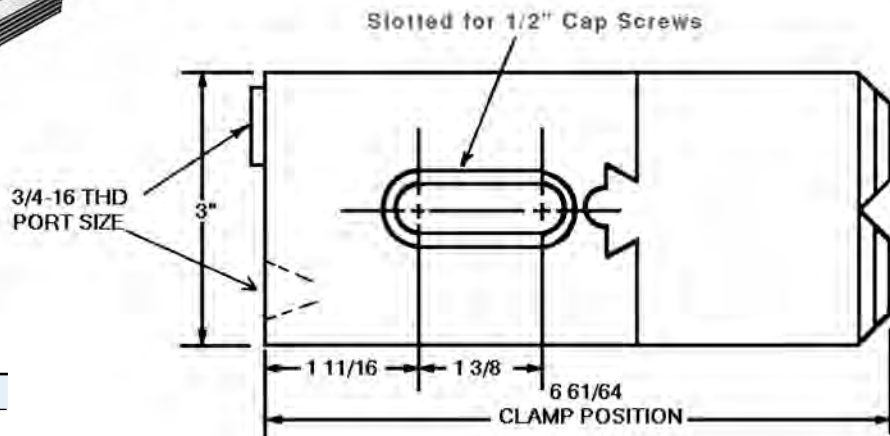
U.S. Patents:  
No. 4406445

### Specifications

| Part Number                      | 60631 |
|----------------------------------|-------|
| Operating Volume (cu. in.)       | .115  |
| Minimum Operating Pressure (psi) | 200   |
| Maximum Output Force (lbs.)      | 3000  |
| Overall Stroke                   | 3/16  |

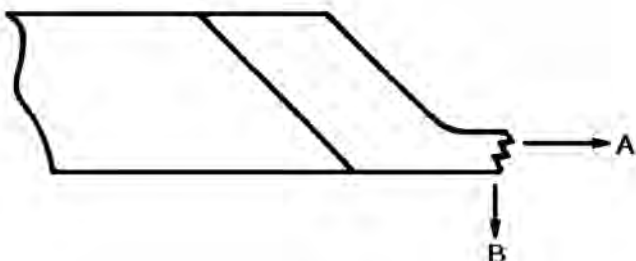
A washer (60636), to prevent damage by the cap screw, is included with each clamp.

Toe Insert is not supplied with the Toe Clamp.  
See below to order the Toe Inserts.



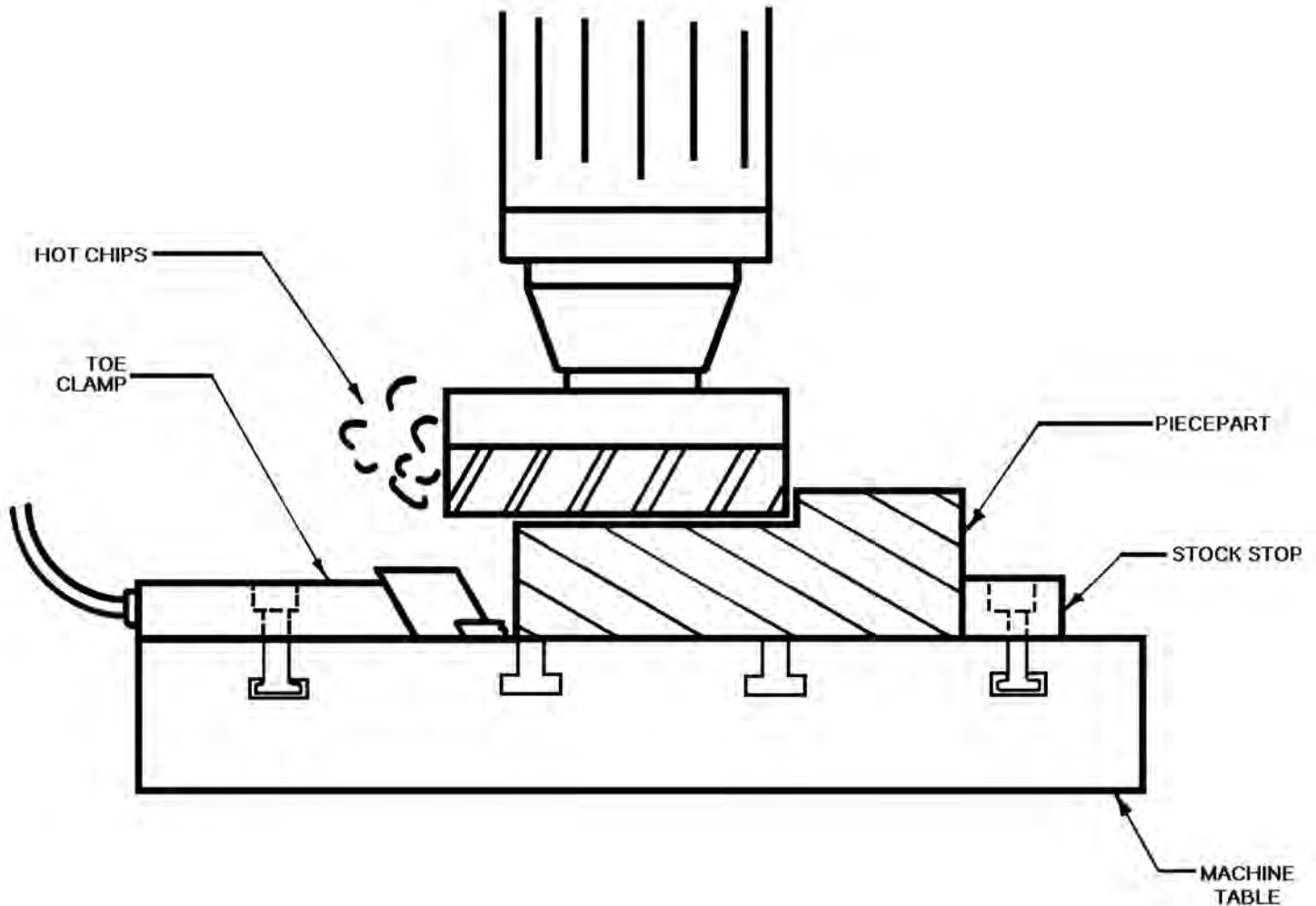
## Toe Inserts

| Part Number | Insert |
|-------------|--------|
| 60633       | Steel  |
| 60632       | Brass  |



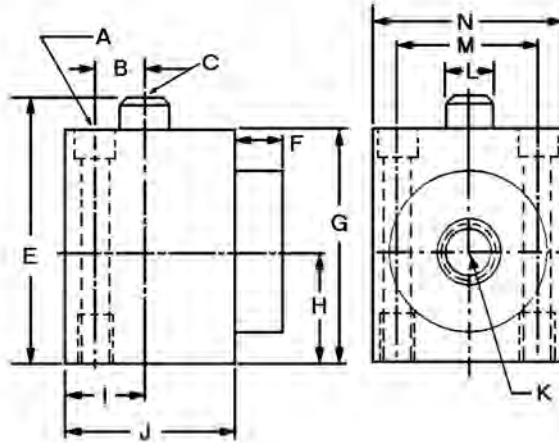
| Hydraulic Pressure | Force in Pounds |      |
|--------------------|-----------------|------|
|                    | A               | B    |
| 1500               | 900             | 750  |
| 3000               | 1800            | 1500 |
| 5000               | 3000            | 2500 |

## Toe Clamp Application



A Toe Clamp is used in applications where clamps cannot be on top of the workpiece due to the fact that the cutter must pass over that area. The clamp holds the workpiece against stop and down on the table. T-Slot mounting gives clamping versatility.

## Work Supports



| Part Number | Bolt Size |          | B   | Tap C  | Height E |      | F   | G    | H    | I   | J    | Port K  | L  | M   | N |
|-------------|-----------|----------|-----|--------|----------|------|-----|------|------|-----|------|---------|----|-----|---|
|             | Thru A    | Tapped A |     |        | Min      | Max  |     |      |      |     |      |         |    |     |   |
| 60513       | 1/4       | 5/16-24  | .50 | 1/4-20 | 2.45     | 2.70 | .49 | 2.36 | 1.12 | .81 | 1.75 | 9/16-18 | .5 | 1.5 | 2 |

Hydraulically-locked Work Supports differ from clamps and vises in that they do not actually exert force upon the workpiece. Rather, they are used to support the part being machined, offering resistance to any clamping forces acting counter to the direction of travel of the piston.

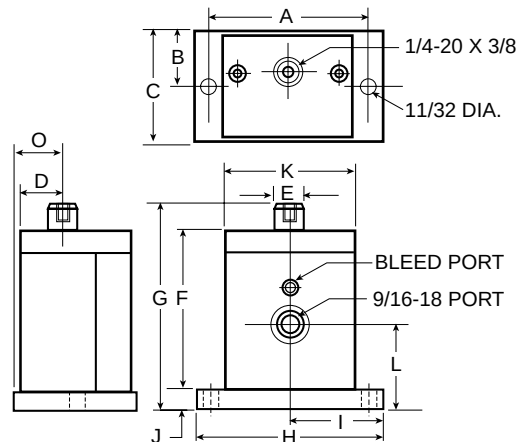
In a typical application, a large, thin casting is located on several tooling point pads for positioning. Work Supports will automatically adjust to support the delicate sections of the casting. When hydraulic pressure is applied, the floating pistons within the Work Support are locked in position and resist any downward movement exerted on the casting. After the casting is removed, the floating pistons return to their fully-raised position.

### Specifications

| Part Number                        | 60513 | 60512 |
|------------------------------------|-------|-------|
| Operating Volume (cu. in.)         | .04   | .06   |
| Support to Pressure Ratio          | 1.6:1 | 3.3:1 |
| Minimum Operating Pressure (psi)   | 500   | 500   |
| Maximum Operating Pressure (psi)   | 3000  | 3000  |
| Maximum Support Capacity (lbs.)    | 5000  | 10000 |
| Plunger Spring Start Force (lbs.)  | 2     | 14    |
| Plunger Spring Finish Force (lbs.) | 7     | 40    |
| Weight (lbs.)                      | 2.0   | 5.5   |

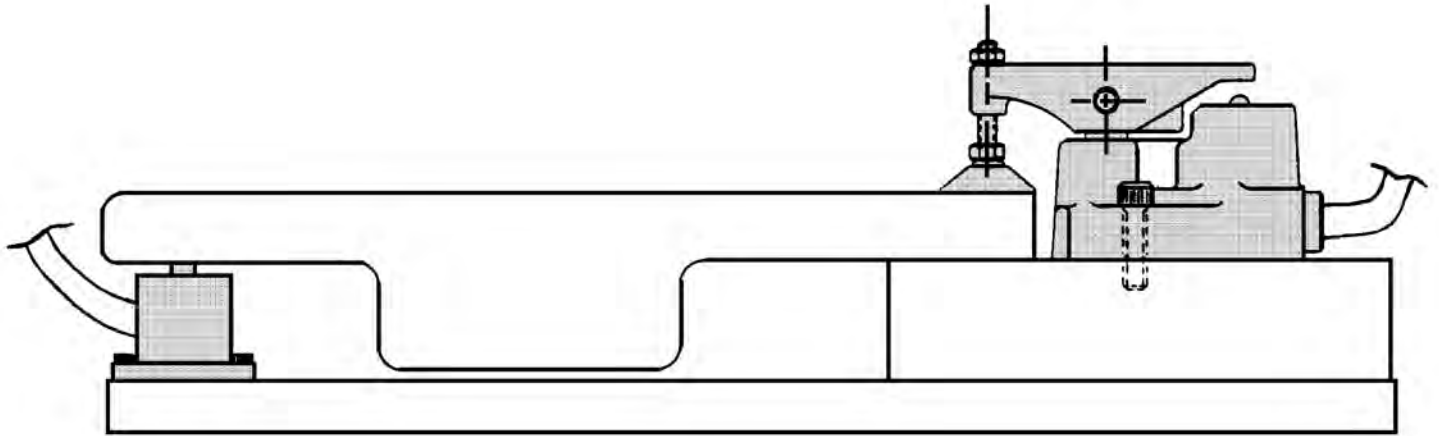


- Available in FixturePro™ Design Software

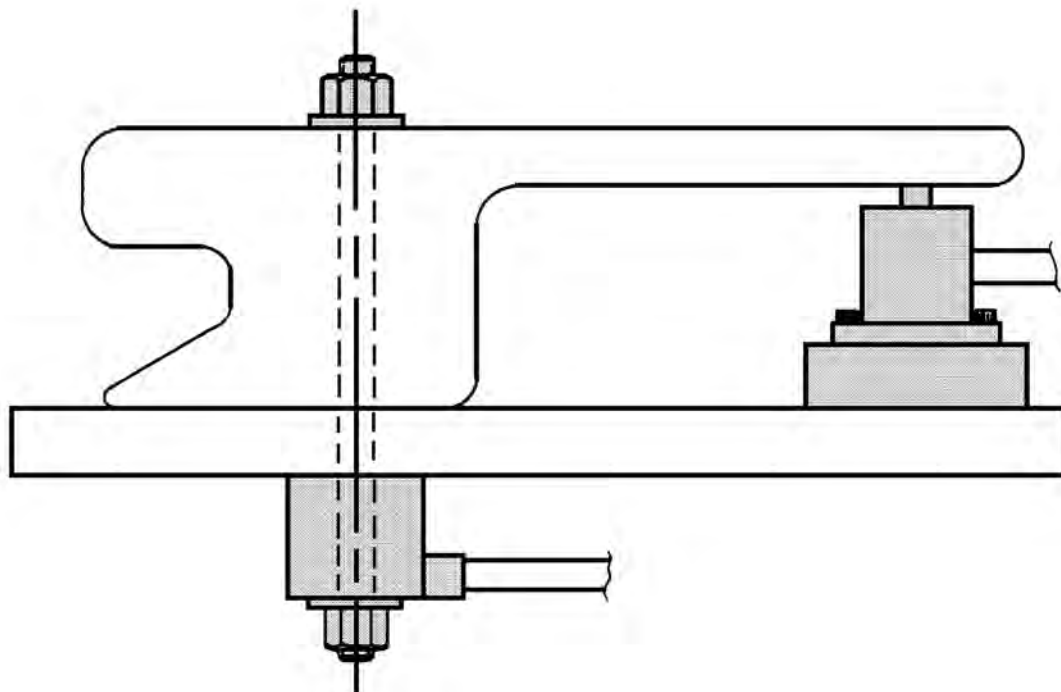


| Part Number | A      | B     | C     | D    | E   | F    | G    |      | H      | I      | J   | K | L     | O    |
|-------------|--------|-------|-------|------|-----|------|------|------|--------|--------|-----|---|-------|------|
|             |        |       |       |      |     |      | Min  | Max  |        |        |     |   |       |      |
| 60512       | 3 9/16 | 1 3/8 | 2 3/4 | .990 | 5/8 | 3.69 | 4.15 | 4.65 | 4 3/16 | 2 3/32 | 3/8 | 3 | 1 7/8 | 1.07 |

## Work Support Applications



The workpiece is located and clamped on the right end by a Jergens Swing Clamp. The Work Support resists the machining forces applied to the other end of the casting. Variations between castings are compensated for by the floating support plunger in the Work Support.



The top and bottom surfaces of the large casting must be machined to be flat, parallel, and at a fixed distance from each other. Jergens Work Supports eliminate deflection at the outer edge while compensating for variations between castings. A Jergens Hollow Rod Cylinder, stud and "C" washer are used to hold the casting.

## Hollow Rod Cylinders



Hollow Rod Cylinders are ideal for converting existing fixtures to power clamping. Replaces clamps which use double cams, flange nuts, draw bars, or other mechanical devices. Generally, no special machining is required, just a longer stud.

### Specifications

| Part Number                     | 60403<br>60404<br>60413<br>60414 | 60401<br>60402<br>60410<br>60411<br>60412 | 60405 |
|---------------------------------|----------------------------------|-------------------------------------------|-------|
| Operating Stroke (in.)          | .24                              | .31                                       | .64   |
| Operating Volume (cu. in.)      | .3                               | .7                                        | 3.2   |
| Effective Piston Area (sq. in.) | .96                              | 1.9                                       | 5     |
| Min. Oper. Pressure (psi)*      | 100                              | 100                                       | 100   |
| Max. Oper. Pressure (psi)       | 5000                             | 5000                                      | 5000  |
| Max Output Force (lbs.)         | 4800                             | 9850                                      | 25000 |

\* With Spring Installed

Hollow Rod Cylinders can either push or pull. Two styles are available, either Through Hole or Tapped Hole. In the Through Hole style, the piston rod is hollow to accept a bolt. The Tapped Hole cylinders accept a bolt threaded into the piston. Because of the piston design, the Tapped Hole style cannot gain stroke. Removing the return springs make the Hollow Rod Cylinders suitable for air operation.

- Available in FixturePro™ Design Software

### Through Hole Cylinders

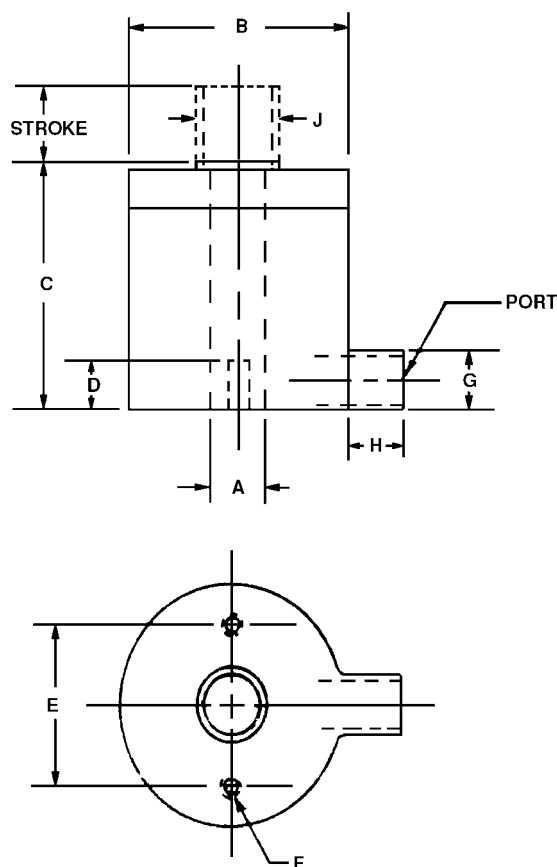
| Part Number | A      | B       | C†     | D    | E      | F      | G       | H   | Rod Dia. J | Port Size | Wt. (lbs) |
|-------------|--------|---------|--------|------|--------|--------|---------|-----|------------|-----------|-----------|
| *60403      | 13/32  | 1 15/16 | 1 7/8  | 5/16 | 1 5/8  | 10-32  | 3/4     | 1/2 | 7/8        | 7/16-20   | 1.0       |
| *60404      | 17/32  | 1 15/16 | 1 7/8  | 5/16 | 1 5/8  | 10-32  | 3/4     | 1/2 | 7/8        | 7/16-20   | 1.0       |
| 60401       | 21/32  | 2 1/2   | 2 3/16 | 5/16 | 2 7/32 | 10-32  | 7/8     | 3/8 | 1 1/4      | 9/16-18   | 2.5       |
| 60402       | 25/32  | 2 1/2   | 2 3/16 | 5/16 | 2 7/32 | 10-32  | 7/8     | 7/8 | 1 1/4      | 9/16-18   | 2.5       |
| 60405       | 1 1/64 | 4       | 3 9/16 | 5/8  | 3 1/2  | 1/4-28 | No Boss |     | 2 1/8      | 9/16-18   | 10.5      |

\*Cannot increase stroke

† Measured over piston in the retracted position.

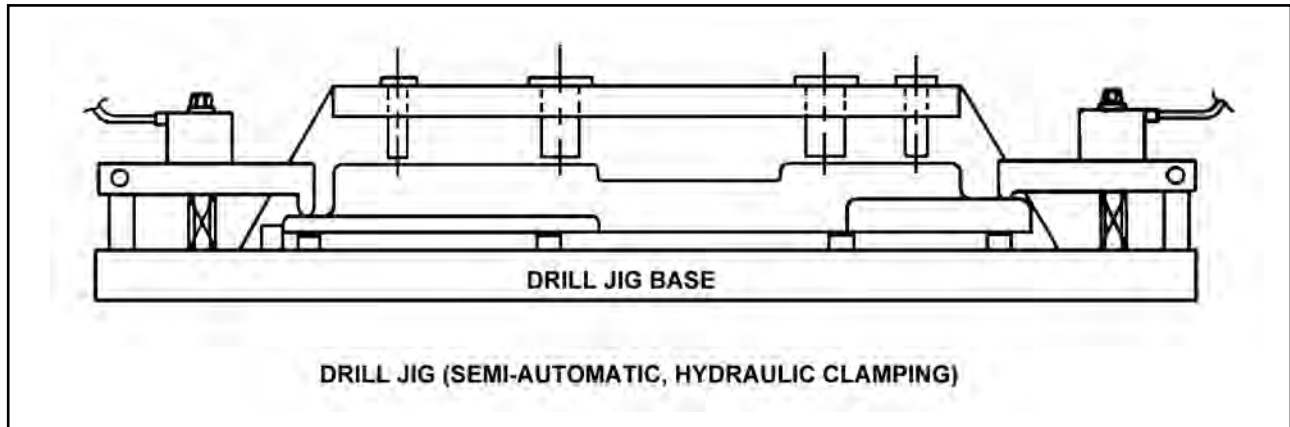
### Tapped Hole Cylinders

| Part Number | A      | B       | C       | Thd. Depth D | E      | F     | G   | H   | J     | Port Size | Wt. (lbs) |
|-------------|--------|---------|---------|--------------|--------|-------|-----|-----|-------|-----------|-----------|
| 60413       | 3/8-16 | 1 15/16 | 1 13/16 | 5/16         | 1 5/8  | 10-32 | 3/4 | 1/2 | 7/8   | 7/16-20   | 1.0       |
| 60414       | 1/2-13 | 1 15/16 | 1 13/16 | 5/16         | 1 5/8  | 10-32 | 3/4 | 1/2 | 7/8   | 7/16-20   | 1.0       |
| 60410       | 1/2-13 | 2 1/2   | 2 3/16  | 5/16         | 2 7/32 | 10-32 | 7/8 | 7/8 | 1 1/4 | 9/16-18   | 2.5       |
| 60411       | 5/8-11 | 2 1/2   | 2 3/16  | 5/16         | 2 7/32 | 10-32 | 7/8 | 7/8 | 1 1/4 | 9/16-18   | 2.5       |
| 60412       | 3/4-10 | 2 1/2   | 2 3/16  | 5/16         | 2 7/32 | 10-32 | 7/8 | 7/8 | 1 1/4 | 9/16-18   | 2.5       |

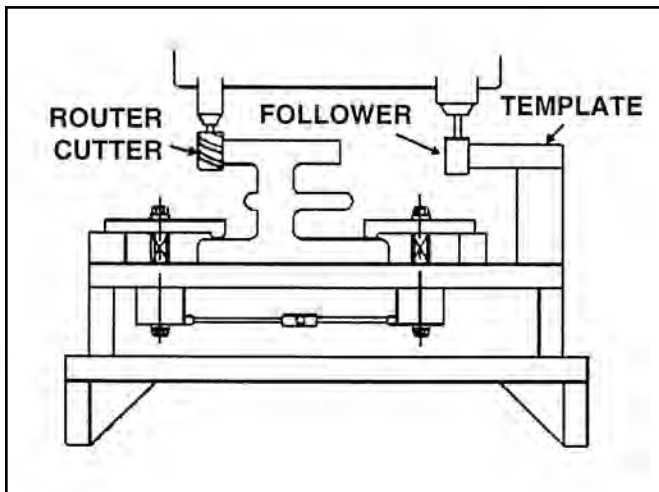




## Hollow Rod Cylinder Applications



Typical, low cost conversion from manual clamping to Hollow Rod Cylinders can be accomplished by using the existing drill jig clamps and changing the stud to a longer length. Besides clamping faster than the manual method, the Hollow Rod Cylinders allow for uniform clamping forces on all strap clamps.



The Hollow Rod Cylinder is ideal for "close to the machine base" strap clamping. By mounting the clamps under the work table, a manual clamping set-up can be easily and economically converted to hydraulic clamping.

## Threaded Cylinders Pressure Points

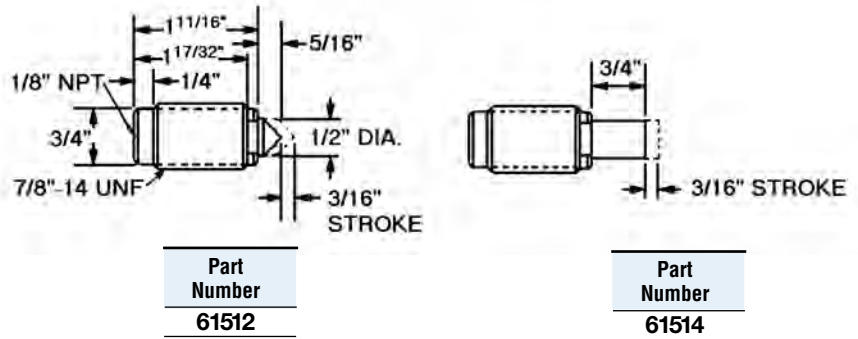


Jergens Pressure Points may be used with any power source and are designed to be used in restricted areas where space is at a minimum. Pressure Points can be used to eliminate part distortion during machining operations or to hold large diameter castings or rings in place while machining the upper surface. Pressure Points have hardened tool steel tips (50-60Rc). Jam nuts are included. Not suitable for air operation.

- Available in FixturePro™ Design Software

### Specifications

| Part Number                      | 61512 | 61514 |
|----------------------------------|-------|-------|
| Operating Stroke (in.)           | 3/16  | 3/16  |
| Operating Volume (cu. in.)       | .037  | .037  |
| Effective Piston Area (sq. in.)  | .20   | .20   |
| Minimum Operating Pressure (psi) | 400   | 400   |
| Maximum Operating Pressure (psi) | 5000  | 5000  |
| Maximum Output Force (lbs.)      | 1000  | 1000  |
| Weight (lbs.)                    | .5    | .6    |



## Miniature Cylinders

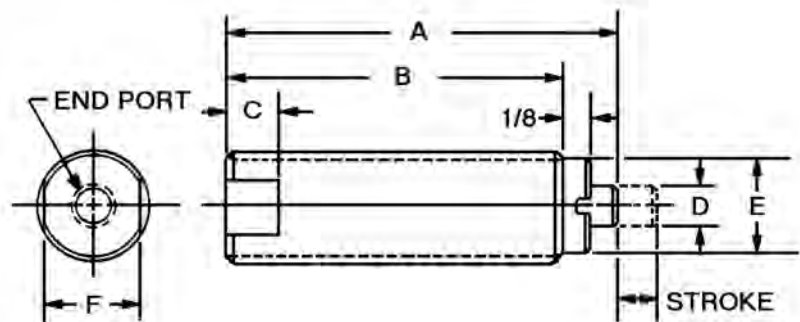


Small, fully-threaded bodies ensure easy mounting and simple length adjustments. Their small size provides high workholding forces in tight places. Threaded Cylinders have hardened piston rods, steel bodies, alloy springs and Teflon® back-up rings which ensure trouble-free operation and long life. Not suitable for air operation. For mounting, see brackets on page 3.24. Jam nuts are included.

- Available in FixturePro™ Design Software

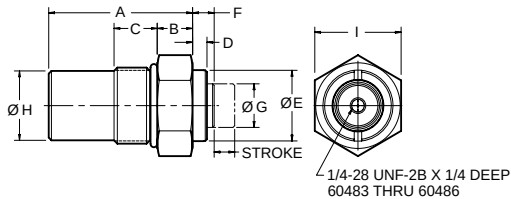
### Specifications

| Part Number                      | 60461 | 60462 |
|----------------------------------|-------|-------|
| Operating Stroke (in.)           | 3/16  | 1/2   |
| Operating Volume (cu. in.)       | .018  | .049  |
| Effective Piston Area (sq. in.)  | .096  | .196  |
| Minimum Operating Pressure (psi) | 200   | 300   |
| Maximum Operating Pressure (psi) | 10000 | 10000 |
| Maximum Output Force (lbs.)      | 960   | 1960  |
| Weight (lbs.)                    | .5    | .7    |



| Part Number | Stroke | Body Thread | A       | B      | C    | D    | E     | F    | End Port     |
|-------------|--------|-------------|---------|--------|------|------|-------|------|--------------|
| 60461       | 3/16   | 1/2-20      | 1 13/16 | 1 9/16 | 1/4  | 3/16 | 3/8   | 7/16 | 1/16-27 NPTF |
| 60462       | 1/2    | 3/4-16      | 2 3/8   | 2      | 5/16 | 1/4  | 21/32 | 5/8  | 1/8-27 NPTF  |

## Manifold Mount Cylinders

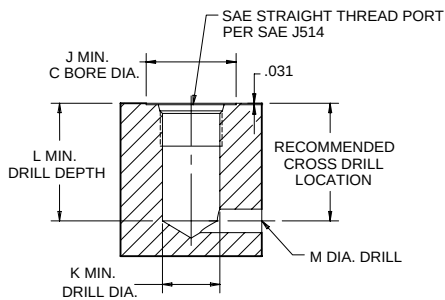


- Provides for clean installation
- Eliminates exposed fittings and plumbing
- Well suited for use in custom design fixtures

## Specifications

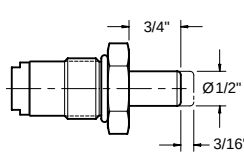
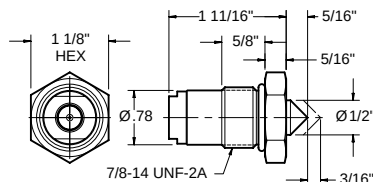
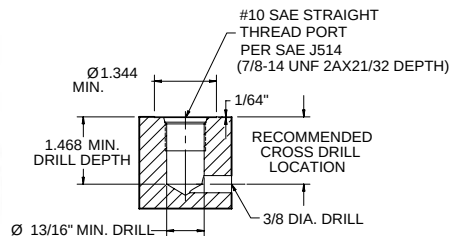
| Part Number                      | 60481 | 60482 | 60483 | 60484 | 60485 | 60486 |
|----------------------------------|-------|-------|-------|-------|-------|-------|
| Operating Stroke (in.)           | 3/16  | 1/2   | 1/2   | 1     | 1/2   | 1     |
| Operating Volume (cu. in.)       | 0.017 | 0.098 | 0.393 | 0.785 | 0.884 | 1.767 |
| Effective Piston Area (sq. in.)  | 0.093 | 0.196 | 0.785 | 0.785 | 1.767 | 1.767 |
| Minimum Operating Pressure (psi) | 200   | 200   | 200   | 200   | 200   | 200   |
| Maximum Operating Pressure (psi) | 5000  | 5000  | 5000  | 5000  | 5000  | 5000  |
| Maximum Output Force (lbs.)      | 465   | 980   | 3925  | 3925  | 8835  | 8835  |
| Weight (lbs.)                    | 0.5   | 0.7   | 1     | 1.5   | 2     | 2.5   |

| Part No.     | Body Thread     | Stroke | A       | B    | C    | D   | E Dia.  | F    | G Dia. | H Dia. | I Hex. |
|--------------|-----------------|--------|---------|------|------|-----|---------|------|--------|--------|--------|
| <b>60481</b> | 9/16-18 UNF     | 3/16   | 1 13/32 | .375 | 1/2  | 1/8 | 3/8     | 1/4  | 3/16   | .48    | 3/4    |
| <b>60482</b> | 3/4-16 UNF-2A   | 1/2    | 1 23/32 | .375 | 9/16 | 1/8 | 41/64   | 3/8  | 1/4    | .66    | 7/8    |
| <b>60483</b> | 1 5/16-12 UN-2A | 1/2    | 2 1/2   | .615 | 3/4  | 1/4 | 1 7/32  | 5/16 | 3/4    | 1.19   | 1 1/2  |
| <b>60484</b> | 1 5/16-12 UN-2A | 1"     | 3       | .615 | 3/4  | 1/4 | 1 7/32  | 5/16 | 3/4    | 1.19   | 1 1/2  |
| <b>60485</b> | 1 7/8-12 UN-2A  | 1/2    | 2 1/2   | .615 | 3/4  | 1/4 | 1 47/64 | 5/16 | 1 1/4  | 1.75   | 2 1/8  |
| <b>60486</b> | 1 7/8-12 UN-2A  | 1"     | 3       | .615 | 3/4  | 1/4 | 1 47/64 | 5/16 | 1 1/4  | 1.75   | 2 1/8  |



| Part No.     | SAE No. | Thread Size     | Thread Depth | J    | K       | L    | M    |
|--------------|---------|-----------------|--------------|------|---------|------|------|
| <b>60481</b> | 6       | 9/16-18 UNF     | 1/2          | .970 | 1/2     | 1.09 | 1/4  |
| <b>60482</b> | 8       | 3/4-16 UNF-2A   | 9/16         | 1.19 | 11/16   | 1.41 | 5/16 |
| <b>60483</b> | 16      | 1 5/16-12 UN-2A | 3/4          | 1.91 | 1 7/32  | 2.00 | 1/2  |
| <b>60484</b> | 15      | 1 5/16-12 UN-2A | 3/4          | 1.91 | 1 7/32  | 2.50 | 1/2  |
| <b>60485</b> | 24      | 1 7/8-12 UN-2A  | 3/4          | 2.56 | 1 13/16 | 2.00 | 9/16 |
| <b>60486</b> | 24      | 1 7/8-12 UN-2A  | 3/4          | 2.56 | 1 13/16 | 2.50 | 9/16 |

## Pressure Points



## Specifications

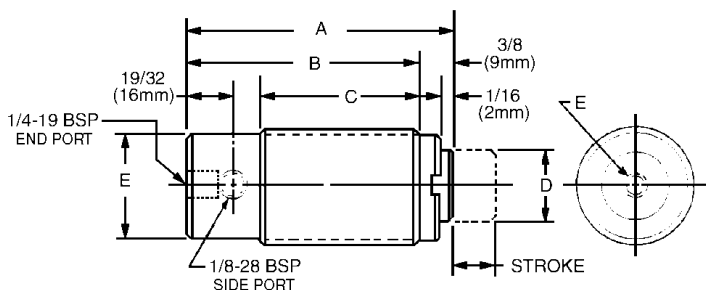
| Part Number                      | 61522 | 61524 |
|----------------------------------|-------|-------|
| Operating Stroke (in.)           | 3/16  | 3/16  |
| Operating Volume (cu. in.)       | 0.049 | 0.049 |
| Effective Piston Area (sq. in.)  | 0.261 | 0.261 |
| Minimum Operating Pressure (psi) | 400   | 400   |
| Maximum Operating Pressure (psi) | 5000  | 5000  |
| Maximum Output Force (lbs.)      | 1305  | 1305  |
| Weight (lbs.)                    | 0.5   | 0.5   |

## Threaded Cylinders Heavy-Duty



Full-threaded bodies ensure easy mounting and simple length adjustments. Their small size provides high work holding forces in tight places. Threaded Cylinders have hardened piston rods, steel bodies, alloy springs and Teflon® back-up rings which ensure trouble-free operation and long life. Not suitable for air operation. For mounting, see bracket and jam nuts on page 3.21.

- Compact Design
- Easy Installation
- Side and Rear Ports
- Tapped Piston



### Inch

| Part Number | Stroke | Body Thread | A     | B     | C     | D     | E            | F       | Input Ports |         |
|-------------|--------|-------------|-------|-------|-------|-------|--------------|---------|-------------|---------|
|             |        |             |       |       |       |       |              |         | End         | Side    |
| 60463       | 1/2    | 1 5/16-16   | 3 1/4 | 2 7/8 | 2     | 3/4   | 1/4-28 x 1/4 | 1 7/32  | 7/16-20 SAE | 1/8-NPT |
| 60464       | 1      | 1 5/16-16   | 3 3/4 | 3 3/8 | 2 1/2 | 3/4   | 1/4-28 x 1/4 | 1 7/32  | 7/16-20 SAE | 1/8-NPT |
| 60465       | 1/2    | 1 7/8-16    | 3 1/4 | 2 7/8 | 2     | 1 1/4 | 1/4-28 x 1/4 | 1 25/32 | 7/16-20 SAE | 1/8-NPT |
| 60466       | 1      | 1 7/8-16    | 3 3/4 | 3 3/8 | 2 1/2 | 1 1/4 | 1/4-28 x 1/4 | 1 25/32 | 7/16-20 SAE | 1/8-NPT |

Cylinders are supplied with a plug installed in the side port.

To use side port, remove plug and install part number 61060 (7/16-20 pipe plug) to plug end port.

### Metric

| Part Number | Stroke | Body Thread | A  | B  | C  | D  | E            | F  | Input Ports  |              |
|-------------|--------|-------------|----|----|----|----|--------------|----|--------------|--------------|
|             |        |             |    |    |    |    |              |    | End          | Side         |
| 63213       | 13     | M36 x 1.5   | 82 | 73 | 51 | 19 | M6 x 1.0 x 6 | 31 | 1/4 - 19 BSP | 1/8 - 28 BSP |
| 63214       | 25     | M36 x 1.5   | 95 | 86 | 64 | 19 | M6 x 1.0 x 6 | 31 | 1/4 - 19 BSP | 1/8 - 28 BSP |
| 63215       | 13     | M48 x 1.5   | 82 | 73 | 51 | 32 | M6 x 1.0 x 6 | 44 | 1/4 - 19 BSP | 1/8 - 28 BSP |
| 63216       | 25     | M48 x 1.5   | 95 | 86 | 64 | 32 | M6 x 1.0 x 6 | 44 | 1/4 - 19 BSP | 1/8 - 28 BSP |

Cylinders are supplied with a plug installed in the side port.

### Specifications - Inch

| Part Number                      | 60463 | 60464 | 60465 | 60466 |
|----------------------------------|-------|-------|-------|-------|
| Operating Stroke (in.)           | 1/2   | 1     | 1/2   | 1     |
| Operating Volume (cu. in.)       | .392  | .785  | .883  | 1.767 |
| Effective Piston Area (sq. in.)  | .785  | .785  | 1.767 | 1.767 |
| Minimum Operating Pressure (psi) | 200   | 200   | 200   | 200   |
| Maximum Operating Pressure (psi) | 5000  | 5000  | 5000  | 5000  |
| Maximum Output Force (lbs.)      | 3925  | 3925  | 8835  | 8835  |
| Weight (lbs.)                    | 1.0   | 1.5   | 2.0   | 2.5   |

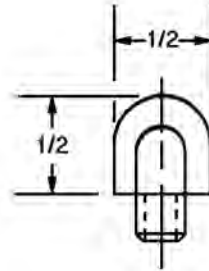
### Specifications - Metric

| Part Number                   | 63213 | 63214 | 63215 | 63216 |
|-------------------------------|-------|-------|-------|-------|
| Operating Stroke (mm)         | 13    | 25    | 13    | 25    |
| Operating Volume (cu. Cm.)    | 6.4   | 12.8  | 14.5  | 29    |
| Effective Piston Area (cm²)   | 5     | 5     | 11.4  | 11.4  |
| Maximum Oper. Pressure (bars) | 340   | 340   | 340   | 340   |
| Minimum Oper. Pressure (bars) | 14    | 14    | 14    | 14    |
| Maximum Output Force (kg)     | 1780  | 1780  | 4007  | 4007  |
| Weight (kg)                   | .45   | .68   | .90   | 1.13  |

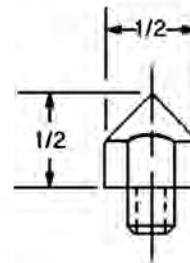
## Threaded Cylinders Piston Buttons



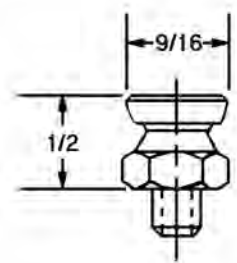
Hardened steel buttons for use  
on 60463 thru 60466 cylinders.



**60471**



**60472**

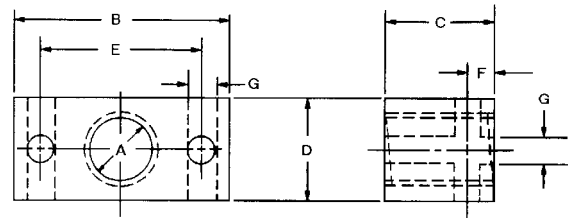


**60473**

## Threaded Cylinders Block Mountings



- Material: Low Carbon Steel
- Finish: Black Oxide



### Inch

| Part Number  | A         | B     | C     | D       | E      | F    | G     | Wt. (lbs) |
|--------------|-----------|-------|-------|---------|--------|------|-------|-----------|
| <b>60950</b> | 1/2-20    | 1 3/8 | 3/4   | 5/8     | 15/16  | 1/4  | 1/4   | .125      |
| <b>60951</b> | 3/4-16    | 1 5/8 | 1 1/8 | 1       | 1 1/8  | 1/4  | 1/4   | .375      |
| <b>60959</b> | 7/8-14    | 2     | 3/4   | 1 1/2   | 1 1/2  | 3/8  | 21/64 | .40       |
| <b>60956</b> | 1 5/16-16 | 3     | 1 1/4 | 1 13/16 | 2 1/8  | 7/16 | 25/64 | 1.27      |
| <b>60957</b> | 1 9/16-16 | 3 1/4 | 1 1/2 | 2       | 2 7/16 | 7/16 | 25/64 | 1.95      |
| <b>60958</b> | 1 7/8-16  | 4     | 2     | 2 3/8   | 3      | 1/2  | 33/64 | —         |

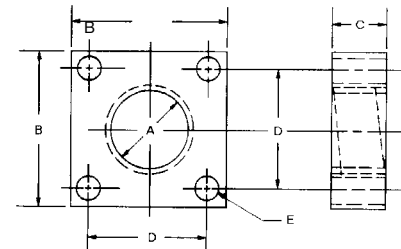
### Metric

| Part Number  | A            | B     | C    | D    | E  | F  | G    | Wt. (kg) |
|--------------|--------------|-------|------|------|----|----|------|----------|
| <b>60997</b> | M36 x 1.5 6H | 82.6  | 38.1 | 50.8 | 62 | 12 | 10.8 | .86      |
| <b>60998</b> | M48 x 1.5 6H | 101.6 | 38.1 | 60.3 | 76 | 12 | 13   | 1.13     |

## Flange Mountings



- Material: Low Carbon Steel
- Finish: Black Oxide



### Inch

| Part Number  | A         | B     | C   | D     | E     | Wt. (lbs) |
|--------------|-----------|-------|-----|-------|-------|-----------|
| <b>60952</b> | 1 5/16-16 | 1 5/8 | 1/2 | 1 1/4 | 17/64 | .18       |
| <b>60955</b> | 1 9/16-16 | 2     | 1   | 1 1/2 | 17/64 | .56       |
| <b>60954</b> | 1 7/8-16  | 2 1/4 | 1   | 1 3/4 | 21/64 | .625      |

### Metric

| Part Number  | A            | B    | C    | D  | E   | Wt. (kg) |
|--------------|--------------|------|------|----|-----|----------|
| <b>60995</b> | M36 x 1.5 6H | 50.8 | 25.4 | 38 | 6.7 | .30      |
| <b>60994</b> | M48 x 1.5 6H | 63.5 | 25.4 | 50 | 8.8 | .42      |

## Jam Nuts



| Part Number        | 60961  | 60962  | 60963  | 60964 | 60965     | 60966     | 60967    |
|--------------------|--------|--------|--------|-------|-----------|-----------|----------|
| Thread             | 1/2-20 | 3/4-16 | 7/8-14 | 1-12  | 1 5/16-16 | 1 9/16-16 | 1 7/8-16 |
| Thickness          | 5/16   | 3/8    | 5/16   | 35/64 | 25/64     | 25/64     | 7/16     |
| Width Across Flats | 3/4    | 1 1/8  | 1 5/16 | 1 5/8 | 1 7/8     | 2 1/4     | 3        |



## Standard Cylinders

### Single Acting

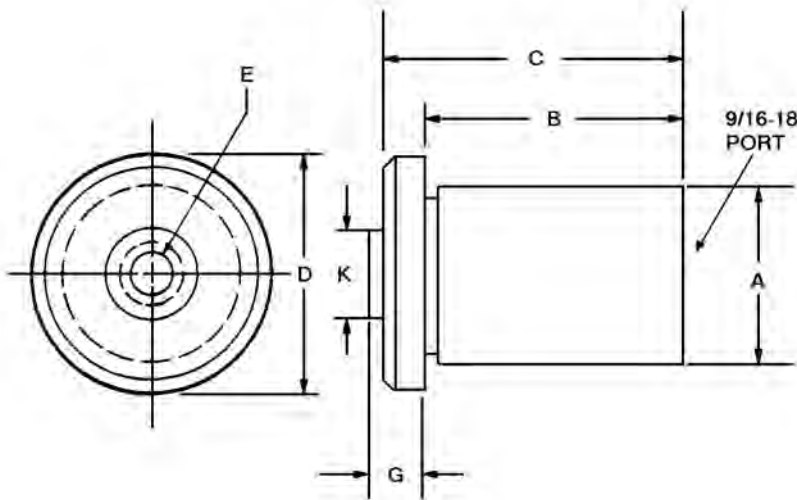


**These single-acting, spring-return cylinders will operate on air or oil; all have a 1" stroke.**

Single-acting cylinders are especially applicable to large circuits where cylinders are plumbed into the air side of the circuit and used to align parts in the fixture prior to hydraulic clamping. These applications are primarily pushing type operations where the cylinder return spring pulls only the piston rod.

- Available in FixturePro™ Design Software

**NOTE:** Not recommended for applications where coolant or chips are prevalent. Use double acting style (next page) for these applications



### Specifications

| Part Number                      | 60301 | 60307 | 60303 |
|----------------------------------|-------|-------|-------|
| Operating Stroke (in.)           | 1     | 1     | 1     |
| Operating Volume (cu. in.)       | .44   | 1.22  | 3.14  |
| Effective Piston Area (sq. in.)  | .44   | 1.22  | 3.14  |
| Minimum Operating Pressure (psi) | 32    | 25    | 25    |
| Maximum Operating Pressure (psi) | 3000  | 3000  | 3000  |
| Maximum Output Force (lbs.)      | 1320  | 3660  | 9300  |
| Weight (lbs.)                    | .5    | 1     | 3     |

Bore Tolerances: +.0005  
-.0010

### Dimensions

| Part Number | A     | B     | C     | D       | Tap E        | G    | K   |
|-------------|-------|-------|-------|---------|--------------|------|-----|
| 60301       | 1.000 | 2 3/8 | 2 5/8 | 1 15/64 | 1/4-20 x 1/2 | 7/16 | 3/8 |
| 60307       | 1.500 | 2 3/8 | 2 5/8 | 1 47/64 | 3/8-16 x 3/4 | 7/16 | 1/2 |
| 60303       | 2.500 | 2 3/8 | 2 5/8 | 2 47/64 | 3/8-16 x 3/4 | 7/16 | 3/4 |

## Standard Cylinders

### Double Acting

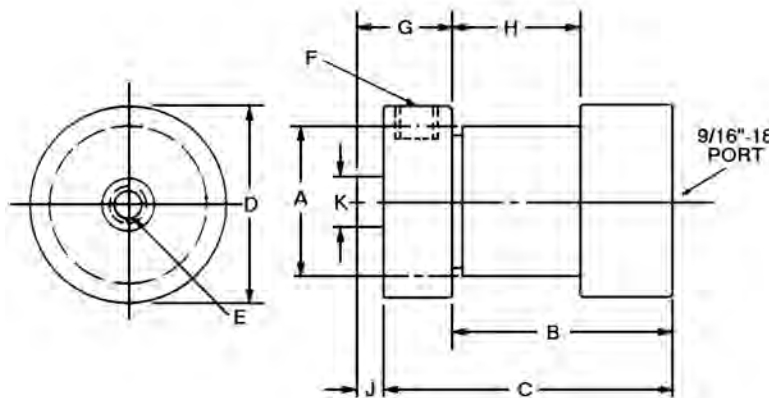


Double Acting Cylinders can be used for clamping, holding positioning, staking, punching...anywhere that a heavy duty cylinder is needed. If the cylinder is mounted in the fixture (as opposed to using mounting brackets), the fixture should be bored to between .0005 and .0010 over the "A" dimension. Doing so will prevent an out-of-round condition of the cylinder body which could damage the piston. They may be returned by air or by hydraulic pressure.

- Available in FixturePro™ Design Software

### Specifications

| Part Number                      | 60345                   | 60341         | 60350       | 60351         | 60360       | 60361         |
|----------------------------------|-------------------------|---------------|-------------|---------------|-------------|---------------|
| Operating Stroke (in.)           | 1                       | 1             | 2           | 2             | 3           | 3             |
| Operating Volume (cu. in.)       | 1.1                     | 3.14          | 2.2         | 6.28          | 3.31        | 9.42          |
| Effective Piston Area (sq. in.)  | -Push 1.1<br>-Pull .912 | 3.14<br>2.699 | 1.1<br>.956 | 3.14<br>2.699 | 1.1<br>.956 | 3.14<br>2.699 |
| Minimum Operating Pressure (psi) | 20                      | 20            | 20          | 20            | 20          | 20            |
| Maximum Operating Pressure (psi) | 3000                    | 3000          | 3000        | 3000          | 3000        | 3000          |
| Maximum Output Force (lbs.)      | 3300                    | 9300          | 3300        | 9300          | 3300        | 9300          |
| Weight (lbs.)                    | 2.5                     | 4.5           | 3.5         | 6.0           | 4.75        | 6.2           |



### Dimensions

| Part Number | A     | B       | C       | D       | Tap E        | Return Port F | G      | H       | J   | K    |
|-------------|-------|---------|---------|---------|--------------|---------------|--------|---------|-----|------|
| 60345       | 1.500 | 2 7/16  | 3 1/8   | 2 15/32 | 3/8-16 x 3/4 | 7/16-20       | 31/32  | 1 9/32  | 1/4 | 1/2  |
| 60341       | 2.500 | 2 11/16 | 3 3/8   | 2 31/32 | 3/8-16 x 3/4 | 7/16-20       | 31/32  | 1 9/32  | 1/4 | 3/4  |
| 60350       | 1.500 | 3 1/2   | 4 1/2   | 2 15/32 | 1/4-20 x 1/2 | 9/16-18       | 1 7/32 | 2 11/32 | 1/4 | 7/16 |
| 60351       | 2.500 | 3 3/4   | 4 23/32 | 2 31/32 | 3/8-16 x 3/4 | 9/16-18       | 1 3/16 | 2 11/32 | 1/4 | 3/4  |
| 60360       | 1.500 | 4 1/2   | 5 1/2   | 2 15/32 | 1/4-20 x 1/2 | 9/16-18       | 1 7/32 | 3 11/32 | 1/4 | 7/16 |
| 60361       | 2.500 | 4 3/4   | 5 23/32 | 2 31/32 | 3/8-16 x 3/4 | 9/16-18       | 1 3/16 | 3 11/32 | 1/4 | 3/4  |

## Standard Cylinders Mounting Brackets



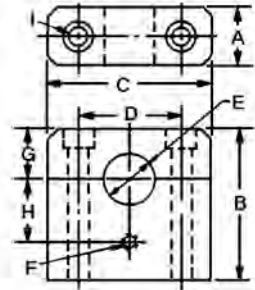
Mounting Brackets are designed to save you time and money when laying out your fixture.

All Mounting Brackets are made of low carbon steel, which is not heat-treated. This allows you to custom fit or weld the brackets into your fixture. The cylinder clamping area is concentric to the OD of the various cylinders to avoid distortion of the cylinder walls which may cause damage to the piston.

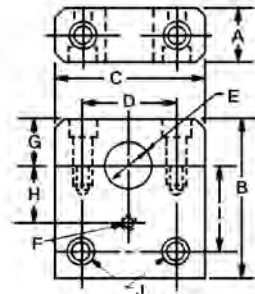
Spacers may be used to add height to the cylinders when using Jergens Mounting Brackets.

- Material: Low Carbon Steel
- Finish: Black Oxide
- Bore Tolerances: +.0005  
-.0010
- Available in FixturePro™ Design Software

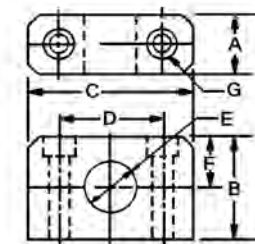
| Part Number | A     | B     | C     | D     | E    | Tap F  | G     | H | (2 Bolts Supplied) I | Wt. (lbs) |
|-------------|-------|-------|-------|-------|------|--------|-------|---|----------------------|-----------|
| 60901       | 1 1/4 | 3 3/4 | 2 3/8 | 1 1/2 | 1.00 | 1/2-13 | 3/4   | 2 | 3/8-16 x 4           | 2.75      |
| 60902       | 1 1/4 | 4     | 3 1/2 | 2 1/8 | 1.50 | 3/4-10 | 1     | 2 | 1/2-13 x 4 1/2       | 3.5       |
| 60903       | 1 1/4 | 4 1/2 | 4 3/8 | 3 1/4 | 2.50 | 3/4-10 | 1 1/2 | 2 | 5/8-11 x 5           | 4.75      |



| Part Number | A     | B     | C     | D     | E    | Tap F  | G     | H | I      | (2 Bolts Supplied) J | Wt. (lbs) |
|-------------|-------|-------|-------|-------|------|--------|-------|---|--------|----------------------|-----------|
| 60904       | 1 1/4 | 3 3/4 | 2 3/8 | 1 1/2 | 1.00 | 1/2-13 | 3/4   | 2 | 2 9/16 | 3/8-16 x 1 1/2       | 2.7       |
| 60905       | 1 1/4 | 4     | 3 1/8 | 2 1/8 | 1.50 | 3/4-10 | 1     | 2 | 2 1/2  | 1/2-13 x 1 1/2       | 3.5       |
| 60906       | 1 1/4 | 4 1/2 | 4 3/8 | 3 1/4 | 2.50 | 3/4-10 | 1 1/2 | 2 | 2 7/16 | 5/8-11 x 1 1/2       | 4.7       |



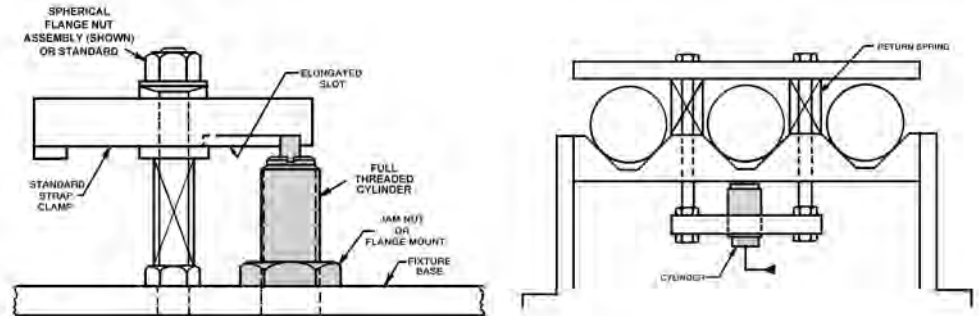
| Part Number | A     | B     | C     | D     | E    | F     | (2 Bolts Supplied) G | Wt. (lbs) |
|-------------|-------|-------|-------|-------|------|-------|----------------------|-----------|
| 60907       | 1 1/4 | 1 1/2 | 2 3/8 | 1 1/2 | 1.00 | 3/4   | 3/8-16 x 1 3/4       | .95       |
| 60908       | 1 1/4 | 2     | 3 1/8 | 2 1/8 | 1.50 | 1     | 1/2-13 x 2 1/4       | 1.50      |
| 60909       | 1 1/4 | 3     | 4 3/8 | 3 1/4 | 2.50 | 1 1/2 | 5/8-11 x 3 1/4       | 2.75      |



## Threaded Cylinder Applications

By replacing step blocks or similar mechanical devices with a threaded cylinder, manual clamping is easily adaptable into a more productive hydraulic clamping set-up.

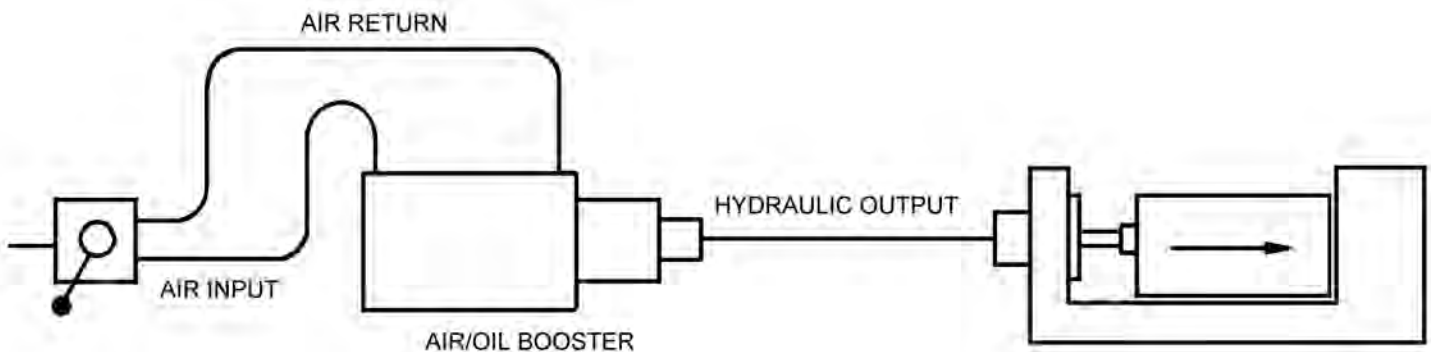
This principle of “building block” components can be combined with various Jergens cylinders, standard components and mounting blocks or strap clamps; thus allowing an almost infinite method of production clamping.



## Standard Cylinder Applications

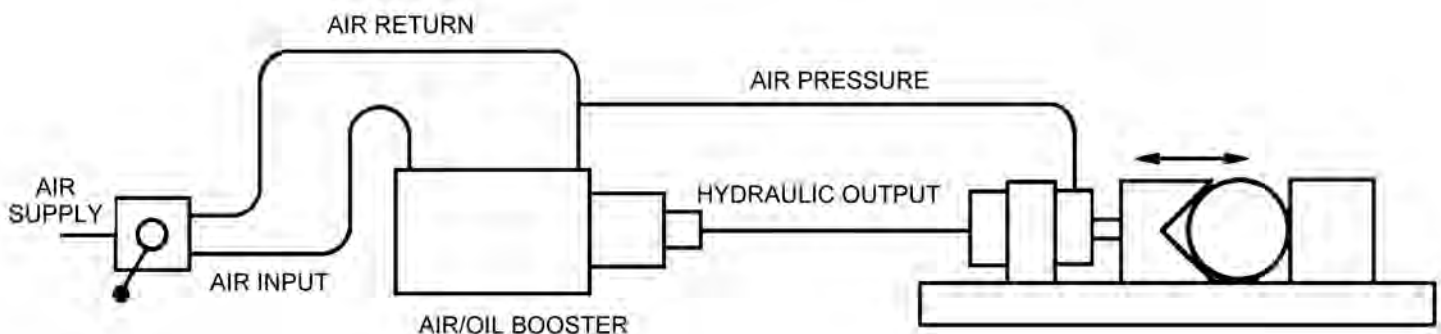
### Holding Fixture

A Single Acting Cylinder is used to locate and clamp the workpiece in a channel fixture. The cylinder rod automatically returns when the booster pressure is released.



### Vise Fixture

A Double Acting Cylinder is being used to operate a Vee Jaw in the above fixture. Hydraulic pressure is used to clamp and unclamp the jaw. Air pressure, used to return the Double Acting Cylinder, is connected to the air return line of the Booster. Jergens Double Acting Cylinders will operate with as little as 10 psi of air pressure or up to 3000 psi of hydraulic pressure.

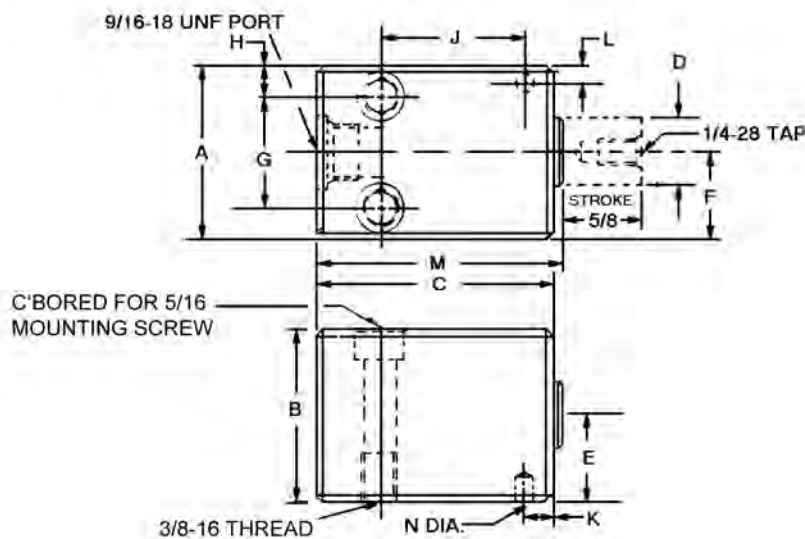


## Block Cylinders

### Single Acting Horizontal



- Vertical and Horizontal Styles
- Simple Mounting
- Compact Design



### Dimensions (Horizontal Style)

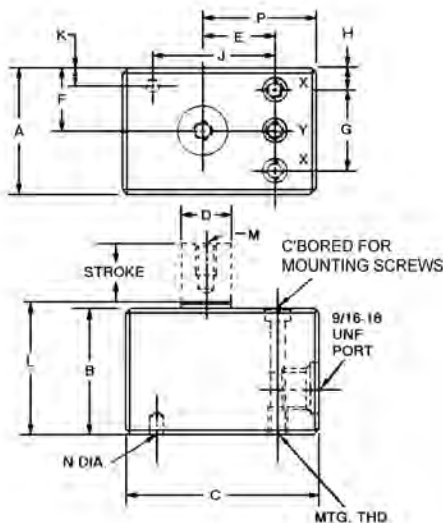
| Part Number | A     | B     | C      | D     | E   | F   | G | H   | J       | K    | L    | M     | N    |
|-------------|-------|-------|--------|-------|-----|-----|---|-----|---------|------|------|-------|------|
| 60372*      | 1 3/4 | 1 3/4 | 2 7/16 | 11/16 | 7/8 | 7/8 | 1 | 3/8 | 1 15/32 | 9/32 | 3/16 | 2 1/2 | .194 |

### Dimensions (Vertical Style)

| Part Number   | A     | B     | C      | D     | E       | F     | G     | H    | J       | K    | L       | M          | N    | P       | Mtg. Screw Size | Mtg. Thread |
|---------------|-------|-------|--------|-------|---------|-------|-------|------|---------|------|---------|------------|------|---------|-----------------|-------------|
| <b>60371*</b> | 1 3/4 | 1 3/4 | 2 1/2  | 11/16 | 1       | 7/8   | 1 1/8 | 5/16 | 1 11/16 | 1/4  | 1 13/16 | 1/4-28 UNF | .194 | 1 9/16  | #10             | 1/4-20 UNC  |
| <b>60373</b>  | 2 1/2 | 2 1/2 | 3 3/16 | 1 1/2 | 1 11/32 | 1 1/4 | —     | —    | 2 3/32  | 7/16 | 2 11/16 | 3/8-24 UNF | .257 | 1 15/16 | 5/16            | 3/8-16 UNC  |
| <b>60374</b>  | 3 1/2 | 3     | 4      | 2     | 1 1/2   | 1 3/4 | 1 3/4 | 7/8  | —       | —    | 3 3/8   | 1/2-20 UNF | —    | 2 1/4   | 5/16            | 3/8-16 UNC  |

\*Not recommended for applications where coolant or chips are prevalent.

## Single Acting Vertical



### Specifications (Both Styles)

| Part Number                      | 60371         | 60372         | 60373         | 60374         |
|----------------------------------|---------------|---------------|---------------|---------------|
| Operating Stroke (in.)           | 5/8           | 5/8           | 1/2           | 1/2           |
| Operating Volume (cu. in.)       | .77           | .77           | 1.1           | 1.96          |
| Effective Piston -Push           | 1.22          | 1.22          | 1.77          | 3.14          |
| Area (sq. in) -Pull              | Spring Return | Spring Return | Spring Return | Spring Return |
| Maximum Operating Pressure (psi) | 5000          | 5000          | 5000          | 5000          |
| Maximum Output Force (lbs.)      | 6100          | 6100          | 8850          | 15700         |
| Weight (lbs.) Approx.            | 2             | 2             | 5             | 11            |
| Mounting Location                | X<br>Position | As<br>Shown   | Y<br>Position | X<br>Position |

“X” refers to double mounting hole style.

"Y" refers to single mounting hole style.



## Block Cylinders

### Heavy Duty Double Acting



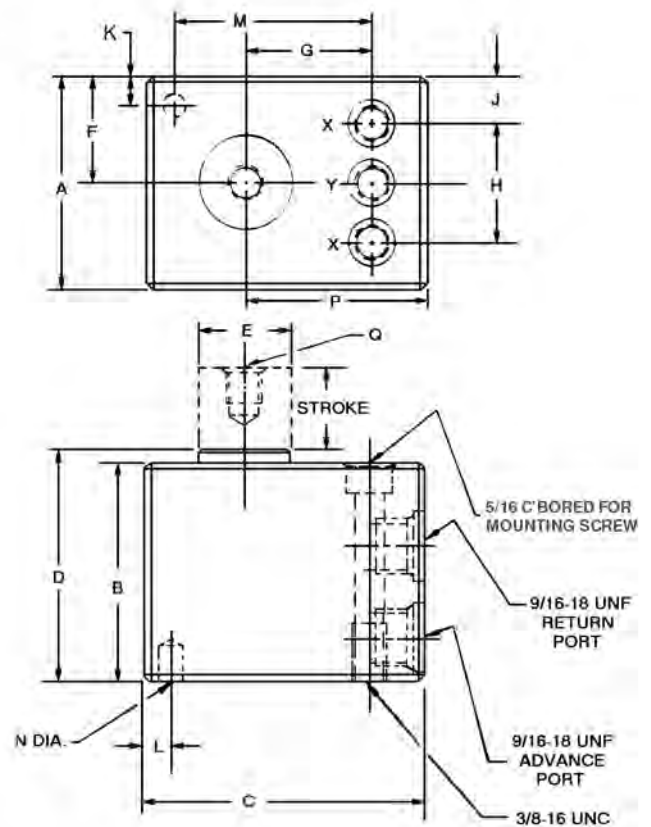
- Simple Mounting
- Compact Design
- High Output Forces

### Specifications

| Part Number                           | 60381      | 60382 | 60383      | 60384 |
|---------------------------------------|------------|-------|------------|-------|
| Operating Stroke (in.)                | 1/2        | 1     | 1/2        | 1     |
| Operating Volume (cu. in.)            | .88        | 1.77  | 1.57       | 3.14  |
| Effective Piston -Push Area (sq. in.) | 1.77       | 1.77  | 3.14       | 3.14  |
| -Pull                                 | .98        | .98   | 1.37       | 1.37  |
| Minimum Operating Pressure (psi)      | 20         | 20    | 20         | 20    |
| Maximum Operating Pressure (psi)      | 5000       | 5000  | 5000       | 5000  |
| Maximum Output Force (lbs.)           | 8850       | 8850  | 15700      | 15700 |
| Weight (lbs.) Approx.                 | 4          | 4.8   | 10.5       | 12.1  |
| Mounting Location                     | Y Position |       | X Position |       |

"X" refers to double mounting hole style.

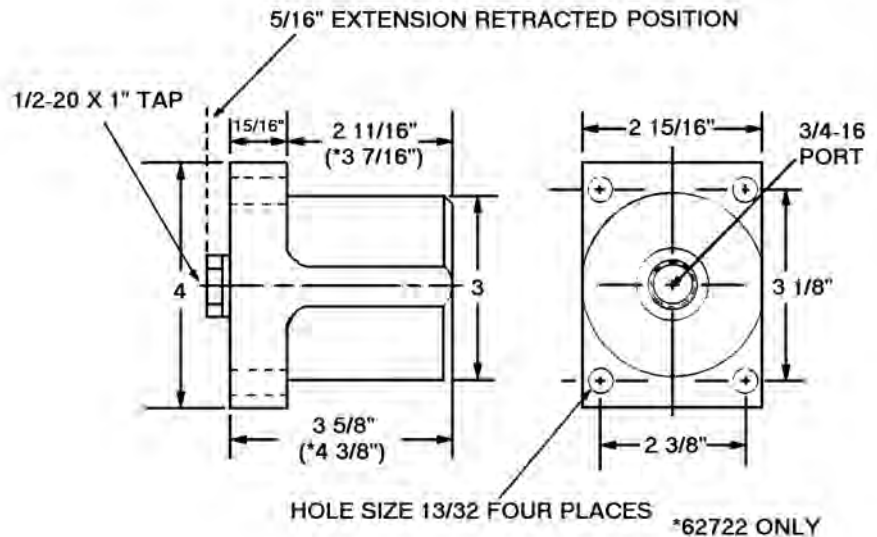
"Y" refers to single mounting hole style.



### Dimensions

| Part Number | A     | B       | C     | D       | E     | F     | G       | H     | J   | K    | L    | M      | N    | P       | Stroke | Q             |
|-------------|-------|---------|-------|---------|-------|-------|---------|-------|-----|------|------|--------|------|---------|--------|---------------|
| 60381       | 2 1/4 | 2 5/16  | 3     | 2 7/16  | 1     | 1 1/8 | 1 11/32 | —     | —   | 5/16 | 5/16 | 2 3/32 | .257 | 1 15/16 | 1/2    | 3/8-24 UNF-2B |
| 60382       | 2 1/4 | 2 13/16 | 3     | 2 15/16 | 1     | 1 1/8 | 1 11/32 | —     | —   | 5/16 | 5/16 | 2 3/32 | .257 | 1 15/16 | 1      | 3/8-24 UNF-2B |
| 60383       | 3 1/4 | 3 1/4   | 3 3/4 | 3 3/8   | 1 1/2 | 1 5/8 | 1 1/2   | 1 3/4 | 3/4 | —    | —    | —      | —    | 2 1/4   | 1/2    | 1/2-20 UNF-2B |
| 60384       | 3 1/4 | 3 3/4   | 3 3/4 | 3 7/8   | 1 1/2 | 1 5/8 | 1 1/2   | 1 3/4 | 3/4 | —    | —    | —      | —    | 2 1/4   | 1      | 1/2-20 UNF-2B |

## Flange Mount Cylinders



- Easy Mounting
- Heavy Duty
- High Output Forces
- Long Lasting
- Available in FixturePro™ Design Software

The Jergens Heavy Duty Flange Mount Cylinders mount through holes on the flange of the cylinder body. This feature eliminates the need for separate mounting brackets. The cylinders can provide high forces for clamping, lifting and pressing. Not recommended with flood coolant applications.

### Specifications

| Part Number                      | 62721 | 62722 |
|----------------------------------|-------|-------|
| Operating Stroke (in.)           | 1/2   | 1     |
| Operating Volume (cu. in.)       | 1.9   | 3.9   |
| Effective Piston Area (sq. in.)  | 3.9   | 3.9   |
| Minimum Operating Pressure (psi) | 100   | 100   |
| Maximum Operating Pressure (psi) | 5000  | 5000  |
| Maximum Output Force (lbs.)      | 19880 | 19880 |
| Weight (lbs.)                    | 5.0   | 6.5   |

## Intensifier Cylinders



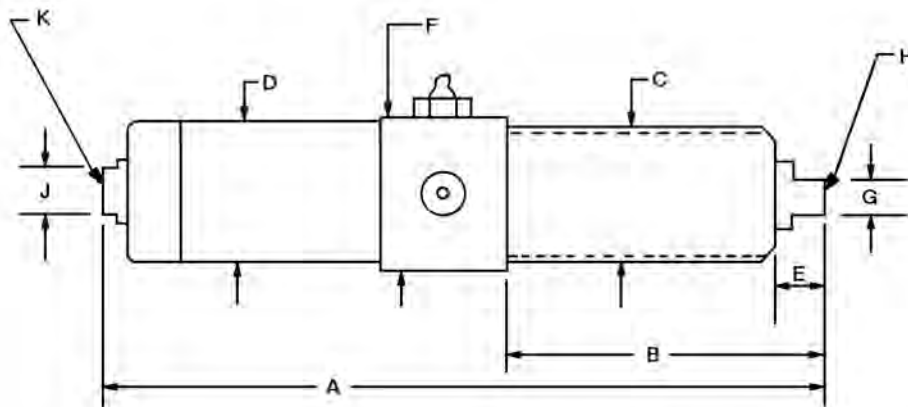
Intensifier Cylinders are combination air-hydraulic cylinders. An air powered cylinder is driven into a small oil reservoir which produces a nominal 8:1 or 30:1 power boost ratio, depending upon air pressure and the cylinder used. These miniature, self-contained power sources are ideal where fast action (100 operations per minute), a short stroke and high power are needed.

- 8:1 and 30:1 Boost Ratios
- Self-Contained
- Fast Acting
- Air Controlled
- Easy Recharge Without Disassembly
- Available in FixturePro™ Design Software

### Specifications

| Part Number                                     | 60596 | 60598 |
|-------------------------------------------------|-------|-------|
| Operating Stroke (in.)                          | 1/4   | 1/4   |
| Force (lbs.) at Inlet Air Pressure 125 psi Max. |       |       |
| 100 psi                                         | 700   | 2900  |
| 75 psi                                          | 450   | 2100  |
| 50 psi                                          | 250   | 1300  |
| 25 psi Min.                                     | 50    | 450   |
| Weight (lbs.)                                   | 2.2   | 4.5   |
| Ratio                                           | 8:1   | 30:1  |

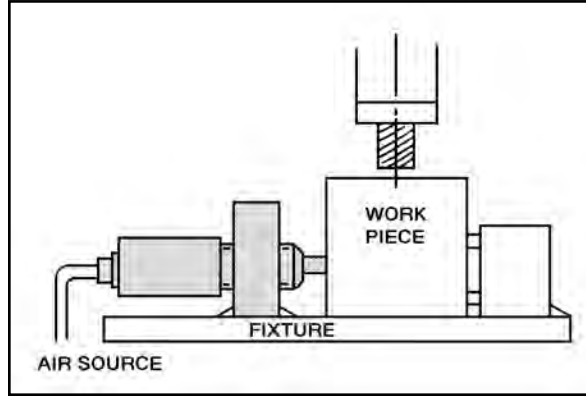
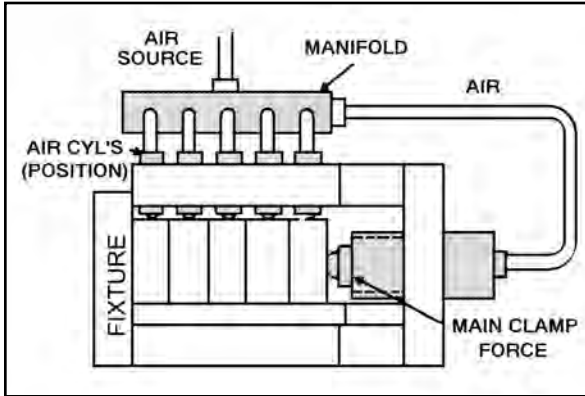
For Mounting Brackets see page 3.24.



### Dimensions

| Part Number | A      | B       | Thread C  | D     | E     | F     | Across Flats G | Tap H         | Across Flats J | Port K  |
|-------------|--------|---------|-----------|-------|-------|-------|----------------|---------------|----------------|---------|
| 60596       | 7 1/4  | 2 13/16 | 1 9/16-16 | 1 3/4 | 23/32 | 2     | 3/4            | 5/16-24 x 1/2 | 7/8            | 9/16-18 |
| 60598       | 9 5/16 | 3 15/16 | 1 7/8-16  | 2 1/2 | 23/32 | 2 1/2 | 3/4            | 5/16-24 x 1/2 | 7/8            | 9/16-18 |

## Intensifier Cylinder Applications

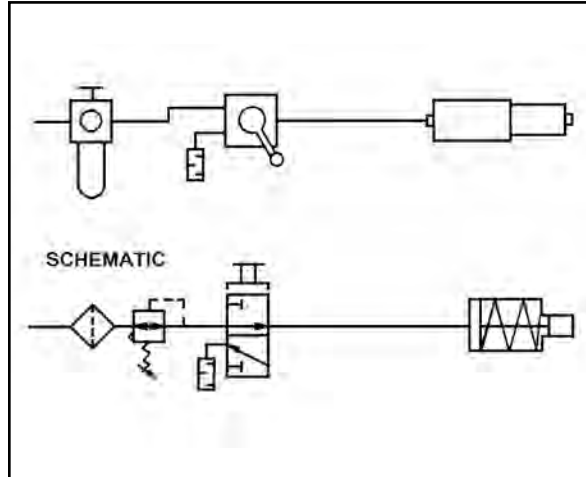
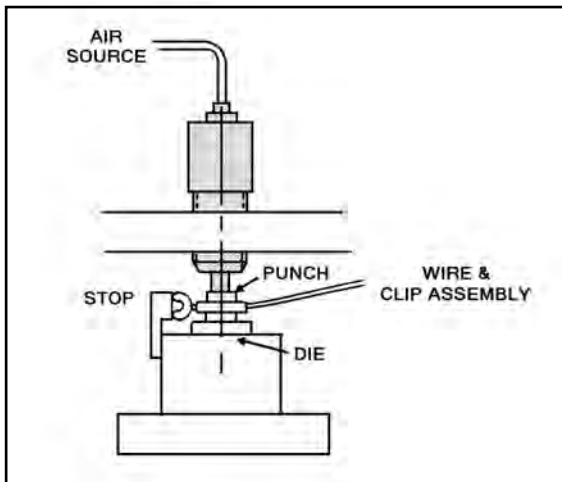


### Positioning

A series of plates are gang loaded into the fixture. Air operation of the intensifier assures fast and positive positioning of the plates, after which the multiple hydraulic cylinders are used to clamp.

### Clamping

Installed in a Jergens Mounting Bracket, the Intensifier Cylinder provides efficient, versatile, yet economical clamping.



### Crimping

The intensifiers may be installed at any attitude. Mounted in a vertical attitude (as shown), up to 1 1/2 tons of force is available for crimping, punching, or notching.

### Circuit Diagrams

A filter/regulator and a 3-way hand valve are all that is required to control an Intensifier Cylinder. Installation is as simple as an air cylinder but the resulting force is much greater.

## How to Design Your Own Hydraulic System

1. Calculate the force used to hold the workpiece during machining.  
To convert the torque applied to a fastener into holding force use the following formula:

$$P = \frac{T}{KD}$$

Where: P = Holding Force (lbs.)  
T = Torque (in. lbs.)  
D = Nominal Thread Diameter (in.)  
K = Friction Factor  
(K Varies with material, finish, and lubrication, .19 to .25)

Example: 1/2-13 bolt tightened to 30 ft. lbs  
(360 in. lbs.) provides 3600 lbs. of force.

$$P = \frac{360}{(.2 \times .5)} = 3600$$

2. Calculate the force required at each work unit.

$$\frac{\text{Total Force}}{\text{Number of work units}} = \text{Force per unit}$$

3. Select the style of work unit to be used at each location. Select units which can be easily mounted and will allow access for loading and unloading of the workpiece.
4. Compare the force required by each work unit with the maximum force available from the unit selected. If the required force is greater than the available force, substitute larger work units or increase the number of work units to be used.
5. Calculate the hydraulic pressure required to provide the force needed at each work unit. To determine pressure, divide the force required at the work unit by the effective piston area of the unit selected.

$$\frac{\text{Force}}{\text{Area}} = \text{Pressure}$$

The unit requiring the highest pressure determines the requirement for the entire system.

6. Determine the total volume of oil required to operate all of the work units (Volume = Piston Area x Stroke).  
Operating volume requirements for work units are listed in the specifications chart for the item.
7. Select a power source which will provide the required pressure, using the available air pressure. To determine if a power source will provide the required pressure from available air pressure, multiply the available air pressure by the boost ratio of the power source.

Example: (90 psi air pressure) (15:1 boost ratio) = 1350 psi hydraulic pressure

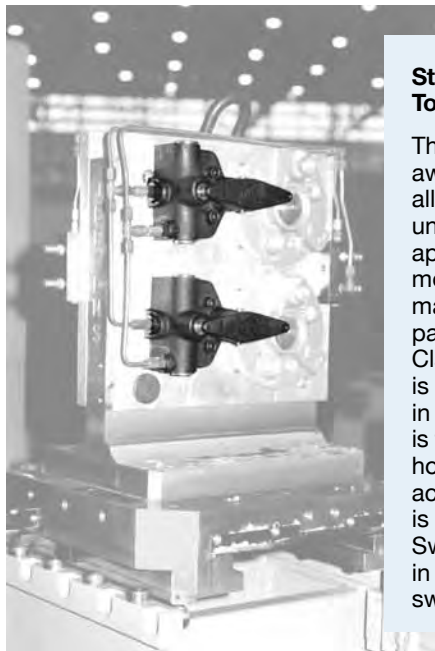
The power source must also provide the total volume of oil required by the system. When using a standard booster, the high pressure volume of the unit must exceed the system requirement.

8. If you need help, call Jergens Technical Sales at: 1-800-JERGENS (537-4367).



## Staylock Clamps

### Stays Mechanically Locked— Even When Disconnected from Hydraulic Pressure



#### StayLock Swing Clamp on a Tombstone Fixture

The Swing Clamp rotates 80° away from the workpiece, allowing easy loading and unloading of the part. In this application, the tombstone is mounted on a double pallet machining center. When the pallet rotates, the StayLock Clamp remains clamped. There is no need for an accumulator in the hydraulic system. Nor is there a chance of hydraulic hoses getting tangled or accidentally cut while the part is being machined. StayLock Swing Clamps are available in left-hand or right-hand swing styles.

StayLock Clamps ...the Hydraulic clamp with the mechanical advantage! With conventional power clamping, when pressure is put to the clamp, it clamps... take the pressure away (on purpose or not), it unclamps. With the StayLock Clamp's patented internal locking mechanism, hydraulic pressure is needed to clamp...and to unclamp!

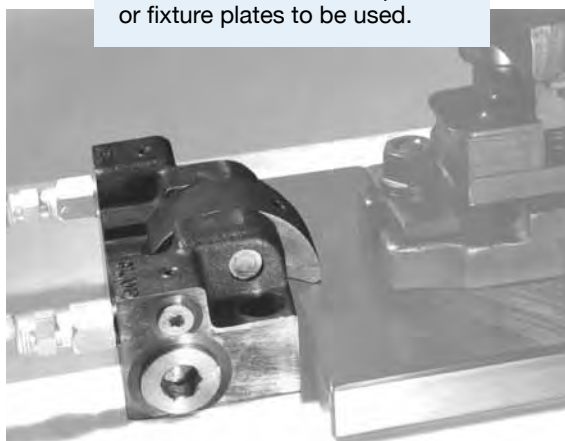
#### StayLock Rocker Clamp Holding a Die

The Rocker Clamp is ideal for quick change clamping on dies, molds, and fixture plates where a standard height subplate is employed. Because of the unique body design of the Rocker Clamp, it can easily be adapted with a T-slot nut mounted on the bottom. This enables the Rocker Clamp to slide in and out, making part removal easier, plus it allows for various widths of subplates or fixture plates to be used.

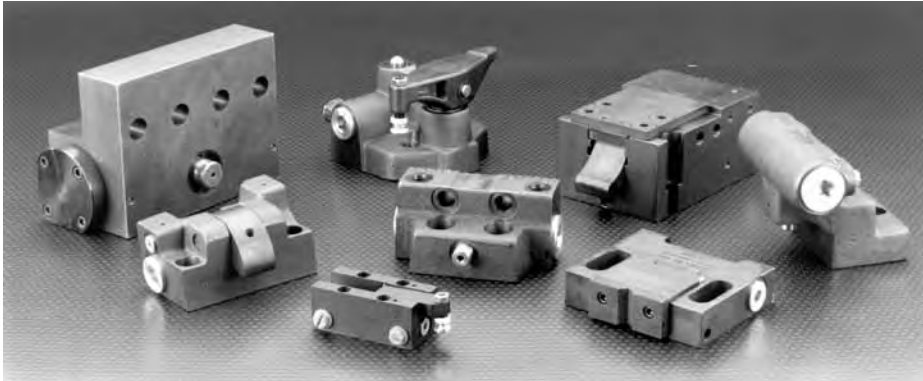


#### StayLock Block Clamp on a Tombstone

The Block Clamp is a multi-purpose utility clamp, utilized, as any StayLock Clamp can be, in either the horizontal or vertical clamping positions. In this application, the Block Clamp (at the top of the tombstone) is replacing step blocks and tedious manual clamping.



## Staylock Clamps



### Positive Mechanical Lock

Jergens StayLock Clamps offer a breakthrough in clamping flexibility! These mechanically locked clamps are activated and released by hydraulic pressure. Once activated, the clamps automatically lock and will not release until hydraulic pressure is applied to the release port.

#### Once clamped, you can:

- disconnect your hydraulic power source
- move the fixture, with the part still clamped, to other machines
- not worry about your part unclamping due to hydraulic power failure, a cut line, or leaks in the hydraulic system

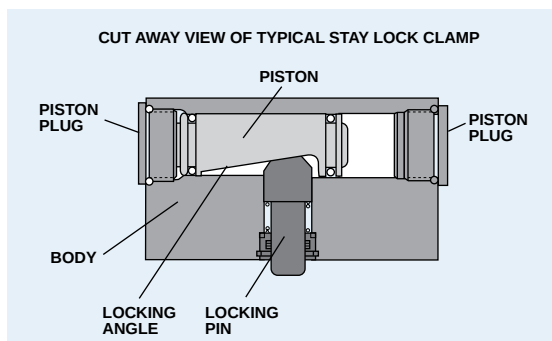
#### Patented positive mechanical lock minimizes:

- reclamping
- set-up costs
- parts accidentally becoming unclamped

Jergens StayLock Clamps can provide solutions to many clamping problems. They are designed for use on:

- palletized fixtures
- transfer machines
- machining centers
- any power clamping application
- quick change on molds and dies

Use the StayLock Clamps with Jergens Air-Operated Hydraulic Pumps (described on page 3.51-3.52). One Hydraulic Pump can service several machines because there is no need to maintain hydraulic pressure when clamping StayLock Clamps. Once StayLock Clamps are in a clamping position, the hydraulic hoses can be disconnected, and the part will remain clamped indefinitely. Once the machining cycle is completed, applying hydraulic pressure to the release port unclamps the part.



### Most Commonly Asked Questions

#### Q. Does the StayLock Clamp lose pressure?

- A. No, it does not. Because of a patented mechanical lock, a positive locking wedge is activated when pressure is applied to the clamp port. There is no need to maintain hydraulic pressure; therefore, the power source can be disconnected. There is no pressure to lose.

#### Q. How do I lock StayLock Clamps in place?

- A. Applying hydraulic pressure to the clamp port of a StayLock Clamp drives two internal wedges together. The two wedges form a mechanical lock and will not retract until hydraulic pressure is applied to the release port.

#### Q. Can these clamps be used with air?

- A. No. Air pressure does not apply enough force to lock or unlock the internal wedge mechanism.

#### Q. How much hydraulic pressure is needed to activate the clamps?

- A. The minimum pressure required on most of the StayLock Clamps is 500 psi. The minimum and maximum pressure requirements are specified for each clamp on the following pages.

#### Q. What is needed to set up a hydraulic system using StayLock Clamps?

- A. Typically, a system includes several clamps (depending on individual requirements); a power source; a four-way, three-position, zero-leakage control valve (see page 3.54); and hydraulic hose and fittings. There is no need for an accumulator in the system.

#### Q. Can an air/oil booster be used with StayLock Clamps?

- A. No. Boosters typically are used with standard hydraulic clamps because pressure is needed to activate and maintain the clamp in the clamping position. With a Booster set-up, there is only one hydraulic line that provides the pressure needed. StayLock Clamps need pressure to clamp and unclamp; therefore, a Booster would not provide the needed pressure to the release port to unclamp the part.

#### Q. Can I get technical assistance from Jergens when designing a StayLock Clamping system?

- A. Yes. Jergens will assist you by providing a CAD schematic drawing of your system, including all of the part numbers needed to order the system.

For assistance, call 1-800-JERGENS (537-4367).

## Staylock Clamps

## Die/Mold Clamps

Four models of Die/Mold Clamps are available. Part number 62801 provides 4000 lbs. of output pressure. It is only available in the T-Slot mounting style. The T-Slot mount allows the clamp to be mounted on a machine base via a T-Slot nut, thus allowing the clamp to slide to and from the workpiece. Part number 62802 provides 10,000 lbs. of clamping force. It employs standard mounting bolts for permanent mounting to the machine base, subplate, or fixture plate. Part number 62803 also provides 10,000 lbs. of clamping force. This clamp is provided with a Sensor Interlock which, when wired to a control panel, indicates

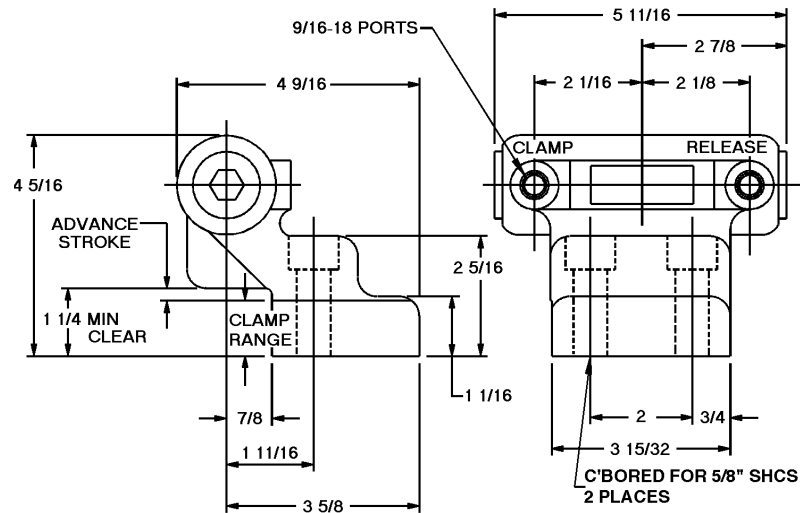
whether the clamp is locked or not. Sensor Interlocks are available as an accessory for part numbers 62801 and 62802. Part number 62804 is similar to part number 62802, except it has a greater clamping range. It does not have mounting holes for the Sensor Interlock. Die/Mold Clamps are available with Viton® seals for high temperature applications.

Ideal for:

- Injection molding machines
- Die casting machines
- Punch presses
- Machining centers



U.S. Patents:  
 No. 4,511,127  
 No. 4,471,293



Part Number

62802

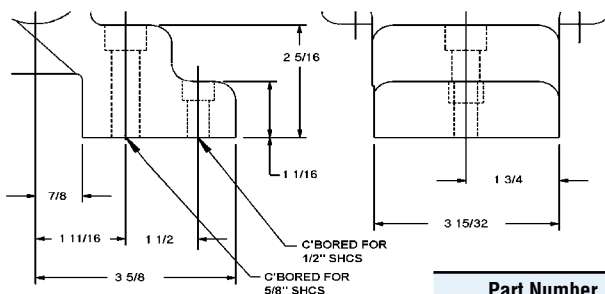
Part Number

62803 with Sensor Interlock

## Specifications

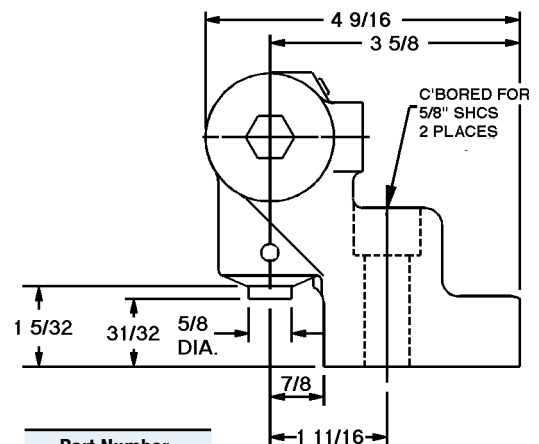
| Part Number                  | 62801    | 62802    | 62803    | 62804    |
|------------------------------|----------|----------|----------|----------|
| Operating Volume (cu. in.)   | 1        | 1        | 1        | 1        |
| Min Operating Pressure (psi) | 500      | 500      | 500      | 500      |
| Max Operating Pressure (psi) | 2000     | 5000     | 5000     | 5000     |
| Force to Pressure Ratio      | 2:1      | 2:1      | 2:1      | 2:1      |
| Clamping Range (in.)         | 1.03/.95 | 1.03/.95 | 1.03/.95 | 1.15/.97 |
| Max Output Force (lbs)       | 4000     | 10000    | 10000    | 10000    |
| Weight (lbs)                 | 9.5      | 9.5      | 9.5      | 9.5      |

- Available in FixturePro™ Design Software



Part Number

62801 T-Slot Style



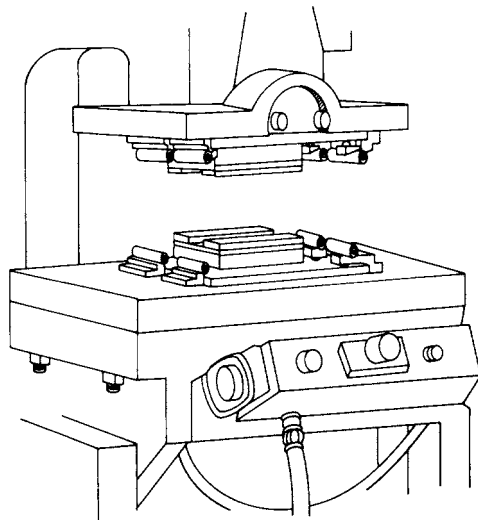
Part Number

62804

## Staylock Clamps

### Die/Mold StayLock® Clamp Applications

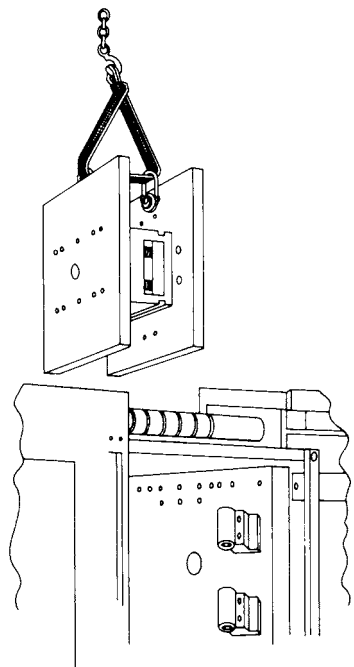
#### Punch Press



The Die/Mold Clamp is mounted (either permanently, or by using T-Slots) on the injection molding machine platen. The mold is mounted on subplates. By standardizing on subplates with the same height and width, several different molds can be used on one injection molding machine. The mold is lowered into the machine, the Die/Mold Clamps are activated, hydraulic connections are removed, and the job is run. A Sensor Interlock can be added to indicate to the operator that the Die/Mold Clamp is clamping. If molds are used that have a clamping slot, either a StayLock Retractable Clamp or a StayLock Rocker Clamp can be used. Die/Mold Clamps are mounted on the Punch Press table either permanently or by using T-Slots. The top and bottom dies are slid into place, hydraulic connections are removed and the job is run.

At changeover time, the hydraulic quick disconnect fittings are reconnected, the die is removed and replaced with the next die, and the process is repeated. In some applications on punch presses, the Die/Mold Clamp may create a shut height problem. If this is the case, the StayLock Rocker Clamp is an excellent substitute.

#### Injection Molding Press



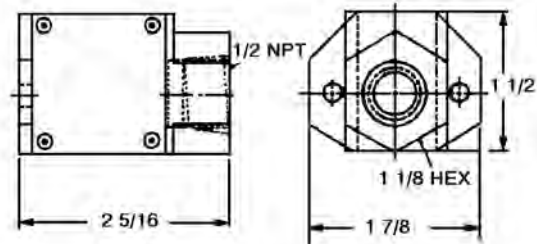
## Sensor Interlock



- Available in FixturePro™ Design Software

The Sensor Interlock (62816) can be mounted on the Die/Mold Clamp and is used to indicate that the clamping piston is engaged or disengaged. Because of the minimal movement of the clamping piston, some applications may require more than a visual method of determining if the Die/Mold Clamp is in the clamping position. The Sensor Interlock is a normally open, 110 volt, 6 amp switch. It is supplied with a six foot long wire and mounting hardware to mount in the control panel of a machine. The switch contacts on the Sensor Interlock will only close when the clamping piston is within the clamping range of the Die/Mold Clamp. It is included with Part Number 62803.

| Part Number |
|-------------|
| 62816       |



## Staylock Clamps

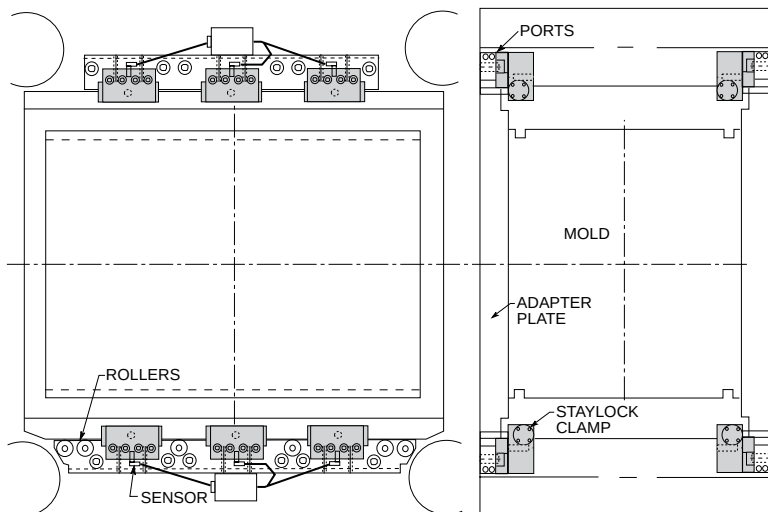
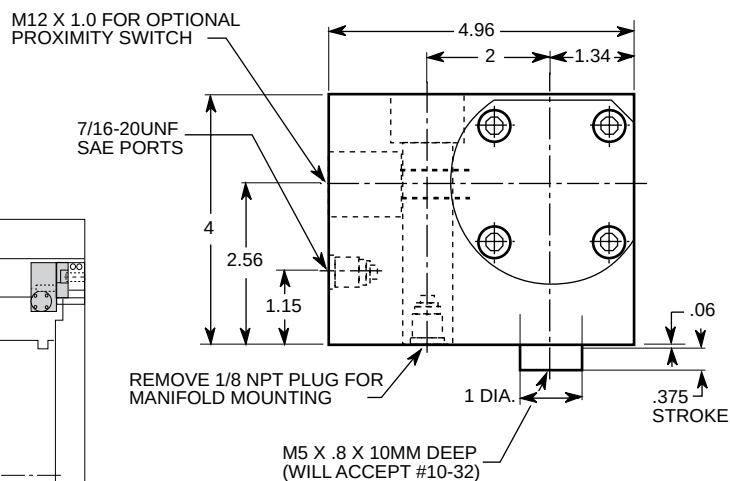
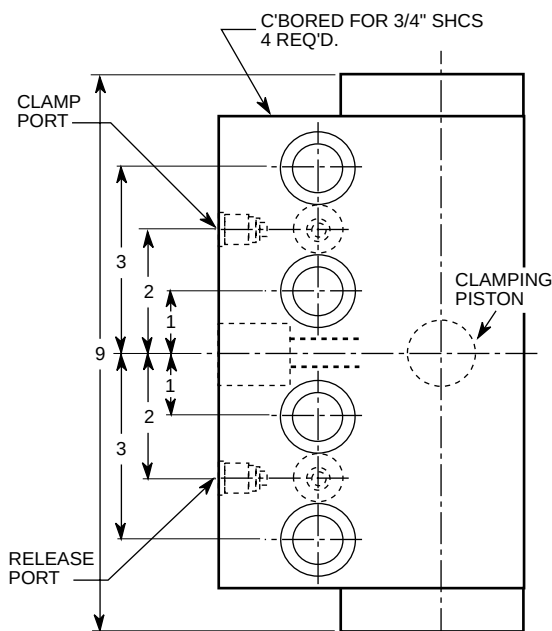
### Large Capacity Mold Clamp



#### Specifications

| Part Number                      | 62806  |
|----------------------------------|--------|
| Operating Volume (cu. in.)       | 7      |
| Minimum Operating Pressure (psi) | 500    |
| Maximum Operating Pressure (psi) | 3500   |
| Force to Pressure Ratio          | 8:1    |
| Clamping Stroke                  | .38    |
| Maximum Output Force (lbs.)      | 28,000 |
| Weight (lbs.)                    | 43     |

The Jergens Large Capacity Mold Clamp is used on molding machines and wherever heavy clamping forces are required. It has a clamping force of 28,000 lbs. The clamp can be mounted either individually or in series on a manifold.



**Typical StayLock Manifold Layout on Injection Molding Machine**



**Part Number**  
**62817**

#### Proximity Switch

The Proximity Switch indicates the clamp's piston position. A single switch is required for each Large Capacity Clamp. Stainless steel construction with 16' cord, 10-30 VDC.



## Staylock Clamps

### Retractable Clamps



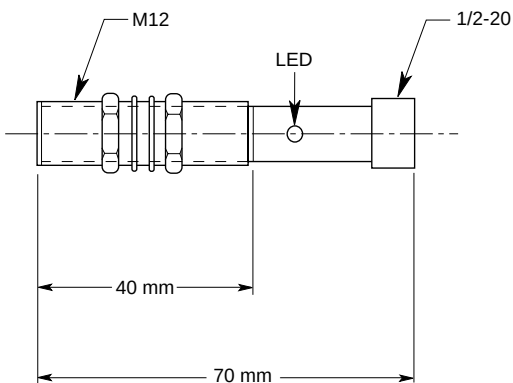
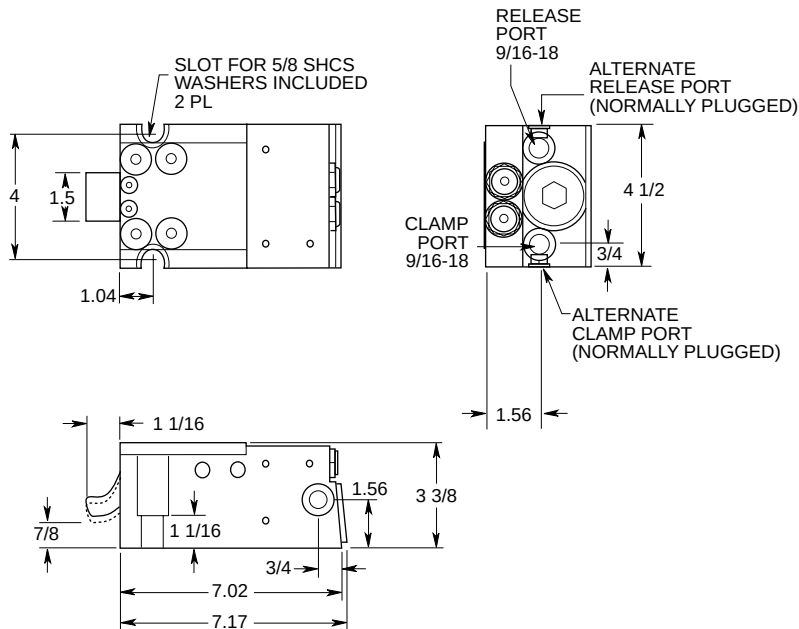
U.S. Patents:  
No. 4,511,127  
No. 4,471,293

Jergens StayLock Retractable Clamps are designed to allow quick change of molds in injection molding machines and die casting machines. The locking arm, which retracts into the clamp body for easy loading and unloading of a mold, is adaptable to clamp many standard mold slots. The Retractable Clamp is double acting and includes alternate clamp and release ports for easier hydraulic plumbing set-up. A Proximity Switch, which indicates the Retractable Clamp is in the extended or retracted position, is also available (see below).

**High temperature version available, contact Technical Sales for more information**

### Specifications

| Part Number                              | 62852 |
|------------------------------------------|-------|
| Operating Volume (in <sup>3</sup> )      | 1.6   |
| Minimum Operating Pressure (psi)         | 500   |
| Maximum Operating Pressure (psi)         | 2500  |
| Force to Pressure Ratio                  | 2:1   |
| Clamping Stroke                          | .13   |
| Maximum Output Force (lbs.) @ 2500 (psi) | 5000  |
| Weight (lbs.)                            | 23    |



Part Number  
**62857**

### Proximity Switch

The Proximity Switch senses the position of the clamping arm within the Retractable Clamp. Two Proximity Switches are required for each clamp. They have a stainless steel housing and are mounted in the Retractable Clamp. One Switch senses the arm extended; the other, the arm retracted. A sixteen foot cord is included with each Proximity Switch, 35-250 VAC.

## Staylock Clamps

## Rocker Clamps



Part Number  
**62841**

U.S. Patents:  
No. 4,511,127  
No. 4,471,293



Part Number  
**62842**

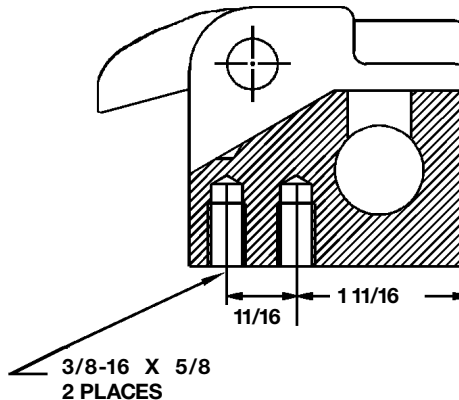
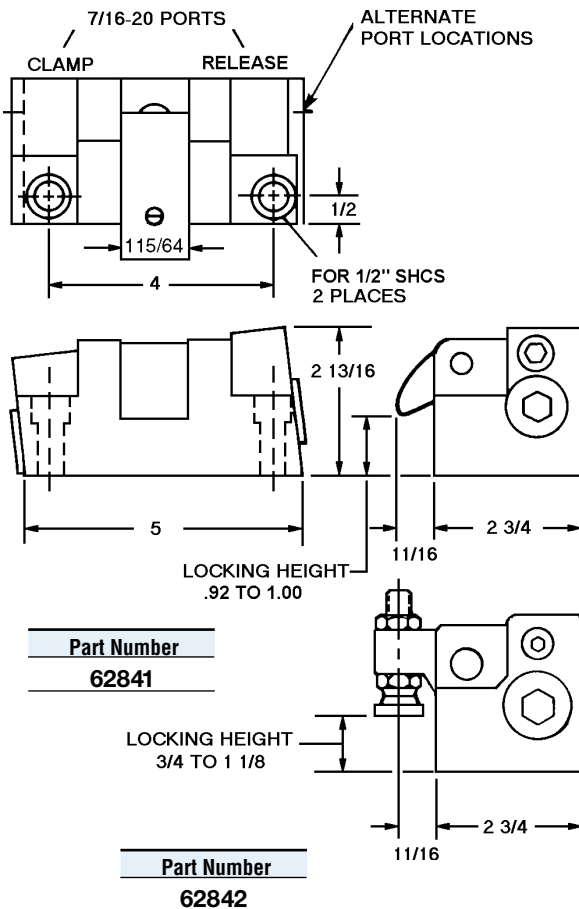
Compact design and dual mounting capability make the Jergens StayLock Rocker Clamp versatile for many applications. The Rocker Clamps come in two styles. Part number 62841 is typically used with standard height subplates upon which the die, mold, or fixture plate is mounted. Part number 62842 has an adjustable spindle which adapts to the height of the workpiece. Both styles of Rocker Clamps have drilled and tapped holes on the bottom of the clamp for mounting T-Slot nuts for use on slotted tables. This method of mounting allows the operator to slide the clamp to and from the workpiece for easier part loading and unloading. Bolt down mounting holes are also provided. For mounting applications, contact the Jergens Technical Sales Department. Ideal for:

- Holding dies on punch presses
- Molds on injection molding machines
- Dies on die casting machines
- Use on hydraulic fixtures
- Available in FixturePro™ Design Software

### Specifications

| Part Number                            | 62841       | 62842 |
|----------------------------------------|-------------|-------|
| Operating Volume (cu. in.)             | .67         | .67   |
| Minimum Operating Pressure (psi)       | 500         | 500   |
| Maximum Operating Pressure (psi)       | 2,000       | 2,000 |
| Force to Pressure Ratio                | 1.9:1       | 1.9:1 |
| Clamping Range (in.)                   | .92 to 1.00 | .10*  |
| Maximum Output Force (lbs.) @2,000 psi | 3,800       | 3,800 |
| Weight (lbs.)                          | 7.5         | 7.6   |

\*After adjustment for height.



Mounting holes for T-Slot applications.

## Staylock Clamps

### Mini-Rocker Clamps



The StayLock Mini-Rocker Clamp is designed for small parts workholding. Like the other StayLock Clamps, the Mini-Rocker can be mounted at any angle. Clamping forces range from 200 lbs. to 700 lbs. The Mini-Rocker can be used as a single clamp; or because of its unique port arrangement, it can be manifold mounted.



#### Socket Toggle Screw

Part Number  
**33302**

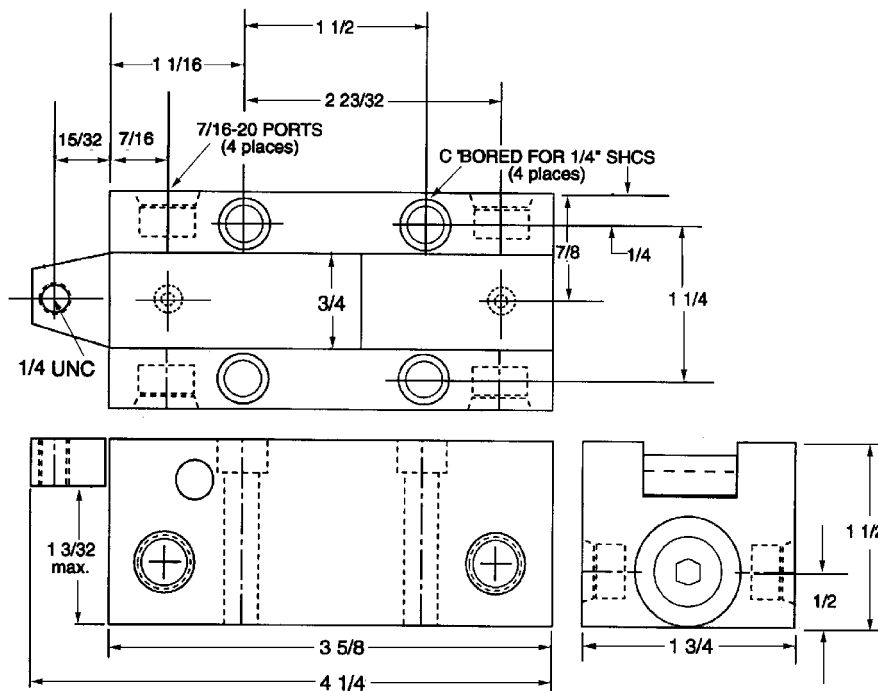
Set Screw/Jam Nut not included  
See Page 6.16



#### Optional Toggle Pad (Shown in picture)

Part Number  
**43502**

See Page 6.17



### Specifications

| Part Number                      | 62845*  | 62846** |
|----------------------------------|---------|---------|
| Operating Volume (cu. in.)       | .08     | .08     |
| Minimum Operating Pressure (psi) | 500     | 500     |
| Maximum Operating Pressure (psi) | 3,500   | 3,500   |
| Force to Pressure Ratio          | .2:1    | .2:1    |
| Clamping Range                   | .09     | .09     |
| Clamping Force @ 3500 psi        | 700 lbs | 700 lbs |
| Clamping Force @ 1000 psi        | 200 lbs | 200 lbs |
| Weight (lbs.)                    | 2.1     | 2.1     |

\* Includes four plugs & two O-Rings, SAE style, for manifold mounting

\*\* Includes two plugs

## Staylock Clamps

## Block Clamps



Jergens StayLock Block Clamps are multi-purpose utility clamps designed for many versatile applications. Block Clamps may be mounted for either vertical or horizontal clamping. They may be used with strap clamps or similar workholding devices for maximum adaptability (see illustration below). The Block Clamp plunger has a 1/4 - 28 thread on the I.D. for use with various contact points.

- Available in FixturePro™ Design Software

U.S. Patents:  
 No. 4,511,127  
 No. 4,471,293

### Specifications

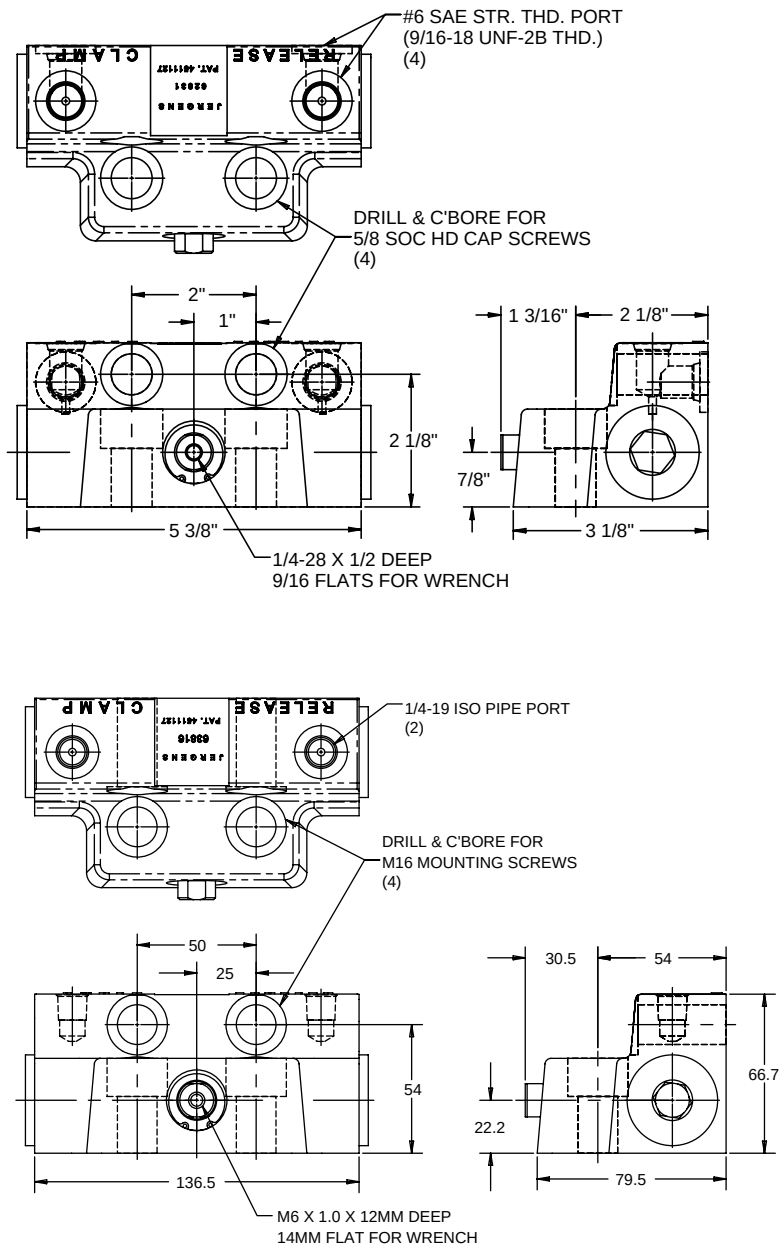
### Inch

| Part Number                             | 62831  |
|-----------------------------------------|--------|
| Operating Volume (cu. in.)              | 1.1    |
| Minimum Operating Pressure (psi)        | 500    |
| Maximum Operating Pressure (psi)        | 5,000  |
| Force to Pressure Ratio                 | 2:1    |
| Clamping Stroke (in.)                   | .18    |
| Maximum Output Force (lbs.) @ 5,000 psi | 10,000 |
| Weight (lbs.)                           | 6.5    |

### Specifications

### Metric

| Part Number                                          | 63816  |
|------------------------------------------------------|--------|
| Operating Volume (cu. cm)                            | 18     |
| Minimum Operating Pressure (kg/cm <sup>2</sup> )     | 14     |
| Maximum Operating Pressure (kg/cm <sup>2</sup> )     | 350    |
| Force to Pressure Ratio                              | 12.8:1 |
| Clamping Stroke (mm)                                 | 4.7    |
| Maximum Output Force (kg) @ 351(kg/cm <sup>2</sup> ) | 4,500  |
| Weight (kg)                                          | 2.93   |



## Staylock Clamps Toe Clamps



Low Toe Style

| Part Number |
|-------------|
| 62811       |

U.S. Patents:  
No. 4,511,127  
No. 4,471,293

### Specifications

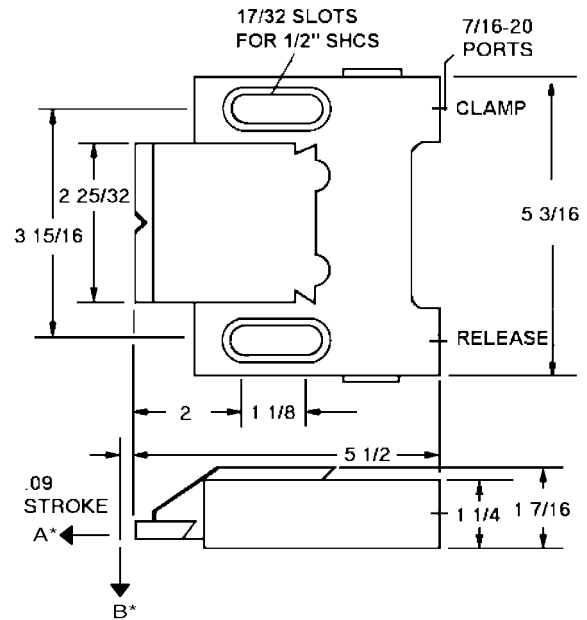
|                                        |             |
|----------------------------------------|-------------|
| Part Number                            | 62811       |
| Part Number                            | 62812       |
| Operating Volume (cu. in.)             | .5          |
| Minimum Operating Pressure (psi)       | 500         |
| Maximum Operating Pressure (psi)       | 3,000       |
| Hydraulic Force in Pounds              |             |
| Pressure (psi)                         | A* B*       |
| 1,500                                  | 1,200 800   |
| 3,000                                  | 2,500 1,800 |
| Clamping Stroke                        | .09         |
| Maximum Output Force (lbs.) @3,000 psi | 2,500       |
| Weight (lbs.)                          | 6.7         |

- Two special washers which prevent damage by the cap screws are included with each toe clamp. To order washers separately, order Part Number 60636.
- Toe is moved back by spring.
- Available in FixturePro™ Design Software



High Toe Style

| Part Number |
|-------------|
| 62812       |

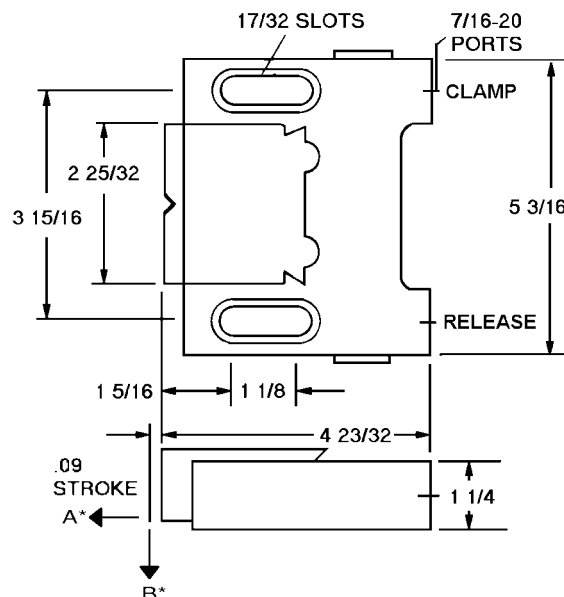


Jergens StayLock Toe Clamps are designed for edge gripping of parts when the clamp height must be kept at a minimum, such as in a milling operation. They are available in Low Toe (62811) or High Toe (62812) styles.

Toe Clamps provide two directional clamping forces: one pushes the work-piece against a positive stop, the other pushes it down against the table or fixture. A brass or steel insert is available on the low toe style Toe Clamp. The inserts must be ordered separately.

**IMPORTANT: Jergens 62811 Toe Clamp is supplied without toe insert. Please order one of the inserts below.**

| Part Number | Insert |
|-------------|--------|
| 60633       | Steel  |
| 60632       | Brass  |





## Staylock Clamps

## Swing Clamps (Metric)



U.S. Patents:  
 No. 4,511,127  
 No. 4,471,293

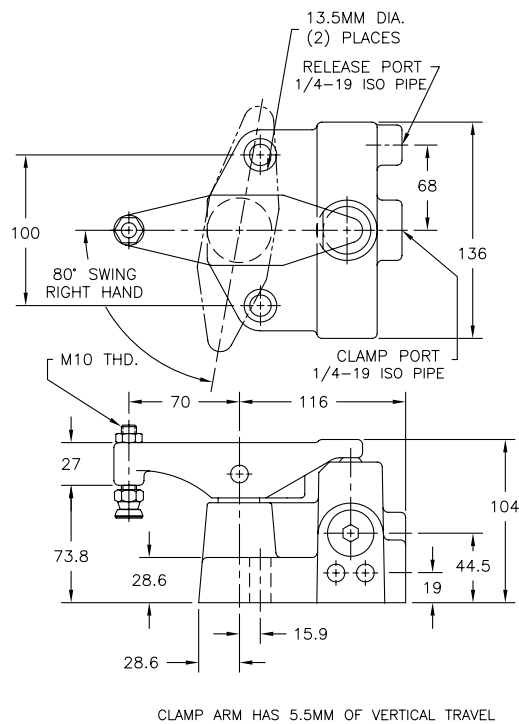
### Specifications

|                                          |              |
|------------------------------------------|--------------|
| <b>Part Number (Right Swing)</b>         | <b>63801</b> |
| <b>Part Number (Left Swing)</b>          | <b>63802</b> |
| Operating Volume (cm <sup>3</sup> )      | 20.5         |
| Minimum Operating Pressure (bar)         | 6*/7         |
| Maximum Operating Pressure (bar)         | 200          |
| Force to Pressure Ratio                  | 8.5:1        |
| Clamping Stroke (mm)                     | 5.5          |
| Maximum Output Force (kN) @ 200 bar      | 18           |
| Effective Piston Area (cm <sup>2</sup> ) | 8.6          |
| Weight (kg)                              | 5.5          |

\*5.4 bar to swing, 7 bar to clamp.

Jergens StayLock Swing Clamps are designed to be used when accessible loading and unloading of a workpiece is required. The clamping arm rotates 80° away from the workpiece. The Swing Clamp operates in any position and is sealed so it can be used with coolant applications.

Important: When using the High Volume Air-Powered Hydraulic Pumps (61761 and 61762), the Flow Limit Valve (shown below) must be used to limit the flow of hydraulic oil going to the clamp port of the Swing Clamp. This will extend the life of the clamp by minimizing the clamp arm from slamming into the clamping position.

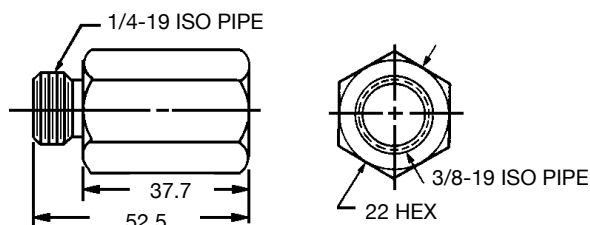


The Flow Limit Valve restricts the flow of oil to dampen the rotating action of the Swing Clamp. It is recommended that the Flow Limit Valve be used with the High Volume Air-Powered Hydraulic Pump (61761 or 61762). It is not needed with the lower volume "Shoebox" Pumps (61755 or 61756).

## Flow Limit Valves



|                    |
|--------------------|
| <b>Part Number</b> |
| <b>63603</b>       |



• Available in FixturePro™ Design Software

## Staylock Clamps

### Swing Clamps



U.S. Patents:  
No. 4,511,127  
No. 4,471,293

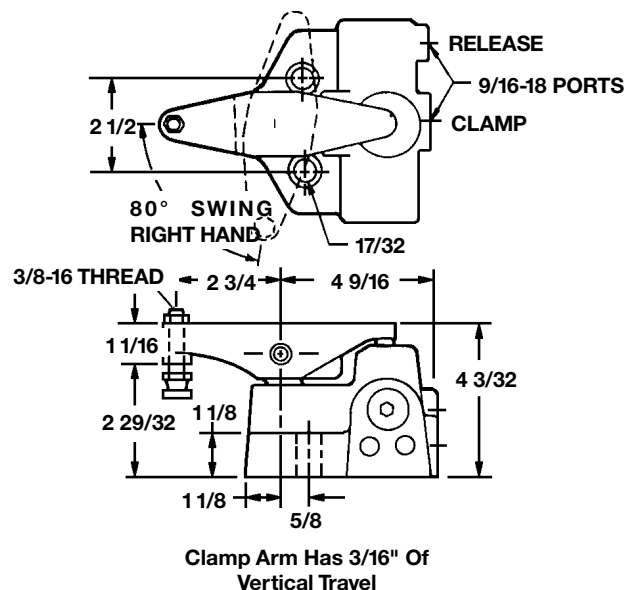
#### Specifications

|                                         |         |
|-----------------------------------------|---------|
| Part Number (Right Swing)               | 62823   |
| Part Number (Left Swing)                | 62824   |
| Operating Volume (cu. in.)              | 1       |
| Minimum Operating Pressure (psi)        | 80*/300 |
| Maximum Operating Pressure (psi)        | 3,000   |
| Force to Pressure Ratio                 | 1.3:1   |
| Clamping Stroke (in.)                   | .18     |
| Maximum Output Force (lbs.) @ 3,000 psi | 3,900   |
| Weight (lbs.)                           | 11      |

\*80 psi to swing, 300 psi to clamp.

Jergens StayLock Swing Clamps are designed to be used when accessible loading and unloading of a workpiece is required. The clamping arm rotates 80° away from the workpiece. The Swing Clamp operates in any position and is sealed so it can be used with coolant applications.

Important: When using the High Volume Air-Powered Hydraulic Pumps (61761 and 61762), the Flow Limit Valve (shown below) must be used to limit the flow of hydraulic oil going to the clamp port of the Swing Clamp. This will extend the life of the clamp by minimizing the clamp arm from slamming into the clamping position.

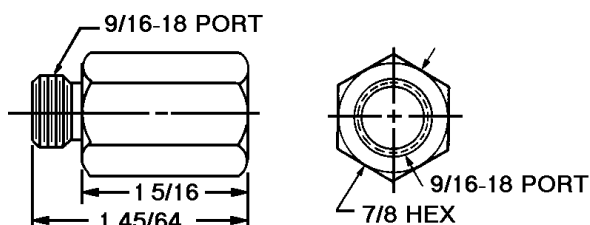


The Flow Limit Valve restricts the flow of oil to dampen the rotating action of the Swing Clamp. It is recommended that the Flow Limit Valve be used with the High Volume Air-Powered Hydraulic Pump (61761 or 61762). It is not needed with the lower volume "Shoebox" Pumps (61755 or 61756).

## Flow Limit Valves



Part Number  
61648



• Available in FixturePro™ Design Software

## Pre-Fill Boosters



- Self Bleeding
- Easy View Reservoir
- 15:1, 30:1, and 54:1 Boost Ratios

These units offer many more advantages than conventional boosters, while maintaining the same basic simplicity. The pre-fill booster has two automatic cycles. The first cycle pre-fills the work circuit using low pressure with a large reservoir to provide volume. The second cycle then automatically provides high pressure, as needed. These units also provide automatic bleeding of the work circuit. This self-bleeding feature negates the need to “bleed the lines” after it is set up.

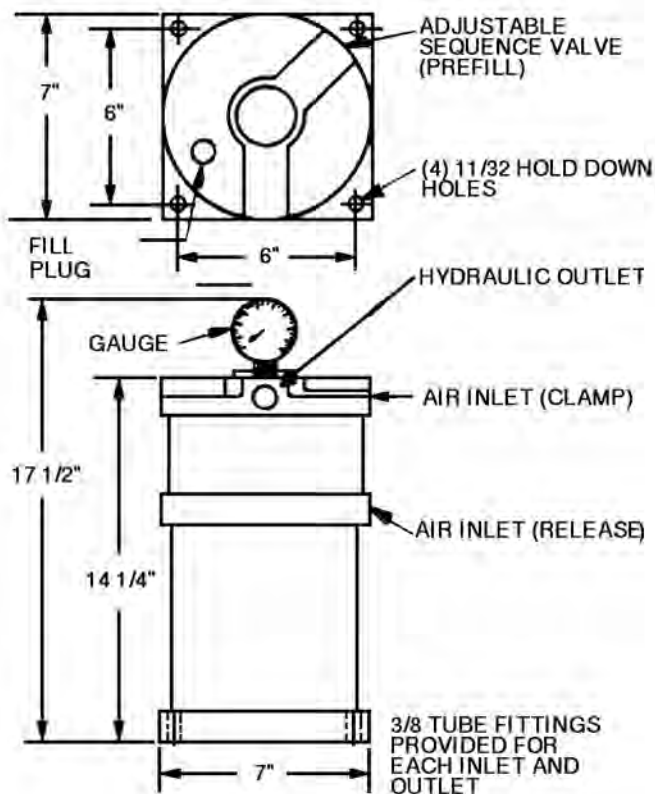
The pre-fill booster is ideal for any general use production system requiring maximum efficiency with minimum effort! Pre-fill boosters must be used in the upright (vertical) position.

- Installation Kits Available. See Page 3.48.
- See page 3.45 for Rapid Exhaust and Rapid Advance Kits, Handles, and Mounting Bases.

Patent No. 3839866

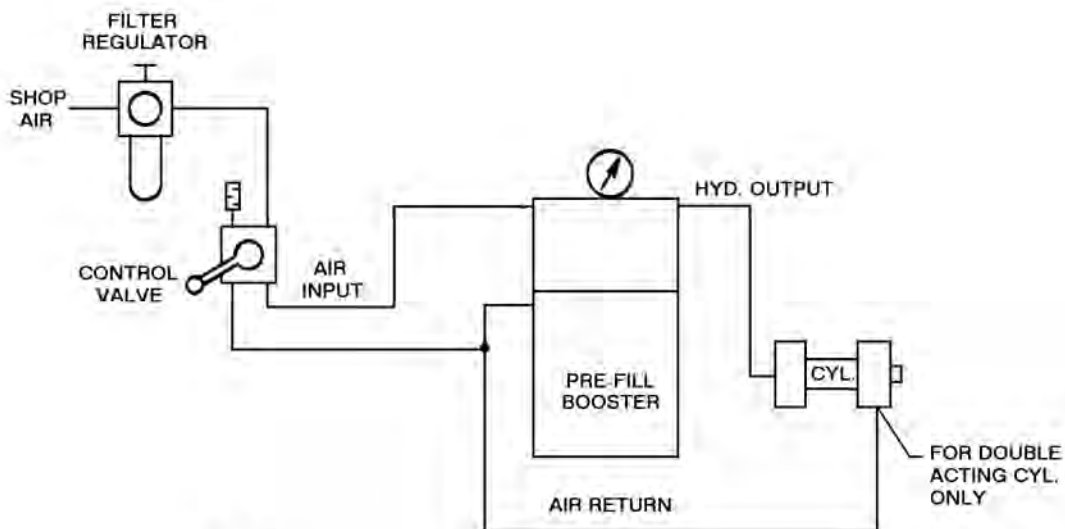
### Specifications

| Part Number                    | 61704 | 61705 | 61706 |
|--------------------------------|-------|-------|-------|
| Reservoir Capacity (cu. in.)   | 50    | 50    | 55    |
| High Pressure Volume (cu. in.) | 7 1/2 | 3 3/4 | 2     |
| Minimum Input (psi)            | 40    | 40    | 40    |
| Maximum Input (psi)            | 125   | 125   | 75    |
| Boost Ratio                    | 15:1  | 30:1  | 55:1  |
| Maximum Output (psi)           | 1875  | 3750  | 4100  |
| Weight (lbs.)                  | 28    | 28    | 28    |

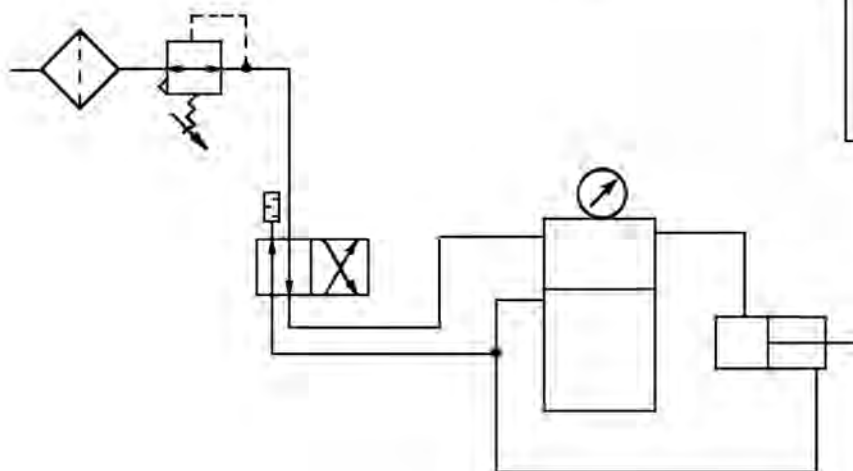


## Boosters Circuit Diagrams

Graphic

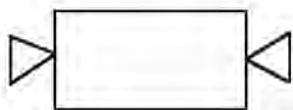


Schematic



## Accessories

### Rapid Exhaust and Advance Kits



**Rapid  
Exhaust  
Part  
Number**

**62214**

**Rapid  
Advance  
Part  
Number**

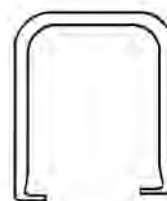
**62215**

These kits include everything needed to convert a standard Pre-Fill Booster to high speed operation. Fittings, pre-bent tubing, and the quick exhaust valve are included.

**Valve Only**

**61641**

### Handle



**Part  
Number**

**62621**

Convert your Pre-Fill Booster to a portable power source. The 62621 handle is for use when the hydraulic gage is mounted on the top of the booster.

## Standard Boosters



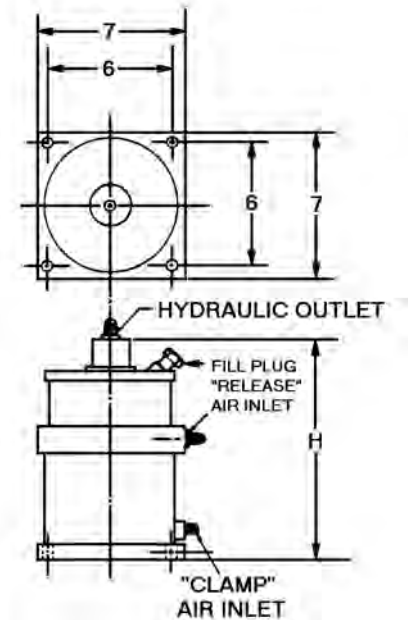
Standard Boosters are ideal for permanent fixtures, special machines or O.E.M. applications.

The volume of oil available to operate the work circuit depends upon the high pressure capacity of the booster. Work circuits using standard boosters require manual bleeding.

- Easy to view reservoir
- 15:1 and 30:1 boost ratios
- May be mounted vertically or horizontally

### Specifications

| Part Number                    | 61709   | 61710   | 61711   |
|--------------------------------|---------|---------|---------|
| Reservoir Capacity (cu. in.)   | 15      | 15      | 18      |
| High Pressure Volume (cu. in.) | 4       | 7 1/2   | 3 3/4   |
| Minimum Input (psi)            | 20      | 20      | 20      |
| Maximum Input (psi)            | 125     | 125     | 125     |
| Boost Ratio                    | 15:1    | 15:1    | 30:1    |
| Maximum Output (psi)           | 1875    | 1875    | 3750    |
| Weight (lbs.)                  | 20      | 24      | 22      |
| Height (H)                     | 10 7/16 | 14 7/16 | 14 7/16 |



3/8" TUBE FITTING PROVIDED FOR EACH INLET AND OUTLET PORT.

## Accessories

### Mounting Bases



Part  
Number

60973

### Rapid Exhaust Kit



Part  
Number

62215

Installation Kits  
See Page  
3.48

Base 60973 can be used to mount Jergens Boosters 61709 thru 61711 in a horizontal position.

The Rapid Exhaust Kit includes a valve, muffler, and fittings needed to convert Booster numbers 61709 thru 61711 to high speed operation.

Valve Only

61641

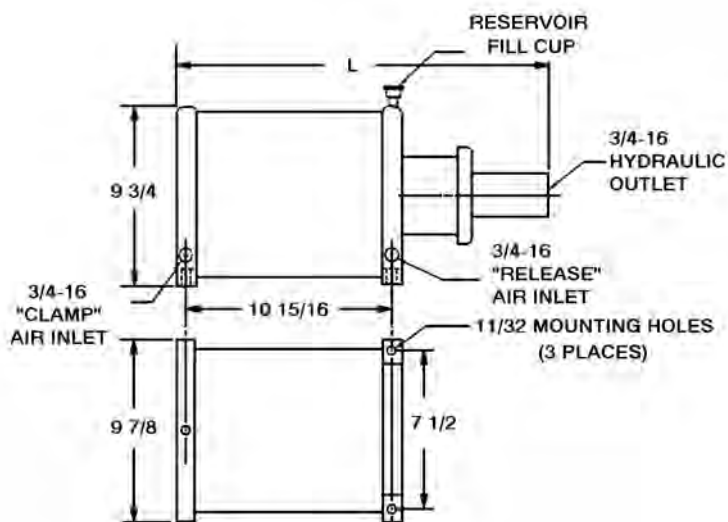


## High Pressure/Volume Boosters



- Available in 26:1, 37:1, and 64:1 boost ratios.
- High output pressure
- High pressure volume

Unit must be used only  
in the **horizontal position**

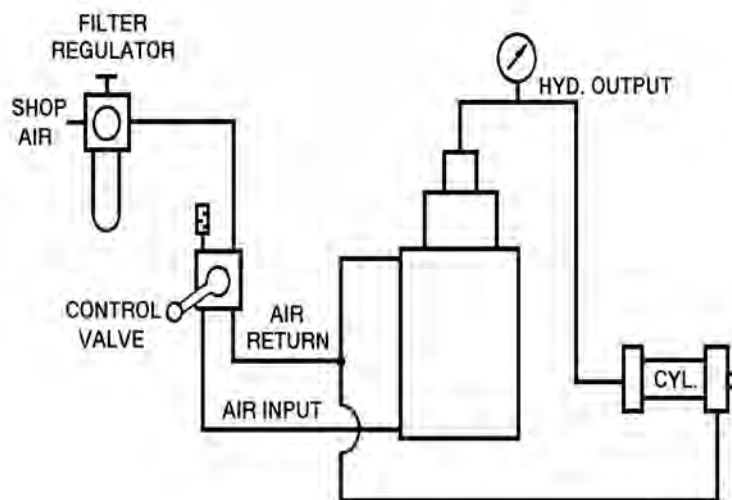


### Specifications

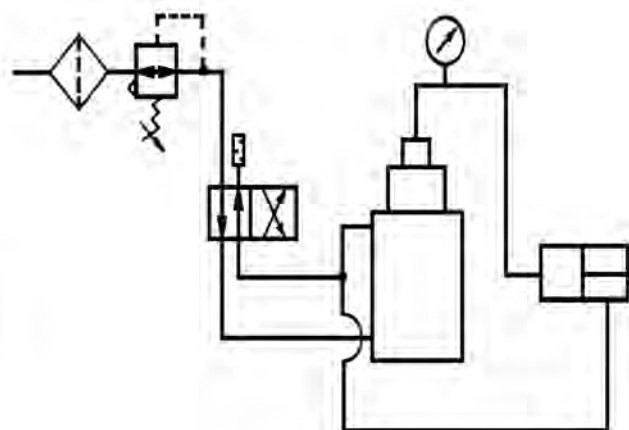
| Part Number                    | 61720    | 61721  | 61722  |
|--------------------------------|----------|--------|--------|
| Reservoir Capacity (cu. in.)   | 17       | 17     | 17     |
| High pressure Volume (cu. in.) | 12.9     | 9.1    | 5.3    |
| Minimum Input (psi)            | 10       | 10     | 10     |
| Maximum Input (psi)            | 125      | 125    | 125    |
| Boost Ratio                    | 26:1     | 37:1   | 64:1   |
| Maximum Output (psi)           | 3250     | 4625   | 8000   |
| Length (L)                     | 19 11/16 | 19 5/8 | 19 1/2 |
| Weight (lbs.)                  | 28       | 28     | 28     |

## Circuit Diagrams

### GRAPHIC



### SCHEMATIC



## Boosters Installation Kits

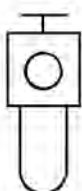
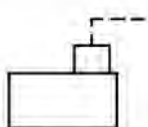
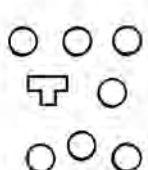
Jergens offers four kits to simplify the installation of your Jergens booster. The kits may be used with any Jergens booster.

**62203** — This kit is recommended for most applications. The kit includes everything needed to connect your air line to the booster and everything needed to connect the booster to your fixture.

**62204** — This kit should be used when the protection of a pilot check valve is not required, as in punching or staking applications.

**62205** — This kit is the same as kit 62203 except the hand valve has been eliminated. Use this kit when the system will be activated by a foot valve, solenoid or pilot operated valve.

**62206** — This kit should be used for punching or other applications where no check valve is required and the system will be activated by a foot valve.

|                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |  |  |  |  |
| Filter/<br>Regulator<br>61617<br>(1)                                             | 4-Way<br>Hand<br>Valve<br>61615<br>(2)                                            | Muffler<br>62613<br>(3)                                                           | Air<br>Hose<br>(18 Ft.)<br>61108<br>(4)                                           | Pilot<br>Check<br>Valve<br>61629<br>(5)                                           | Hydraulic<br>Hose<br>(6 Ft.)<br>61205<br>(6)                                      | Quick<br>Disconnect<br>Couplings<br>61915<br>61965<br>(7)                           | Fittings<br>as<br>Req'd.<br>(8)                                                     |
| See Page 3.57                                                                    | See Page 3.58                                                                     | See Page 3.57                                                                     | See Page 3.68                                                                     | See Page 3.62                                                                     | See Page 3.68                                                                     | See Page 3.68                                                                       |                                                                                     |

### Selection Data

| Part Number  | Items Included In Kit  |
|--------------|------------------------|
| <b>62203</b> | 1, 2, 3, 4, 5, 6, 7, 8 |
| <b>62204</b> | 1, 2, 3, 4, 6, 7, 8    |
| <b>62205</b> | 1, 3, 4, 5, 6, 7, 8    |
| <b>62206</b> | 1, 3, 4, 6, 8          |

Jergens recommends the use of a gage kit with any standard booster.



### Gage Kit

| Part Number  | PSI       |
|--------------|-----------|
| <b>60711</b> | 3000 psi  |
| <b>60712</b> | 6000 psi  |
| <b>60713</b> | 10000 psi |

## 3 SECOND Clamping Kit



To simplify the installation of Jergens power clamps, Jergens offers its 3 SECOND Clamping Kit. The Kits contain everything required to convert your shop air pressure to hydraulic power for your clamping fixture.

**61717** — This kit contains a 61711 booster, control valve, gage, hoses and fittings. This kit should be used for fixtures which will remain on a machine for long periods of time, such as a vise on a milling machine.

**61719** — This kit contains a 61705 booster, control valve, filter-regulator, pilot check valve, quick disconnects and all hose and fittings required. This kit should be used on machines where the fixture changes frequently. The 61705 booster eliminates the need to bleed each fixture after it is connected. To change the fixture, simply switch the hydraulic hose from one fixture to the other using quick disconnect fittings.

### Selection Data

| Part Number  | Included in Kit |                        |
|--------------|-----------------|------------------------|
|              | Booster         | Accessories*           |
| <b>61717</b> | <b>61711</b>    | 2, 3, 4, 6, 8, 9       |
| <b>61719</b> | <b>61705</b>    | 1, 2, 3, 4, 5, 6, 7, 8 |
| <b>61716</b> | <b>61710</b>    | 2, 3, 4, 6, 8, 9       |
| <b>61718</b> | <b>61704</b>    | 1, 2, 3, 4, 5, 6, 7, 8 |

\*As shown on page 3.44.

## Pre-Fill Power Pacs



Jergens Pre-Fill Power Pacs provide a complete portable power source. Everything required to power and control your hydraulic fixture is included. Connect your shop air to the filter/regulator, and your fixture to the hydraulic hose. The self bleeding feature and the hydraulic quick disconnects (provided) make these units the ideal power sources for job shops and production lines.

- Completely Assembled
- Self Contained
- Portable
- Self Bleeding
- Fast Set-Up

### Selection Data

| Part Number  | Included In Power Pac |                     |
|--------------|-----------------------|---------------------|
|              | Booster               | Accessories*        |
| <b>61714</b> | <b>61704</b>          | 1, 2, 3, 5, 6, 7, 8 |
| <b>61715</b> | <b>61705</b>          | 1, 2, 3, 5, 6, 7, 8 |

\*As shown on page 3.44.

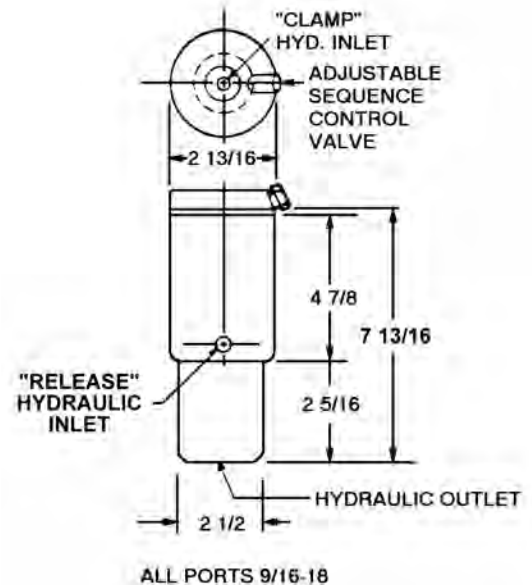
## Hydraulic Intensifier



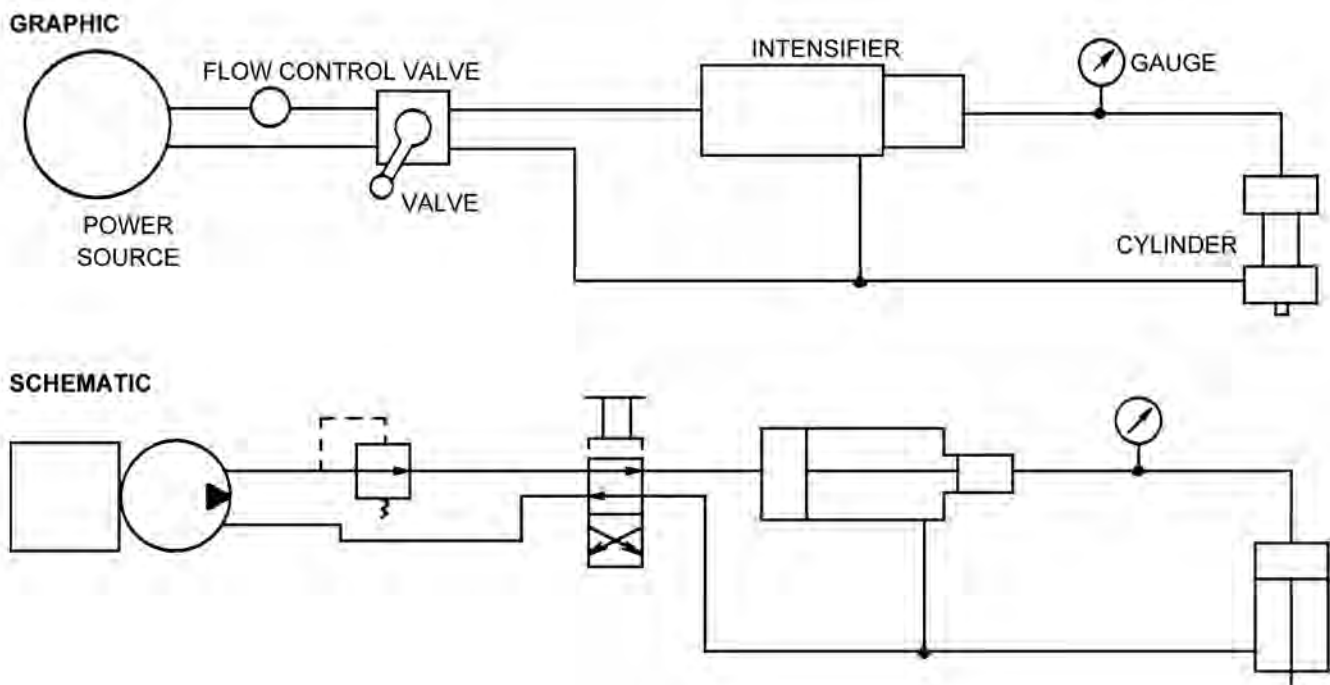
This unit is designed to be used on any machine tool with its own hydraulic system where higher pressures are needed. Jergens Intensifiers will pre-fill your circuit at approximately 200 psi maximum. Once the Intensifier sequences over to its high pressure mode, it will deliver one cubic inch of working oil at seven times the input pressure.

### Specifications

| Part Number                    | 61701  |
|--------------------------------|--------|
| High Pressure Volume (cu. in.) | 1      |
| Minimum Input (psi)            | 50     |
| Maximum Input (psi)            | 710    |
| Boost Ratio                    | 7:1    |
| Maximum Output (psi)           | 5000   |
| Prefill (psi) Adjustments      | 50-200 |
| Weight (lbs.)                  | 4.4    |



## Circuit Diagrams



## Air-Powered Hydraulic Pumps

### Shoebox™ Pumps



The “Shoebox” Pump is a low cost, compact unit used on smaller hydraulic circuits. Its small size offers the versatility of mounting on wheels (such as a workcart) and moving the pump from workstation to workstation. Like the High Volume Pump, this pump allows independent control of multiple workstations.

### Specifications

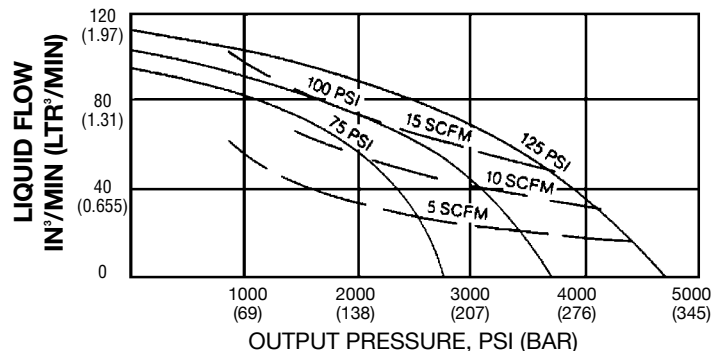
| Part Number                 | 61755 | 61756 |
|-----------------------------|-------|-------|
| Reservoir Capacity (cu.in.) | 300   | 300   |
| Minimum Input (psi)         | 25    | 25    |
| Maximum Input (psi)         | 125   | 85    |
| Boost Ratio                 | 36:1  | 71:1  |
| Maximum Output              | 4500  | 6000  |
| Free Flow (psi)             |       |       |
| @100 psi (cu.in./min.)      | 100   | 50    |
| Weight (lbs.)               | 24    | 24    |

A ten cubic inch accumulator (Part Number 62601) is available to increase the clamping speed if needed. Contact our Technical Sales Department for details.

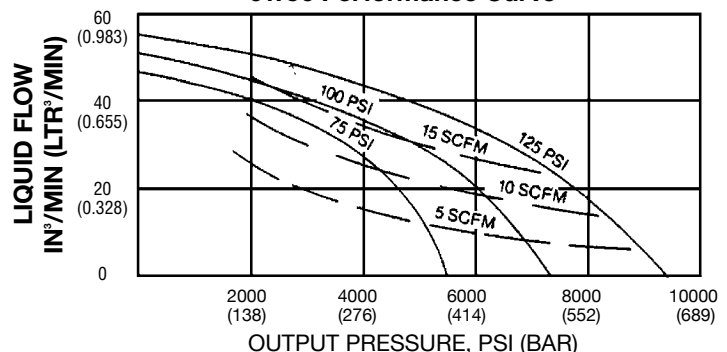
Jergens Air-Powered Hydraulic Pumps are used as a power source to activate Hydraulic Clamps. Shop air is introduced into the Filter/Regulator and converted to hydraulic pressure. These pumps are available in two styles: the High Volume Pump (61761 and 61762) with Boost Ratios of 20:1 and 50:1 and the standard, more compact “shoebox” pump (61755 and 61756) with Boost Ratios of 36:1 and 71:1. The Air-Powered Hydraulic Pumps are easy to use, energy efficient, versatile and affordable. They are completely self-contained and do not require any external reservoirs or motors.

**NOTE:** See page 3.54 for Valve and Subplate options.

**61755 Performance Curve\***



**61756 Performance Curve\***



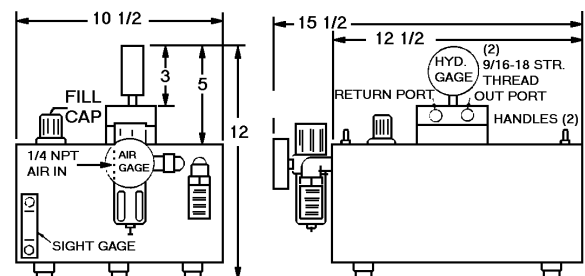
\* Air Drive Pressure (SOLID Lines) /  
Air Drive Flow (DASHED Lines)

### Pump Kits

The 61757 Pump Kit includes a 61755 Pump (36:1 Ratio), a 61642 Four-Way, Zero-Leakage Valve, a 61647 Subplate, and a 60703 gauge (6000 psi). The valve, subplate and gauge are supplied mounted on the pump.

The 61758 Pump Kit includes a 61756 Pump (71:1 Ratio), a 61642 Four-Way, Zero-Leakage Valve, a 61647 Subplate, and a 60706 gauge (10,000 psi). The valve, subplate and gauge are supplied mounted on the pump.

| Part Number 61757 includes:               | Part Number 61758 includes:               |
|-------------------------------------------|-------------------------------------------|
| <b>61755</b> 36:1 Pump                    | <b>61756</b> 71:1 Pump                    |
| <b>61642</b> Four-way, zero-leakage valve | <b>61642</b> Four-way, zero-leakage valve |
| <b>61647</b> Subplate                     | <b>61647</b> Subplate                     |
| <b>60703</b> 6000 psi gauge               | <b>60706</b> 10,000 psi gauge             |





## Air-Powered Hydraulic Pumps

### Breadbox™ Pumps



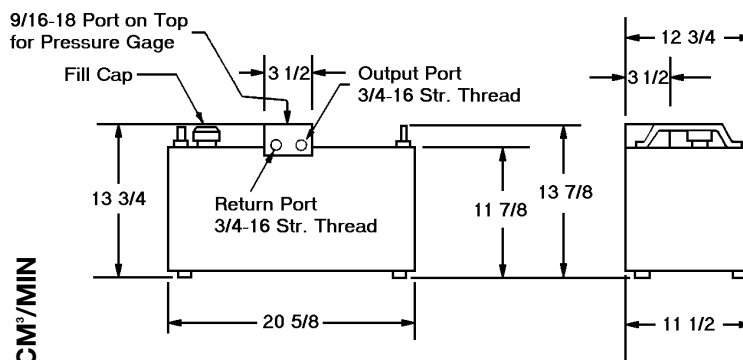
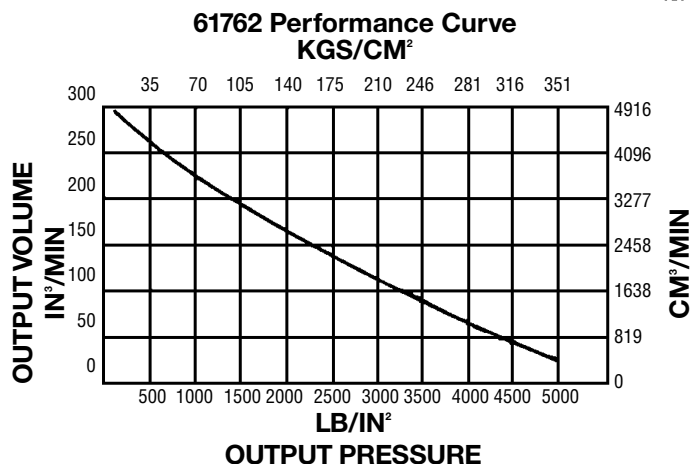
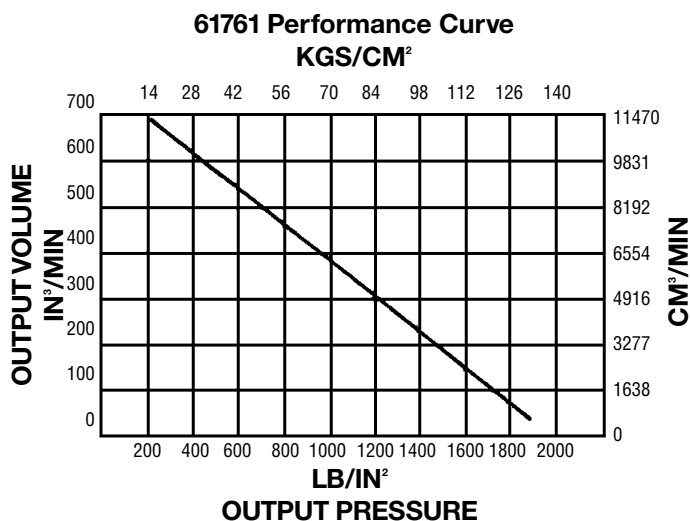
#### High Volume Air-Powered Hydraulic Pump

The Jergens High Volume Air-Powered Hydraulic Pump converts standard and accessible low pressure shop air to hydraulic pressure up to 5000 psi. These pumps offer large reservoir capacities and allow independent control of multiple work stations. They are designed to provide high volume output throughout the pump's entire pressure range.

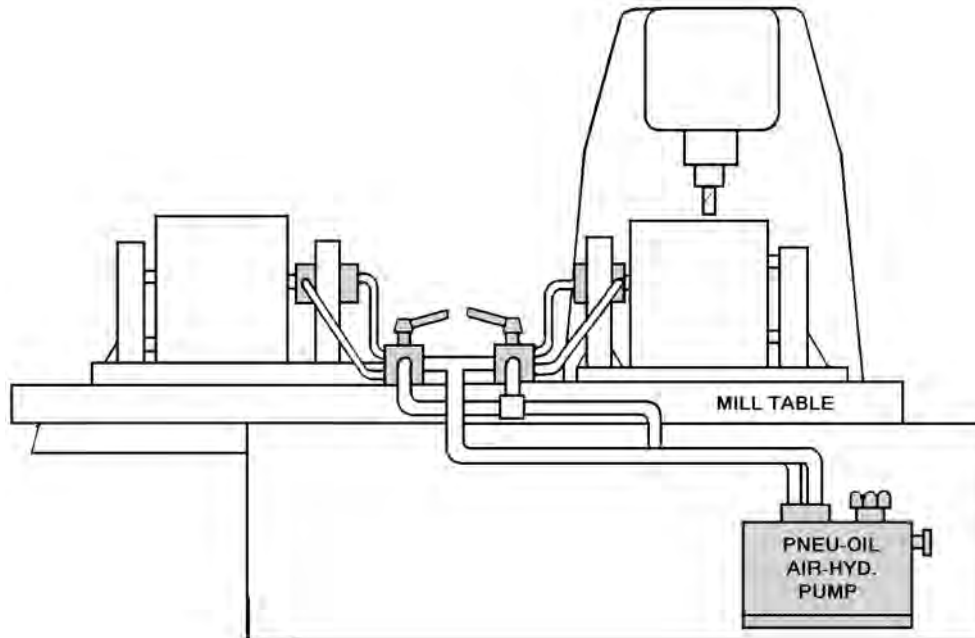
#### Specifications

| Part Number                          | 61761 | 61762 |
|--------------------------------------|-------|-------|
| Reservoir Capacity (cu.in.)          | 440   | 440   |
| Minimum Input (psi)                  | 40    | 40    |
| Maximum Input (psi)                  | 125   | 100   |
| Boost Ratio                          | 20:1  | 50:1  |
| Maximum Output (psi)                 | 2500  | 5000  |
| Free Flow<br>@ 100 psi (cu.in./min.) | 700   | 300   |
| Weight (lbs)                         | 100   | 100   |

A ten cubic inch accumulator (Part Number 62601) is available to increase the clamping speed if needed. Contact our Technical Sales Department for details.

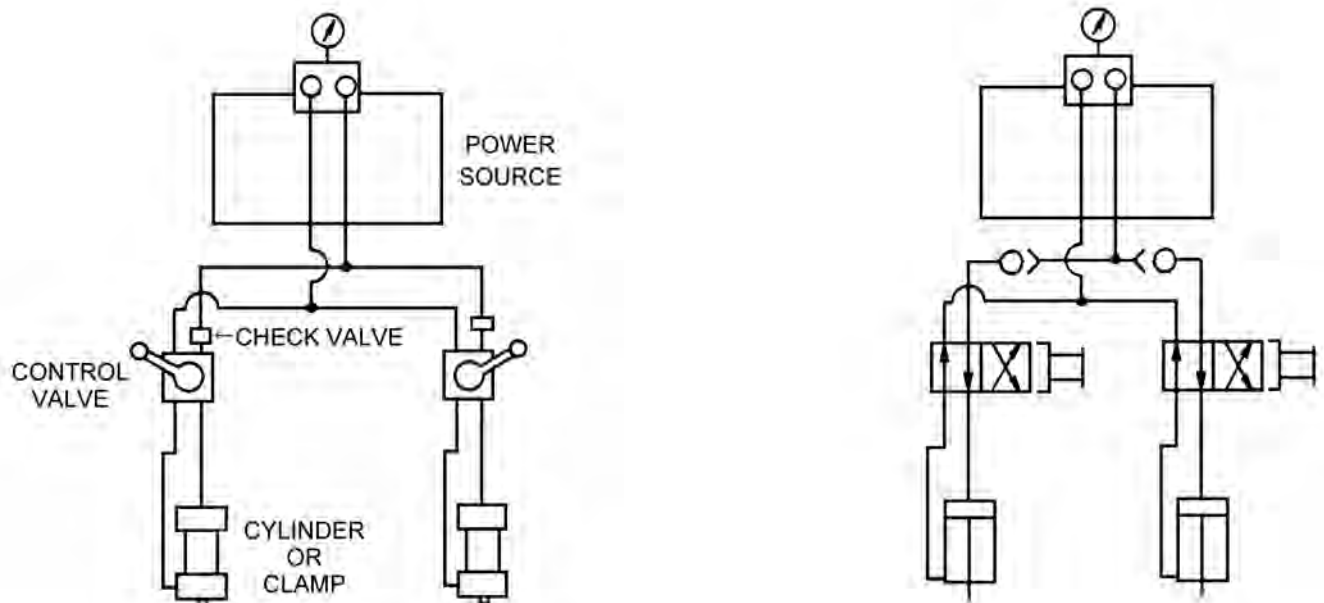


## Typical Hydraulic Circuit Application



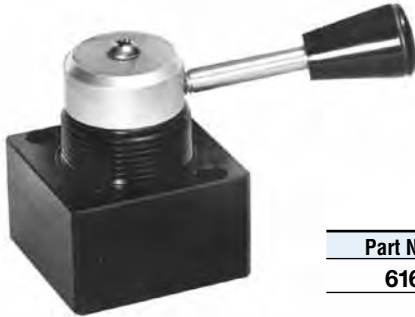
Typical Installation — Two Station Milling Operation

## Circuit Diagram



## Valves and Subplates for Air Powered Hydraulic Pumps

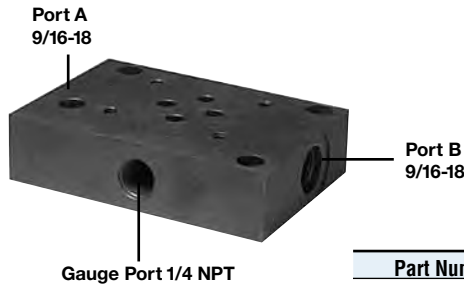
### Zero-Leakage Valve



|             |
|-------------|
| Part Number |
| 61642       |

For inline applications, use the 61642 Valve mounted on a 61646 Subplate (Order Part Number 61643). This set-up is also recommended for use with High Volume Air-Powered Hydraulic Pumps (61761, 61762) in StayLock and standard applications. For D03 manifold mounting, directly on the pump, the 61647 Subplate and 61642 Valve are recommended. Because the Jergens Air-Powered Hydraulic Pump provides only the necessary hydraulic pressure to clamp and unclamp the StayLock Clamps, the Four-Way, Zero-Leakage Valve is recommended to prevent the unnecessary running of the pump, thus minimizing pump maintenance and wear.

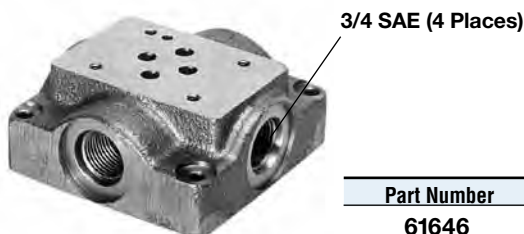
### Subplate for Shoebox Pump



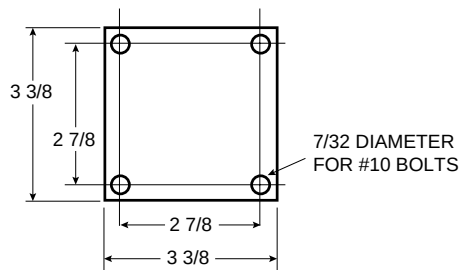
|             |
|-------------|
| Part Number |
| 61647       |

- For 61642 (D03 Pad)

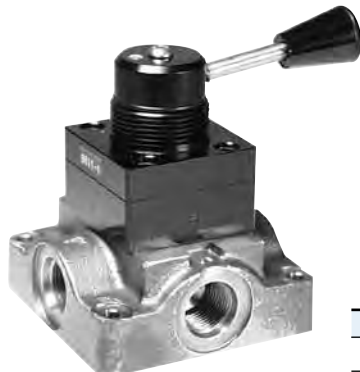
### Inline Subplate



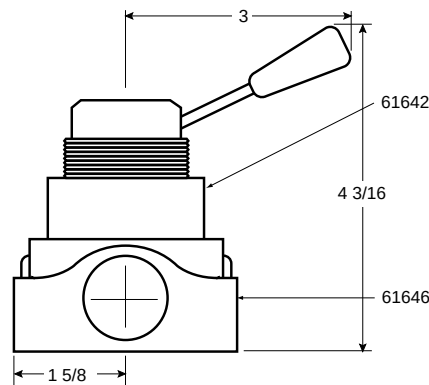
|             |
|-------------|
| Part Number |
| 61646       |



### Valve and Inline Subplate Assembly



|             |
|-------------|
| Part Number |
| 61643       |



## Manual Pumps Lever Type

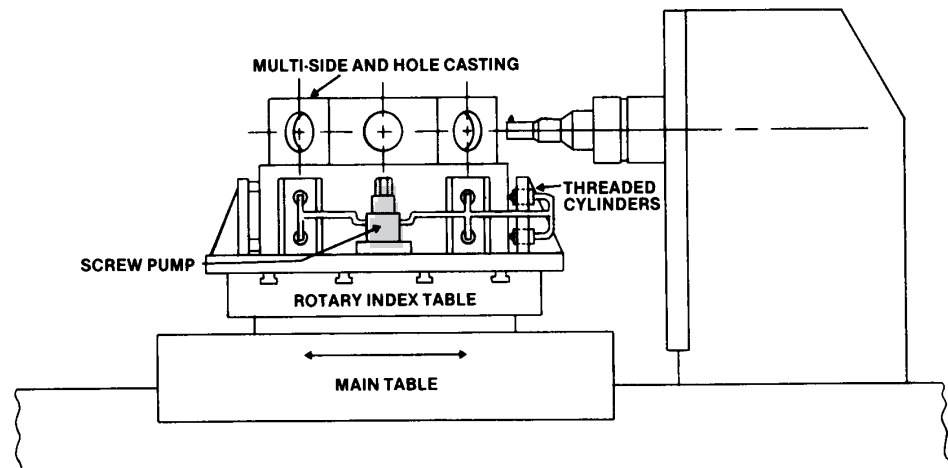


These units offer greater versatility than screw pumps. The pumps have a built-in reservoir check valve and control. Single and two stage models are available. Applications are the same as for the screw pump but allow for larger circuits. Circuits require manual bleeding.

### Specifications

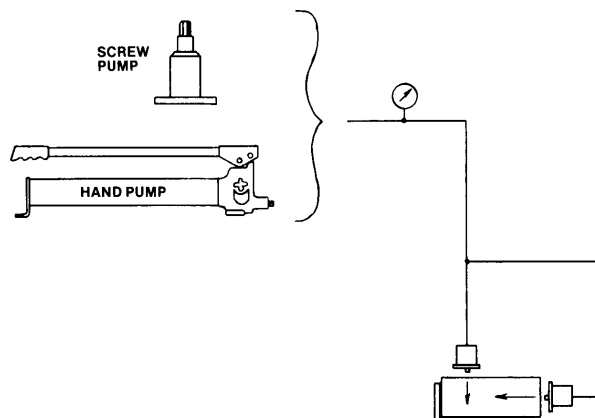
| Pump Model No. | Usable Oil Cap (Cu. In.) | Max. Working Pressure (psi) | Pump Plunger Dia. (in.) | Pump Plunger Stroke (in.) | Pump Plunger Displacement (cu. in.) | Pump Delivery (Cu. In./Min.) | Low-Speed By-Pass Pressure (psi) | High-Speed By-Pass Pressure (psi) | Pipe Thread Conn. (in.) | Handle Length (in.) | Length (in.) | Width (in.) | Height (in.) | Weight (lbs) |
|----------------|--------------------------|-----------------------------|-------------------------|---------------------------|-------------------------------------|------------------------------|----------------------------------|-----------------------------------|-------------------------|---------------------|--------------|-------------|--------------|--------------|
| 61736          | 45                       | 10000                       | 1/2                     | 1                         | .19                                 | 3.6                          | 10500                            | -                                 | 3/8 NPTF                | 20                  | 24 1/2       | 5 1/2       | 6 1/4        | 16           |
| 61737          | 143                      | 10000                       | 1/2                     | 1                         | .19                                 | 3.6                          | 10500                            | 300                               | 3/8 NPTF                | 20                  | 23 5/16      | 7           | 7 3/8        | 29           |

## Manual Pumps Application

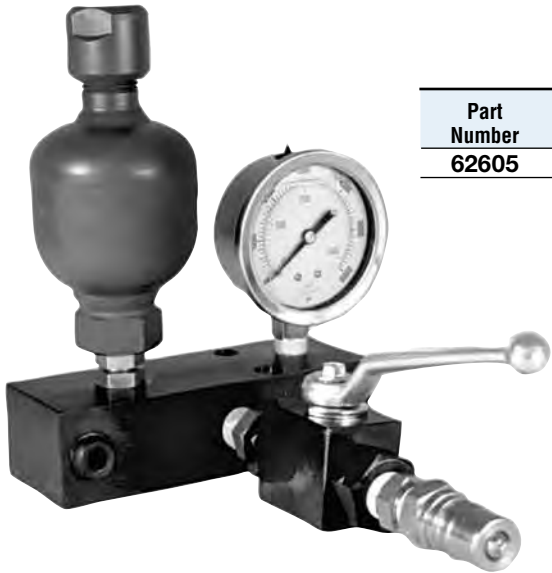


Typical Manual Pump application on a boring mill. The clamping is a self-contained set-up for rotary indexing for large multi-side castings.

### Circuit Diagram



## Pallet Decoupler Valve



Part  
Number  
**62605**

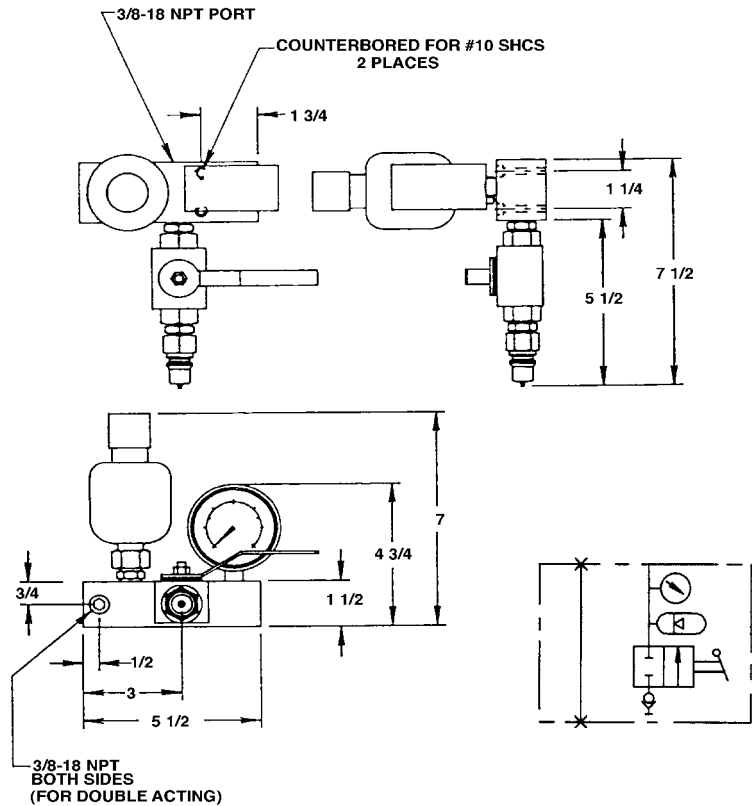
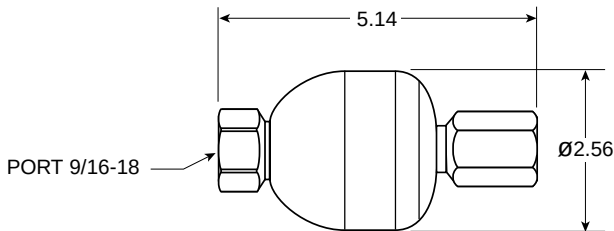
The Pallet Decoupler Valve allows hydraulically clamped tooling fixtures to maintain pressure when disconnected from their power source. The built-in pre-charged accumulator maintains pressure within a hydraulic system, compensating for slow leaks. The Pallet Decoupler Valve adds a level of security to fixtures that must be disconnected from a power source while being moved. Ideal for use with palletized fixtures and machining centers.

- Manifold
- Accumulator
- Hydraulic Connections
- Hydraulic Gauge
- Manual Ball Valve

### Accumulator

| Part Number  | Max. Pressure | Pre-Charge Pressure | Volume    | Weight (lbs) |
|--------------|---------------|---------------------|-----------|--------------|
| <b>62603</b> | 3600 psi      | 1500 psi            | 5 cu. in. | 1.5          |

\*Other Accumulators and pre-charge pressure are available upon request.

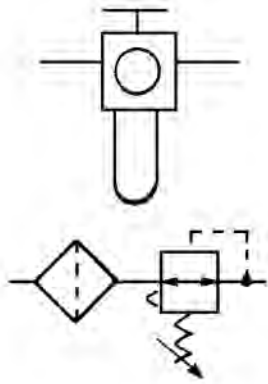


### To order components separately

| Ball Valve   | Male Quick Disconnect | Coupler Sleeve | Hydraulic Gauge |
|--------------|-----------------------|----------------|-----------------|
| <b>61639</b> | <b>61965</b>          | <b>61915</b>   | <b>60703</b>    |



## Air Circuit Controls Filter/Regulators



The filter element removes the solid impurities and condensates before the compressed air enters the regulator. The regulator valve supplies a preset pressure regardless of main circuit pressure as long as pressure in the main circuit is higher than that in the secondary.

### Specifications

| Part Number  | 61616   | 61617   |
|--------------|---------|---------|
| Port Size    | 1/4 NPT | 3/8 NPT |
| SCFM Rating  | 53 SCFM | 80 SCFM |
| Weight (lbs) | 1.6     | 3.2     |

## Gauges

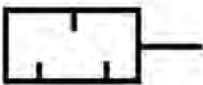


When sizing a pressure gauge, the maximum output of the system should be approximately 2/3 of the gauge capacity.

### Specifications

| Part Number  | 160 PSI |         |         |
|--------------|---------|---------|---------|
|              | 60701   | 60702   | 60705   |
| Thread Size  | 1/8 NPT | 1/4 NPT | 1/4 NPT |
| Location     | Back    | Bottom  | Back    |
| Weight (lbs) | .16     | .25     | .25     |

## Mufflers

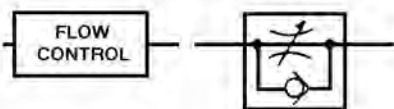


Used to reduce air flow noise. Installation is recommended at exhaust ports of Air Control Valves.

### Specifications

| Part Number  | 62612   | 62613   |
|--------------|---------|---------|
| Thread Size  | 1/4 NPT | 3/8 NPT |
| Weight (lbs) | .06     | .22     |

## Flow Control Valve



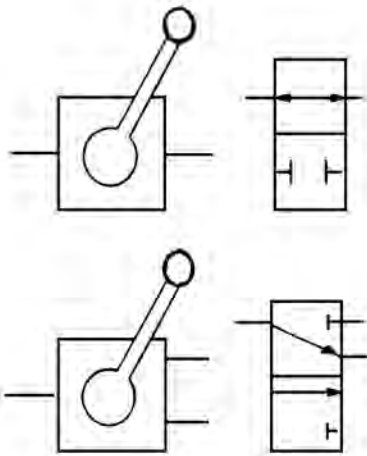
Manually adjusted control of input pressures. Allows the regulation of pressures into a work circuit. Reverse flow is unrestricted. Used for throttling or metering a circuit so that actuator speed meets work requirements.

### Specifications

| Part Number  | 61603   |
|--------------|---------|
| Port Size    | 1/4 NPT |
| Weight (lbs) | .31     |

## Air Circuit Controls

### 2-Way and 3-Way Valves

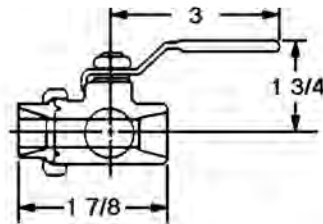


#### Specifications

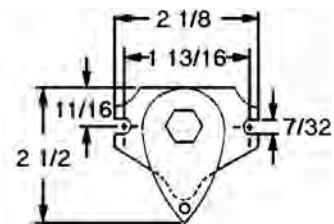
| Part Number  | 61601   | 61634   |
|--------------|---------|---------|
| Type         | 2-way   | 3-way   |
| Port Size    | 3/8 NPT | 1/8 NPT |
| Weight (lbs) | .81     | .22     |

2-way valves are in-line ball valves. They are used as a shut-off valve in simple circuits.

3-way valves are similar to 2-way valves but have a third port which is generally used as a vent or exhaust.

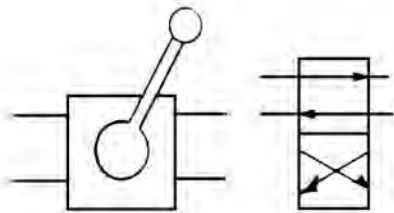


Part Number  
61601



Part Number  
61634

### 4-Way Valves

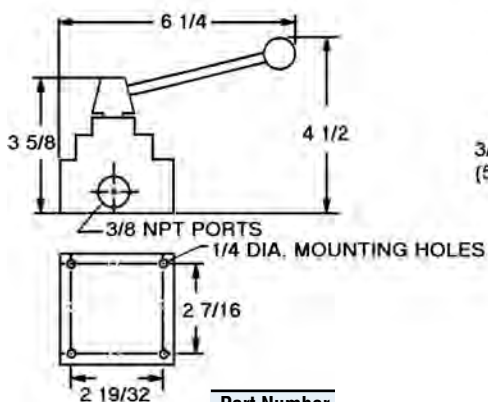


A variety of directional control valves are offered. Manual valves are normally two position, detented. Solenoid valves are 115V-60 Hz; other voltages are available.

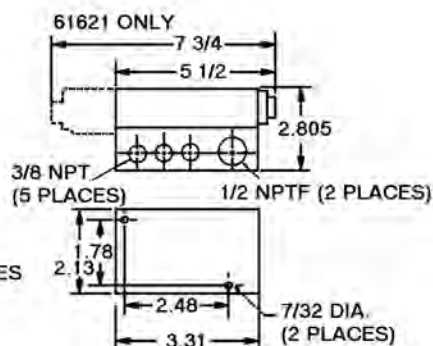
#### Specifications

| Part Number     | 61615   | 61620    | 61621    | 61630   | 61631*  |
|-----------------|---------|----------|----------|---------|---------|
| Actuator Type   | Hand    | Solenoid | Solenoid | Treadle | Pedal   |
| Return Actuator | Hand    | Spring   | Solenoid | Treadle | Spring  |
| Port Size       | 3/8 NPT | 3/8 NPT  | 3/8 NPT  | 3/8 NPT | 3/8 NPT |
| CV Rating       | 1.5     | 1.0      | 1.0      | 2.3     | 2.3     |
| Weight (lbs)    | 2.75    | 5.0      | 5.5      | 4.0     | 3.5     |

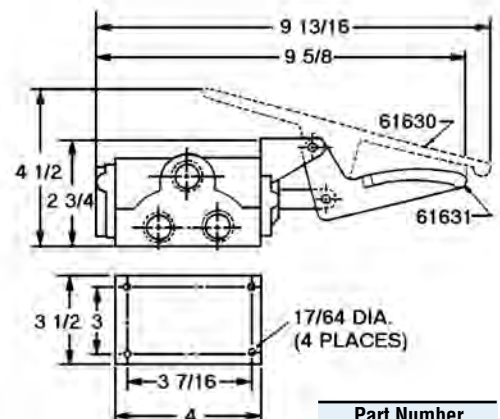
\*Foot Guard for 61631 Valve; Part Number 61632



Part Number  
61615



Part Number  
61620 & 61621



Part Number  
61630 & 61631

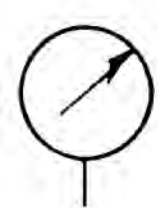
## Air Circuit Controls 2-Hand No Tie Down

Requires the operator to use both hands when activating a work circuit. Two counterbored finger buttons are installed at a minimum center distance.

### Specifications

| Part Number                       | 61304                                |
|-----------------------------------|--------------------------------------|
| Medium                            | Clean, dry compressed air only       |
| Working Range                     | 50 to 100 psi                        |
| Temperature Range                 | -30° to 180°F                        |
| Air Flow<br>(with Modular Valves) | 10 CFM at 100 psi                    |
| Exhaust                           | To atmosphere through holes in plate |
| Mounting                          | 7/32 holes provided in subplate      |
| Materials                         | Clear Acrylic, brass                 |
| Filtration                        | 40 Micron required                   |
| Lubrication                       | Recommended                          |

## Hydraulic Circuit Controls Gauges



Recommended as a visual pressurized monitoring gauge to be used on all pressuring systems.

When sizing a pressure gauge, the maximum output of the system should equal approximately 2/3 of the gauge capacity.

Gauges are filled with glycerine in order to dampen internal movement.

Gauge blocks facilitate the installation of pressure gauges on standard boosters.

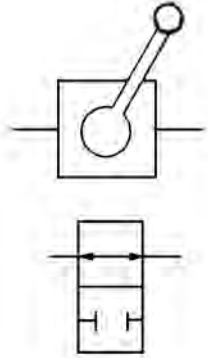
### Selection Data

|            | Part Number |          |           |
|------------|-------------|----------|-----------|
|            | 3000 Psi    | 6000 Psi | 10000 Psi |
| Gauge Only | 60704       | 60703    | 60706     |
| Block Only | 61055       | 61055    | 61055     |
| Gauge Kit* | 60711       | 60712    | 60713     |

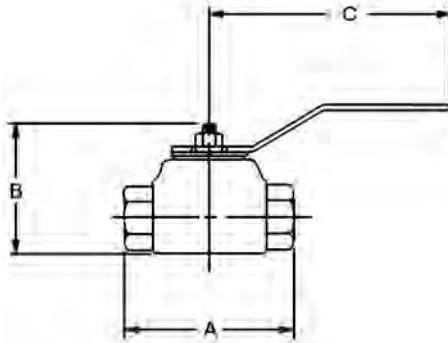
\* Gauge, Block and Fittings included in kits. All Gauges 1/4" NPT, bottom ported.

## Hydraulic Circuit Controls

### 2-Way Valves



2-way valves are in-line ball valves. They are used as a shut-off valve in simple circuits.



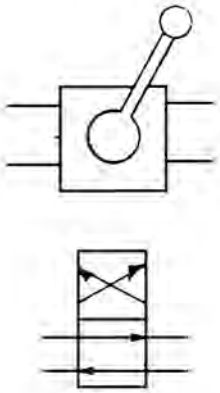
#### Specifications

| Part Number           | 61610   | 61639   |
|-----------------------|---------|---------|
| Port Size             | 1/4 NPT | 3/8 NPT |
| Pressure Rating (psi) | 3000    | 5000    |

#### Dimensions

| Part Number | A       | B     | C     |
|-------------|---------|-------|-------|
| 61610       | 2 11/16 | 2 5/8 | 5 1/4 |
| 61639       | 3       | 2     | 4 1/4 |

### 4-Way Valves

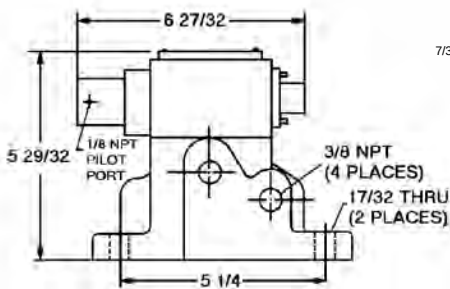


A variety of directional control valves are offered. Manual valves are normally two position, detented. Solenoid valves are 115V-60 Hz; other voltages are available.

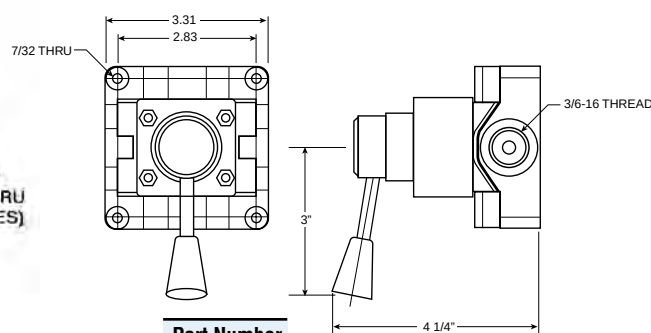
#### Specifications

| Part Number           | 61643  | 61644              | 61636              | 61637              | 61638   |
|-----------------------|--------|--------------------|--------------------|--------------------|---------|
| Actuator Type         | Hand   | Solenoid (115 VAC) | Solenoid (115 VAC) | Solenoid (115 VAC) | Air     |
| Return Actuator       | Hand   | Solenoid (115 VAC) | Spring             | Solenoid (115 VAC) | Spring  |
| Port Size             | 3/4-16 | DO3 MT6            | 3/4-16             | 3/4-16             | 3/8 NPT |
| Flow Rating           | 5 GPM  | 3 GPM              | 5 GPM              | 5 GPM              | 12 GPM  |
| Pressure Rating (psi) | 5000   | 6000               | 5000               | 5000               | 5000    |
| Weight (lbs)          | 3.75   | 3                  | 6.75               | 7.3                | 17.5    |

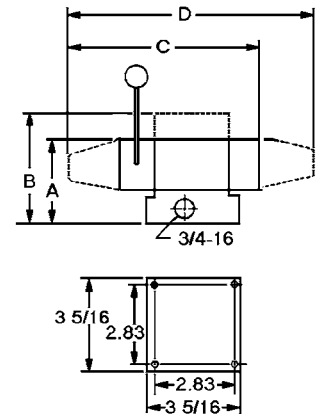
For 4-Way, Zero Leakage Valves, See Page 3.54



**Part Number**  
**61638**



**Part Number**  
**61643**



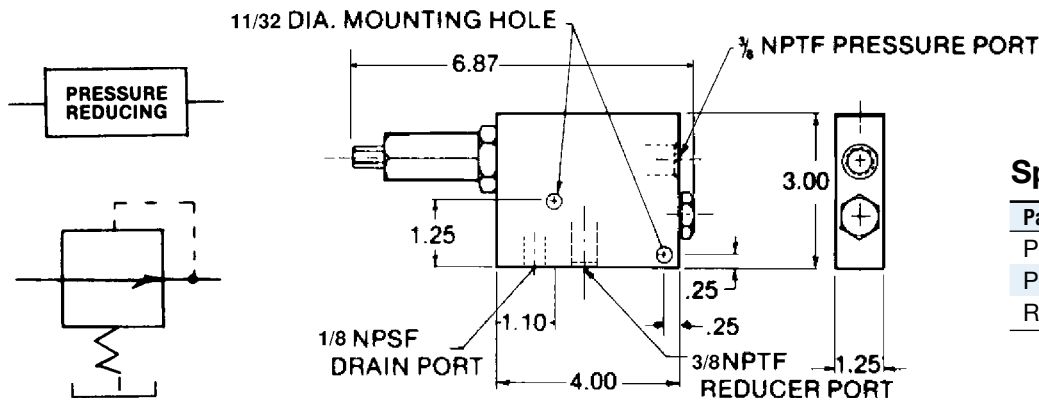
#### Dimensions

| Part Number | A     | B      | C       | D      |
|-------------|-------|--------|---------|--------|
| 61636       | 3 1/4 | 5 5/64 | 5 21/32 | —      |
| 61637       | 3 1/4 | 5 5/64 | —       | 8 3/8  |
| 61644       | 2 3/8 | —      | —       | 8 3/16 |

## Hydraulic Circuit Controls

### Pressure Reducing Valve

Allow individual cylinders or clamps to operate at different pressures from the same power source.

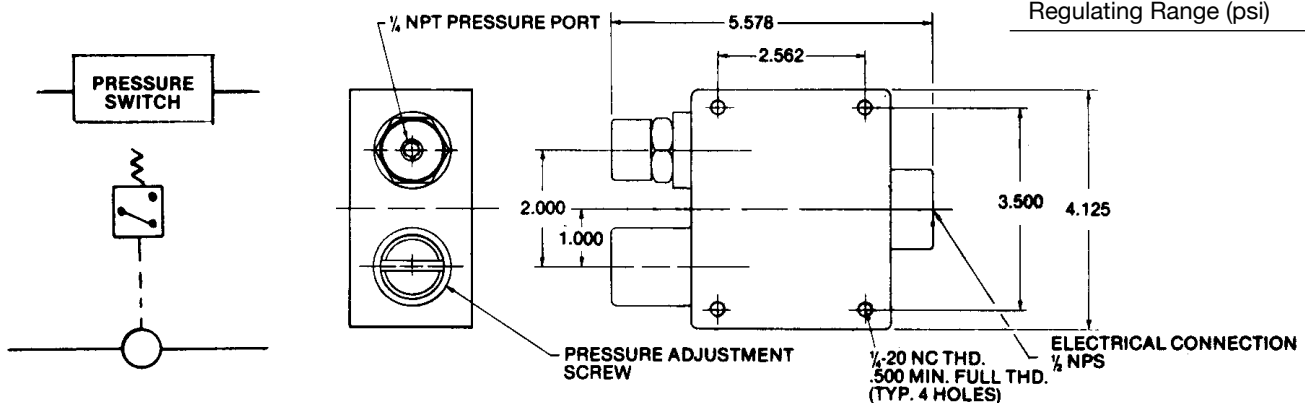


#### Specifications

|                        |              |
|------------------------|--------------|
| Part Number            | <b>61619</b> |
| Port Size              | 3/8 NPT      |
| Pressure Rating (psi)  | 5000         |
| Regulating Range (psi) | 500-4500     |

## Pressure Switch

Senses pressure in a circuit and may be used to start or shut down a system. A pressure switch can be used to remove the cutting tool and turn off machine in the event of loss of clamping pressure.

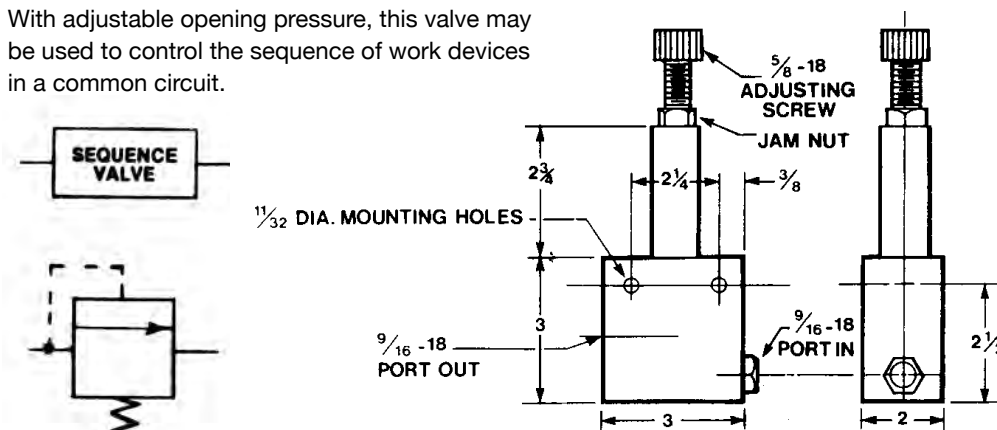


#### Specifications

|                        |              |
|------------------------|--------------|
| Part Number            | <b>61633</b> |
| Port Size              | 1/4 NPT      |
| Pressure Rating (psi)  | 10000        |
| Regulating Range (psi) | 350-5000     |

## Sequence Valve

With adjustable opening pressure, this valve may be used to control the sequence of work devices in a common circuit.



#### Specifications

|                       |              |
|-----------------------|--------------|
| Part Number           | <b>61640</b> |
| Port Size             | 9/16-18      |
| Pressure Rating (psi) | 5000         |
| Sequence Range* (psi) | 500-3000     |

\* Factory Adjusted to sequence at 1000 psi.



## Hydraulic Circuit Controls

### Pilot Operated Check Valve

#### Specifications

| Part Number      | 61629   |
|------------------|---------|
| <b>Hydraulic</b> |         |
| Ports            | 3/4-16  |
| Pilot Port       | 7/16-20 |
| <b>Pressure</b>  |         |
| Rating (psi)     | 5000    |

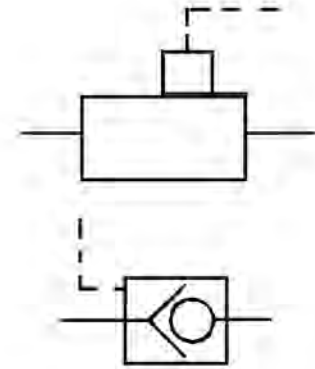
- Minimum operating pressure 500 psi
- 50:1 differential pressure
- Pilot not to exceed 125 psi

A two-way valve used to lock pressure in a working circuit. Automatic free return flow is provided via air pilot operation. Designed so that loss of shop air line pressure will have no effect on the hydraulic circuit in booster applications.

#### Specifications

|                             | Part Number |
|-----------------------------|-------------|
| Valve only                  | 61629       |
| Valve with Installation Kit | 62211*      |

\* Includes hose, fittings and valves

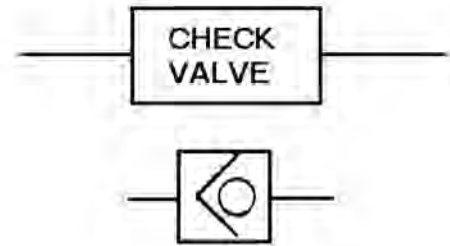


## Check Valve

#### Specifications

| Part Number     | 61607   |
|-----------------|---------|
| Port Size       | 3/8 NPT |
| <b>Pressure</b> |         |
| Rating (psi)    | 5000    |
| Flow Rating     | CV .83  |
| Weight (lbs)    | .63     |

Allows pressure flow in one direction only.

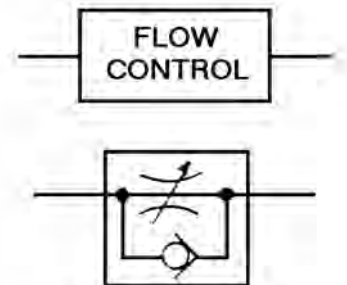


## Flow Control Valve

#### Specifications

| Part Number     | 61609   |
|-----------------|---------|
| Port Size       | 3/8 NPT |
| <b>Pressure</b> |         |
| Rating (psi)    | 5000    |
| Flow Rating     | CV .78  |
| Weight (lbs)    | .63     |

Used to control the flow of pressure in a system, to slow the movement of individual cylinders, or decrease shock.

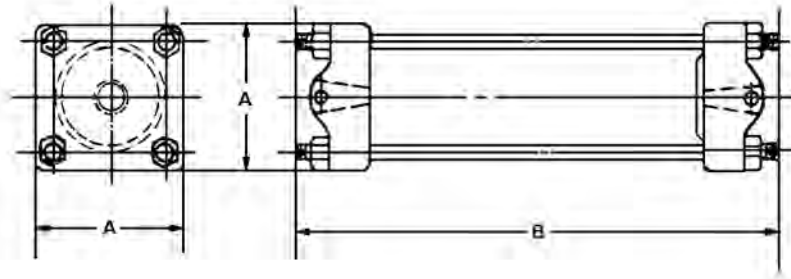


- Recommended for use with Jergens Swing Clamps

## Oil Reservoirs



Can be used with air pressure on top of oil to do work in your system, such as returning double acting cylinders with hydraulic pressure. The acrylic reservoir allows easy monitoring of oil level. Special baffle plates in the top of the reservoir distribute incoming air pressure evenly against the top surface of the oil.



| Part Number | A       | B     | Capacity (Cu. In.) | Side Ports | End Ports | Wt (lbs) |
|-------------|---------|-------|--------------------|------------|-----------|----------|
| 61750       | 2 7/8   | 9 1/2 | 18                 | 9/16-18    | 9/16-18   | 3.0      |
| 61751       | 4 13/16 | 8 1/2 | 55                 | NONE       | 9/16-18   | 6.8      |

- Maximum air operating pressure rating 125 PSI.

## Hydraulic Fluids

### Hydraulic Oil

Jergens Hydraulic Oil is specially formulated to minimize foaming and to protect metal parts from rust. It is an aircraft type oil with high wetting out and film strength characteristics.

Its viscosity is 170/190 at 100°F and it maintains functional characteristics down to 25°F below zero.

One Quart.....**60801**  
One Gallon.....**60802**  
Five Gallon..... **60803**  
55 Gallon Drum ..... **60804**

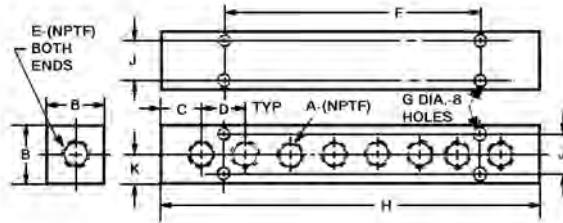
### Food Grade Hydraulic Oil

Jergens Food Grade Hydraulic Oil is a blend of food grade lubricants designed for use as a hydraulic media in food packaging and other similar equipment. It is composed of 100% chemically produced synthetic lubricants and contains no petroleum hydrocarbons.

Its viscosity is 140 SUS at 100°F and 725 SUS at 35°F.

One Quart..... **60813**  
One Gallon..... **60812**  
55 Gallon Drum .....**60811**

## Manifold Strip

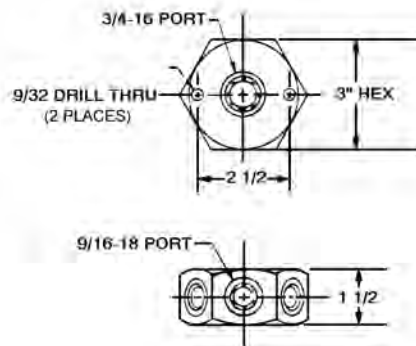


### Dimensions

| Part Number | Number Of Side Ports | Ports A | B     | C   | D   | End Ports E | F     | G     | H     | J      | K   | Wt. (lbs) |
|-------------|----------------------|---------|-------|-----|-----|-------------|-------|-------|-------|--------|-----|-----------|
| 61801       | 4                    | 1/4     | 1 1/2 | 5/8 | 7/8 | 3/8         | 1 3/4 | 13/64 | 3 7/8 | 1 1/64 | 3/4 | .75       |
| 61802       | 8                    | 1/4     | 1 1/2 | 5/8 | 7/8 | 3/8         | 5 1/4 | 13/64 | 7 3/8 | 1 1/64 | 3/4 | 1.50      |

NOTE: Maximum operating pressure is 3000 PSI for all aluminum manifolds.

## Hex

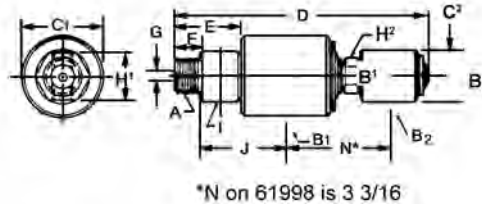


The six port hex manifold, with SAE straight thread ports, can be mounted in the center of several work units or used with a **61031** union (see page 3.67) to mount the manifold directly to the output port of your Jergens Booster.

- Material: Aluminum
- Finish: Black Oxide

| Part Number |
|-------------|
| 61805       |

## Rotary Coupler Single and Dual Passage



\*N on 61998 is 3 3/16

### Specifications

|                                  |       |
|----------------------------------|-------|
| Maximum Air Pressure (psi)       | 150   |
| Maximum Vacuum (Hg.)             | 28"   |
| Maximum Hydraulic Pressure (psi) | 3000  |
| Maximum Temperature              | 250°F |
| Maximum Speed (rpm)              | 250   |

### Dimensions

| Part Number | Rotor Thread A | Tap B1  | Tap B2  | C1    | C2    | D       | E       | F   | Rotor Port G | Hex H1 | Hex H2 | Tap I   | Lockup J | Wt. (lbs) |
|-------------|----------------|---------|---------|-------|-------|---------|---------|-----|--------------|--------|--------|---------|----------|-----------|
| 61997       | 3/8 NPT        | 1/4 NPT | —       | 1 1/2 | —     | 3 1/4   | 1 1/8   | 5/8 | 5/16         | 7/8    | —      | —       | 1 25/32  | .5        |
| 61998       | 3/4 NPT        | 1/2 NPT | 1/4 NPT | 2 3/4 | 1 1/2 | 7 11/16 | 1 15/16 | 7/8 | 1/4          | 1 3/8  | 7/8    | 1/4 NPT | 2 7/8    | 3.0       |

## Installation Tips for Plumbing Hydraulic Systems

### Hose

The use of hydraulic hose is only recommended when the need for flexibility exists. Generally, the only hydraulic hose in an application is that used to connect the power source to the fixture.

All hydraulic hoses expand under pressure. This uses costly energy as well as volume. Some hoses expand at a greater rate than others, even though size remains the same.

Generally speaking, an 8 foot length of hydraulic hose will expand at a rate absorbing one cubic inch of high pressure oil at 3000 p.s.i.

When applying hose, the following is recommended:

#### Do Not:

- Overextend bend radius of hose.
- Put unnecessary strain at fitting ends.
- Subject hose to abrasive conditions.
- Use hose that hasn't been identified.

#### Do:

- Use a minimum size of 3/8" I.D.
- Check with factory for alternate brands.
- Use firesleeve protective covering in applications where flame is present (like weld fixtures).
- Make sure power source has enough high pressure volume to compensate for hose expansion.

### Tubing

Whenever possible use 3/8" diameter steel fluid line tubing for hydraulic lines. This is a low carbon, soft tube and readily available. Depending on the application, two types are recommended:

- 3/8" diameter x .049 wall thickness for pressures to 3000 p.s.i.
- 3/8" diameter x .065 wall thickness for pressures to 5000 p.s.i.

When rigid tubing is applied to air circuitry, use copper tube. This will reduce the corrosive effect of water most likely found in your air lines. Caution: Do not use copper in a high pressure hydraulic circuit!

### Fittings

#### Pipe Thread Fittings

Upon installation, apply a good sealing compound on threads of fitting only. When Teflon tape is used, overlap threads 1-1/2 to two turns tightly in direction of thread. Be careful not to extend tape over end of fitting. Do not overtighten pipe threads as they may put unnecessary strain on pressure vessels.

#### Straight Thread Fittings (SAE J514)

These fittings require no sealing material as the built-in o-ring provides a positive seal. The threads are a Class 2 straight thread with no taper. Before installation, be sure to lubricate the o-ring. Tighten these fittings to approximately 50-150 ft./lbs.

#### The Tube Flare

Cut tube squarely and remove any burrs. Split flares may be caused by the tube being too hard, opening up of scratches and draw marks, or failure to deburr tube end.

Place nut, then sleeve onto tube with open end of nut and toe end of sleeve toward end of tube.

Flare to standard 37° angle (maximum diameter of flare is equal to maximum diameter of sleeve). A correct flare should extend beyond the inside diameter of toe on sleeve but not beyond outside diameter of toe on sleeve.

Never attempt to spring tube to force alignment using the fitting installed. This can damage the flare and wrinkle, kink or flatten the tube. This can be avoided by using the correct tools.

## Fittings

### 37° Flare



| Sleeves                  | Nuts                     | Caps                     | Plugs                    | Reducer                                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------------------------------|
| 1/4 Tube<br><b>61001</b> | 1/4 Tube<br><b>61002</b> | 1/4 Tube<br><b>61056</b> | 1/4 Tube<br><b>61058</b> | 1/4 Tube Male<br>3/8 Tube Female<br><b>61063</b> |
| 3/8 Tube<br><b>61015</b> | 3/8 Tube<br><b>61016</b> | 3/8 Tube<br><b>61057</b> | 3/8 Tube<br><b>61059</b> |                                                  |
| 1/2 Tube<br><b>61049</b> | 1/2 Tube<br><b>61050</b> |                          |                          |                                                  |



| Swivel Nut<br>Branch Tees | Union<br>Tee             |
|---------------------------|--------------------------|
| 1/4 Tube<br><b>61051</b>  |                          |
| 3/8 Tube<br><b>61062</b>  | 3/8 Tube<br><b>61023</b> |

## Male Connectors



| Pipe<br>Thread                     | Straight<br>Thread                 |
|------------------------------------|------------------------------------|
| 1/8 NPT x 1/4 Tube<br><b>61007</b> | 7/16-20 x 1/4 Tube<br><b>61009</b> |
| 1/8 NPT x 3/8 Tube<br><b>61054</b> | 9/16-18 x 1/4 Tube<br><b>61030</b> |
| 1/4 NPT x 1/4 Tube<br><b>61008</b> | 9/16-18 x 3/8 Tube<br><b>61021</b> |
| 1/4 NPT x 3/8 Tube<br><b>61020</b> | 3/4-16 x 3/8 Tube<br><b>61046</b>  |
| 3/8 NPT x 1/4 Tube<br><b>61028</b> | 3/4-16 x 1/2 Tube<br><b>61047</b>  |
| 3/8 NPT x 3/8 Tube<br><b>61034</b> |                                    |
| 3/8 NPT x 1/2 Tube<br><b>61048</b> |                                    |

## Male Elbows



| Pipe<br>Thread                     | Straight<br>Thread                 |
|------------------------------------|------------------------------------|
| 1/8 NPT x 1/4 Tube<br><b>61003</b> | 7/16-20 x 1/4 Tube<br><b>61005</b> |
| 1/4 NPT x 1/4 Tube<br><b>61004</b> | 9/16-18 x 1/4 Tube<br><b>61029</b> |
| 1/4 NPT x 3/8 Tube<br><b>61017</b> | 9/16-18 x 3/8 Tube<br><b>61018</b> |
| 3/8 NPT x 3/8 Tube<br><b>61064</b> | 3/4-16 x 1/2 Tube<br><b>61044</b>  |
| 3/8 NPT x 1/2 Tube<br><b>61045</b> |                                    |
| <b>45° ELBOW</b>                   |                                    |
| 3/8 NPT x 3/8 Tube<br><b>61072</b> |                                    |

## Male Branch Tees



| Pipe<br>Thread                     | Straight<br>Thread                 |
|------------------------------------|------------------------------------|
| 1/8 NPT x 1/4 Tube<br><b>61014</b> | 7/16-20 x 1/4 Tube<br><b>61040</b> |
| 1/4 NPT x 3/8 Tube<br><b>61027</b> | 9/16-18 x 3/8 Tube<br><b>61041</b> |
| 3/8 NPT x 1/2 Tube<br><b>61043</b> | 3/4-16 x 1/2 Tube<br><b>61042</b>  |
| <b>Male Run<br/>Teas</b>           |                                    |
| 7/16-20 x 1/4 Tube<br><b>61032</b> |                                    |
| 9/16-18 x 3/8 Tube<br><b>61061</b> |                                    |

## Flareless Fittings



These fittings are the most common types needed to plumb Pressure Points and Screw Pumps. Use 1/8" Heavy Duty High Pressure, Fluid Line Steel Tube.

| Ferrule<br>1/8 Tube | Nut<br>1/8 Tube | Male<br>Connector<br>1/8 NPT x 1/8 Tube | Male<br>Elbow<br>1/8 Tube | Union<br>Tee<br>1/8 Tube |
|---------------------|-----------------|-----------------------------------------|---------------------------|--------------------------|
| <b>60201</b>        | <b>60202</b>    | <b>60204</b>                            | <b>60205</b>              | <b>60207</b>             |



## Fittings

### Elbows & Tees



| Elbows                                        | Tees                           |
|-----------------------------------------------|--------------------------------|
| 1/8 NPT Female<br><b>61095</b>                | 1/8 NPT Female<br><b>61087</b> |
| 1/8 NPT Street<br><b>61070</b>                |                                |
| 1/4 NPT Female<br><b>61096</b>                | 1/4 NPT Female<br><b>61088</b> |
| 1/4 NPT Street<br><b>61071</b>                |                                |
| 3/8 NPT Female<br><b>61097</b>                | 3/8 NPT Female<br><b>61089</b> |
| 3/8 NPT Male<br><b>61066</b>                  |                                |
| 1/2 NPT Female<br><b>61098</b>                | 1/2 NPT Female<br><b>61090</b> |
| 3/4-16 Male<br>3/8 NPT Female<br><b>61065</b> |                                |

### Nipples & Plugs



| Nipples                           | Plugs                   |
|-----------------------------------|-------------------------|
| 1/8 NPT<br><b>61083</b>           | 1/8 NPT<br><b>61091</b> |
| 1/4 NPT<br><b>61084</b>           | 1/4 NPT<br><b>61092</b> |
| 3/8 NPT<br><b>61085</b>           | 3/8 NPT<br><b>61093</b> |
| 1/2 NPT<br><b>61086</b>           | 1/2 NPT<br><b>61094</b> |
| 1/8 NPT x 3/8 NPT<br><b>61052</b> | 7/16-20<br><b>61060</b> |
| 1/4 NPT x 3/8 NPT<br><b>61053</b> | 9/16-18<br><b>61068</b> |
| 9/16-18 Union<br><b>60210</b>     | 3/4-16<br><b>61069</b>  |
| 3/4-16 Union<br><b>61031</b>      |                         |

### Reducers/Expanders



| Pipe Thread                                    | Straight Thread                                |
|------------------------------------------------|------------------------------------------------|
| 1/4 NPT Male<br>1/8 NPT Female<br><b>61074</b> | 9/16-18 Male<br>7/16-20 Female<br><b>61033</b> |
| 3/8 NPT Male<br>1/4 NPT Female<br><b>61025</b> | 7/16-20 Male<br>9/16-18 Female<br><b>61080</b> |
| 1/2 NPT Male<br>3/8 NPT Female<br><b>61038</b> | 3/4-16 Male<br>9/16-18 Female<br><b>61037</b>  |
| 3/4 NPT Male<br>3/8 NPT Female<br><b>61067</b> |                                                |
| 3/4 NPT Male<br>1/2 NPT Female<br><b>61039</b> |                                                |

### Adapters



| Pipe Thread                                     | Mixed Thread                                    |                                                 | Metric                                         |
|-------------------------------------------------|-------------------------------------------------|-------------------------------------------------|------------------------------------------------|
| 1/16 NPT Male<br>1/4 NPT Female<br><b>61075</b> | 1/4 Male NPT<br>1/4 Female BSP<br><b>60221</b>  | 3/8 Tube Male<br>1/4 NPT Female<br><b>60217</b> | 7/16-20 Male<br>1/8 ISO Female<br><b>61077</b> |
| 1/8 NPT Male<br>1/4 NPT Female<br><b>61076</b>  | 7/16-20 Male<br>1/4 NPT Female<br><b>61082</b>  | 3/8 Male NPT<br>3/8 Female BSP<br><b>60222</b>  | 9/16-18 Male<br>1/4 ISO Female<br><b>61078</b> |
|                                                 | 9/16-18 Male<br>1/4 NPT Female<br><b>61081</b>  | 3/4-16 Male<br>1/4 NPT Female<br><b>61035</b>   | 3/4-16 Male<br>3/8 ISO Female<br><b>61079</b>  |
|                                                 | 9/16-18 Male<br>3/8 Tube Female<br><b>60211</b> | 3/4-16 Male<br>3/8 NPT Female<br><b>61036</b>   |                                                |

## Quick Disconnect Couplers

### Hydraulic Coupler

| Sleeve                         | Nipple                         |
|--------------------------------|--------------------------------|
| 3/8 NPT Female<br><b>61915</b> | 3/8 NPT Female<br><b>61965</b> |
| 1/4 NPT Female<br><b>61916</b> | 1/4 NPT Male<br><b>61966</b>   |

Hydraulic couplers have dual checks.

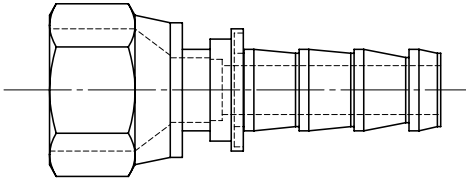
### Air Couplers

| Sleeve                         | Nipple                         |
|--------------------------------|--------------------------------|
| 1/8 NPT Female<br><b>61904</b> | 1/8 NPT Male<br><b>61950</b>   |
| 1/4 NPT Female<br><b>61905</b> | 1/4 NPT Male<br><b>61951</b>   |
|                                | 1/4 NPT Female<br><b>61954</b> |

Air couplers have checks on sleeves only.

## Flexible Hose

Low pressure air hose is sold by the foot in bulk lengths. Order the total footage and number of push-on fittings required by using the number to the right.



### Low Pressure Air Hose

| Hose I.D.              | 1/4          | 3/8          | 1/2          |
|------------------------|--------------|--------------|--------------|
| Hose<br>Part Number    | <b>61106</b> | <b>61108</b> | <b>61110</b> |
| Fitting<br>Part Number | <b>61107</b> | <b>61109</b> | <b>61111</b> |
| Thread Size            | 7/16-20      | 9/16-18      | 3/4-16       |

## Hydraulic Hose



High pressure hose is supplied assembled and to lengths indicated. Lengths are measured from end of coupling to end of coupling. Hose is 3/8" ID and available in 4000 psi or 7000 psi rating. 3/8" female tubing fittings on each end.

### High Pressure Hydraulic Hose

| Length                  | 12"          | 18"          | 24"          | 36"          | 72"          |
|-------------------------|--------------|--------------|--------------|--------------|--------------|
| Part Number<br>4000 psi | <b>61201</b> | <b>61202</b> | <b>61203</b> | <b>61204</b> | <b>61205</b> |
| Part Number<br>7000 psi | <b>61211</b> | <b>61212</b> | <b>61213</b> | <b>61214</b> | <b>61215</b> |

\*Also available in 5000 psi.

### Hydraulic Hose (Build Your Own)

| Length      | 25'          | Hose Ends    | Hose Ends                    |
|-------------|--------------|--------------|------------------------------|
| Part Number | <b>61221</b> | <b>61226</b> | <b>61227</b>                 |
| 2750 psi    | 1/4 Hose     | 1/4 Npt Male | 1/4 37° JIC<br>Swivel Female |

## Steel Tubing

Whenever possible, 3/8" diameter steel tubing should be used for hydraulic lines. Jergens tubing is low carbon soft tube with .065 wall thickness. The tubing is rated at 5000 psi.

### Steel Tubing

| Part Number  | Description      |
|--------------|------------------|
| <b>60209</b> | 3/8 DIA. X 5 FT. |

## Maintenance and Test Kits

| Part Number | Kit Number | Part Number | Kit Number | Part Number | Kit Number | Part Number | Kit Number | Part Number | Kit Number |
|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|
| 60302       | 62102      | 60414       | 62195      |             | 62162 (3)  | 61709       | 62109      | 62824       | 62184      |
| 60303       | 62103      | 60461       | 62125      | 60651       | 62105 (2)  | 61710       | 62109      | 62831       | 62187      |
| 60307       | 62102      | 60462       | 62126      |             | 62162 (3)  | 61711       | 62110      | 62841       | 62185      |
| 60340       | 62104      | 60463       | 62127      | 60660       | 62360      | 61714       | 62107      | 62842       | 62185      |
| 60341       | 62105      | 60464       | 62128      | 60661       | 62360      | 61715       | 62108      | 62845       | 62303      |
| 60345       | 62189      | 60465       | 62129      | 60662       | 62362      | 61720       | 62173      | 62846       | 62303      |
| 60350       | 62120      | 60466       | 62130      | 60663       | 62362      | 61721       | 62174      | 62852       | 62199      |
| 60351       | 62121      | 60511       | 62139      | 60664       | 62364      | 61722       | 62175      | 63101       | 62101      |
| 60360       | 62120      | 60512       | 62140      | 60665       | 62364      | 61736       | 62159      | 63103       | 62103      |
| 60361       | 62121      | 60513       | 62194      | 60670       | 62360      | 61737       | 62160      | 63107       | 62102      |
| 60371       | 62167      | 60554       | 62151      | 60671       | 62360      | 61755       | 62197      | 63113       | 62105      |
| 60372       | 62167      | 60555       | 62151      | 60672       | 62362      | 61756       | 62198      | 63117       | 62104      |
| 60373       | 62168      | 60593       | 62145 (1)  | 60673       | 62362      | 61761       | 62144      | 63123       | 62106      |
| 60374       | 62169      | 60594       | 62146 (1)  | 60674       | 62364      | 61762       | 62144      | 63201       | 62134      |
| 60381       | 62170      | 60595       | 62147 (1)  | 60675       | 62364      | 61997       | 62165      | 63202       | 62134      |
| 60382       | 62170      | 60596       | 62177      | 60680       | 62190      | 61998       | 62166      | 63212       | 62126      |
| 60383       | 62171      | 60597       | 62178      | 60681       | 62196      | 62721       | 62161      | 63213       | 62127      |
| 60384       | 62171      | 60598       | 62179      | 60685       | 62131      | 62722       | 62161      | 63214       | 62128      |
| 60401       | 62106      | 60601       | 62102 (2)  | 61501       | 62133      | 62801*      | 62172      | 63215       | 62129      |
| 60402       | 62106      |             | 62162 (3)  | 61612       | 62134      | 62802*      | 62172      | 63216       | 62130      |
| 60403       | 62195      | 60602       | 62103 (2)  | 61514       | 62134      | 62803*      | 62172      | 63302       | 62140      |
| 60404       | 62195      |             | 62162 (3)  | 61623       | 62163      | 62804*      | 62172      | 63303       | 62194      |
| 60405       | 62124      | 60621       | 62154      | 61629       | 62123      | 62805       | 62301      | 63801       | 62184      |
| 60410       | 62106      | 60622       | 62155      | 61640       | 62164      | 62806       | 62302      | 63802       | 62184      |
| 60411       | 62106      | 60631       | 62156      | 61701       | 62132      | 62811       | 62183      |             |            |
| 60412       | 62106      | 60650       | 62104 (4)  | 61704       | 62107      | 62812       | 62183      |             |            |
| 60413       | 62195      |             | 62189 (5)  | 61705       | 62108      | 62823       | 62184      |             |            |

(1) Special tools required: use 62148 tool for 60556, use 62149 tool for 60597 or 60598.

(2) Cylinder Kit (3) Mechanical Kit (4) Kit for cylinder with 3/8" piston (5) Kit for cylinder with 1/2" piston

(\*) Tool kit 62176 required for 62801, 62802, 62803, 62804

## Technical Assistance



Jergens maintains a qualified staff whose primary responsibility is to provide technical assistance to our distributors and customers.

Your direct connection number for dimensional questions, circuit assistance and troubleshooting is:

**1-800-JERGENS**

OR

**E-mail: [info@jergensinc.com](mailto:info@jergensinc.com)**

# THE *Jergens*® DIFFERENCE

## Swing Cylinders

**OURS**



**Squared Tracks and Pin Engagement**  
Internal piston is driven by a pin designed for close tolerance with squared track. Larger load-bearing surface results in a more durable assembly.

**THEIRS**



**V-grooves and Ball-bearing Engagement**  
Internal piston is driven by a ball bearing that rolls in a rounded track on only two points. Less surface contact leads to more wear and reduced product life.

### JERGENS CLAMPING SWING CYLINDERS

VS.

### OTHER CLAMPING SWING CYLINDERS

Precision machined for close tolerance between piston groove and pin. Better fit results in smoother motion and a more durable swing cylinder assembly.

Less surface area between bearing and track combined with severe conditions within the clamp body result in deforming of the bearing and assembly breakdown.

Free-floating pin design matches the shape of the groove. More contact area and less wear "keeps the pin in the pocket."

Ball bearings can "pop out" of the track—a common failure of traditional swing clamps—causing the piston to seize.

Heavy-duty, low-friction rod seal features "double-lip" sealing—virtually leak-free even under severe operating conditions. Plus, lubricant is retained in the cavity formed by secondary lip—increases performance and quiets operation.

Seals may be more prone to wear and "dry run." Failure of traditional seals is the primary failure of swing cylinder clamps.

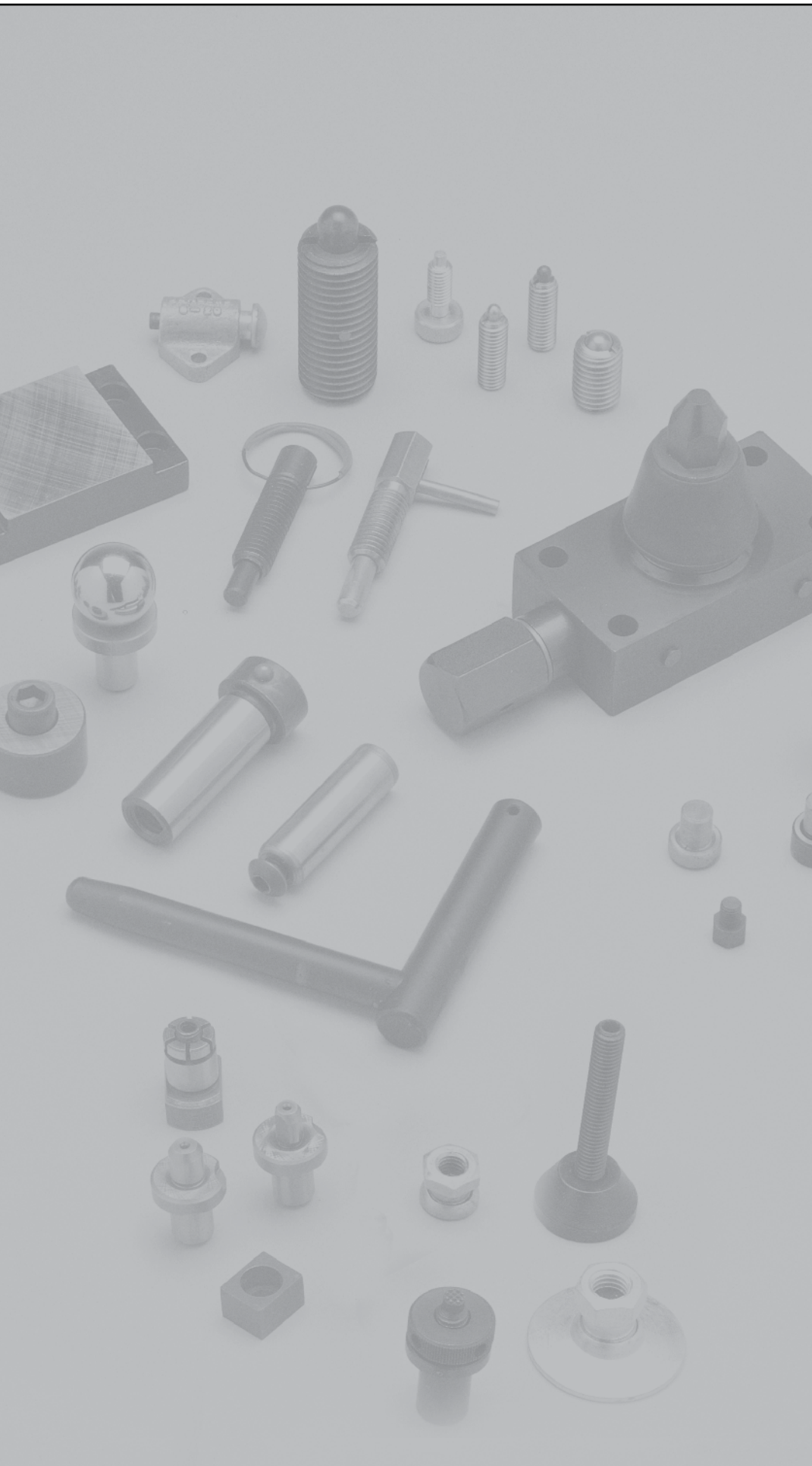
High-pressure, low-friction, bi-directional piston seal is easier to turn and reduces leaks.

Breakdown of traditional seals is the primary failure of swing cylinder clamps. Galled seals cause contaminants, accelerating breakdown and increasing downtime.

***Jergens***®

*The Standard Components with the Highest Standards™*

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|                                    |           |
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## Kwik-Strip® Stripper Bolts

### A New Perspective on Stripper Plates

Today's more complex dies require more time to service. The advantage of time saving devices such as ball and roll lock punches is minimized unless the stripper plate can be removed first.

The patented Jergens Kwik-Strip Stripper Bolts provide an inexpensive, simple method of stripper plate removal. The stripper can be removed with the die still mounted in the press!

### Installation

**Step 1:** Drill a through hole 1/32" larger than the nominal body diameter of the bolt to be used.

**Step 2:** Using a Jergens Drill Jig, drill the auxiliary 1/4" hole. The 1/4" hole may be located radially at any position on the periphery of the body hole. Drill the 1/4" hole slightly deeper than the proposed counterbore.

**Step 3:** Using a standard counterboring tool, counterbore to required depth. See counterbore selection chart for proper size.

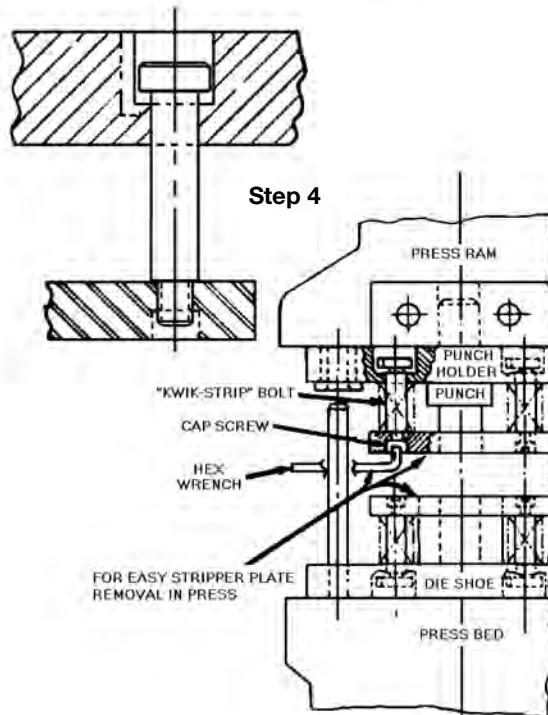
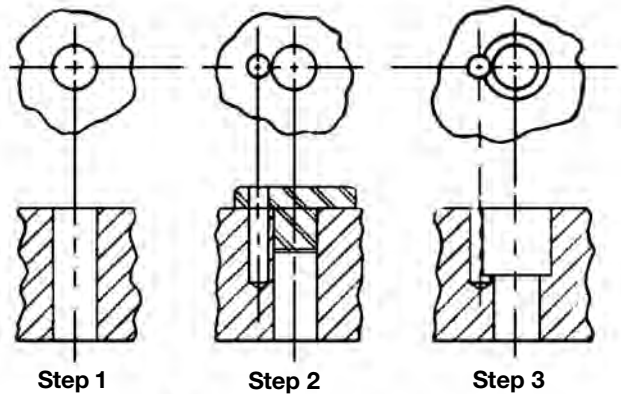
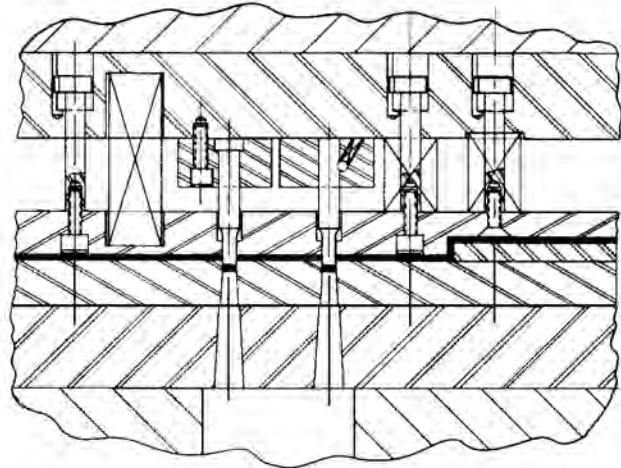
**Step 4:** Drill and counterbore the stripper plate for a socket head cap screw.

### Installation in Existing Dies

To convert an existing die for use with Jergens Kwik-Strip Stripper Bolts, simply mill a 1/4" slot down the side of the stripper counterbore, then drill and counterbore the stripper plate. If the same size thread must be maintained, the through hole and counterbore in the punch holder will have to be increased.

### Disassembly in the Press

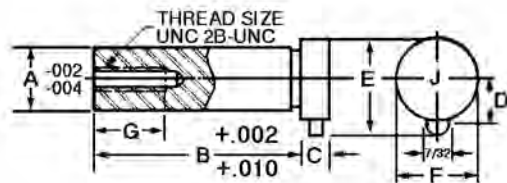
Block the stripper plate in position, remove the cap screws using a hex wrench, then carefully remove stripper plate. Replace stripper plate after completion of required service.



## Kwik-Strip® Stripper Bolts



- Material: Alloy Steel
- Heat Treat: Rc 32-36
- Available in FixturePro™ Design Software



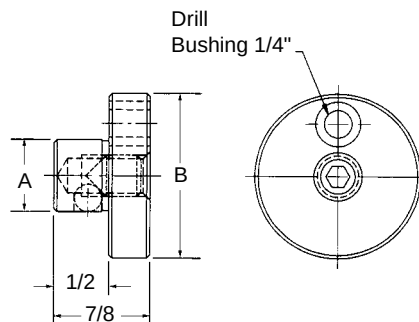
### Selection of Sizes

Size selections should be based upon thread size. For example, if your application calls for a 1/2" stripper bolt (with a 3/8" thread) use a 5/8" Kwik-Strip bolt (with a 3/8" thread). Kwik-Strip bolts may be shortened by 1/4" and still have sufficient thread depth for the cap screw.

| Part Number | A   | B     | C    | D    | E      | F   | G     | Thread Size | Wt. (lbs) |
|-------------|-----|-------|------|------|--------|-----|-------|-------------|-----------|
| 46601       | 1/2 | 2     | 5/16 | .409 | 57/64  | 3/4 | 1     | 5/16-18     | .14       |
| 46602       | 1/2 | 2 1/2 | 5/16 | .409 | 57/64  | 3/4 | 1     | 5/16-18     | .17       |
| 46603       | 1/2 | 3     | 5/16 | .409 | 57/64  | 3/4 | 1     | 5/16-18     | .20       |
| 46604       | 1/2 | 3 1/2 | 5/16 | .409 | 57/64  | 3/4 | 1     | 5/16-18     | .23       |
| 46605       | 1/2 | 4     | 5/16 | .409 | 57/64  | 3/4 | 1     | 5/16-18     | .26       |
| 46606       | 1/2 | 4 1/2 | 5/16 | .409 | 57/64  | 3/4 | 1     | 5/16-18     | .29       |
| 46607       | 1/2 | 5     | 5/16 | .409 | 57/64  | 3/4 | 1     | 5/16-18     | .32       |
| 46608       | 5/8 | 2     | 3/8  | .472 | 1 1/64 | 7/8 | 1 1/8 | 3/8-16      | .18       |
| 46609       | 5/8 | 2 1/2 | 3/8  | .472 | 1 1/64 | 7/8 | 1 1/8 | 3/8-16      | .23       |
| 46610       | 5/8 | 3     | 3/8  | .472 | 1 1/64 | 7/8 | 1 1/8 | 3/8-16      | .27       |
| 46611       | 5/8 | 3 1/2 | 3/8  | .472 | 1 1/64 | 7/8 | 1 1/8 | 3/8-16      | .32       |
| 46612       | 5/8 | 4     | 3/8  | .472 | 1 1/64 | 7/8 | 1 1/8 | 3/8-16      | .36       |
| 46613       | 5/8 | 4 1/2 | 3/8  | .472 | 1 1/64 | 7/8 | 1 1/8 | 3/8-16      | .41       |
| 46614       | 5/8 | 5     | 3/8  | .472 | 1 1/64 | 7/8 | 1 1/8 | 3/8-16      | .45       |
| 46615       | 3/4 | 2     | 1/2  | .534 | 1 9/64 | 1   | 1 1/4 | 1/2-13      | .26       |
| 46616       | 3/4 | 2 1/2 | 1/2  | .534 | 1 9/64 | 1   | 1 1/4 | 1/2-13      | .33       |
| 46617       | 3/4 | 3     | 1/2  | .534 | 1 9/64 | 1   | 1 1/4 | 1/2-13      | .39       |
| 46618       | 3/4 | 3 1/2 | 1/2  | .534 | 1 9/64 | 1   | 1 1/4 | 1/2-13      | .46       |
| 46619       | 3/4 | 4     | 1/2  | .534 | 1 9/64 | 1   | 1 1/4 | 1/2-13      | .52       |
| 46620       | 3/4 | 4 1/2 | 1/2  | .534 | 1 9/64 | 1   | 1 1/4 | 1/2-13      | .59       |
| 46621       | 3/4 | 5     | 1/2  | .534 | 1 9/64 | 1   | 1 1/4 | 1/2-13      | .65       |

### Drill Jigs

Position in drilled hole, rotate set screw to lock, then proceed to drill 1/4" hole to desired depth.



| Part Number | Bolt Size* | A    | B     | Wt. (lbs) |
|-------------|------------|------|-------|-----------|
| 46641       | 1/2        | .528 | 1 1/2 | .20       |
| 46642       | 5/8        | .653 | 1 1/2 | .22       |
| 46643       | 3/4        | .778 | 1 5/8 | .24       |

1/4" Drill bushing is included.

### Counterbore Tools

Counterbores for installing Jergens Kwik-Strip Stripper Bolts.

| Part Number | Counterbore | Bolt Size* |
|-------------|-------------|------------|
| 46647       | 31/32       | 5/8        |
| 46648       | 1 1/32      | 3/4        |

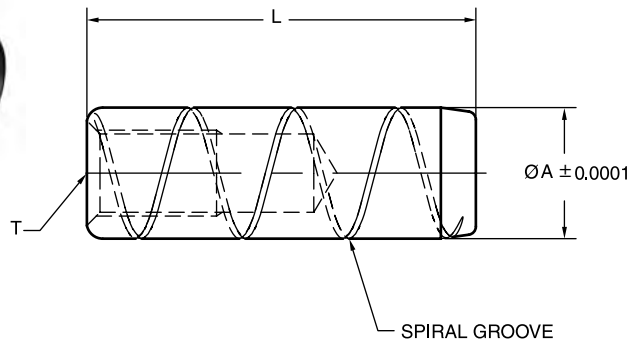
\*Refers to "A" Dimension on stripper bolts.

## Alloy Steel Pull Dowel Pins

### Jergens Offers 3 Styles of Precision Ground Pull Dowels



**Spiral Groove**  
**(Grooves Help to Relieve Trapped Air)**

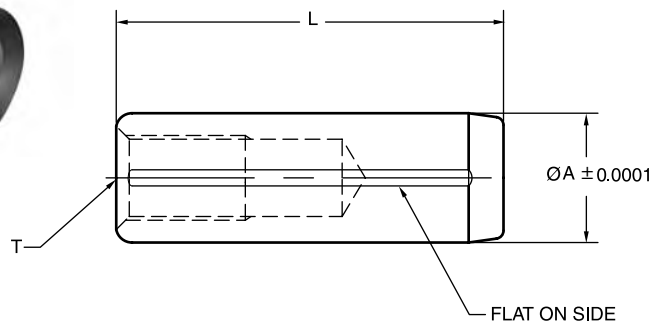


#### Features, Applications & Benefits

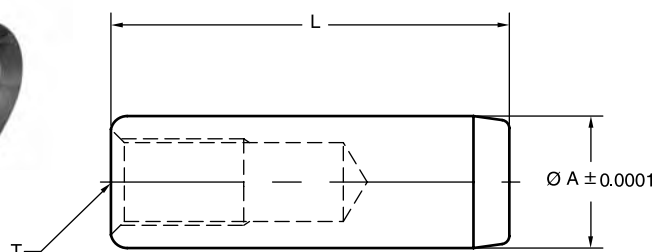
- Internally threaded hole allows removal of pull dowels with a standard screw.
- Standard Round Pull Dowels are typically used in applications featuring a through hole.
- Spiral Groove Pull Dowels feature a groove cut to allow trapped air to be released.
- Flat Vent Pull Dowels feature a ground flat on one side to release trapped air.
- Spiral Groove and Flat Vent Pull Dowels are typically used in blind hole applications.
- All of Jergens Precision Ground Pull Dowels are constructed of heat treated alloy steel.



**Flat Vent**  
**(Ground Flat Helps to Relieve Trapped Air)**



**Standard Round**  
**(Non-Vented)**



**Precision Ground Pull Dowels**

| Spiral Groove | Flat Vent | Standard Round | Nominal | Actual | Length | Internal Thread |
|---------------|-----------|----------------|---------|--------|--------|-----------------|
| 31800         | 31400     | 31600          | 1/4     | .2502  | 1/2    | 8 - 32          |
| 31801         | 31401     | 31601          | 1/4     | .2502  | 3/4    | 8 - 32          |
| 31802         | 31402     | 31602          | 1/4     | .2502  | 1      | 8 - 32          |
| 31803         | 31403     | 31603          | 1/4     | .2502  | 1-1/4  | 8 - 32          |
| 31804         | 31404     | 31604          | 1/4     | .2502  | 1-1/2  | 8 - 32          |
| 31805         | 31405     | 31605          | 1/4     | .2502  | 1-3/4  | 8 - 32          |
| 31806         | 31406     | 31606          | 1/4     | .2502  | 2      | 8 - 32          |
| 31807         | 31407     | 31654          | 1/4     | .2502  | 2-1/4  | 8 - 32          |
| 31808         | 31408     | 31607          | 1/4     | .2502  | 2-1/2  | 8 - 32          |
| 31809         | 31409     | 31608          | 5/16    | .3127  | 3/4    | 10 - 32         |
| 31810         | 31410     | 31609          | 5/16    | .3127  | 1      | 10 - 32         |
| 31811         | 31411     | 31610          | 5/16    | .3127  | 1-1/4  | 10 - 32         |
| 31812         | 31412     | 31611          | 5/16    | .3127  | 1-1/2  | 10 - 32         |
| 31813         | 31413     | 31612          | 5/16    | .3127  | 2      | 10 - 32         |
| 31814         | 31414     | 31613          | 5/16    | .3127  | 2-1/4  | 10 - 32         |
| 31815         | 31415     | 31614          | 5/16    | .3127  | 2-1/2  | 10 - 32         |
| 31816         | 31416     | 31615          | 3/8     | .3752  | 3/4    | 10 - 32         |
| 31817         | 31417     | 31616          | 3/8     | .3752  | 1      | 10 - 32         |
| 31818         | 31418     | 31617          | 3/8     | .3752  | 1-1/4  | 10 - 32         |
| 31819         | 31419     | 31618          | 3/8     | .3752  | 1-1/2  | 10 - 32         |
| 31820         | 31420     | 31619          | 3/8     | .3752  | 1-3/4  | 10 - 32         |
| 31821         | 31421     | 31620          | 3/8     | .3752  | 2      | 10 - 32         |
| 31822         | 31422     | 31621          | 3/8     | .3752  | 2-1/4  | 10 - 32         |
| 31823         | 31423     | 31622          | 3/8     | .3752  | 2-1/2  | 10 - 32         |
| 31824         | 31424     | 31623          | 3/8     | .3752  | 3      | 10 - 32         |
| 31825         | 31425     | 31624          | 7/16    | .4377  | 1      | 1/4 - 20        |
| 31826         | 31426     | 31625          | 7/16    | .4377  | 1-1/2  | 1/4 - 20        |
| 31827         | 31427     | 31626          | 7/16    | .4377  | 2      | 1/4 - 20        |
| 31828         | 31428     | 31627          | 1/2     | .5002  | 3/4    | 1/4 - 20        |
| 31829         | 31429     | 31628          | 1/2     | .5002  | 1      | 1/4 - 20        |
| 31830         | 31430     | 31629          | 1/2     | .5002  | 1-1/4  | 1/4 - 20        |
| 31831         | 31431     | 31630          | 1/2     | .5002  | 1-1/2  | 1/4 - 20        |
| 31832         | 31432     | 31631          | 1/2     | .5002  | 1-3/4  | 1/4 - 20        |
| 31833         | 31433     | 31632          | 1/2     | .5002  | 2      | 1/4 - 20        |
| 31834         | 31434     | 31633          | 1/2     | .5002  | 2-1/4  | 1/4 - 20        |
| 31835         | 31435     | 31634          | 1/2     | .5002  | 2-1/2  | 1/4 - 20        |
| 31836         | 31436     | 31635          | 1/2     | .5002  | 3      | 1/4 - 20        |
| 31837         | 31437     | 31636          | 1/2     | .5002  | 3-1/2  | 1/4 - 20        |
| 31838         | 31438     | 31637          | 1/2     | .5002  | 4      | 1/4 - 20        |
| 31839         | 31439     | 31638          | 5/8     | .6252  | 1-1/4  | 1/4 - 20        |
| 31840         | 31440     | 31639          | 5/8     | .6252  | 1-1/2  | 1/4 - 20        |
| 31841         | 31441     | 31640          | 5/8     | .6252  | 2      | 1/4 - 20        |
| 31842         | 31442     | 31641          | 5/8     | .6252  | 2-1/4  | 1/4 - 20        |
| 31843         | 31443     | 31642          | 5/8     | .6252  | 2-1/2  | 1/4 - 20        |
| 31844         | 31444     | 31643          | 5/8     | .6252  | 3      | 1/4 - 20        |
| 31845         | 31445     | 31644          | 5/8     | .6252  | 4      | 1/4 - 20        |
| 31846         | 31446     | 31645          | 3/4     | .7502  | 1-1/2  | 5/16 - 18       |
| 31847         | 31456     | 31655          | 3/4     | .7502  | 1-3/4  | 5/16 - 18       |
| 31848         | 31447     | 31646          | 3/4     | .7502  | 2      | 5/16 - 18       |
| 31849         | 31448     | 31647          | 3/4     | .7502  | 2-1/2  | 5/16 - 18       |
| 31850         | 31449     | 31648          | 3/4     | .7502  | 3      | 5/16 - 18       |
| 31851         | 31450     | 31649          | 3/4     | .7502  | 4      | 5/16 - 18       |
| 31856*        | 31451     | 31656          | 1       | 1.0002 | 1-3/4  | 5/16 - 18       |
| 31852*        | 31452     | 31650          | 1       | 1.0002 | 2      | 5/16 - 18       |
| 31853*        | 31453     | 31651          | 1       | 1.0002 | 2-1/2  | 5/16 - 18       |
| 31854*        | 31454     | 31652          | 1       | 1.0002 | 3      | 5/16 - 18       |
| 31855*        | 31455     | 31653          | 1       | 1.0002 | 4      | 5/16 - 18       |

\*3/8-16 Internal Thread

**Technical Data**

**Material:**

Alloy Steel

**Length Tolerance:**

± .010"

**Core Hardness:**

47 - 58 Rockwell C

**Diameter Tolerance:**

± .0001"

**Surface Hardness:**

60 - 64 Rockwell C

**Recommended Hole Size:**

.0005" under Nom. Dia.

**Surface Finish:**

8 Micro-Inch

**Specification:**

ASME B18.8.2

**Spiral Groove**



**Flat Vent**



**Standard Round**



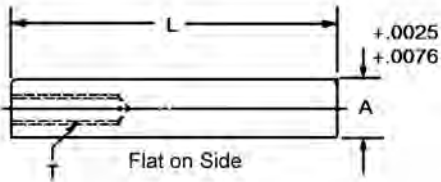
## Pull Dowels

### Metric



- Material: Low Carbon Steel
- Heat Treat: Case Hardened
- Available in FixturePro™ Design Software

Flat ground on the side for air release in blind holes.



| Part Number | A  | L  | T        |
|-------------|----|----|----------|
| 31751       | 8  | 20 | M5 x 1.0 |
| 31753       | 8  | 30 | M5 x 1.0 |
| 31755       | 8  | 40 | M5 x 1.0 |
| 31759       | 10 | 20 | M6 x 1.0 |
| 31761       | 10 | 30 | M6 x 1.0 |
| 31763       | 10 | 40 | M6 x 1.0 |
| 31765       | 10 | 50 | M6 x 1.0 |
| 31767       | 10 | 70 | M6 x 1.0 |
| 31769       | 12 | 20 | M6 x 1.0 |
| 31771       | 12 | 30 | M6 x 1.0 |
| 31773       | 12 | 40 | M6 x 1.0 |

| Part Number | A  | L  | T         |
|-------------|----|----|-----------|
| 31775       | 12 | 50 | M6 x 1.0  |
| 31776       | 12 | 60 | M6 x 1.0  |
| 31777       | 12 | 70 | M6 x 1.0  |
| 31780       | 16 | 40 | M8 x 1.25 |
| 31782       | 16 | 50 | M8 x 1.25 |
| 31783       | 16 | 60 | M8 x 1.25 |
| 31784       | 16 | 70 | M8 x 1.25 |
| 31787       | 20 | 50 | M10 x 1.6 |
| 31788       | 20 | 60 | M10 x 1.6 |
| 31789       | 20 | 70 | M10 x 1.6 |

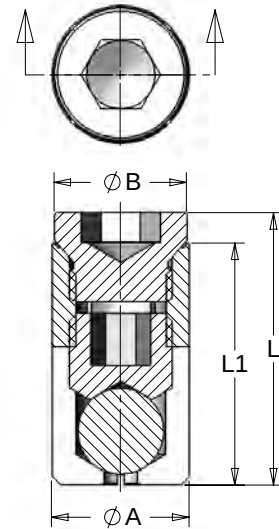
Button head screw not included.



## Precision Expanding Dowels



- Material: Alloy Steel, case hardened to 50-55 Rockwell C
- Self-Centering and Repeatable within  $\pm 0.0005"$  (0.013mm)
- Top and bottom half of dowel expand separately
- Patented



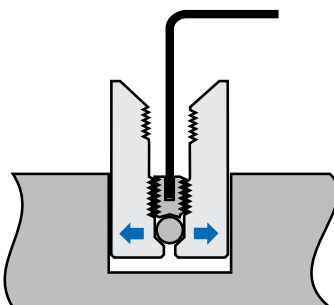
### Inch

| Part Number | Nominal Diameter Inch | Nominal Length (L) Inch | Recommended Hole Diameter |                  |                  |                  | Hex Key Sizes |      |
|-------------|-----------------------|-------------------------|---------------------------|------------------|------------------|------------------|---------------|------|
|             |                       |                         |                           | A Diameter       | B Diameter       | L1               | Bottom        | Top  |
|             |                       |                         |                           | $+0.001/-0.000"$ | $+0.000/-0.001"$ | $+0.000/-0.010"$ | $\pm 0.005"$  |      |
| 29401       | 1/4                   | 1/2                     | 0.250                     | 0.249            | 0.245            | 0.428            | 5/64          | 3/32 |
| 29402       | 3/8                   | 3/4                     | 0.375                     | 0.374            | 0.370            | 0.634            | 1/8           | 5/32 |
| 29403       | 1/2                   | 1                       | 0.500                     | 0.499            | 0.495            | 0.881            | 5/32          | 3/16 |
| 29404       | 5/8                   | 1 1/4                   | 0.625                     | 0.624            | 0.620            | 1.162            | 3/16          | 7/32 |
| 29405       | 3/4                   | 1 1/2                   | 0.750                     | 0.749            | 0.745            | 1.390            | 1/4           | 5/16 |
| 29406       | 1                     | 2                       | 1.000                     | 0.999            | 0.995            | 1.758            | 3/8           | 1/2  |

### Metric

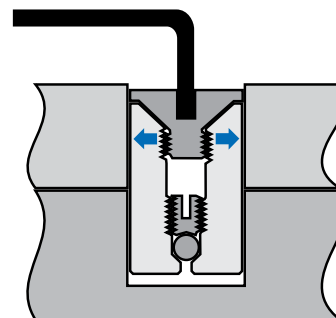
| Part Number | Nominal Diameter (mm) | Nominal Length (L) (mm) | Recommended Hole Diameter |                  |                  |                 | Hex Key Sizes |     |
|-------------|-----------------------|-------------------------|---------------------------|------------------|------------------|-----------------|---------------|-----|
|             |                       |                         |                           | A Diameter       | B Diameter       | L1              | Bottom        | Top |
|             |                       |                         |                           | $+0.025/-0.00mm$ | $+0.00/-0.025mm$ | $+0.00/-0.25mm$ | $\pm 0.13mm$  |     |
| 29451       | 10                    | 20                      | 10                        | 9.98             | 9.88             | 17.45           | 3             | 4   |
| 29452       | 12                    | 25                      | 12                        | 11.98            | 11.89            | 22.48           | 4             | 5   |
| 29453       | 14                    | 28                      | 14                        | 13.97            | 13.89            | 24.74           | 4             | 5   |
| 29454       | 16                    | 32                      | 16                        | 15.98            | 15.90            | 29.51           | 5             | 6   |
| 29455       | 20                    | 38                      | 20                        | 19.98            | 19.89            | 35.31           | 6             | 8   |

## Installation Instructions



### Step 1

Remove the top screw, insert the dowel into the locating hole of the first part, and expand the bottom half with a hex wrench.



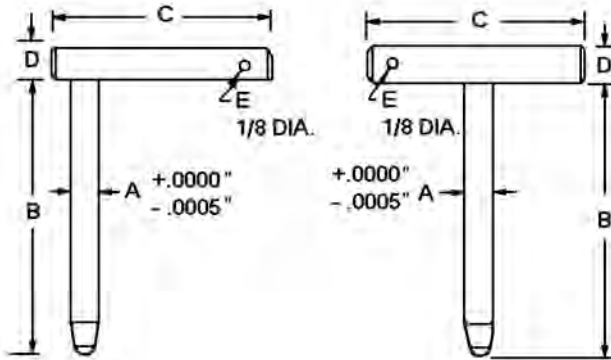
### Step 2

Replace the top screw, slide the locating hole of the second part over the dowel and expand top half with a hex wrench.

## L-Pins and T-Pins



- Material: Heat Treated Steel
- Finish: Black Oxide
- Available in FixturePro™ Design Software



Jergens L-Pins and T-Pins are precision ground locating devices for aligning workpieces in jigs or fixtures. Each pin has a 1/8" diameter hole in the handle for attaching the nylon covered lanyard shown on page 4.9.

| Part Number |       | A     | B     | C     | D    |
|-------------|-------|-------|-------|-------|------|
| L-pin       | T-pin |       |       |       |      |
| 24001       | 24201 | .125  | 2 1/2 | 1 1/2 | 1/4  |
| 24002       | 24202 | .1875 | 3     | 2 1/2 | 5/16 |
| 24003       | 24203 | .1875 | 6     | 2 1/2 | 5/16 |
| 24004       | 24204 | .191  | 3     | 2 1/2 | 5/16 |
| 24005       | 24205 | .191  | 6     | 2 1/2 | 5/16 |
| 24026       | 24226 | .250  | 2     | 2 1/2 | 3/8  |
| 24007       | 24207 | .250  | 3     | 2 1/2 | 3/8  |
| 24008       | 24208 | .250  | 4     | 2 1/2 | 3/8  |
| 24009       | 24209 | .250  | 6     | 2 1/2 | 3/8  |
| 24010       | 24210 | .257  | 3     | 2 1/2 | 3/8  |
| 24030       | 24230 | .3125 | 2     | 2 1/2 | 7/16 |
| 24011       | 24211 | .3125 | 3 1/2 | 3     | 7/16 |
| 24012       | 24212 | .3125 | 6     | 3     | 7/16 |
| 24013       | 24213 | .375  | 4     | 3 1/2 | 1/2  |
| 24014       | 24214 | .375  | 6     | 3 1/2 | 1/2  |
| 24015       | 24215 | .4375 | 4     | 3 1/2 | 9/16 |
| 24016       | 24216 | .4375 | 6     | 3 1/2 | 9/16 |
| 24017       | 24217 | .500  | 4     | 3 1/2 | 5/8  |
| 24018       | 24218 | .500  | 6     | 3 1/2 | 5/8  |
| 24019       | 24219 | .5625 | 4     | 3 1/2 | 5/8  |
| 24020       | 24220 | .5625 | 6     | 3 1/2 | 5/8  |
| 24021       | 24221 | .625  | 6     | 3 1/2 | 7/8  |
| 24022       | 24222 | .750  | 6     | 3 1/2 | 7/8  |

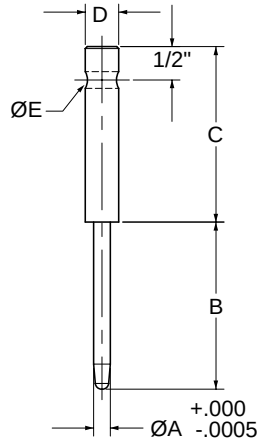
## Metric

| Part Number |       | A  | B   | C  | D  |
|-------------|-------|----|-----|----|----|
| L-pin       | T-pin |    |     |    |    |
| 24051       | 24251 | 4  | 88  | 64 | 8  |
| 24052       | 24252 | 5  | 76  | 64 | 8  |
| 24054       | 24254 | 6  | 152 | 64 | 8  |
| 24055       | 24255 | 6  | 76  | 64 | 10 |
| 24056       | 24256 | 6  | 152 | 64 | 10 |
| 24057       | 24257 | 8  | 88  | 76 | 11 |
| 24058       | 24258 | 8  | 152 | 76 | 11 |
| 24059       | 24259 | 10 | 76  | 64 | 13 |
| 24060       | 24260 | 10 | 152 | 88 | 13 |
| 24061       | 24261 | 12 | 102 | 88 | 16 |
| 24062       | 24262 | 12 | 152 | 88 | 16 |
| 24063       | 24263 | 16 | 152 | 88 | 22 |
| 24064       | 24264 | 16 | 204 | 88 | 22 |
| 24065       | 24265 | 20 | 152 | 88 | 22 |
| 24066       | 24266 | 20 | 204 | 88 | 22 |

## Jig Pins



Straight Handle Jig Pin



Jig Pins are precision ground locating devices. The straight handle style comes with a hole for easy attachment of a lanyard. The T-handle style can be converted to an L-handle style by tapping the roll pin with a hammer.

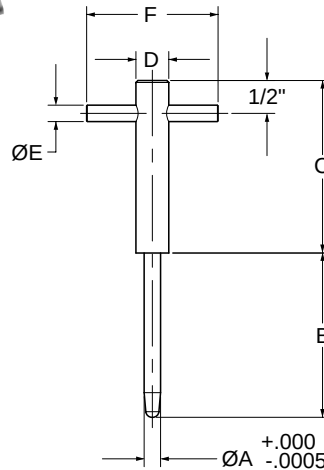
- Material: Low Carbon Steel
- Finish: Black Oxide
- Heat Treat: Case Hardened Rc 58-62 (pin only)

### Straight Handle Jig Pin

| Part Number | A     | B     | C     | D    | E    |
|-------------|-------|-------|-------|------|------|
| 24101       | .2500 | 2 1/2 | 2 5/8 | 1/2  | 1/4  |
| 24102       | .3125 | 2 1/2 | 2 5/8 | 9/16 | 1/4  |
| 24103       | .3750 | 4     | 2 5/8 | 5/8  | 1/4  |
| 24104       | .5000 | 3     | 2 5/8 | 3/4  | 5/16 |



T-Handle Jig Pins



### T- Handle Jig Pin

| Part Number | A     | B     | C     | D    | E    | F |
|-------------|-------|-------|-------|------|------|---|
| 24111       | .2500 | 2 1/2 | 2 5/8 | 1/2  | 1/4  | 2 |
| 24112       | .3125 | 2 1/2 | 2 5/8 | 9/16 | 1/4  | 3 |
| 24113       | .3750 | 4     | 2 5/8 | 5/8  | 1/4  | 3 |
| 24114       | .5000 | 3     | 2 5/8 | 3/4  | 5/16 | 3 |

## Lanyards

- To attach lanyard to L or T Pins order Split Ring **890000**
- To permanently attach Lanyard to L or T Pins add -C to Lanyard part number.
- For Lanyard & Tab drawings see page 9.22

### Ordering Lanyards When Supplied Separately Without Pins

#### Lanyards with Tabs

| Length |     | Round Tab       | Oval Tab |
|--------|-----|-----------------|----------|
| inch   | mm  | Stainless Steel | Aluminum |
| 4      | 102 | 890054*         | 890104*  |
| 6      | 152 | 890056*         | 890106*  |
| 8      | 203 | 890058*         | 890108*  |
| 10     | 254 | 890060*         | 890110*  |
| 12     | 305 | 890062*         | 890112*  |
| 16     | 406 | 890066*         | 890116*  |
| 20     | 508 | 890070*         | 890120*  |
| 24     | 610 | 890074*         | 890124*  |

Substitute the asterisk (\*) with the proper hole size letter from Table 1.

#### Table 1 Tab Hole Size

| Tab Mounting Hole Diameter |       |             |
|----------------------------|-------|-------------|
| Inch                       | mm    | Size Letter |
| 0.131                      | 3.3   | P           |
| 0.196                      | 4.9   | Q           |
| 0.257                      | 6.5   | R           |
| 0.283†                     | 7.1†  | S           |
| 0.320†                     | 8.1†  | T           |
| 0.379†                     | 9.6†  | U           |
| 0.406†                     | 10.3† | V           |
| 0.468†                     | 11.8† | W           |
| 0.515†                     | 13.1† | Y           |

(†) These sizes only available in stainless steel round tabs

#### Lanyards without Tabs

| Length |     | 2 Loops | 1 Loops (Pin) |
|--------|-----|---------|---------------|
| inch   | mm  |         |               |
| 4      | 102 | 890204  | 890254        |
| 6      | 152 | 890206  | 890256        |
| 8      | 203 | 890208  | 890258        |
| 10     | 254 | 890210  | 890260        |
| 12     | 305 | 890212  | 890262        |
| 16     | 406 | 890216  | 890266        |
| 20     | 508 | 890220  | 890270        |
| 24     | 610 | 890224  | 890274        |

#### Lanyard Loop/Eyelet

| For Screw Size |        |
|----------------|--------|
| #10            | M5     |
| 890304         | 890404 |
| 890306         | 890406 |
| 890308         | 890408 |
| 890310         | 890410 |
| 890312         | 890412 |
| 890316         | 890416 |
| 890320         | 890420 |
| 890324         | 890424 |

## Slotted Locator Bushing

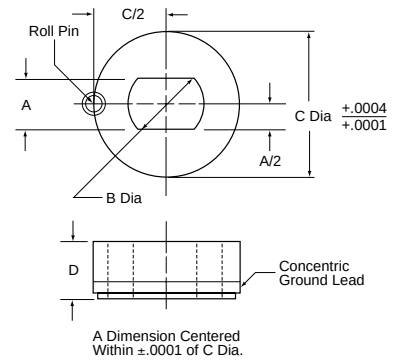


- Use with L Pins to align two holes without binding.
- Available for 3/16" through 1" diameter pins (6mm-25mm in metric sizes).
- Tool Steel, heat treated to Rc 58-62
- Supplied with Roll Pin: Locate within  $\pm .002"$  of slot centerline.



### Press Fit

| Part Number | Pin Dia | A             | Dia B | Dia C | D      |
|-------------|---------|---------------|-------|-------|--------|
| 24301       | 3/16    | .1876/.1882   | 0.312 | 0.75  | 0.400  |
| 24302       | 1/4     | .2501/.2507   | 0.375 | 0.75  | 0.400  |
| 24303       | 1/4     | .2501/.2507   | 0.375 | 1     | 0.400  |
| 24304       | 5/16    | .3126/.3132   | 0.437 | 1     | 0.400  |
| 24305       | 3/8     | .3751/.3757   | 0.5   | 1     | 0.400  |
| 24306       | 1/2     | .5001/.5007   | 0.625 | 1     | 0.400  |
| 24307       | 1/2     | .5001/.5007   | 0.625 | 1     | 0.900  |
| 24308       | 5/8     | .6251/.6257   | .075  | 1.25  | 0.900  |
| 24309       | 3/4     | .7501/.7510   | 0.812 | 1.5   | 1.0000 |
| 24310       | 7/8     | .8751/.8760   | 1     | 1.5   | 1.0000 |
| 24311       | 1       | 1.0001/1.0010 | 1.062 | 1.5   | 1.0000 |

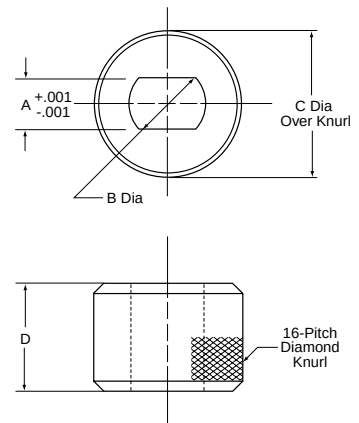


### Press Fit Metric

| Part Number | Pin Dia | A           | Dia B | Dia C  | D    |
|-------------|---------|-------------|-------|--------|------|
| 24351       | 6mm     | 6.00/6.03   | 9.0   | 20.000 | 9.0  |
| 24352       | 8mm     | 8.00/8.03   | 11.0  | 24.000 | 9.0  |
| 24353       | 10mm    | 10.00/10.03 | 13.0  | 24.000 | 9.0  |
| 24354       | 12mm    | 12.00/12.03 | 15.0  | 24.000 | 14.0 |
| 24355       | 16mm    | 16.00/16.03 | 18.0  | 30.000 | 12.0 |
| 24356       | 20mm    | 20.00/20.03 | 22.0  | 35.999 | 19.0 |
| 24357       | 25mm    | 25.00/25.03 | 27.0  | 40.000 | 19.0 |

### Knurled

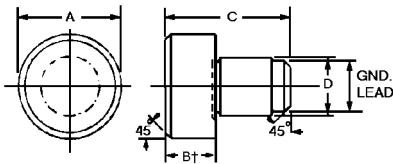
| Part Number | Pin Dia | A     | Dia B | Dia C | D   |
|-------------|---------|-------|-------|-------|-----|
| 24331       | 3/16    | 0.188 | 0.312 | 0.565 | .50 |
| 24332       | 1/4     | 0.25  | 0.375 | 0.64  | .50 |
| 24333       | 5/16    | 0.313 | 0.437 | 0.765 | .50 |
| 24334       | 3/8     | 0.375 | 0.5   | 0.89  | .50 |



## Rest Buttons Ground and Unground



- Material:  
Ground, Low Carbon Steel  
Unground, 52100
- Finish: Black Oxide
- Heat Treat:  
Ground, Case Hardened  
75-77 R30N  
Unground, 58-62 Rc
- Available in FixturePro™  
Design Software



†"B" dimension for ground style is  $+.0005/-0.000$ , unground  $+.010/+0.015$

### The Closest Tolerances in the Industry...

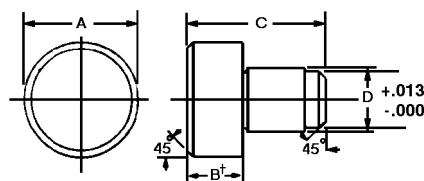
Jergens is proud of the close tolerances held on the "B" dimension of our Ground Rest Buttons. When it becomes necessary through constant wear to replace rest buttons, they can be replaced with the assurance of being within  $.0005$  ( $.013\text{mm}$ )

of the original location. Where replacement is not going to be a problem, we recommend the use of the Unground Buttons, which have a  $+.010$  ( $.25\text{mm}$ ) grinding stock to be ground after the fixture is assembled.

| Part Number<br>"B" Ground† | Part Number<br>"B" Unground† | A     | B    | C       | D            | Wt.<br>(lbs)<br>10 Pcs. |
|----------------------------|------------------------------|-------|------|---------|--------------|-------------------------|
|                            | 45719                        | 1/4   | 1/4  | 15/32   | .1885-.188   | .05                     |
| 34701*                     | 45721                        | 3/8   | 1/4  | 15/32   | .1885-.188   | .08                     |
| 34702*                     | 45722                        | 3/8   | 3/8  | 19/32   | .1885-.188   | .16                     |
| 34703*                     | 45723                        | 3/8   | 1/2  | 23/32   | .1885-.188   | .16                     |
| 34704*                     | 45724                        | 1/2   | 1/4  | 23/32   | .251-.2505   | .16                     |
| 34705*                     | 45725                        | 1/2   | 3/8  | 27/32   | .251-.2505   | .21                     |
| 34706*                     | 45726                        | 1/2   | 1/2  | 31/32   | .251-.2505   | .31                     |
| 34707*                     | 45727                        | 5/8   | 1/4  | 23/32   | .376-.3755   | .31                     |
| 34708*                     | 45728                        | 5/8   | 3/8  | 27/32   | .376-.3755   | .47                     |
|                            | 45729                        | 5/8   | 7/16 | 29/32   | .376-.3755   | .50                     |
| 34709*                     | 45730                        | 5/8   | 1/2  | 31/32   | .376-.3755   | .55                     |
| 34710*                     | 45731                        | 5/8   | 5/8  | 1 3/32  | .376-.3755   | .62                     |
| 34711                      | 45732                        | 5/8   | 3/4  | 1 7/32  | .376-.3755   | .78                     |
|                            | 45733                        | 7/8   | 3/8  | 31/32   | .501-.5005   | .68                     |
| 34712                      | 45734                        | 7/8   | 7/16 | 1 1/32  | .501-.5005   | .78                     |
|                            | 45735                        | 7/8   | 1/2  | 1 3/32  | .501-.5005   | .94                     |
| 34713*                     | 45736                        | 7/8   | 5/8  | 1 7/32  | .501-.5005   | 1.10                    |
| 34714                      | 45737                        | 7/8   | 3/4  | 1 11/32 | .501-.5005   | 1.25                    |
|                            | 45738                        | 1     | 3/8  | 1 3/32  | .626-.6255   | 1.20                    |
| 34715                      | 45739                        | 1     | 7/16 | 1 5/32  | .626-.6255   | 1.45                    |
| 34716*                     | 45740                        | 1     | 1/2  | 1 7/32  | .626-.6255   | 1.65                    |
|                            | 45741                        | 1     | 5/8  | 1 11/32 | .626-.6255   | 2.00                    |
|                            | 45742                        | 1     | 3/4  | 1 15/32 | .626-.6255   | 2.50                    |
|                            | 45743                        | 1 1/4 | 3/8  | 1 7/32  | .751-.7505   | 1.80                    |
|                            | 45744                        | 1 1/4 | 7/16 | 1 9/32  | .751-.7505   | 2.10                    |
|                            | 45745                        | 1 1/4 | 1/2  | 1 11/32 | .751-.7505   | 2.50                    |
| 34717*                     | 45746                        | 1 1/4 | 5/8  | 1 15/32 | .751-.7505   | 3.10                    |
| 34718                      | 45747                        | 1 1/2 | 3/4  | 1 31/32 | 1.001-1.0005 | 6.90                    |

\*Conforms to TCMA

## Rest Buttons Metric Ground and Unground

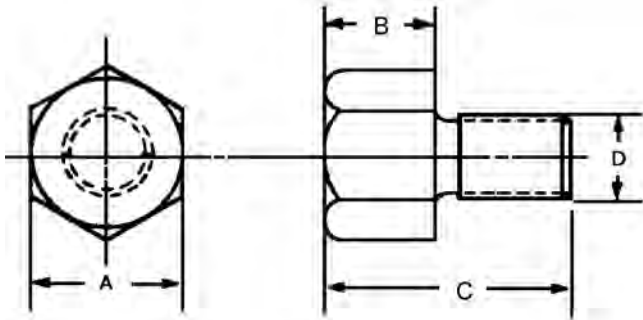


| "B" Ground†<br>Part<br>Number | "B" Unground†<br>Part<br>Number | A  | B  | C  | D  |
|-------------------------------|---------------------------------|----|----|----|----|
| 34751                         | 45771                           | 10 | 6  | 12 | 5  |
| 34754                         | 45774                           | 13 | 6  | 18 | 6  |
| 34757                         | 45777                           | 16 | 6  | 18 | 10 |
| 34758                         | 45778                           | 16 | 10 | 22 | 10 |
| 34759                         | 45780                           | 16 | 12 | 25 | 10 |
| 34763                         | 45786                           | 22 | 16 | 31 | 12 |
| 34766                         | 45790                           | 25 | 12 | 30 | 16 |

†"B" Dimension for ground style is  $+.013/-0.000\text{mm}$ , ungrounded style is  $+.25/+0.38\text{mm}$ .



## Threaded Rest Buttons

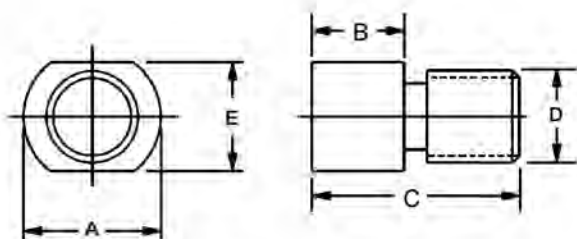


Thread into job instead of press fit. "B" dimension left with .010-.015 for finishing after assembly. For cutter setting blocks on milling fixtures, grind to your own specifications. Case hardened to approximately .030 deep.

- Material: Low Carbon Steel
- Finish: Black Oxide
- Heat Treat: Case Hardened 75-77 R30N
- Thread: 2A-UNF
- Available in FixturePro™ Design Software

| Part Number | A   | B     | C      | D      | Thread Pitch | wt/lbs 10 pcs. |
|-------------|-----|-------|--------|--------|--------------|----------------|
| 21501       | 3/8 | 1/4   | 5/8    | 1/4-28 | fine         | .16            |
| 21521       | 3/8 | 1/4   | 5/8    | 1/4-20 | coarse       | .16            |
| 21502       | 3/8 | 3/8   | 3/4    | 1/4-28 | fine         | .16            |
| 21522       | 3/8 | 3/8   | 3/4    | 1/4-20 | coarse       | .16            |
| 21503       | 3/8 | 1/2   | 7/8    | 1/4-28 | fine         | .16            |
| 21523       | 3/8 | 1/2   | 7/8    | 1/4-20 | coarse       | .16            |
| 21504       | 1/2 | 1/4   | 11/16  | 3/8-24 | fine         | .24            |
| 21524       | 1/2 | 1/4   | 11/16  | 3/8-16 | coarse       | .24            |
| 21505       | 1/2 | 3/8   | 13/16  | 3/8-24 | fine         | .31            |
| 21525       | 1/2 | 3/8   | 13/16  | 3/8-16 | coarse       | .31            |
| 21506       | 1/2 | 1/2   | 15/16  | 3/8-24 | fine         | .47            |
| 21526       | 1/2 | 1/2   | 15/16  | 3/8-16 | coarse       | .47            |
| 21507       | 1/2 | 3/4   | 1 3/16 | 3/8-24 | fine         | .47            |
| 21527       | 1/2 | 3/4   | 1 3/16 | 3/8-16 | coarse       | .47            |
| 21508       | 3/4 | 3/8   | 15/16  | 1/2-20 | fine         | .78            |
| 21528       | 3/4 | 3/8   | 15/16  | 1/2-13 | coarse       | .78            |
| 21509       | 3/4 | 1/2   | 1 1/16 | 1/2-20 | fine         | .94            |
| 21529       | 3/4 | 1/2   | 1 1/16 | 1/2-13 | coarse       | .94            |
| 21510       | 3/4 | 1     | 1 9/16 | 1/2-20 | fine         | 1.56           |
| 21530       | 3/4 | 1     | 1 9/16 | 1/2-13 | coarse       | 1.56           |
| 21511       | 1   | 1/2   | 1 3/16 | 5/8-18 | fine         | 1.72           |
| 21531       | 1   | 1/2   | 1 3/16 | 5/8-11 | coarse       | 1.72           |
| 21512       | 1   | 1 1/2 | 2 3/16 | 5/8-18 | fine         | 4.10           |
| 21532       | 1   | 1 1/2 | 2 3/16 | 5/8-11 | coarse       | 4.10           |

## Threaded Rest Buttons Metric

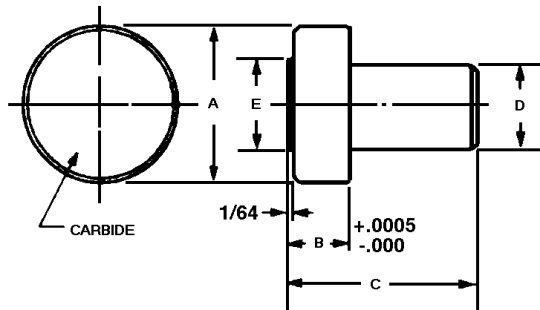


- Material: Low Carbon Steel
- Finish: Black Oxide
- Heat Treat: Case Hardened 75-77 R30N
- Thread: Class 6g

| Part Number | Dia. A | B  | C† | D        | Across Flats E |
|-------------|--------|----|----|----------|----------------|
| 21551       | 10     | 6  | 14 | M6x1.0   | 8              |
| 21554       | 13     | 6  | 17 | M10x1.5  | 10             |
| 21558       | 16     | 10 | 25 | M12x1.75 | 14             |
| 21561       | 25     | 12 | 30 | M16x2.9  | 20             |

† +.25/+ .38 mm Grinding Stock

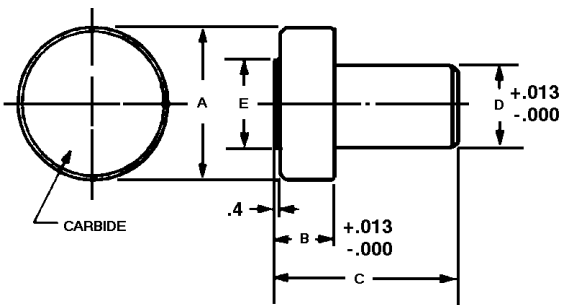
## Carbide Insert Rest Buttons



- Material: Body, Low Carbon Steel  
Insert, Carbide
- Available in FixturePro™ Design Software

| Part Number  | A   | B     | C      | D           | E   | Wt. (lbs) 10 Pcs. |
|--------------|-----|-------|--------|-------------|-----|-------------------|
| <b>34901</b> | 1/2 | .250  | 23/32  | .2505/.2510 | 3/8 | .25               |
| <b>34902</b> | 5/8 | .250  | 23/32  | .3755/.3760 | 3/8 | .42               |
| <b>34903</b> | 5/8 | .375  | 27/32  | .3755/.3760 | 3/8 | .58               |
| <b>34904</b> | 3/4 | .4375 | 1 1/32 | .5005/.5010 | 1/2 | .92               |
| <b>34905</b> | 1   | .4375 | 1 5/32 | .6255/.6260 | 3/4 | 1.80              |

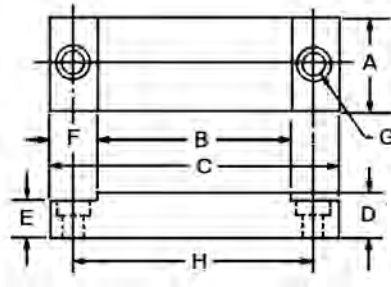
## Metric Carbide Insert Rest Buttons



- Material: Body, Low Carbon Steel  
Insert, Carbide

| Part Number  | A  | B  | C  | D  | E  |
|--------------|----|----|----|----|----|
| <b>34951</b> | 13 | 6  | 18 | 6  | 10 |
| <b>34953</b> | 16 | 10 | 22 | 10 | 10 |
| <b>34955</b> | 25 | 12 | 30 | 16 | 19 |

## Rest Pad



### Jergens Feature:

By holding close tolerances on the "D" dimension, when replacement becomes necessary, your original tolerances are maintained within .0005 (.013)

- Material: Low Carbon Steel
- Finish: Black Oxide
- Heat Treat: Case Hardened 75-77 R30N
- Available in FixturePro™ Design Software

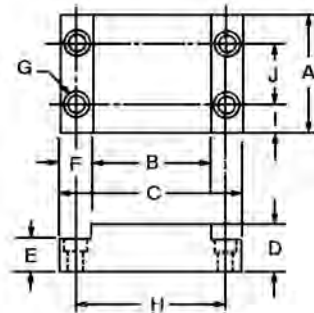
Rest Pads are designed to be used when you need a larger hardened wearing surface for heavy duty applications. Rest Pads can also be used as hardened work rests or as wear plates on your jigs and fixtures.

| Part Number | A     | B     | C     | +.0005<br>-.000<br>D | E   | F   | G    | H     | Wt.<br>(lbs) |
|-------------|-------|-------|-------|----------------------|-----|-----|------|-------|--------------|
| 35901       | 1     | 1     | 2     | .475                 | 3/8 | 1/2 | #10  | 1 1/2 | .22          |
| 35902       | 1 1/2 | 1 1/2 | 2 1/2 | .600                 | 1/2 | 1/2 | 1/4  | 2     | .58          |
| 35904       | 1     | 2     | 3 1/2 | .720                 | 5/8 | 3/4 | 5/16 | 2 3/4 | .63          |
| 35905       | 1     | 3     | 4 1/2 | .720                 | 5/8 | 3/4 | 5/16 | 3 3/4 | .84          |
| 35906       | 1     | 4     | 5 1/2 | .720                 | 5/8 | 3/4 | 5/16 | 4 3/4 | 1.06         |

### Metric

| Part Number | A  | B  | C  | +.013<br>-.000<br>D | E  | F  | G  | H  |
|-------------|----|----|----|---------------------|----|----|----|----|
| 35951       | 25 | 25 | 50 | 12                  | 10 | 13 | M5 | 38 |
| 35952       | 25 | 38 | 64 | 15                  | 13 | 13 | M6 | 50 |
| 35954       | 25 | 50 | 89 | 18                  | 16 | 19 | M8 | 70 |

## Rest Pad



Rest Pads are designed to be used when you need a larger hardened wearing surface for heavy duty applications. Rest Pads can also be used as hardened work rests or as wear plates on your jigs and fixtures.

- Material: Low Carbon Steel
- Finish: Black Oxide
- Heat Treat: Case Hardened 75-77 R30N
- Available in FixturePro™ Design Software

| Part Number | A | B | C | +.0005<br>-.000<br>D | E   | F   | G   | H     | I   | J | Wt.<br>(lbs) |
|-------------|---|---|---|----------------------|-----|-----|-----|-------|-----|---|--------------|
| 35903       | 2 | 2 | 3 | .725                 | 1/2 | 1/2 | 1/4 | 2 1/2 | 1/2 | 1 | 1.06         |

### Metric

| Part Number | A  | B  | C  | +.013<br>-.000<br>D | E  | F  | G  | H  | I  | J  |
|-------------|----|----|----|---------------------|----|----|----|----|----|----|
| 35953       | 50 | 50 | 75 | 18                  | 12 | 13 | M6 | 64 | 13 | 25 |

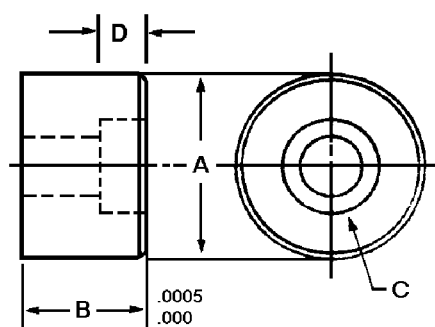
## Jig Feet



- Material: Low Carbon Steel
- Finish: Black Oxide
- Cap Screw included
- Heat Treat: Case Hardened  
75-77 R30N
- Available in FixturePro™ Design Software

### Jergens Feature:

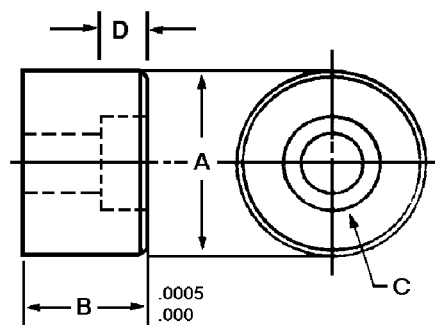
By holding close tolerances on the "B" dimension, when replacement becomes necessary, your original tolerances are maintained within .0005 (.013)



| Part Number | A     | +.0005<br>-.000<br>B | Socket Head<br>Capscrew<br>C | D     | Wt.<br>(lbs)<br>10 Pcs. |
|-------------|-------|----------------------|------------------------------|-------|-------------------------|
| 25701*      | 5/8   | 3/8                  | 1/4-20 x 3/8                 | 9/32  | .31                     |
| 25702*      | 5/8   | 1/2                  | 1/4-20 x 1/2                 | 9/32  | .31                     |
| 25703*      | 5/8   | 5/8                  | 1/4-20 x 5/8                 | 9/32  | .47                     |
| 25704*      | 5/8   | 3/4                  | 1/4-20 x 3/4                 | 9/32  | .55                     |
| 25705       | 5/8   | 7/8                  | 1/4-20 x 7/8                 | 9/32  | .62                     |
| 25706       | 5/8   | 1                    | 1/4-20 x 1                   | 9/32  | .78                     |
| 25707*      | 7/8   | 1/2                  | 5/16-18 x 1/2                | 11/32 | .78                     |
| 25708*      | 7/8   | 5/8                  | 5/16-18 x 5/8                | 11/32 | .94                     |
| 25709*      | 7/8   | 3/4                  | 5/16-18 x 3/4                | 11/32 | 1.03                    |
| 25710       | 7/8   | 7/8                  | 5/16-18 x 7/8                | 11/32 | 1.12                    |
| 25711*      | 7/8   | 1                    | 5/16-18 x 1                  | 11/32 | 1.15                    |
| 25712       | 7/8   | 1 1/8                | 5/16-18 x 1 1/4              | 11/32 | 1.17                    |
| 25713       | 7/8   | 3/4                  | 3/8-16 x 3/4                 | 13/32 | 1.11                    |
| 25714*      | 1 1/4 | 3/4                  | 3/8-16 x 3/4                 | 13/32 | 2.50                    |
| 25715       | 1 1/4 | 7/8                  | 3/8-16 x 7/8                 | 13/32 | 2.70                    |
| 25716*      | 1 1/4 | 1                    | 3/8-16 x 1                   | 13/32 | 3.30                    |
| 25717*      | 1 1/4 | 1 1/2                | 3/8-16 x 1 1/2               | 13/32 | 5.00                    |
| 25718       | 1 1/4 | 2                    | 3/8-16 x 2                   | 13/32 | 6.60                    |
| 25719       | 1 5/8 | 1 1/4                | 1/2-13 x 1 1/2               | 17/32 | 7.00                    |
| 25720       | 1 5/8 | 1 3/4                | 1/2-13 x 1 3/4               | 17/32 | 9.80                    |
| 25721       | 1 5/8 | 2 1/4                | 1/2-13 x 2 1/2               | 17/32 | 13.75                   |

\*Conforms to TCMA

## Metric Jig Feet



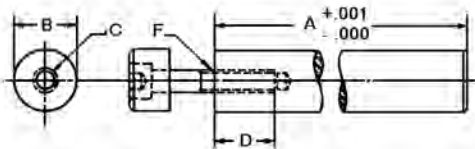
| Part Number | A  | +.013<br>-.000<br>B | Socket Head<br>Capscrew<br>C | D  |
|-------------|----|---------------------|------------------------------|----|
| 25751       | 16 | 10                  | M6 x 10                      | 7  |
| 25752       | 16 | 12                  | M6 x 12                      | 7  |
| 25754       | 16 | 20                  | M6 x 20                      | 7  |
| 25757       | 22 | 12                  | M8 x 12                      | 9  |
| 25759       | 22 | 20                  | M8 x 20                      | 9  |
| 25761       | 22 | 24                  | M8 x 25                      | 9  |
| 25766       | 32 | 24                  | M10 x 25                     | 11 |

## Jig Legs



The Jergens Jig Legs are ideal for cutting costs in simple jig plates. They assure lasting accuracy in your jig plate with a larger bearing surface at the top the the leg. The large diameter rest button provides more bearing surface for spot facing or counterboring on the bottom side. Both legs and rest buttons are hardened for long life.

- Material: Low Carbon Steel
- Finish: Black Oxide
- Heat Treat: Case Hardened 75-77 R30N
- Cap Screw Included
- Available in FixturePro™ Design Software



| Part Number | A | B   | C      | D   | Cap Screw F    | Wt. (lbs) |
|-------------|---|-----|--------|-----|----------------|-----------|
| 25301       | 1 | 5/8 | 1/4-20 | 5/8 | 1/4-20 x 1     | .13       |
| 25302       | 2 | 5/8 | 1/4-20 | 5/8 | 1/4-20 x 1     | .20       |
| 25303       | 3 | 5/8 | 1/4-20 | 7/8 | 1/4-20 x 1     | .28       |
| 25304       | 4 | 7/8 | 3/8-16 | 7/8 | 3/8-16 x 1 3/4 | .81       |
| 25305       | 5 | 7/8 | 3/8-16 | 7/8 | 3/8-16 x 1 3/4 | 1.00      |
| 25306       | 6 | 7/8 | 3/8-16 | 7/8 | 3/8-16 x 1 3/4 | 1.10      |

## Flat Feet



- Material: Low Carbon Steel
- Heat Treat: Case Hardened 75-77 R30N
- Cap Screw Included
- Available in FixturePro™ Design Software

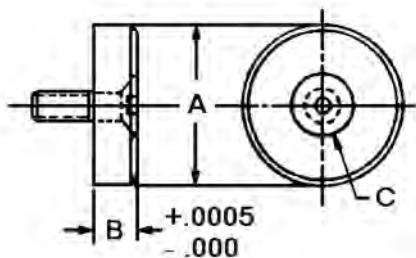
### Jergens Feature:

By holding close tolerances on the "B" dimension, when replacement becomes necessary, your original tolerances are maintained within .0005 (.013mm)

| Part Number | A     | +.0005<br>-.000<br>B | Flat Head<br>Screw<br>C | Wt. (lbs)<br>10 Pcs |
|-------------|-------|----------------------|-------------------------|---------------------|
| 19301       | 1/2   | 1/8                  | 8-32 x 3/8              | .06                 |
| 19302       | 1/2   | 1/4                  | 8-32 x 1/2              | .16                 |
| 19303       | 5/8   | 1/4                  | 10-32 x 5/8             | .21                 |
| 19304       | 7/8   | 3/8                  | 1/4-20 x 3/4            | .62                 |
| 19305       | 1 1/4 | 3/8                  | 5/16-18 x 3/4           | 1.25                |
| 19306       | 1 5/8 | 3/8                  | 3/8-16 x 3/4            | 2.20                |

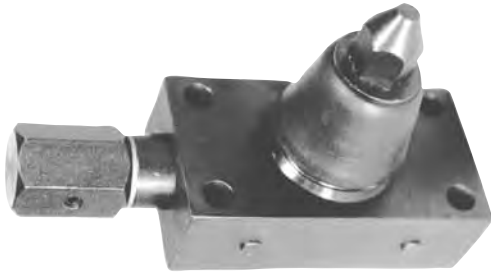
### Metric

| Part Number | A  | +.013<br>-.000<br>B | Flat Head<br>Screw<br>C | Wt. (Kg)<br>10 Pcs |
|-------------|----|---------------------|-------------------------|--------------------|
| 19351       | 13 | 3                   | M4 x 10                 | .03                |
| 19352       | 13 | 6                   | M4 x 12                 | .09                |
| 19353       | 16 | 6                   | M5 x 16                 | .11                |
| 19354       | 22 | 10                  | M6 x 20                 | .33                |
| 19355       | 31 | 10                  | M8 x 20                 | .47                |



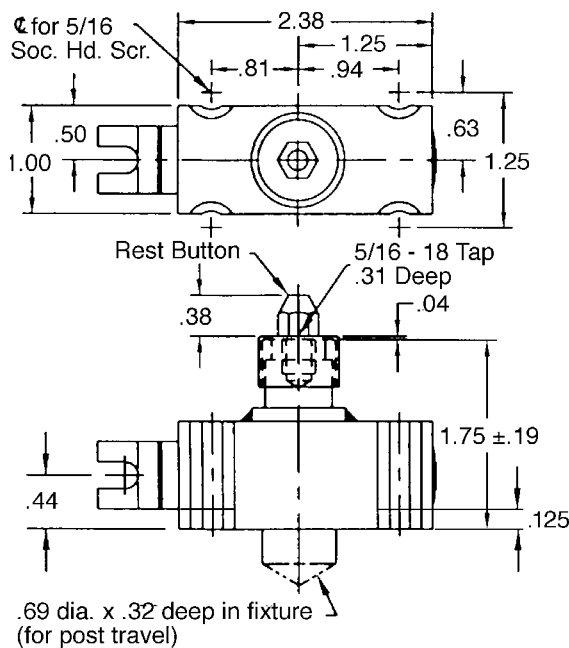


## Work Support Jacks



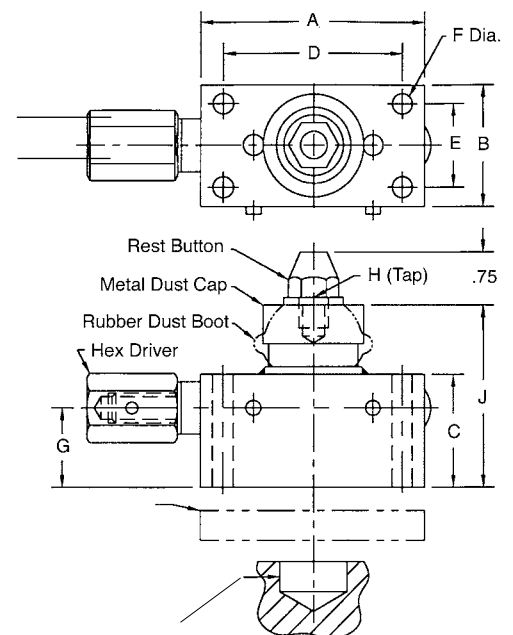
The Jergens Spring Loaded Work Jacks provide consistent support and rigidity to odd shaped workpieces. They are designed to prevent workpiece deflection under forces created during machining operations. Precision mated locking jaws grip the jackpost from both sides creating a vise-like action.

- Load capacities 300-4500 lbs.
- Rugged design
- Quality construction
- Dual jaw locking action
- Rubber boot or dust cap models available



25201

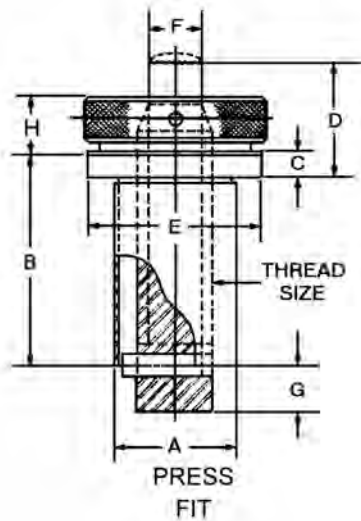
| Riser Optional on Part Number 25207 & 25208 |       |
|---------------------------------------------|-------|
| 1/4"                                        | 25211 |
| 1/2"                                        | 25212 |
| 3/4"                                        | 25213 |



If risers are not used, hole must be provided in fixture base:  
1.12" dia. x .50" deep for Part No.'s 25207 & 25208

| Part Number | Load Rating                    | Type Of Dust Protector | Type Of Driver | A                                         | B    | C    | D    | E    | Dia. F | G    | Tap H              | Jackpost J |        |
|-------------|--------------------------------|------------------------|----------------|-------------------------------------------|------|------|------|------|--------|------|--------------------|------------|--------|
|             |                                |                        |                |                                           |      |      |      |      |        |      |                    | Mean Ht.   | Travel |
| 25201       | 300 lbs at<br>10 ft-lbs Torque | Cap                    |                | Slotted, See Detailed View for Dimensions |      |      |      |      |        |      |                    | 1.75       | ±.19   |
| 25203       | 1400 lbs                       | Cap                    | .750 Hex       | 3.75                                      | 2.00 | 2.00 | 3.00 | 1.38 | 11/32  | 1.13 | 3/8-16<br>.44 Deep | 3.31       | ±.25   |
| 25207       | 2500 lbs                       | Cap                    | .750 Hex       | 3.75                                      | 2.00 | 1.12 | 3.00 | 1.38 | 11/32  | .56  | 3/8-16<br>.44 Deep | 2.38       | ±.25   |
| 25205       | 4500 lbs                       | Cap                    | .937 Hex       | 4.54                                      | 2.50 | 2.50 | 3.50 | 1.88 | 13/32  | 1.63 | 1/2-13<br>.59 deep | 4.13       | ±.38   |

## Fixture Jacks

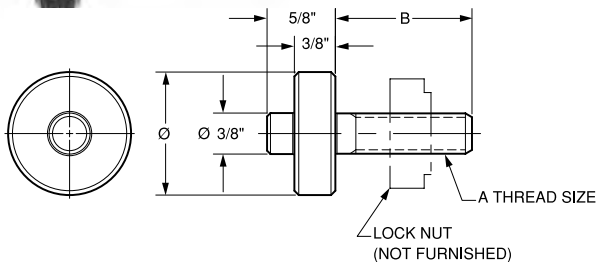


Designed as a positive locking jack for irregular clamping to achieve various heights requiring a positive pressure stop. Adjustable to fit height irregularities of milling operations. Available in either a smooth radius head or a hardened tool steel serrated gripping surface. Elevates vertically, no rotation. Outer diameter of bushing ground for press-fit.

- Material: Bushing, Low Carbon Steel  
Radius Stem, Low Carbon Steel  
Serrated Stem, 4140
- Finish: Bushing, Black Oxide  
Radius Stem, Black Oxide  
Serrated Stem, Black Oxide
- Heat Treat: Bushing, Case Hardened  
74-77 R30N  
Radius Stem, Case Hardened  
Serrated Stem, Rc 45-48
- Available in FixturePro™ Design Software

| Part Number<br>Radius | Part Number<br>Serrated | Press Fit<br>A | B      | C    | D    |        | E      | F     | G    | H    | Thread Size | Wt. (lbs) |
|-----------------------|-------------------------|----------------|--------|------|------|--------|--------|-------|------|------|-------------|-----------|
|                       |                         |                |        |      | Min. | Max.   |        |       |      |      |             |           |
| 24901                 | 25101                   | 5/8            | 1 3/16 | 3/16 | 9/16 | 1 1/2  | 1      | 1/4   | 5/32 | 3/8  | 3/8-16      | .19       |
| 24902                 | 25102                   | 1              | 1 5/8  | 3/16 | 7/8  | 2 7/16 | 1 5/16 | 15/32 | 7/16 | 7/16 | 5/8-11      | .55       |
| 24903                 | 25103                   | 1 1/2          | 2 3/4  | 3/16 | 7/8  | 3 1/2  | 1 3/4  | 13/16 | 1/2  | 9/16 | 1-8         | 1.90      |

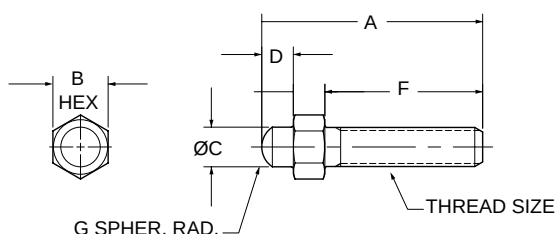
## Adjustable Jack Screws



- Material: Low Carbon Steel
- Finish: Black Oxide
- Heat Treat: Screw/Stem Case Hardened 87-92 R15N

| Part Number | A      | B     | C     | Wt. (lbs) | Lock Nut (Not Included) |
|-------------|--------|-------|-------|-----------|-------------------------|
| 25001       | 3/8-16 | 1-1/4 | 1-1/8 | 0.15      | 28101                   |
| 25003       | 3/8-16 | 2     | 1-1/8 | 0.18      | 28101                   |
| 25005       | 1/2-13 | 1-5/8 | 1-1/8 | 0.20      | 28102                   |
| 25007       | 1/2-13 | 2-1/2 | 1-1/8 | 0.25      | 28102                   |
| 25009       | 5/8-11 | 2     | 1-3/8 | 0.34      | 28103                   |
| 25011       | 5/8-11 | 3     | 1-3/8 | 0.43      | 28103                   |

## Adjustable Locating Buttons



- Material: Low Carbon Steel
- Finish: Black Oxide
- Heat Treat: Case Hardened 87-92 R15N

| Part Number | Thread Size | A     | B    | C    | D    | E    | F     | G    |
|-------------|-------------|-------|------|------|------|------|-------|------|
| 21401       | 10-32       | 1     | 1/4  | 3/16 | 1/8  | 1/8  | 3/4   | 1/8  |
| 21402       | 1/4-28      | 1 1/2 | 3/8  | 1/4  | 3/16 | 3/16 | 1 1/8 | 3/16 |
| 21403       | 5/16-24     | 1 3/4 | 7/16 | 5/16 | 1/4  | 1/4  | 1 1/4 | 3/16 |
| 21404       | 3/8-24      | 2     | 1/2  | 3/8  | 1/4  | 1/4  | 1 1/2 | 1/4  |
| 21405       | 1/2-20      | 2 1/2 | 5/8  | 1/2  | 5/16 | 5/16 | 1 7/8 | 5/16 |
| 21406       | 5/8-18      | 3     | 3/4  | 5/8  | 3/8  | 3/8  | 1 1/4 | 3/8  |
| 21407       | 3/4-16      | 3 1/2 | 7/8  | 3/4  | 7/16 | 7/16 | 2 5/8 | 7/16 |

## Standard Fixture Keys



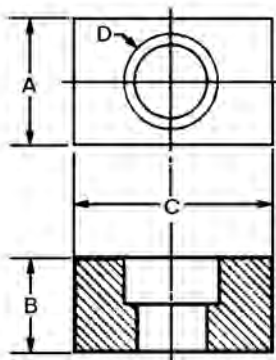
- Material: C-1018
- Finish: Black Oxide
- Heat Treat: Case Hardened 74-77 R30N
- Available in FixturePro™ Design Software

| Part Number | -.0005<br>-.0010<br>A | B   | C     | Socket Head Screw<br>D | Wt.<br>(lbs)<br>10 Pcs. |
|-------------|-----------------------|-----|-------|------------------------|-------------------------|
| 19701*      | .5000                 | 1/2 | 3/4   | 1/4                    | .14                     |
| 19702*      | .5625                 | 1/2 | 3/4   | 1/4                    | .65                     |
| 19703*      | .6250                 | 1/2 | 3/4   | 5/16                   | .68                     |
| 19704*      | .6875                 | 1/2 | 1     | 5/16                   | .98                     |
| 19705       | .7500                 | 1/2 | 1 1/4 | 5/16                   | 1.10                    |
| 19706       | .8125                 | 1/2 | 1 1/4 | 5/16                   | 1.25                    |

\*Conforms to TCMA

### Metric

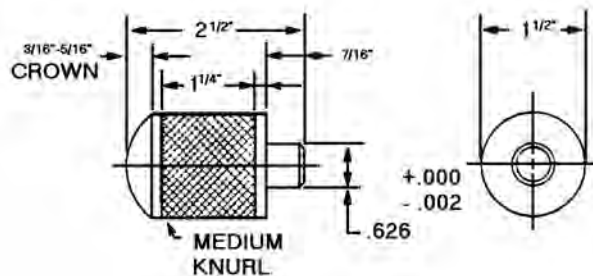
| Part Number | -.0013<br>-.0026<br>A | B  | C  | Socket Head Screw<br>D |
|-------------|-----------------------|----|----|------------------------|
| 19751       | 12                    | 13 | 19 | M5                     |
| 19752       | 14                    | 14 | 22 | M6                     |
| 19753       | 16                    | 13 | 22 | M6                     |
| 19754       | 18                    | 14 | 22 | M6                     |
| 19755       | 20                    | 13 | 22 | M6                     |
| 19756       | 22                    | 13 | 32 | M6                     |



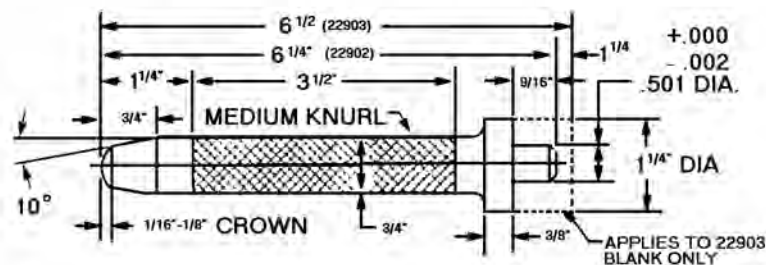
## Drift Handles



- Material: AISI-S7
- Finish: Black Oxide
- Heat Treat: Rc 44-48
- Available in FixturePro™ Design Software



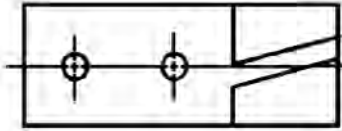
| Part Number | Wt.<br>(lbs) |
|-------------|--------------|
| 22901       | 1.0          |



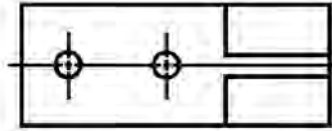
| Part Number | Wt.<br>(lbs) |
|-------------|--------------|
| 22902       | 1.1          |
| 22903       | 1.2          |

## Compare The Jergens Sine Fixture Key Method To The Standard Method

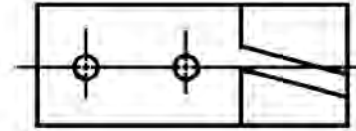
Construct a fixture to mill slots in castings A, B, and C. The locator pins to be common.



A



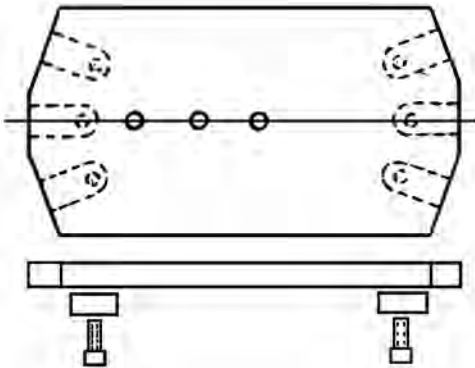
B



C

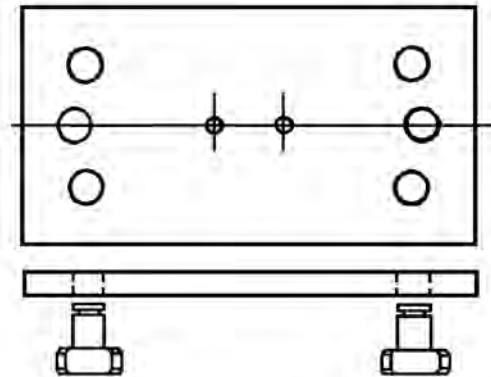
### Present Method

A total of 11.2 hours was required to complete this fixture base with finished edge, milled fixture key slots, bored locator pin holes and drilled and tapped set screw holes.



### Jergens Method

It took only 5 1/2 hours to complete this fixture with bored sine fixture key holes and bored locator pin holes



#### PRESENT METHOD

#### TIME

- |                                                                                                            |            |
|------------------------------------------------------------------------------------------------------------|------------|
| 1. Finish one edge.                                                                                        | .5 hours   |
| 2. Locate on jig bore and bore locating point and two locator pin holes                                    | 1.75 hours |
| 3. Relocate, position and mill two fixture key slots.                                                      | 1.75 hours |
| 4. Relocate and, by use of sine bar or other positioning device, establish and mill two fixture key slots. | 2.35 hours |
| 5. For opposite slots-same as above                                                                        | 2.35 hours |
| 6. Drill and tap six holes for holding fixture keys in slots.                                              | 1.5 hours  |
| 7. Set up and perform inspection-if inaccurate, reroute for reworking.                                     | 1.0 hours  |

#### TOTAL TIME REQUIRED

11.2 hours

#### JERGENS METHOD

#### TIME

- |                                                                            |           |
|----------------------------------------------------------------------------|-----------|
| 1. Eliminated.                                                             |           |
| 2. One set-up serves for establishing locator holes and sine fixture keys. | 4.5 hours |
| 3. Eliminated.                                                             |           |
| 4. Eliminated                                                              |           |
| 5. Eliminated.                                                             |           |
| 6. Eliminated.                                                             |           |
| 7. Inspect on original set-up.                                             | 1.0 hours |

#### TOTAL TIME REQUIRED

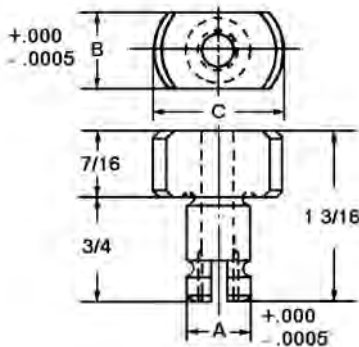
5.5 hours

**ON THIS PARTICULAR FIXTURE - SAVE OVER 50% OF SET-UP TIME!**

## Sine Fixture Keys



- Material: 4140
- Heat Treat: 26-30
- Available in FixturePro™ Design Software
- Reduce fixture costs
- Cut extra set-up time
- Completely interchangeable
- Fits many table slot sizes



### Jergens Feature:

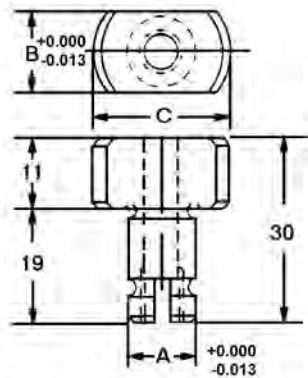
**Full 360° contact for more accurate locating.**

Sine Fixture Keys locate jigs and fixtures on machine tool tables and position the part in one operation. They eliminate the need to slot fixture bases, make step fixture keys, or drill and tap keys. Simply ream two holes, depending upon the shank size shown in the table below.

The unique expansion shaft allows the key to be locked in the fixture from either the top or the bottom using a standard hex wrench.

| Part Number | Shank Size A | Slot Size B | C     | Wt. (lbs) | Recommended Hole Diameter                  |
|-------------|--------------|-------------|-------|-----------|--------------------------------------------|
| 39501       | .625         | .4995       | 1     | .09       | <b>.625 Shank Size:</b><br>0.6255 ± 0.0005 |
| 39502       | .625         | .562        | 1     | .11       |                                            |
| 39503       | .625         | .6245       | 1     | .11       |                                            |
| 39504       | .625         | .687        | 1     | .11       |                                            |
| 39505       | .625         | .7495       | 1 1/8 | .13       |                                            |
| 39506       | .625         | .812        | 1 1/8 | .14       |                                            |
| 39507       | .625         | .8745       | 1 1/8 | .15       |                                            |
| 39509       | .750         | .9995       | 1 3/8 | .22       | <b>.75 Shank Size:</b><br>0.7505 ± 0.0005  |
| 39510       | .750         | 1.062       | 1 3/8 | .23       |                                            |

## Metric Sine Fixture Keys



| Part Number | Shank Size A | Slot Size B | C  | Wt. (kg) | Recommended Hole Diameter               |
|-------------|--------------|-------------|----|----------|-----------------------------------------|
| 39551       | 16           | 12          | 25 | .04      | <b>16mm Shank Size:</b><br>16.01 ± 0.01 |
| 39552       | 16           | 14          | 25 | .05      |                                         |
| 39553       | 16           | 16          | 25 | .05      |                                         |
| 39554       | 16           | 18          | 29 | .05      |                                         |
| 39555       | 16           | 20          | 29 | .06      |                                         |
| 39556       | 16           | 22          | 29 | .06      |                                         |
| 39557       | 20           | 24          | 35 | .07      | <b>20mm Shank Size:</b><br>20.01 ± 0.01 |
| 39558       | 20           | 28          | 35 | .10      |                                         |
| 39559       | 20           | 32          | 40 | .10      |                                         |

## Metric Slot/Inch Shank

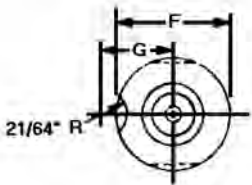
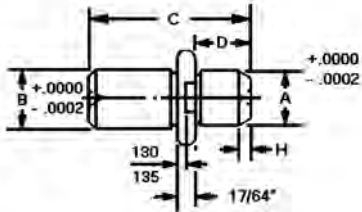
Used primarily for adapting existing fixtures with inch locating holes to metric table slots.

| Part Number | Shank Size A | Slot Size (Mm) B | C     | Wt. (lbs) | Recommended Hole Diameter |
|-------------|--------------|------------------|-------|-----------|---------------------------|
| 39561       | .625         | 12               | 1     | .09       | 0.6255 ± 0.0005           |
| 39562       | .625         | 14               | 1     | .09       |                           |
| 39563       | .625         | 16               | 1     | .11       |                           |
| 39564       | .625         | 18               | 1 1/8 | .11       |                           |
| 39565       | .625         | 20               | 1 1/8 | .14       |                           |
| 39566       | .625         | 22               | 1 1/8 | .15       |                           |



## Locating Pins-Slip Fit

### Round



- Material: Low Carbon Steel
- Heat Treat: Case Hardened  
74-77 R30N
- Available in FixturePro™  
Design Software

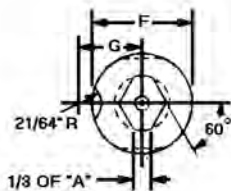
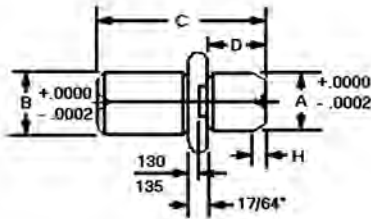
- Sizes range from 1/8" to 1" head diameters
- Concentricity in both diameters is held within .0002
- For special applications we will grind the "A" dimension to your specifications
- Quick turnaround on specials
- May be used in bushing applications or press fit with Lock Screws.

| Part Number | A     | B    | C       | D     | F     | G     | H    | Wt.<br>(lbs)<br>10 Pcs. |
|-------------|-------|------|---------|-------|-------|-------|------|-------------------------|
| Round       |       |      |         |       |       |       |      |                         |
| 29101*      | .1245 | 5/16 | 1 3/16  | 7/16  | 5/8   | 33/64 | 1/32 | .31                     |
| 29102       | .1401 | 5/16 | 1 3/16  | 7/16  | 5/8   | 33/64 | 1/32 | .31                     |
| 29103*      | .1558 | 5/16 | 1 3/16  | 7/16  | 5/8   | 33/64 | 3/64 | .31                     |
| 29104       | .1714 | 5/16 | 1 3/16  | 7/16  | 5/8   | 33/64 | 3/64 | .31                     |
| 29105*      | .1870 | 5/16 | 1 3/16  | 7/16  | 5/8   | 33/64 | 1/16 | .31                     |
| 29106       | .2026 | 5/16 | 1 3/16  | 7/16  | 5/8   | 33/64 | 1/16 | .31                     |
| 29107*      | .2183 | 5/16 | 1 3/16  | 7/16  | 5/8   | 33/64 | 5/64 | .31                     |
| 29108       | .2339 | 5/16 | 1 3/16  | 7/16  | 5/8   | 33/64 | 3/32 | .31                     |
| 29109*      | .2495 | 5/16 | 1 3/16  | 7/16  | 5/8   | 33/64 | 3/32 | .31                     |
| 29110       | .2651 | 5/16 | 1 3/16  | 7/16  | 5/8   | 33/64 | 3/32 | .31                     |
| 29111*      | .2808 | 5/16 | 1 3/16  | 7/16  | 5/8   | 33/64 | 3/32 | .36                     |
| 29112       | .2964 | 5/16 | 1 3/16  | 7/16  | 5/8   | 33/64 | 3/32 | .36                     |
| 29113*      | .3120 | 5/16 | 1 3/16  | 7/16  | 5/8   | 33/64 | 3/32 | .36                     |
| 29114*      | .3115 | 1/2  | 1 1/2   | 1/2   | 7/8   | 41/64 | 1/8  | .90                     |
| 29115       | .3271 | 1/2  | 1 1/2   | 1/2   | 7/8   | 41/64 | 1/8  | .90                     |
| 29116*      | .3428 | 1/2  | 1 1/2   | 1/2   | 7/8   | 41/64 | 1/8  | .90                     |
| 29117       | .3584 | 1/2  | 1 1/2   | 1/2   | 7/8   | 41/64 | 1/8  | .90                     |
| 29118*      | .3740 | 1/2  | 1 1/2   | 1/2   | 7/8   | 41/64 | 1/8  | .90                     |
| 29119       | .3896 | 1/2  | 1 1/2   | 1/2   | 7/8   | 41/64 | 1/8  | .90                     |
| 29120*      | .4053 | 1/2  | 1 1/2   | 1/2   | 7/8   | 41/64 | 1/8  | .90                     |
| 29121       | .4209 | 1/2  | 1 1/2   | 1/2   | 7/8   | 41/64 | 1/8  | .90                     |
| 29122*      | .4365 | 1/2  | 1 1/2   | 1/2   | 7/8   | 41/64 | 1/8  | .90                     |
| 29123       | .4521 | 1/2  | 1 1/2   | 1/2   | 7/8   | 41/64 | 1/8  | .95                     |
| 29124*      | .4678 | 1/2  | 1 1/2   | 1/2   | 7/8   | 41/64 | 1/8  | .95                     |
| 29125       | .4834 | 1/2  | 1 1/2   | 1/2   | 7/8   | 41/64 | 1/8  | 1.00                    |
| 29126*      | .4990 | 1/2  | 1 1/2   | 1/2   | 7/8   | 41/64 | 1/8  | 1.00                    |
| 29127*      | .4980 | 3/4  | 1 15/16 | 11/16 | 1 1/8 | 49/64 | 3/16 | 2.0                     |
| 29128*      | .5293 | 3/4  | 1 15/16 | 11/16 | 1 1/8 | 49/64 | 3/16 | 2.0                     |
| 29129*      | .5605 | 3/4  | 1 15/16 | 11/16 | 1 1/8 | 49/64 | 3/16 | 2.5                     |
| 29130*      | .5918 | 3/4  | 1 15/16 | 11/16 | 1 1/8 | 49/64 | 3/16 | 2.5                     |
| 29131*      | .6230 | 3/4  | 1 15/16 | 11/16 | 1 1/8 | 49/64 | 3/16 | 2.5                     |
| 29132*      | .6543 | 3/4  | 1 15/16 | 11/16 | 1 1/8 | 49/64 | 3/16 | 2.5                     |
| 29133*      | .6855 | 3/4  | 1 15/16 | 11/16 | 1 1/8 | 49/64 | 3/16 | 2.5                     |
| 29134*      | .7168 | 3/4  | 1 15/16 | 11/16 | 1 1/8 | 49/64 | 3/16 | 2.5                     |
| 29135*      | .7480 | 3/4  | 1 15/16 | 11/16 | 1 1/8 | 49/64 | 3/16 | 2.5                     |
| 29136*      | .7480 | 1    | 2 5/8   | 1     | 1 1/2 | 61/64 | 9/32 | 5.0                     |
| 29137*      | .7793 | 1    | 2 5/8   | 1     | 1 1/2 | 61/64 | 9/32 | 5.0                     |
| 29138*      | .8105 | 1    | 2 5/8   | 1     | 1 1/2 | 61/64 | 9/32 | 5.0                     |
| 29139*      | .8418 | 1    | 2 5/8   | 1     | 1 1/2 | 61/64 | 9/32 | 5.0                     |
| 29140*      | .8730 | 1    | 2 5/8   | 1     | 1 1/2 | 61/64 | 9/32 | 5.0                     |
| 29141*      | .9043 | 1    | 2 5/8   | 1     | 1 1/2 | 61/64 | 9/32 | 5.0                     |
| 29142*      | .9355 | 1    | 2 5/8   | 1     | 1 1/2 | 61/64 | 9/32 | 5.0                     |
| 29143*      | .9668 | 1    | 2 5/8   | 1     | 1 1/2 | 61/64 | 9/32 | 5.0                     |
| 29144*      | .9980 | 1    | 2 5/8   | 1     | 1 1/2 | 61/64 | 9/32 | 5.0                     |

\* Conforms to TCMA  
See page 4.24 for Liners and Lock Screws.

## Locating Pins-Slip Fit

### Relieved



- Material: Low Carbon Steel
- Heat Treat: Case Hardened  
74-77 R30N
- Available in FixturePro™  
Design Software

- Sizes range from 1/8" to 1" head diameters
- Concentricity in both diameters is held within .0002
- For special applications we will grind the "A" dimension to your specifications
- Quick turn-around on specials
- May be used in bushing applications or press fit with lock screws.

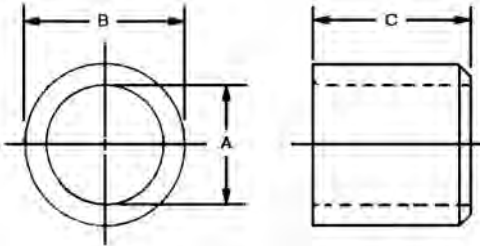
| Part Number | A     | B    | C       | D     | F     | G     | H    | Wt. (lbs) |
|-------------|-------|------|---------|-------|-------|-------|------|-----------|
| Relieved    |       |      |         |       |       |       |      | 10 Pcs.   |
| 29301*      | .1245 | 5/16 | 1 3/16  | 7/16  | 5/8   | 33/64 | 1/32 | .31       |
| 29302       | .1401 | 5/16 | 1 3/16  | 7/16  | 5/8   | 33/64 | 1/32 | .31       |
| 29303*      | .1558 | 5/16 | 1 3/16  | 7/16  | 5/8   | 33/64 | 3/64 | .31       |
| 29304       | .1714 | 5/16 | 1 3/16  | 7/16  | 5/8   | 33/64 | 3/64 | .31       |
| 29305*      | .1870 | 5/16 | 1 3/16  | 7/16  | 5/8   | 33/64 | 1/16 | .31       |
| 29306       | .2026 | 5/16 | 1 3/16  | 7/16  | 5/8   | 33/64 | 1/16 | .31       |
| 29307*      | .2183 | 5/16 | 1 3/16  | 7/16  | 5/8   | 33/64 | 5/64 | .31       |
| 29308       | .2339 | 5/16 | 1 3/16  | 7/16  | 5/8   | 33/64 | 3/32 | .31       |
| 29309*      | .2495 | 5/16 | 1 3/16  | 7/16  | 5/8   | 33/64 | 3/32 | .31       |
| 29310       | .2651 | 5/16 | 1 3/16  | 7/16  | 5/8   | 33/64 | 3/32 | .31       |
| 29311*      | .2808 | 5/16 | 1 3/16  | 7/16  | 5/8   | 33/64 | 3/32 | .36       |
| 29312       | .2964 | 5/16 | 1 3/16  | 7/16  | 5/8   | 33/64 | 3/32 | .36       |
| 29313*      | .3120 | 5/16 | 1 3/16  | 7/16  | 5/8   | 33/64 | 3/32 | .36       |
| 29314*      | .3115 | 1/2  | 1 1/2   | 1/2   | 7/8   | 41/64 | 1/8  | .90       |
| 29315       | .3271 | 1/2  | 1 1/2   | 1/2   | 7/8   | 41/64 | 1/8  | .90       |
| 29316*      | .3428 | 1/2  | 1 1/2   | 1/2   | 7/8   | 41/64 | 1/8  | .90       |
| 29317       | .3584 | 1/2  | 1 1/2   | 1/2   | 7/8   | 41/64 | 1/8  | .90       |
| 29318*      | .3740 | 1/2  | 1 1/2   | 1/2   | 7/8   | 41/64 | 1/8  | .90       |
| 29319       | .3896 | 1/2  | 1 1/2   | 1/2   | 7/8   | 41/64 | 1/8  | .90       |
| 29320*      | .4053 | 1/2  | 1 1/2   | 1/2   | 7/8   | 41/64 | 1/8  | .90       |
| 29321       | .4209 | 1/2  | 1 1/2   | 1/2   | 7/8   | 41/64 | 1/8  | .90       |
| 29322*      | .4365 | 1/2  | 1 1/2   | 1/2   | 7/8   | 41/64 | 1/8  | .90       |
| 29323       | .4521 | 1/2  | 1 1/2   | 1/2   | 7/8   | 41/64 | 1/8  | .95       |
| 29324*      | .4678 | 1/2  | 1 1/2   | 1/2   | 7/8   | 41/64 | 1/8  | .95       |
| 29325       | .4834 | 1/2  | 1 1/2   | 1/2   | 7/8   | 41/64 | 1/8  | 1.00      |
| 29326*      | .4990 | 1/2  | 1 1/2   | 1/2   | 7/8   | 41/64 | 1/8  | 1.00      |
| 29327*      | .4980 | 3/4  | 1 15/16 | 11/16 | 1 1/8 | 49/64 | 3/16 | 2.0       |
| 29328*      | .5293 | 3/4  | 1 15/16 | 11/16 | 1 1/8 | 49/64 | 3/16 | 2.0       |
| 29329*      | .5605 | 3/4  | 1 15/16 | 11/16 | 1 1/8 | 49/64 | 3/16 | 2.5       |
| 29330*      | .5918 | 3/4  | 1 15/16 | 11/16 | 1 1/8 | 49/64 | 3/16 | 2.5       |
| 29331*      | .6230 | 3/4  | 1 15/16 | 11/16 | 1 1/8 | 49/64 | 3/16 | 2.5       |
| 29332*      | .6543 | 3/4  | 1 15/16 | 11/16 | 1 1/8 | 49/64 | 3/16 | 2.5       |
| 29333*      | .6855 | 3/4  | 1 15/16 | 11/16 | 1 1/8 | 49/64 | 3/16 | 2.5       |
| 29334*      | .7168 | 3/4  | 1 15/16 | 11/16 | 1 1/8 | 49/64 | 3/16 | 2.5       |
| 29335*      | .7480 | 3/4  | 1 15/16 | 11/16 | 1 1/8 | 49/64 | 3/16 | 2.5       |
| 29336*      | .7480 | 1    | 2 5/8   | 1     | 1 1/2 | 61/64 | 9/32 | 5.0       |
| 29337*      | .7793 | 1    | 2 5/8   | 1     | 1 1/2 | 61/64 | 9/32 | 5.0       |
| 29338*      | .8105 | 1    | 2 5/8   | 1     | 1 1/2 | 61/64 | 9/32 | 5.0       |
| 29339*      | .8418 | 1    | 2 5/8   | 1     | 1 1/2 | 61/64 | 9/32 | 5.0       |
| 29340*      | .8730 | 1    | 2 5/8   | 1     | 1 1/2 | 61/64 | 9/32 | 5.0       |
| 29341*      | .9043 | 1    | 2 5/8   | 1     | 1 1/2 | 61/64 | 9/32 | 5.0       |
| 29342*      | .9355 | 1    | 2 5/8   | 1     | 1 1/2 | 61/64 | 9/32 | 5.0       |
| 29343*      | .9668 | 1    | 2 5/8   | 1     | 1 1/2 | 61/64 | 9/32 | 5.0       |
| 29344*      | .9980 | 1    | 2 5/8   | 1     | 1 1/2 | 61/64 | 9/32 | 5.0       |

\* Conforms to TCMA  
See page 4.24 for Liners and Lock Screws.

## Locating Pin Liners



- Material: 52100 Steel

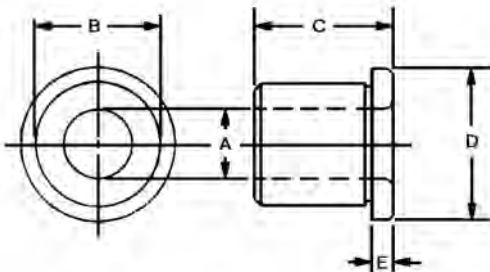


| Part Number | A      | B      | C     | Wt. (lbs) 10 Pcs. |
|-------------|--------|--------|-------|-------------------|
| 28501       | .3129  | .5017  | 1/2   | .16               |
|             | .3126  | .5014  |       |                   |
| 28502       | .5005  | .7518  | 3/4   | .47               |
|             | .5002  | .7515  |       |                   |
| 28503       | .7506  | 1.0018 | 1     | .94               |
|             | .7503  | 1.0015 |       |                   |
| 28504       | 1.0007 | 1.3772 | 1 3/8 | 2.80              |
|             | 1.0004 | 1.3768 |       |                   |

## Locating Pin Shoulder Liners



- Material: 52100 Steel

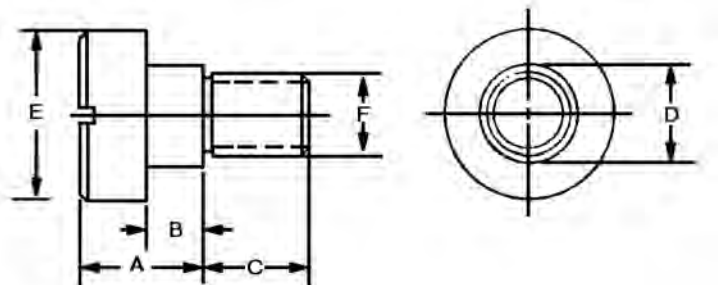


| Part Number | A      | B      | C     | D     | E    | Wt. (lbs) 10 Pcs. |
|-------------|--------|--------|-------|-------|------|-------------------|
| 40901       | .3129  | .5017  | 1/2   | 5/8   | 3/32 | .16               |
|             | .3126  | .5014  |       |       |      |                   |
| 40902       | .5005  | .7518  | 3/4   | 7/8   | 3/32 | .47               |
|             | .5002  | .7515  |       |       |      |                   |
| 40903       | .7506  | 1.0018 | 1     | 1 1/8 | 1/8  | .94               |
|             | .7503  | 1.0015 |       |       |      |                   |
| 40904       | 1.0007 | 1.3772 | 1 3/8 | 1 1/2 | 1/8  | 2.65              |
|             | 1.0004 | 1.3768 |       |       |      |                   |

## Locating Pin Lock Screws

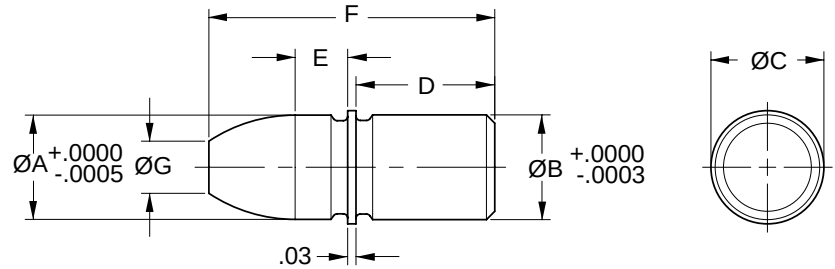


- Material: Low Carbon Steel
- Finish: Black Oxide
- Heat Treat: Case Hardened
- Thread: 2A-UNC



| Part Number | A   | B    | C   | D   | E   | F       | Wt. (lbs) 10 Pcs. |
|-------------|-----|------|-----|-----|-----|---------|-------------------|
| 10101       | 1/4 | .135 | 3/8 | 3/8 | 5/8 | 5/16-18 | .16               |

## Bullet Nose Dowels

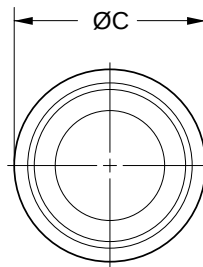
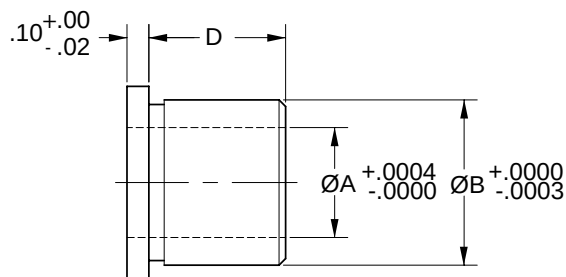


Bullet Nose Dowels are used for aligning two pieces of a fixture together.

- Pin and head centric within .0005 TIR
- Bushing ID and OD concentric within .0003 TIR
- Material: Low carbon steel
- Heat Treat: Case hardened 72-82 R30N
- Ground finish

### Bullet-Nose Dowels

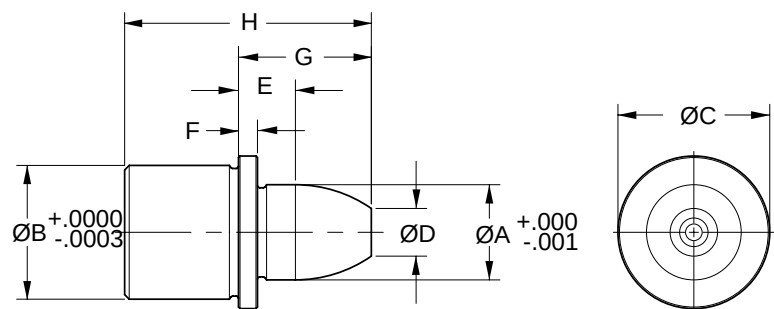
| Part Number  | A     | B     | C    | D   | E   | F    | G    |
|--------------|-------|-------|------|-----|-----|------|------|
| <b>29221</b> | .2499 | .2516 | .280 | 1/2 | .12 | .90  | 1/8  |
| <b>29222</b> | .3124 | .3141 | .344 | 1/2 | .16 | .94  | 5/32 |
| <b>29223</b> | .3749 | .3766 | .407 | 1/2 | .19 | 1.03 | 3/16 |
| <b>29224</b> | .4999 | .5017 | .532 | 1/2 | .19 | 1.09 | 1/4  |



### Bullet-Nose Dowel Liners (Bushings)

| Part Number  | A     | B     | C   | D   |
|--------------|-------|-------|-----|-----|
| <b>40921</b> | .2501 | .5017 | 5/8 | 3/8 |
| <b>40922</b> | .3126 | .5017 | 5/8 | 3/8 |
| <b>40923</b> | .3751 | .6267 | 3/4 | 1/2 |
| <b>40924</b> | .5001 | .7518 | 7/8 | 5/8 |

## Pilot Locating Pins



- Material: Low carbon steel
- Heat Treat: Case hardened 72-82 R30N
- Ground finish

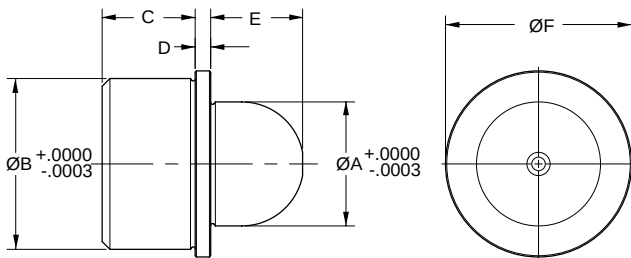
### Pilot Locating Pins

| Part Number  | A    | B     | C    | D    | E    | F    | G     | H     |
|--------------|------|-------|------|------|------|------|-------|-------|
| <b>29231</b> | .249 | .4078 | 9/16 | 5/32 | 9/32 | 3/32 | 15/32 | 27/32 |
| <b>29232</b> | .312 | .5017 | 5/8  | 3/16 | 9/32 | 3/32 | 15/32 | 27/32 |
| <b>29233</b> | .624 | .8768 | 1    | 5/16 | 3/8  | 1/8  | 7/8   | 1 5/8 |

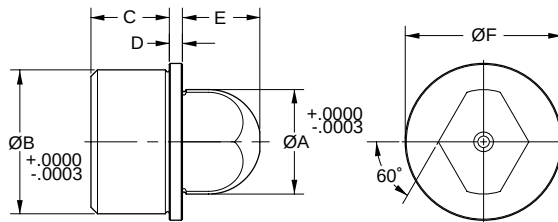
## Bullet Nose Pins



**Bullet-Nose  
Pins – Round**



**Bullet-Nose  
Pins – Relieved**



### Bullet-Nose Pins – Round

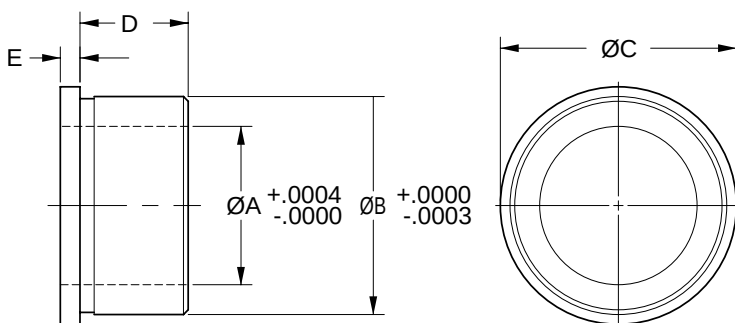
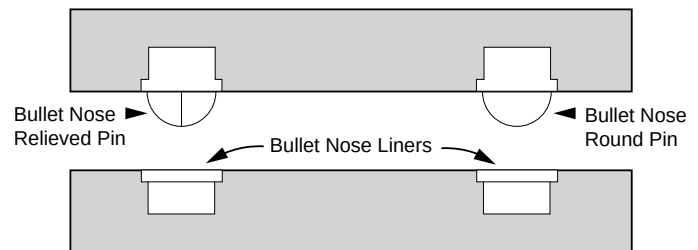
| Part Number | A     | B      | C   | D    | E     | F     |
|-------------|-------|--------|-----|------|-------|-------|
| 29201       | .2499 | .4078  | 3/8 | 1/16 | 7/32  | 9/16  |
| 29202       | .3124 | .5017  | 3/8 | 1/16 | 9/32  | 5/8   |
| 29203       | .3749 | .6267  | 1/2 | 1/16 | 5/16  | 3/4   |
| 29204       | .4998 | .7518  | 1/2 | 1/16 | 13/32 | 7/8   |
| 29205       | .7498 | 1.0018 | 3/4 | 1/8  | 9/16  | 1 1/8 |
| 29206       | .9998 | 1.3771 | 3/4 | 1/8  | 3/4   | 1 1/2 |

### Bullet-Nose Pins – Relieved

| Part Number | A     | B      | C   | D    | E     | F     |
|-------------|-------|--------|-----|------|-------|-------|
| 29211       | .2499 | .4078  | 3/8 | 1/16 | 7/32  | 9/16  |
| 29212       | .3124 | .5017  | 3/8 | 1/16 | 9/32  | 5/8   |
| 29213       | .3749 | .6267  | 1/2 | 1/16 | 5/16  | 3/4   |
| 29214       | .4998 | .7518  | 1/2 | 1/16 | 13/32 | 7/8   |
| 29215       | .7498 | 1.0018 | 3/4 | 1/8  | 9/16  | 1 1/8 |
| 29216       | .9998 | 1.3771 | 3/4 | 1/8  | 3/4   | 1 1/2 |

Bullet Nose Pins are used for aligning two pieces of a fixture together. The round and relieved style are used in conjunction with a matching bushing to locate radially on the round pin. The flats on the relieved pin prevents binding, yet allows a high degree of accuracy to be maintained.

- Material: Low carbon steel
- Heat Treat: Case hardened 72-82 R30N
- Ground finish

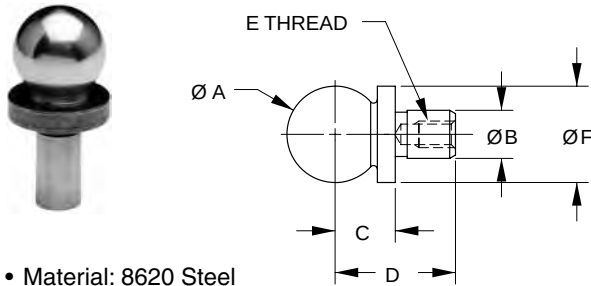


### Bullet Nose Pins Liners (Bushings)

| Part Number | A      | B      | C     | D       | E    |
|-------------|--------|--------|-------|---------|------|
| 40911       | .2501  | .4078  | 9/16  | 7/16    | 1/16 |
| 40912       | .3126  | .5017  | 5/8   | 7/16    | 1/16 |
| 40913       | .3751  | .6267  | 3/4   | 7/16    | 1/16 |
| 40914       | .5001  | .7518  | 7/8   | 1/2     | 1/16 |
| 40915       | .7502  | 1.0018 | 1 1/8 | 1/2     | 1/8  |
| 40916       | 1.0002 | 1.3771 | 1 1/2 | 1 11/16 | 1/8  |



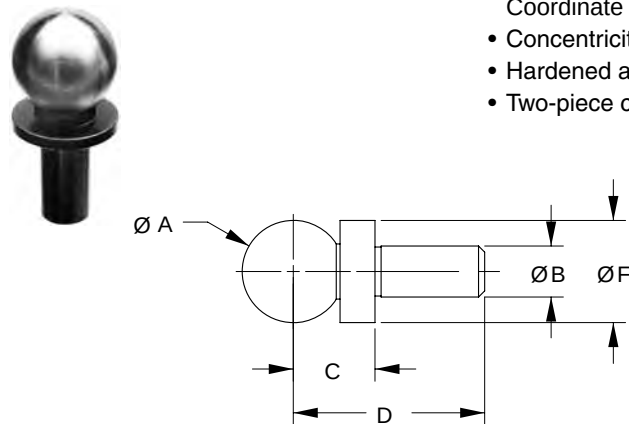
## Premium Short Shank Inspection Balls



- Material: 8620 Steel
- Case Hardened
- Used as reference points for inspection applications in conjunction with Coordinate Measuring Machines to accurately measure the workpiece.
- Concentricity of Ball to Shank - 0.0001 T.I.R.
- One-piece construction

| Part Number | +0.0000/-0.0002<br>A | +0.0000/-0.0002<br>B | +/-0.0002<br>C | D    | Thread<br>E | Dia.<br>F | Weight<br>(lbs)<br>10 Pcs. |
|-------------|----------------------|----------------------|----------------|------|-------------|-----------|----------------------------|
| 29060       | 0.2500               | 0.1247               | 0.2000         | 0.58 |             | 1/4       | .1                         |
| 29061       | 0.3750               | 0.1872               | 0.3000         | 0.75 |             | 3/8       | .1                         |
| 29062       | 0.3750               | 0.3125               | 0.3000         | 0.74 | 8-32        | 1/2       | .3                         |
| 29063       | 0.5000               | 0.2497               | 0.3125         | 0.63 | 6-32        | 1/2       | .3                         |
| 29064       | 0.5000               | 0.2497               | 0.4000         | 0.93 | 6-32        | 1/2       | .3                         |
| 29065       | 0.5000               | 0.2497               | 0.5000         | 0.88 | 6-32        | 1/2       | .3                         |
| 29066       | 0.5000               | 0.3750               | 0.3750         | 1.31 | 10-24       | 5/8       | .6                         |
| 29067       | 0.6250               | 0.3122               | 0.4500         | 1.08 | 8-32        | 5/8       | .6                         |
| 29068       | 0.6250               | 0.3750               | 0.4500         | 1.42 | 10-24       | 5/8       | .7                         |
| 29069       | 0.6875               | 0.3750               | 0.5000         | 1.47 | 10-24       | 3/4       | .9                         |
| 29070       | 0.7500               | 0.3750               | 0.5625         | 1.53 | 10-24       | 3/4       | 1.3                        |
| 29071       | 1.0000               | 0.5000               | 0.7000         | 1.64 | 10-24       | 1         | 2.5                        |

## Precision Slip Fit



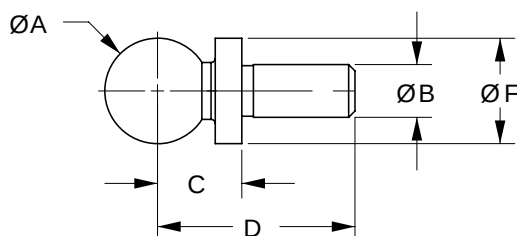
- Used as reference points for inspection applications in conjunction with Coordinate Measuring Machines to accurately measure the workpiece.
- Concentricity of Ball to Shank - 0.0002 T.I.R.
- Hardened and ground steel (440 Stainless)
- Two-piece construction

| Part Number | +/-0.0005<br>A | +0.0000/-0.0002<br>B | +/-0.0002<br>C | D      | Dia<br>F | Weight<br>(lbs)<br>10 Pcs. |
|-------------|----------------|----------------------|----------------|--------|----------|----------------------------|
| 29075       | 0.2500         | 0.1247               | 0.2000         | 9/16   | 1/4      | .1                         |
| 29076       | 0.3750         | 0.1872               | 0.3000         | 3/4    | 3/8      | .1                         |
| 29077       | 0.5000         | 0.2497               | 0.4000         | 15/16  | 1/2      | .3                         |
| 29078       | 0.6250         | 0.3122               | 0.4500         | 1 1/16 | 5/8      | .6                         |
| 29079       | 0.7500         | 0.3747               | 0.5000         | 1 1/4  | 3/4      | 1.0                        |
| 29080       | 0.8750         | 0.4372               | 0.6000         | 1 7/16 | 3/4      | .7                         |
| 29081       | 1.0000         | 0.4997               | 0.7000         | 1 5/8  | 1        | 2.4                        |

## Shoulder Press Fit



- One Piece Construction
- Close Tolerances - 0.0002 T.I.R.
- 8620 Steel Hardened Rc58-62



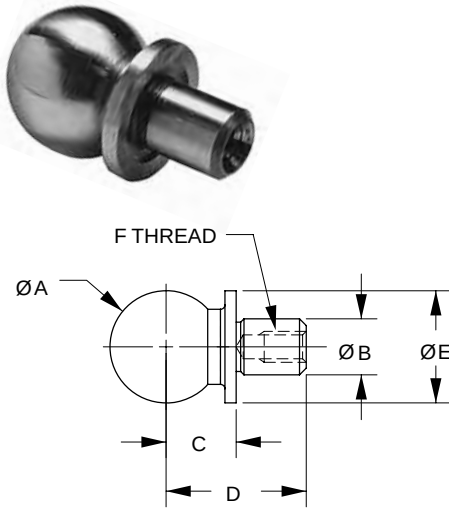
### Slip Fit

| Part Number | ± 0.0002<br>A | + 0.0000<br>- 0.0004<br>B | ± 0.0002<br>C | D     | Dia<br>F | Weight<br>(lbs)<br>10 Pcs. |
|-------------|---------------|---------------------------|---------------|-------|----------|----------------------------|
| 29041       | .2500         | .1250                     | .2000         | 9/16  | 1/4      | .1                         |
| 29042       | .3750         | .1875                     | .3000         | 3/4   | 3/8      | .1                         |
| 29043       | .5000         | .2500                     | .4000         | 15/16 | 1/2      | .3                         |
| 29044       | .5000         | .2500                     | .5000         | 1 3/8 | 1/2      | .4                         |
| 29045       | .7500         | .3750                     | .5000         | 1 1/4 | 3/4      | 1.0                        |

### Press Fit

| Part Number | - 0.0002<br>Dia<br>A | + 0.0003/<br>- 0.0000<br>B | +0.0002<br>C | D     | Dia<br>F | Wt.<br>(lbs)<br>10 Pcs. |
|-------------|----------------------|----------------------------|--------------|-------|----------|-------------------------|
| 29085       | 0.2500               | .1253                      | .2000        | 9/16  | 1/4      | .1                      |
| 29086       | 0.3750               | .1878                      | .3000        | 3/4   | 3/8      | .1                      |
| 29087       | 0.5000               | .2503                      | .4000        | 15/16 | 1/2      | .3                      |
| 29088       | 0.5000               | .2503                      | .5000        | 1 3/8 | 1/2      | .4                      |
| 29089       | 0.7500               | .3753                      | .5000        | 1 1/4 | 3/4      | 1.0                     |

## Construction Balls-Tapped, One-Piece Construction



- Heavy-Duty, Resists Lateral Forces
- Close Tolerances – 0.0002 T.I.R.
- 8620 Steel Hardened Rc58-62

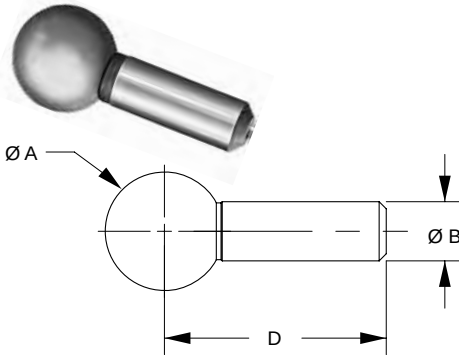
### Inch

| Part Number | $\pm 0.0002$<br>A | $+ 0.0000$<br>$- 0.0004$<br>B | $\pm 0.0002$<br>C | D   | Dia.<br>E | F          | Weight<br>(lbs)<br>10 Pcs |
|-------------|-------------------|-------------------------------|-------------------|-----|-----------|------------|---------------------------|
| 29051       | 0.5000            | 0.2500                        | .3125             | 5/8 | .490      | 6-32 x 1/4 | .3                        |
| 29052       | 0.5000            | 0.2500                        | .3125             | 5/8 | .490      | Not Tapped | .3                        |

### Metric

| Part Number | $\pm 0.005\text{mm}$<br>A | $+ 0.000/-$<br>$0.010\text{mm}$<br>B | $\pm 0.005\text{mm}$<br>C | D    | Dia.<br>E | F          | Weight<br>(kgs)<br>10 Pcs |
|-------------|---------------------------|--------------------------------------|---------------------------|------|-----------|------------|---------------------------|
| 29090       | 6mm                       | 3mm                                  | 6mm                       | 16mm | 6mm       | Not Tapped | .05                       |
| 29091       | 10mm                      | 5mm                                  | 10mm                      | 20mm | 10mm      | Not Tapped | .15                       |
| 29092       | 12mm                      | 6mm                                  | 12mm                      | 22mm | 12mm      | Not Tapped | .15                       |

## Tooling Balls - Standard Tolerance, One-Piece Construction



- One Piece Construction
- Close Tolerances – 0.0002 T.I.R.
- 8620 Steel Hardened Rc58-62

| Part Number | $\pm 0.0002$<br>A | $+ 0.0000$<br>$- 0.0004$<br>B | D     | Weight<br>(lbs)<br>10 Pcs |
|-------------|-------------------|-------------------------------|-------|---------------------------|
| 29031       | .2500             | .1250                         | 9/16  | .1                        |
| 29032       | .3750             | .1875                         | 3/4   | .1                        |
| 29033       | .5000             | .2500                         | 15/16 | .3                        |
| 29034       | .5000             | .2500                         | 1 1/2 | .3                        |
| 29035       | .5000             | .3750                         | 1 1/2 | .8                        |

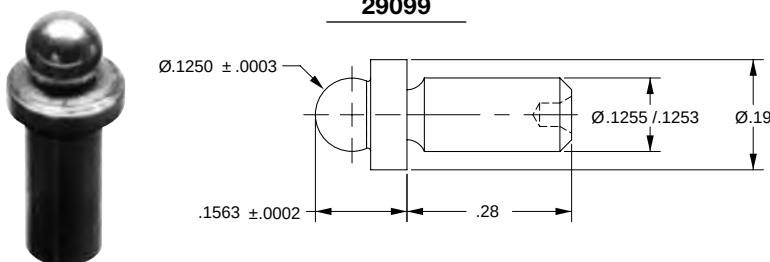
## Tooling/Inspection Ball Covers



- Mounts directly to the fixture with two number 10 (M4) screws.
- Fits most tooling balls up to 3/4".

| Part Number | Mounting<br>Hole-Center to Center<br>+/- .005 | Mounting<br>Hole<br>Diameter | Overall<br>Height |
|-------------|-----------------------------------------------|------------------------------|-------------------|
| 29049       | 1.875                                         | 7/32                         | 1.590             |

## Carbide



Part Number  
29099

- Two-piece construction
- Used as reference points for inspection applications in conjunction with Coordinate Measuring Machines to accurately measure the workpiece.
- Concentricity of Ball to Shank - 0.0002 T.I.R.
- Hardened and ground
- Material: Ball - Carbide  
Shank - 440 Stainless
- Weight per 10 pcs. 0.1 lbs.

## Tooling Balls

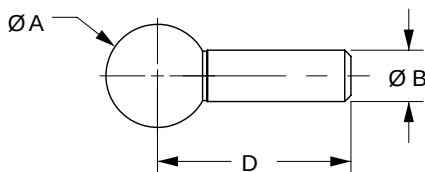


NOTE: The weld between the ball and the shank is made so that the ball will drop off if subjected to unusually heavy lateral forces. This prevents setup and inspection errors that might occur because of accidental bending of the shank.

### Fixture Balls (plain shank)

These Tooling balls are assembled by a welding technique that retains the initial high precision and fine finish of the balls.

- Material: Type 440-C Stainless Steel hardened to Rc 58-62
- Eccentricity, ball to shank, 0.0002 T.I.R. maximum
- Two Piece Welded Construction



| Part Number | A<br>±0.0001 | B<br>+0.0000<br>-0.0003 | C<br>±0.0005 |
|-------------|--------------|-------------------------|--------------|
| 29001       | 0.2500       | 0.1247                  | 0.560        |
| 29002       | 0.3750       | 0.1872                  | 0.750        |
| 29003       | 0.5000       | 0.2497                  | 0.940        |
| 29004       | 0.6250       | 0.3122                  | 1.060        |
| 29005       | 0.7500       | 0.3747                  | 1.250        |
| 29006       | 0.8750       | 0.4372                  | 1.440        |
| 29007       | 1.0000       | 0.4997                  | 1.620        |

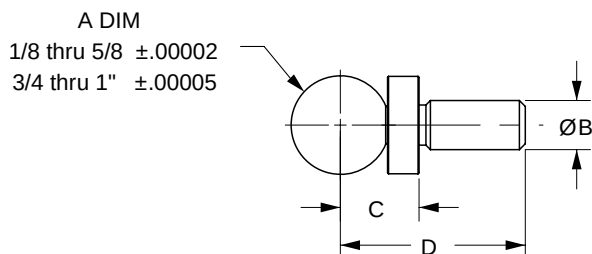
\*Metric available if requested



### Checking Balls (with reference shoulders)

High precision stainless steel checking balls are made to closer tolerances and avoid excessive side forces. The accurately located shoulder provides for positive positioning, re-positioning, or replacement.

- Material: Type 440-C Stainless Steel hardened to Rc 58-62
- Eccentricity, ball to shank, 0.0002 T.I.R. maximum
- Two Piece Welded Construction



| Part Number | A      | B<br>+0.0000<br>-0.0002 | C<br>±0.0002 | D<br>-0.005 |
|-------------|--------|-------------------------|--------------|-------------|
| *29010      | 0.1250 | 0.1255                  | 0.0938       | 0.375       |
| 29011       | 0.2500 | 0.1247                  | 0.2000       | 0.560       |
| 29012       | 0.3750 | 0.1872                  | 0.3000       | 0.750       |
| 29013       | 0.5000 | 0.2497                  | 0.4000       | 0.940       |
| 29014       | 0.6250 | 0.3122                  | 0.4500       | 1.060       |
| 29015       | 0.7500 | 0.3747                  | 0.5000       | 1.250       |
| 29016       | 0.8750 | 0.4372                  | 0.6000       | 1.440       |
| 29017       | 1.0000 | 0.4997                  | 0.7000       | 1.620       |

\*29010 is supplied with tungsten carbide ball only, with Rockwell hardness 91.5 - 92.5

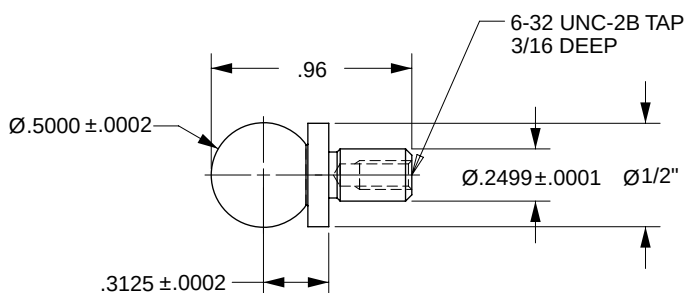
\*\*Metric available if requested



### Checking Balls (with reference shoulder and tapped shank)

This Checking Ball can be pulled into a hole or bushing from below without applying pressure on the ball (accomplished by using a cap screw in the tapped hole in the shank).

- Material: Type 440-C Stainless Steel hardened to Rc 58-62
- Eccentricity, ball to shank, 0.0002 TIR max.
- Two Piece Welded Construction



| Part Number |
|-------------|
| 29021       |

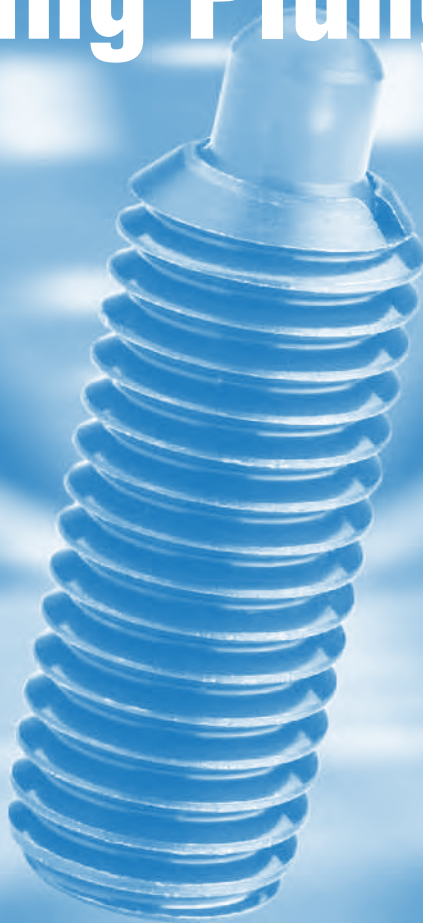
THE **Jergens**® DIFFERENCE

# Spring Plungers

**OURS**



**Solid Drive™ Design**  
Plunger body is made of one integral piece, eliminating the need for a set screw.



**THEIRS**



**The Set Screw Limitation**  
Two-piece body design is a common cause of hard-to-remove plungers and lost springs.

## **JERGENS SPRING PLUNGERS**

Solid Drive™ Design allows the entire plunger to move, preventing lost parts and improving plunger adjustments.

Engineered with a smooth continuous radius tip to improve the point of contact.

Solid tool steel, hardened throughout.

Close tolerance between tip and body provides better fit between parts for smoother motion and precise fit.

**VS.**

## **OTHER MANUFACTURERS' SPRING PLUNGERS**

Set screw, instead of the plunger, can back out during removal, leaving the plunger body in the tapped hole.

Two-step, turn-and-grind manufacturing leaves ridges on tips that can gouge finished parts.

Mild steel is merely case hardened.

Sloppy alignment restricts tip movement and will allow dirt to enter and shorten the life of the plunger.

**Jergens**®

*The Standard Components with the Highest Standards™*

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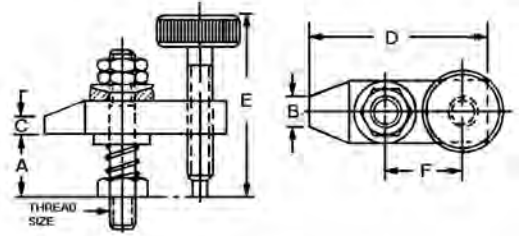
|                                                  |                  |                                                         |           |
|--------------------------------------------------|------------------|---------------------------------------------------------|-----------|
| Adjustable Clamp Heels .....                     | 6.45             | Nuts, Spherical Flange .....                            | 6.31      |
| Adjustable Clamp Rests .....                     | 6.44             | Nuts, Spinner-Grip .....                                | 6.31      |
| Adjustable Step Blocks .....                     | 6.55             | Nuts, Stainless Steel .....                             | 6.33      |
| Assemblies, Spherical Flange .....               | 6.30             | Nuts, T-Slot .....                                      | 6.35      |
| Bolts, Dovetail .....                            | 6.28             | Plastic Pad Covers .....                                | 6.16      |
| Bolts, Swing .....                               | 6.11             | Revolving Clamp Assemblies, Long<br>Bushing Type .....  | 6.8       |
| Bolts, T .....                                   | 6.28             | Revolving Clamp Assemblies,<br>Short Bushing Type ..... | 6.8       |
| Bolts, T-Slot .....                              | 6.27             | Revolving Clamp Base .....                              | 6.8       |
| Bolts, T-Strap .....                             | 6.23             | Rod Ends .....                                          | 6.12      |
| Clamp Assemblies, Double Cam .....               | 6.4              | Screw, Half Turn .....                                  | 6.13      |
| Clamp Assemblies, Flange Nut .....               | 6.3              | Screws, Hand Knob .....                                 | 6.6       |
| Clamp Assembly, Heel Pad .....                   | 6.2              | Screws, Quarter Turn .....                              | 6.13      |
| Clamp Assemblies, Hook .....                     | 6.9              | Screws, Socket Shoulder .....                           | 6.10-6.11 |
| Clamp Assemblies, Knob .....                     | 6.5              | Screws, Thumb .....                                     | 6.14      |
| Clamp Assemblies, Miniature Flat .....           | 6.2              | Set-Up Kits, Die .....                                  | 6.57      |
| Clamp Assemblies, Miniature Radius ...           | 6.2              | Set-Up Kits .....                                       | 6.56-6.57 |
| Clamp Assemblies,<br>Radius End Flange Nut ..... | 6.3              | Single Cams .....                                       | 6.7       |
| Clamp Assemblies, Radius Swing .....             | 6.3              | Step Blocks .....                                       | 6.55      |
| Clamp Assemblies .....                           | 6.2-6.5, 6.8-6.9 | Strap Pads .....                                        | 6.7       |
| Clamp Rests .....                                | 6.6              | Straps, Heel .....                                      | 6.54      |
| Clamping Kits .....                              | 6.57             | Straps, Miniature Flat .....                            | 6.44      |
| Clevis Pins .....                                | 6.22             | Straps, Miniature Radius .....                          | 6.43      |
| Collars, Steel Shaft .....                       | 6.23             | Straps, Padded .....                                    | 6.46      |
| Double Cams .....                                | 6.7              | Straps, Plain .....                                     | 6.45      |
| Finger Handles .....                             | 6.6              | Straps, Radius .....                                    | 6.48      |
| Forged Adjustable Clamp .....                    | 6.53             | Straps, Slotted Radius .....                            | 6.48      |
| Forged Straps, U Clamp .....                     | 6.52             | Straps, Taper Nose Stainless Steel .....                | 6.44      |
| Forged Straps, Finger Clamp .....                | 6.52             | Straps, Taper Nose .....                                | 6.50      |
| Forged Straps, Gooseneck Clamp ...               | 6.51             | Straps, Tapped Radius .....                             | 6.43      |
| Forged Straps, Heel Clamp .....                  | 6.51             | Straps, Tapped .....                                    | 6.49      |
| Guide Blocks .....                               | 6.6              | Studs, Alloy Steel .....                                | 6.24-6.25 |
| Replaceable Grippers .....                       | 6.41-6.42        | Studs, Fixture .....                                    | 6.26      |
| Tapered Hardened Steel .....                     | 6.41-6.42        | Studs, Set-Up .....                                     | 6.26      |
| Tapered Carbide Steel .....                      | 6.42             | Studs .....                                             | 6.24-6.26 |
| I.D. Expansion Clamp .....                       | 6.62             | Tee Strap Bolts .....                                   | 6.23      |
| Leveling Mounts .....                            | 6.20             | Toe Clamp, Kits .....                                   | 6.58-6.59 |
| Leveling Pads .....                              | 6.18-6.19        | Toe Clamps, Large .....                                 | 6.59      |
| Machine Vise .....                               | 6.70-6.71        | Toe Clamps, Small .....                                 | 6.58      |
| Micro Clamps, Adjustable .....                   | 6.61             | Toggle Pads .....                                       | 6.17      |
| Micro Clamps, Edge .....                         | 6.67             | Toggle Screws, Adjustable Torque ....                   | 6.15      |
| Micro Clamps, Expanding .....                    | 6.64             | Toggle Screws, Hand Knob .....                          | 6.15      |
| Micro Clamp, Knife Edge .....                    | 6.63             | Toggle Screws, Socket Toggle .....                      | 6.16      |
| Micro Clamp, Low Profile .....                   | 6.60             | Toggle Screws, Thumb .....                              | 6.16      |
| Micro Clamps, Machinable Expanding..             | 6.65             | U-Straps, Long Slot .....                               | 6.47      |
| Micro Clamps .....                               | 6.63             | Washers, "C" .....                                      | 6.37      |
| Micro Clamps, T-Slot .....                       | 6.66             | Washers, Equalizing "C" .....                           | 6.37      |
| Micro Clamps, Toe .....                          | 6.66             | Washers, Equalizing Swing "C"<br>Assembly .....         | 6.38      |
| Modular Mini Vise .....                          | 6.68             | Washers, Equalizing Swing "C" .....                     | 6.37      |
| Nuts, Acorn .....                                | 6.33             | Washers, Flat .....                                     | 6.36      |
| Nuts, Check .....                                | 6.32             | Washers, Heavy Duty Flat .....                          | 6.36      |
| Nuts, Coupling .....                             | 6.32             | Washers, Heavy Duty Square .....                        | 6.38      |
| Nuts, Equalizing Hex Head .....                  | 6.30             | Washers, Self Aligning .....                            | 6.39      |
| Nuts, Flange .....                               | 6.29             | Washer, USAE .....                                      | 6.40      |
| Nuts, Heavy Duty Hex .....                       | 6.30             | Yokes .....                                             | 6.21-6.22 |
| Nuts, Knurled Equalizing .....                   | 6.33             |                                                         |           |
| Nuts, Knurled Lock .....                         | 6.32             |                                                         |           |
| Nuts, Kwik-Thread .....                          | 6.34             |                                                         |           |

## Clamp Assemblies

### Miniature Flat



Fast-acting clamp for light-duty holding. Includes strap, knurled thumb screw, spherical washer, stud, plain flat washer, three hex jam nuts and spring. Features free swinging adjustments for positioning the assembly without interference.

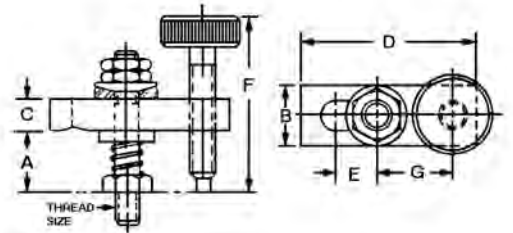


| Part Number  | A    | B   | C   | D     | E      | F      | Thread Size | Wt. (lbs) |
|--------------|------|-----|-----|-------|--------|--------|-------------|-----------|
| <b>12901</b> | 5/8  | 1/4 | 1/8 | 1 1/2 | 1 9/16 | 11/16  | 10-24       | .19       |
| <b>12902</b> | 5/8  | 1/4 | 1/8 | 2     | 1 9/16 | 15/16  | 1/4-20      | .22       |
| <b>12903</b> | 9/16 | 1/4 | 1/8 | 2 1/2 | 1 9/16 | 1 3/16 | 1/4-20      | .25       |

### Miniature Radius



A light-duty clamp assembly for clamping close to the edge. Complete with radius strap, double jam nuts with spherical washers, finger tip, quick-action knurled thumb screw heel rest, stud, spring and washer. The latter allows free swinging and lateral adjustments for easier set-ups.

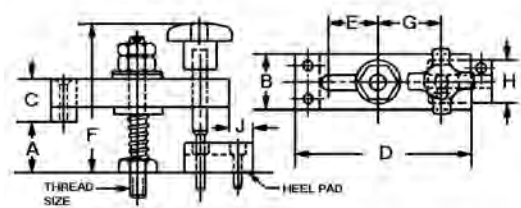


| Part Number  | A   | B   | C   | D     | E     | F      | G     | Thread Size | Wt. (lbs) |
|--------------|-----|-----|-----|-------|-------|--------|-------|-------------|-----------|
| <b>13101</b> | 1/2 | 1/2 | 1/4 | 1 1/2 | 7/16  | 1 9/16 | 9/16  | 10-24       | .20       |
| <b>13102</b> | 1/2 | 1/2 | 1/4 | 1 3/4 | 9/16  | 1 9/16 | 11/16 | 10-24       | .22       |
| <b>13103</b> | 1/2 | 1/2 | 1/4 | 2     | 11/16 | 1 9/16 | 13/16 | 10-24       | .24       |

### Heel Pad



In one movement this clamp assembly can be moved into place and tightened; recommended where hand pressure clamping is suitable for the application.

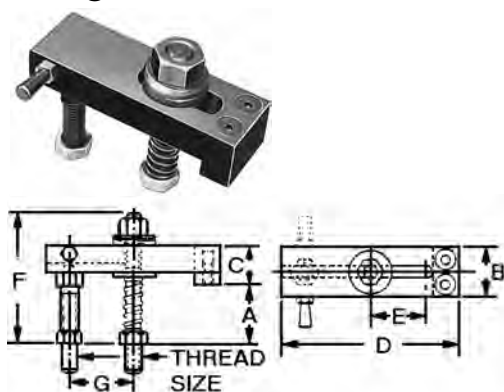


| Part Number  | A     | B     | C     | D     | E     | F       | G       | H     | Heel Pad | J     | Thread Size | Wt. (lbs) |
|--------------|-------|-------|-------|-------|-------|---------|---------|-------|----------|-------|-------------|-----------|
| <b>13301</b> | 5/8   | 5/8   | 1/2   | 2     | 5/8   | 1 15/16 | 25/32   | 3/4   | 13701    | 1/2   | 1/4-20      | .38       |
| <b>13312</b> | 9/16  | 7/8   | 11/16 | 2 1/2 | 3/4   | 2 9/16  | 15/16   | 1     | 13703    | 5/8   | 5/16-18     | .69       |
| <b>13306</b> | 13/16 | 1 1/4 | 7/8   | 3 1/2 | 1     | 2 7/8   | 1 7/16  | 1     | 13703    | 1/2   | 3/8-16      | 1.38      |
| <b>13308</b> | 13/16 | 1 1/4 | 7/8   | 4 1/2 | 1 5/8 | 2 7/8   | 1 13/16 | 1     | 13703    | 1/2   | 3/8-16      | 1.68      |
| <b>13313</b> | 1 1/4 | 1 1/2 | 1     | 4 1/2 | 1 1/4 | 3 7/8   | 1 15/16 | 1 1/2 | 13705    | 1 1/8 | 1/2-13      | 2.20      |



## Clamp Assemblies

### Flange Nut



Use where great clamping pressures are needed and vibration is a problem.

Heavy-duty clamping with spherical flange nut and spherical washer for greater flexibility. Extra long, true milled slot allows more clearance for placing and removing work. Brass and plastic pads are available, see page 6.7.

| Part Number | A     | B     | C     | D     | E     | F       | G*      | Thread Size | Wt. (lbs) |
|-------------|-------|-------|-------|-------|-------|---------|---------|-------------|-----------|
| 12701†      | 3/4   | 5/8   | 1/2   | 2     | 5/8   | 1 5/8   | 7/8     | 1/4-20      | .27       |
| 12703       | 1 1/2 | 1 1/4 | 7/8   | 3 1/2 | 1 1/8 | 2 15/16 | 1 7/16  | 3/8-16      | 1.12      |
| 12705       | 1 1/2 | 1 1/4 | 7/8   | 4 1/2 | 1 5/8 | 2 15/16 | 1 15/16 | 3/8-16      | 1.38      |
| 12707       | 1 1/8 | 1 1/2 | 1 1/8 | 4 1/2 | 1 1/4 | 3       | 2 1/8   | 1/2-13      | 2.12      |
| 12710       | 1 1/8 | 1 1/2 | 1 1/8 | 6     | 2     | 3       | 2 7/8   | 1/2-13      | 2.62      |
| 12711       | 2 5/8 | 1 3/4 | 1 3/8 | 5     | 1 1/2 | 5 1/16  | 2 1/8   | 5/8-11      | 3.50      |
| 12713       | 2 5/8 | 1 3/4 | 1 3/8 | 7     | 2 1/2 | 5 1/16  | 3 1/8   | 5/8-11      | 4.12      |
| 12714       | 1 3/4 | 1 3/4 | 1 1/2 | 5     | 1 1/2 | 4 3/8   | 2 1/8   | 3/4-10      | 4.12      |
| 12716       | 1 3/4 | 1 3/4 | 1 1/2 | 7     | 2 1/2 | 4 3/8   | 3 1/8   | 3/4-10      | 4.87      |

\*G dimension represents an optimum dimension.

† Does not include finger handle. See page 6.6.

### Radius End Flange Nut



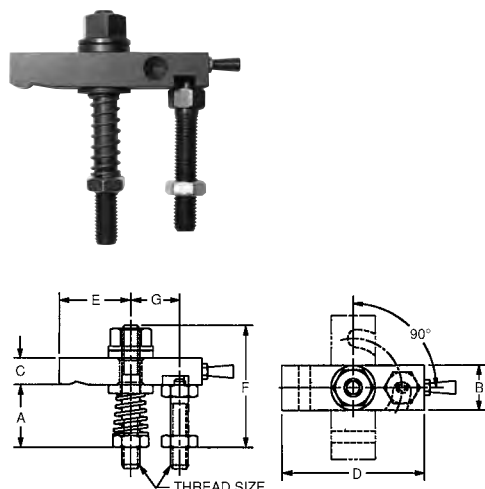
Heavy-duty clamping of plain surfaces with spherical flange nut and spherical washer for angular flexibility. Long, true milled slot allows greater clearance for placing and removing work. Spring-loaded stud for quick release.

| Part Number | A     | B     | C   | D     | E     | F       | G*     | Thread Size | Wt. (lbs) |
|-------------|-------|-------|-----|-------|-------|---------|--------|-------------|-----------|
| 14103†      | 7/8   | 5/8   | 3/8 | 2     | 5/8   | 1 5/8   | 7/8    | 1/4-20      | .25       |
| 14104†      | 7/8   | 5/8   | 3/8 | 2 1/2 | 1     | 1 5/8   | 7/8    | 1/4-20      | .28       |
| 14117†      | 1 1/8 | 7/8   | 1/2 | 2 1/2 | 3/4   | 2 1/4   | 15/16  | 5/16-18     | .75       |
| 14118†      | 1 1/8 | 7/8   | 1/2 | 3 1/2 | 1 1/4 | 2 1/4   | 15/16  | 5/16-18     | .85       |
| 14105       | 1 3/4 | 1 1/4 | 5/8 | 3 1/2 | 1 1/8 | 2 15/16 | 1 7/16 | 3/8-16      | 1.10      |
| 14119       | 1 3/4 | 1 1/4 | 5/8 | 4 1/2 | 1 5/8 | 2 15/16 | 1 7/16 | 3/8-16      | 1.20      |
| 14108       | 1 1/2 | 1 1/2 | 3/4 | 4 1/2 | 1 1/4 | 3       | 1 7/8  | 1/2-13      | 2.00      |
| 14110       | 1 1/2 | 1 1/2 | 3/4 | 6     | 1 1/2 | 3       | 1 7/8  | 1/2-13      | 2.44      |
| 14111       | 3 1/8 | 1 3/4 | 7/8 | 5     | 1 1/2 | 5 1/16  | 2      | 5/8-11      | 3.25      |
| 14113       | 3 1/8 | 1 3/4 | 7/8 | 7     | 2 1/2 | 5 1/16  | 2      | 5/8-11      | 3.88      |
| 14114       | 2 1/4 | 1 3/4 | 1   | 5     | 1 1/2 | 4 3/8   | 2 1/8  | 3/4-10      | 3.88      |
| 14116       | 2 1/4 | 1 3/4 | 1   | 7     | 2 1/2 | 4 3/8   | 2 1/8  | 3/4-10      | 4.85      |

\*G dimension represents an optimum dimension.

† Does not include finger handle. See page 6.6.

### Radius Swing Clamp



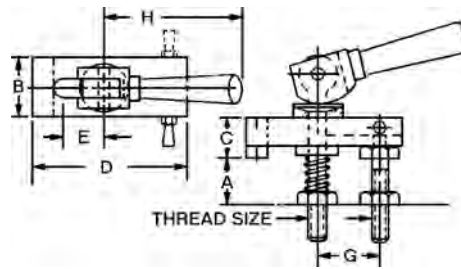
Features fast-action, light-duty holding of plain surface work where quick movements are required in a restricted space. Radial milled slots allows for 90° swing. Ideally suited for placing and removing workpiece.

| Part Number | Thread Size | A     | B     | C   | D     | E       | F       | G       | Wt. (lbs) |
|-------------|-------------|-------|-------|-----|-------|---------|---------|---------|-----------|
| 14123*      | 1/4-20      | 7/8   | 5/8   | 3/8 | 2     | 1       | 1 5/8   | 11/16   | .25       |
| 14125       | 3/8-16      | 1 3/4 | 1 1/4 | 5/8 | 3 1/2 | 1 1/2   | 2 15/16 | 1 1/4   | 1.10      |
| 14128       | 1/2-13      | 1 1/2 | 1 1/2 | 3/4 | 4 1/2 | 1 13/16 | 3       | 1 15/16 | 2.00      |
| 14131       | 5/8-11      | 3 1/8 | 1 3/4 | 7/8 | 5     | 2 1/16  | 5 1/16  | 2 3/16  | 3.25      |
| 14134       | 3/4-10      | 2 1/4 | 1 3/4 | 1   | 5     | 2 1/16  | 4 3/8   | 2 3/16  | 3.88      |

\*Does not include finger handle. See page 6.6.

## Clamp Assemblies

### Double Cam



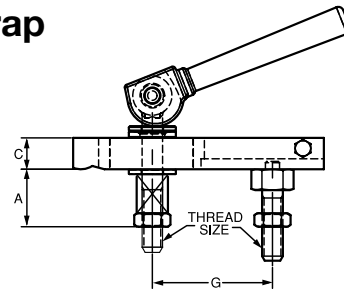
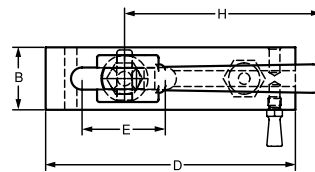
Features fast-action, light-duty holding of plain surface work where quick movements are required in a restricted space. Long end slot for lateral adjustment. Spring-loaded stud member under sturdy double-cam lever. Plastic and brass pads available for protecting workpiece, see page 6.7.

| Part Number | A      | B     | C     | D     | E     | G*      | H      | Thread Size | Wt. (lbs) |
|-------------|--------|-------|-------|-------|-------|---------|--------|-------------|-----------|
| 12501†      | 5/8    | 5/8   | 1/2   | 2     | 5/8   | 7/8     | 2 1/2  | 1/4-20      | .40       |
| 12502       | 1 5/16 | 1 1/4 | 7/8   | 3 1/2 | 1 1/8 | 1 7/16  | 3 7/16 | 3/8-16      | 1.50      |
| 12503       | 1      | 1 1/2 | 1 1/8 | 4 1/2 | 1 1/4 | 1 7/8   | 5      | 1/2-13      | 3.00      |
| 12504       | 2 1/8  | 1 3/4 | 1 3/8 | 5     | 1 1/2 | 1 15/16 | 5 1/16 | 5/8-11      | 4.70      |

\*G dimension represents an optimum dimension.

† Does not include finger handle. See page 6.6.

## Double Cam Clamp Assemblies W/Radius Nose Strap



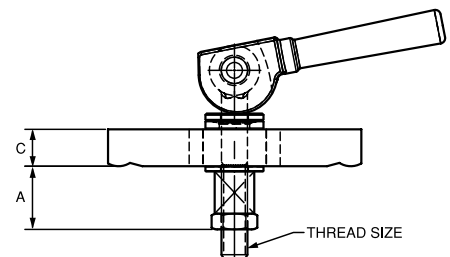
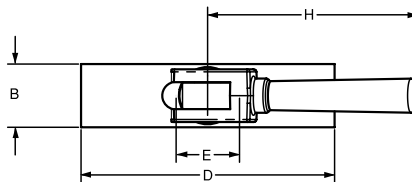
Same fast-action as Standard Double Cam Clamp but with a radius strap.

| Part Number | A     | B     | C   | D     | E     | G*      | H      | Thread Size | Wt. (lbs) |
|-------------|-------|-------|-----|-------|-------|---------|--------|-------------|-----------|
| 12511†      | 3/4   | 5/8   | 3/8 | 2     | 5/8   | 7/8     | 2 1/2  | 1/4-20      | 0.35      |
| 12512†      | 3/4   | 5/8   | 3/8 | 2 1/2 | 1     | 7/8     | 2 1/2  | 1/4-20      | 0.40      |
| 12513†      | 1 1/8 | 7/8   | 1/2 | 2 1/2 | 3/4   | 1 1/4   | 3 7/16 | 5/16-18     | 1.25      |
| 12514†      | 1 1/8 | 7/8   | 1/2 | 3 1/2 | 1 1/4 | 1 1/4   | 3 7/16 | 5/16-18     | 1.40      |
| 12515       | 1 1/2 | 1 1/4 | 5/8 | 3 1/2 | 1 1/8 | 1 7/16  | 3 7/16 | 3/8-16      | 1.50      |
| 12516       | 1 1/2 | 1 1/4 | 5/8 | 4 1/2 | 1 5/8 | 1 7/16  | 3 7/16 | 3/8-16      | 1.80      |
| 12517       | 1 3/8 | 1 1/2 | 3/4 | 4 1/2 | 1 1/4 | 1 7/8   | 5      | 1/2-13      | 3.00      |
| 12518       | 1 3/8 | 1 1/2 | 3/4 | 6     | 2     | 1 7/8   | 5      | 1/2-13      | 3.40      |
| 12519       | 1 5/8 | 1 3/4 | 7/8 | 5     | 1 1/2 | 1 15/16 | 5 1/16 | 5/8-11      | 4.70      |

\*G dimension represents an optimum dimension.

† Does not include finger handle. See page 6.6.

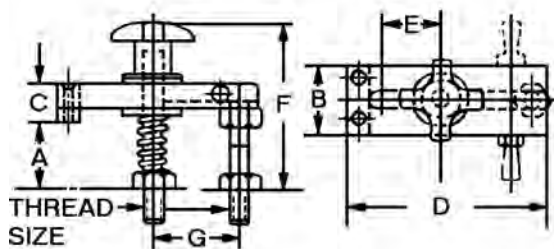
## Double Cam Clamp Assemblies W/Double End Radius Nose Strap



| Part Number | A     | B     | C   | D | E     | H      | Thread Size | Wt. (lbs) |
|-------------|-------|-------|-----|---|-------|--------|-------------|-----------|
| 12523       | 1 3/8 | 1 1/2 | 3/4 | 4 | 1 1/4 | 5      | 1/2-13      | 2.50      |
| 12524       | 1 3/8 | 1 1/2 | 3/4 | 5 | 1 1/4 | 5      | 1/2-13      | 3.00      |
| 12526       | 1 5/8 | 1 5/8 | 7/8 | 6 | 1 1/2 | 5 1/16 | 5/8-11      | 5.30      |

Double Cam Clamp featuring a radius at both ends of the strap.

## Clamp Assemblies Knob



Designed for light-duty clamping, the hand knob eliminates wrenching for faster work changes. Spherical washer allows for clamping irregular surfaces.

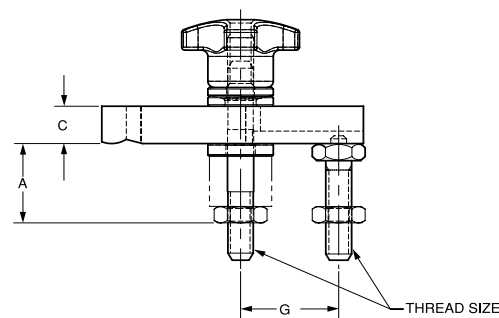
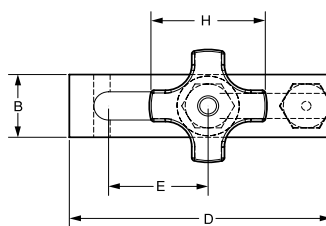
- Interchangeable pad option
- Steel pad standard, brass and plastic pads are available, see page 6.7
- Pads machinable to part configuration

| Part Number | A     | B     | C   | D     | E     | F       | G*     | Thread Size | Wt. (lbs) |
|-------------|-------|-------|-----|-------|-------|---------|--------|-------------|-----------|
| 13501†      | 3/4   | 5/8   | 1/2 | 2     | 5/8   | 2 5/16  | 1      | 1/4-20      | .35       |
| 13503       | 1 1/2 | 1 1/4 | 7/8 | 3 1/2 | 1 1/8 | 3 19/32 | 1 7/16 | 3/8-16      | 1.22      |

\*G dimension represents an optimum dimension.

† Does not include finger handle. See page 6.6.

## Knob Clamp Assemblies w/Radius Nose Strap



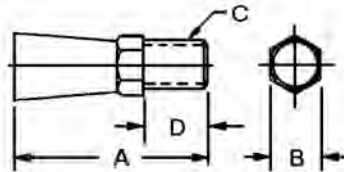
| Part Number | A     | B     | C   | D     | E     | G*    | H      | Thread Size | Wt. (lbs) |
|-------------|-------|-------|-----|-------|-------|-------|--------|-------------|-----------|
| 13512†      | 7/8   | 5/8   | 3/8 | 2 1/2 | 1     | 2 1/4 | 7/8    | 1/4-20      | .32       |
| 13515       | 1 3/4 | 1 1/4 | 5/8 | 3 1/2 | 1 1/8 | 3 1/2 | 1 7/16 | 3/8-16      | 1.10      |
| 13516       | 1 3/4 | 1 1/4 | 5/8 | 4 1/2 | 1 5/8 | 3 1/2 | 1 7/16 | 3/8-16      | 1.30      |

\*G dimension represents an optimum dimension.

† Does not include finger handle. See page 6.6.

## Clamp Assemblies Components

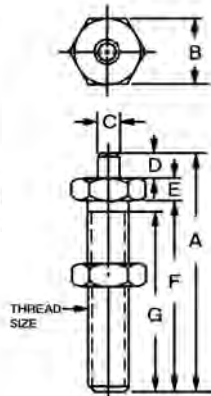
### Finger Handles



| Part Number | A      | B   | C       | D    | Wt. (lbs) 10 Pcs. |
|-------------|--------|-----|---------|------|-------------------|
| 19501       | 3/4    | 1/4 | 10-32   | 1/4  | .08               |
| 19502       | 1 3/16 | 3/8 | 5/16-18 | 5/16 | .31               |

- Material: Low Carbon Steel
- Finish: Black Oxide

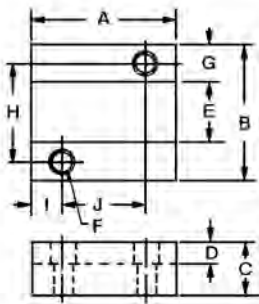
### Clamp Rests



| Part Number | A       | B    | C     | D    | E     | F       | G       | Thread Size | Wt. (lbs) 10 Pcs. |
|-------------|---------|------|-------|------|-------|---------|---------|-------------|-------------------|
| 21301       | 3/4     | 3/8  | 5/32  | 5/64 | 11/64 | 1/2     | 13/32   | 10-24       | .19               |
| 21302       | 1 1/4   | 7/16 | 5/32  | 5/64 | 11/64 | 1       | 29/32   | 1/4-20      | .22               |
| 21307       | 1 7/8   | 1/2  | 7/32  | 3/16 | 7/32  | 1 15/32 | 1 5/16  | 5/16-18     | .60               |
| 21308       | 3 1/4   | 1/2  | 7/32  | 3/16 | 7/32  | 2 27/32 | 2 11/16 | 5/16-18     | 1.25              |
| 21303       | 2 1/2   | 9/16 | 11/32 | 5/32 | 11/32 | 2       | 1 13/16 | 3/8-16      | .70               |
| 21313       | 3 7/8   | 9/16 | 11/32 | 5/32 | 11/32 | 3 3/8   | 3 3/16  | 3/8-16      | 2.80              |
| 21304       | 2 3/8   | 7/8  | 11/32 | 3/16 | 1/2   | 1 11/16 | 1 1/2   | 1/2-13      | 1.88              |
| 21314       | 3 7/8   | 7/8  | 11/32 | 3/16 | 1/2   | 3 3/16  | 3       | 1/2-13      | 3.50              |
| 21315       | 2 5/8   | 7/8  | 11/32 | 3/16 | 1/2   | 1 15/16 | 1 11/16 | 5/8-11      | 2.25              |
| 21305       | 3 27/32 | 7/8  | 11/32 | 3/16 | 1/2   | 3 5/32  | 2 15/16 | 5/8-11      | 3.60              |
| 21316       | 2 3/4   | 7/8  | 11/32 | 3/16 | 1/2   | 2 1/16  | 1 7/8   | 3/4-10      | 2.75              |
| 21306       | 3 1/2   | 7/8  | 11/32 | 3/16 | 1/2   | 2 13/16 | 2 3/8   | 3/4-10      | 4.70              |

- Material: Low Carbon Steel
- Finish: Black Oxide
- Heat Treat: Case Hardened
- Thread: 2A-UNC

### Clamp Assembly Guide Blocks



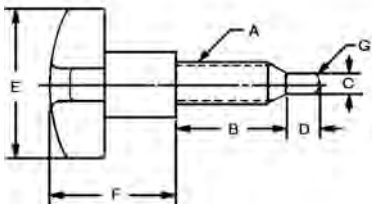
| Part Number | A     | B     | C    | D    | E     | Soc. Hd. Cap F | G    | H   | I    | J   | Wt. (lbs) 10 Pcs. |
|-------------|-------|-------|------|------|-------|----------------|------|-----|------|-----|-------------------|
| 13701       | 7/8   | 3/4   | 5/16 | 1/8  | 7/32  | 5-40           | 1/8  | 1/2 | 3/16 | 1/2 | .06               |
| 13703       | 1 1/8 | 1     | 1/2  | 3/16 | 9/32  | 8-32           | 3/16 | 5/8 | 1/4  | 5/8 | .12               |
| 13705       | 1 5/8 | 1 1/2 | 5/8  | 1/4  | 13/32 | 1/4-20         | 1/4  | 1   | 3/8  | 7/8 | .38               |

- Material: Low Carbon Steel
- Finish: Black Oxide
- Heat Treat: Case Hardened 74-77 R30N
- Mounting Screws Supplied with Heel.

### Hand Knob Screws



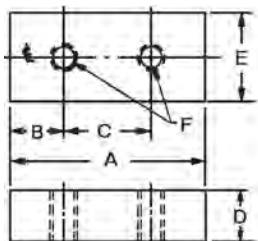
- Material: Stem, Stressproof® Head, Cast Iron
- Finish: Stem, Black Oxide Head, Zinc Plate
- Thread: 2A-UNC



| Part Number | A       | B      | C     | D    | E     | F     | Radius G | Wt. (lbs) 10 Pcs. |
|-------------|---------|--------|-------|------|-------|-------|----------|-------------------|
| 13901       | 1/4-20  | 3/4    | 11/64 | 1/4  | 1 1/8 | 7/8   | 1/8      | .78               |
| 13902       | 5/16-18 | 1 1/16 | 7/32  | 5/16 | 1 1/2 | 1     | 1/4      | 1.57              |
| 13903       | 3/8-16  | 1 3/16 | 1/4   | 5/16 | 2     | 1 1/8 | 1/4      | 1.87              |
| 13904       | 1/2-13  | 1 5/8  | 3/8   | 3/8  | 2 1/2 | 1 1/2 | 3/8      | 4.00              |
| 13905       | 5/8-11  | 1 3/4  | 15/32 | 3/8  | 3     | 2     | 3/8      | 12.50             |

Designed for applications where thumb screws are too light, and a heavier, larger unit is needed. Cast iron knob, dog point end.

## Strap Pads-Steel, Plastic & Brass



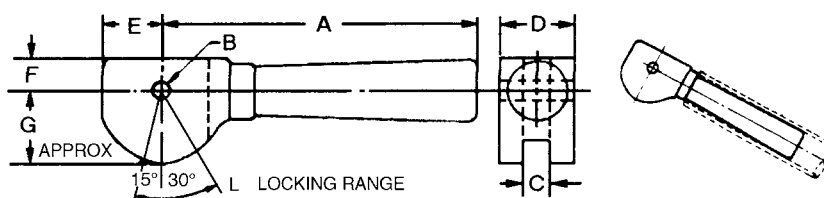
- Material: Steel, Low Carbon Steel  
Plastic, Paper Filled Bakelite  
Brass
- Finish: Steel Pad Only, Black Oxide
- Heat Treat: Steel Pad Only,  
Case Hardened 74-77 R30N

### Plastic Pads

Resistant to oil and cutting fluids, allows high clamping pressures, yet protects the soft materials from being scratched or marred.

| Steel Pads  |                   | Plastic Pads |                   | Brass Pads  |                   | A     | B    | C     | D    | E   | F      |
|-------------|-------------------|--------------|-------------------|-------------|-------------------|-------|------|-------|------|-----|--------|
| Part Number | Wt. (lbs) 10 Pcs. | Part Number  | Wt. (lbs) 10 Pcs. | Part Number | Wt. (lbs) 10 Pcs. |       |      |       |      |     |        |
| 17101       | .05               | 17102        | .02               | 17103       | .06               | 5/8   | 9/64 | 11/32 | 1/8  | 1/4 | 5-40   |
| 17104       | .16               | 17105        | .03               | 17106       | .18               | 7/8   | 3/16 | 1/2   | 3/16 | 3/8 | 8-32   |
| 17107       | .40               | 17108        | .08               | 17109       | .43               | 1 1/4 | 5/16 | 5/8   | 1/4  | 1/2 | 10-24  |
| 17110       | .90               | 17111        | .16               | 17112       | .93               | 1 1/2 | 3/8  | 3/4   | 3/8  | 5/8 | 1/4-20 |
| 17113       | 1.50              | —            | —                 | —           | —                 | 1 3/4 | 1/2  | 3/4   | 1/2  | 3/4 | 1/4-20 |

## Double Cams



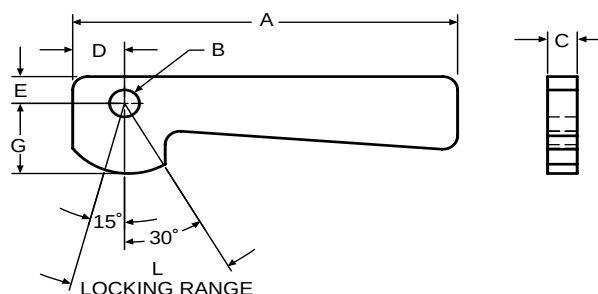
Forged, heat-treated for abrasion-resistance and longer life. Designed for quick change clamping which requires greater holding pressures than are available with single cams. Mean clamping point pressure angle is from 3 1/2° to 4°, which makes for stronger workholding.

Slip standard pipe over handle for more leverage. Snug fit at handle collar and end.

- Finish: Black Oxide
- Material: C1020
- Heat Treat: Case Hardened 74-77 R30N

| Part Number | A      | B    | C     | D     | E     | F     | G     | L    | Wt. (lbs) |
|-------------|--------|------|-------|-------|-------|-------|-------|------|-----------|
| 18101       | 2 1/2  | 3/16 | 17/64 | 5/8   | 3/8   | 1/4   | .437  | .015 | .14       |
| 18102       | 3 7/16 | 5/16 | 25/64 | 7/8   | 19/32 | 23/64 | .679  | .019 | .34       |
| 18103       | 5      | 3/8  | 33/64 | 1 1/8 | 5/8   | 15/32 | .755  | .031 | .83       |
| 18104       | 5 1/16 | 5/8  | 41/64 | 1 1/4 | 7/8   | 5/8   | 1.040 | .043 | 1.00      |

## Single Cams



- Finish: Black Oxide
- Material: 1018
- Heat Treat: Case Hardened Rc 58-62

| Part Number | A     | B    | C    | D    | E    | G      | L    | Wt. (lbs) |
|-------------|-------|------|------|------|------|--------|------|-----------|
| 12101       | 2 3/8 | 5/32 | 3/16 | 3/8  | 3/16 | 17/32  | .015 | 0.62      |
| 12102       | 3 1/4 | 1/4  | 1/4  | 7/16 | 1/4  | 21/32  | .022 | 1.40      |
| 12103       | 4 1/2 | 5/16 | 3/8  | 3/4  | 3/8  | 29/32  | .031 | 4.00      |
| 12104       | 5     | 3/8  | 1/2  | 7/8  | 7/16 | 1 5/64 | .031 | 6.90      |

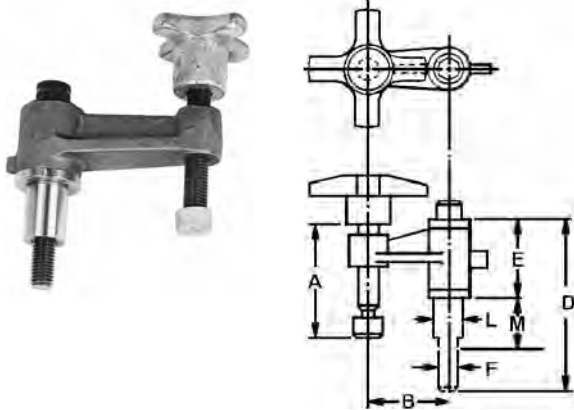


## Revolving Clamp Assemblies

Quick hold-down of workpiece with hand tightening, then loosen and revolve out of the way. Saves time for moderate-duty clamping.

Malleable cast iron body. Case-hardened swivel pad uses "tru-center" feature to maintain even, in-line pressure on workpiece.

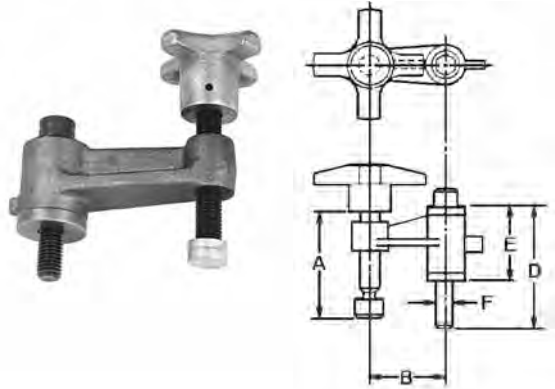
### Long Bushing Type



- Body Material: Malleable ASTM A47, GR32510
- Finish: Black Oxide
- Bushings: Hardened & Ground Rc 56-60

| Part Number | A     | B     | D     | E     | F       | L             | M     | Wt. (lbs) |
|-------------|-------|-------|-------|-------|---------|---------------|-------|-----------|
| 35119       | 2     | 1 1/2 | 3     | 1 1/2 | 5/16-18 | .5610/.5595   | 5/8   | 0.8       |
| 35103       | 2     | 1 1/2 | 3 1/4 | 1 1/2 | 3/8-16  | .6235/.6220   | 3/4   | 0.8       |
| 35116       | 3 3/8 | 3     | 5     | 2 1/4 | 1/2-13  | .8735/.8720   | 1 1/4 | 4.5       |
| 35106       | 3 3/4 | 3     | 5     | 2 1/4 | 5/8-11  | 1.1235/1.1220 | 1 1/2 | 4.8       |
| 35109       | 3 3/4 | 4     | 5     | 2 1/4 | 5/8-11  | 1.1235/1.1220 | 1 1/2 | 5.0       |

### Short Bushing Type



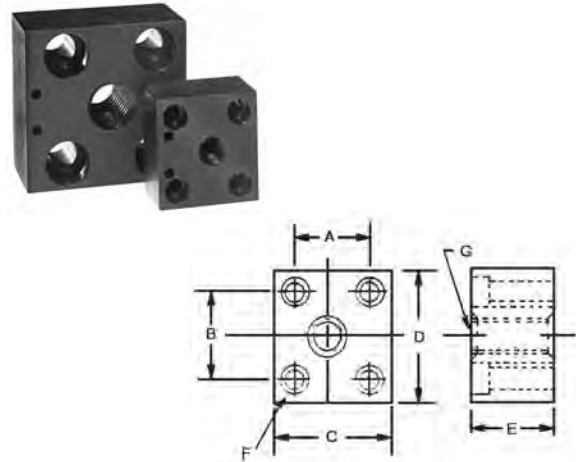
- Body Material: Malleable ASTM A47, GR32510
- Finish: Black Oxide
- Bushings: Hardened & Ground Rc 56-60

| Part Number |               | A     | B     | D     | E     | F       | Wt. (lbs) | Base Part Number |
|-------------|---------------|-------|-------|-------|-------|---------|-----------|------------------|
| Clamp Only  | Clamp w/ Base |       |       |       |       |         |           |                  |
| 35117       | 35118         | 2     | 1 1/2 | 2     | 1 1/2 | 5/16-18 | 0.7       | 35113            |
| 35101       | 35102         | 2     | 1 1/2 | 3 1/4 | 1 1/2 | 3/8-16  | 0.7       | 35110            |
| 35114       | 35115         | 3 3/8 | 3     | 5     | 2 1/4 | 1/2-13  | 4.3       | 35112            |
| 35104       | 35105         | 3 3/4 | 3     | 3     | 2 1/4 | 5/8-11  | 4.5       | 35111            |
| 35107       | 35108         | 3 3/4 | 4     | 5     | 2 1/4 | 5/8-11  | 4.8       | 35111            |

### Revolving Clamp Base

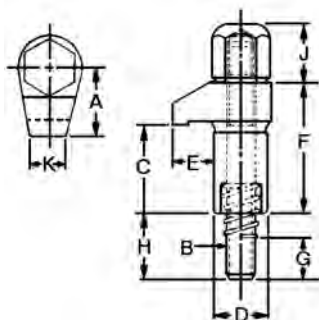
(for use with Short Bushing Type only)

- Stop pin supplied with each base.



| Part Number | A     | B     | C      | D     | E     | F   | Mtg. Bolt Size G | Wt (lbs) |
|-------------|-------|-------|--------|-------|-------|-----|------------------|----------|
| 35113       | 3/4   | 1     | 1 7/16 | 1 1/2 | 1     | #10 | 5/16-18          | 0.5      |
| 35110       | 7/8   | 1     | 1 7/16 | 1 1/2 | 1     | #10 | 3/8-16           | 0.6      |
| 35112       | 1 1/8 | 1 3/8 | 2 1/4  | 2 1/4 | 1 1/4 | 1/4 | 1/2-13           | 1.2      |
| 35111       | 1 1/4 | 1 1/2 | 2 1/4  | 2 1/4 | 1 1/4 | 3/8 | 5/8-11           | 1.7      |

## Hook Clamp Assemblies 829



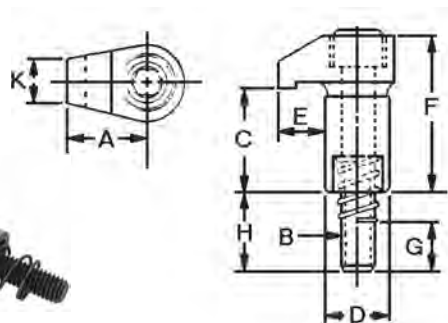
Moderate to heavy-duty holding power in close quarters. When released, the hook clamp swings quickly and easily out of the way for fast maneuvering of work. Spring-loaded shank for speedy clamp release.

- Material: Cast Steel Body, 4140
- Finish: Black Oxide
- Heat Treat: Rc 42-46
- Stud: Furnished

| Part Number   | A      | Stud Size B     | C       | D           | E    | F     | G    | H     | J      | K   | Wt. (lbs) | Max. Torque (Ft/lbs) |
|---------------|--------|-----------------|---------|-------------|------|-------|------|-------|--------|-----|-----------|----------------------|
| <b>41901*</b> | 11/16  | 5/16-18 x 2 1/2 | 7/8     | .624/.625   | 3/8  | 1 3/8 | 5/16 | 3/4   | 5/8    | 3/8 | .21       | 25                   |
| <b>41908</b>  | 1      | 3/8-16 x 4      | 1 5/8   | .874/.875   | 9/16 | 2 1/4 | 3/4  | 1 1/4 | 3/4    | 5/8 | .59       | 40                   |
| <b>41902*</b> | 1      | 1/2-13 x 4      | 1 5/8   | .874/.875   | 9/16 | 2 1/4 | 5/8  | 1 1/8 | 15/16  | 5/8 | .64       | 100                  |
| <b>41903</b>  | 1 7/16 | 5/8-11 x 5      | 1 13/16 | 1.124/1.125 | 7/8  | 2 3/4 | 7/8  | 1 3/8 | 1 3/16 | 3/4 | 1.38      | 180                  |

\*Conforms to TCMA

## Hook Clamp Assemblies 829



Alternative to the above assembly, features flush-mounted socket screw instead of acorn nut. Designed for limited space applications and moderate holding power.

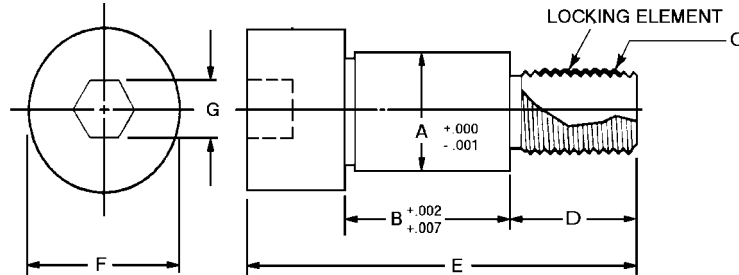
- Material: Cast Steel Body, 4140
- Finish: Black Oxide
- Heat Treat: Rc 42-46
- Screw: Furnished

| Part Number   | A      | Cap Screw B     | C       | D           | E    | F     | G     | H      | K   | Wt. (lbs) | Max. Torque (Ft/lbs) |
|---------------|--------|-----------------|---------|-------------|------|-------|-------|--------|-----|-----------|----------------------|
| <b>41904*</b> | 11/16  | 5/16-18 x 1 3/4 | 7/8     | .624/.625   | 3/8  | 1 3/8 | 1/4   | 5/8    | 3/8 | .14       | 25                   |
| <b>41905*</b> | 1      | 3/8-16 x 3      | 1 5/8   | .874/.875   | 9/16 | 2 1/4 | 5/8   | 1 1/16 | 5/8 | .44       | 40                   |
| <b>41907</b>  | 1      | 1/2-13 x 3      | 1 5/8   | .874/.875   | 9/16 | 2 1/4 | 5/8   | 1 1/8  | 5/8 | .47       | 100                  |
| <b>41906</b>  | 1 7/16 | 5/8-11 x 3 1/2  | 1 13/16 | 1.124/1.125 | 7/8  | 2 3/4 | 13/16 | 1 9/16 | 3/4 | 1.00      | 180                  |

\*Conforms to TCMA

## Socket Shoulder Screws

### Nylon Locking



Socket Shoulder Screws are held to much closer tolerances than on standard Strip-per Bolts. The “B” dimension is always a plus to eliminate the binding on movable plates. The “A” dimension is held closer for bearing-type locating. You’ll get more positive holding power and greater turning leverage. Ideal for all sliding mechanisms. Nylon locking element is incorporated in all Jergens Shoulder Screws.

- Material: 4140
- Heat Treat: Rc 38-42
- Thread: 2A-UNC

| Diameter<br>A | B     | Part<br>Number | Thread<br>Size<br>C | D   | E       | F     | Hex<br>Size<br>G | Wt.<br>(lbs)<br>10 Pcs. |
|---------------|-------|----------------|---------------------|-----|---------|-------|------------------|-------------------------|
| .249          | 1/4   | 41701*         | 10-24               | 3/8 | 13/16   | 3/8   | 1/8              | .09                     |
| .249          | 3/8   | 41702*         | 10-24               | 3/8 | 15/16   | 3/8   | 1/8              | .12                     |
| .249          | 1/2   | 41703*         | 10-24               | 3/8 | 1 1/16  | 3/8   | 1/8              | .13                     |
| .249          | 5/8   | 41704*         | 10-24               | 3/8 | 1 3/16  | 3/8   | 1/8              | .15                     |
| .249          | 3/4   | 41705*         | 10-24               | 3/8 | 1 5/16  | 3/8   | 1/8              | .16                     |
| .249          | 7/8   | 41706*         | 10-24               | 3/8 | 1 7/16  | 3/8   | 1/8              | .19                     |
| .374          | 1/4   | 41707*         | 5/16-18             | 1/2 | 1       | 9/16  | 3/16             | .30                     |
| .374          | 3/8   | 41708*         | 5/16-18             | 1/2 | 1 1/8   | 9/16  | 3/16             | .32                     |
| .374          | 1/2   | 41709*         | 5/16-18             | 1/2 | 1 1/4   | 9/16  | 3/16             | .38                     |
| .374          | 5/8   | 41710*         | 5/16-18             | 1/2 | 1 3/8   | 9/16  | 3/16             | .41                     |
| .374          | 3/4   | 41711*         | 5/16-18             | 1/2 | 1 1/2   | 9/16  | 3/16             | .45                     |
| .374          | 7/8   | 41712*         | 5/16-18             | 1/2 | 1 5/8   | 9/16  | 3/16             | .48                     |
| .499          | 3/8   | 41713*         | 3/8-16              | 5/8 | 1 5/16  | 3/4   | 1/4              | .68                     |
| .499          | 1/2   | 41714*         | 3/8-16              | 5/8 | 1 7/16  | 3/4   | 1/4              | .73                     |
| .499          | 5/8   | 41715*         | 3/8-16              | 5/8 | 1 9/16  | 3/4   | 1/4              | .78                     |
| .499          | 3/4   | 41716*         | 3/8-16              | 5/8 | 1 11/16 | 3/4   | 1/4              | .86                     |
| .499          | 7/8   | 41717*         | 3/8-16              | 5/8 | 1 13/16 | 3/4   | 1/4              | .93                     |
| .624          | 1/2   | 41718*         | 1/2-13              | 3/4 | 1 5/8   | 7/8   | 5/16             | 1.22                    |
| .624          | 5/8   | 41719*         | 1/2-13              | 3/4 | 1 3/4   | 7/8   | 5/16             | 1.36                    |
| .624          | 3/4   | 41720*         | 1/2-13              | 3/4 | 1 7/8   | 7/8   | 5/16             | 1.41                    |
| .624          | 7/8   | 41721*         | 1/2-13              | 3/4 | 2       | 7/8   | 5/16             | 1.56                    |
| .624          | 1     | 41722*         | 1/2-13              | 3/4 | 2 1/8   | 7/8   | 5/16             | 1.85                    |
| .749          | 5/8   | 41723*         | 5/8-11              | 7/8 | 2       | 1     | 3/8              | 2.25                    |
| .749          | 3/4   | 41724*         | 5/8-11              | 7/8 | 2 1/8   | 1     | 3/8              | 2.47                    |
| .749          | 7/8   | 41725*         | 5/8-11              | 7/8 | 2 1/4   | 1     | 3/8              | 2.60                    |
| .749          | 1     | 41726*         | 5/8-11              | 7/8 | 2 3/8   | 1     | 3/8              | 2.75                    |
| .749          | 1 1/4 | 41727*         | 5/8-11              | 7/8 | 2 5/8   | 1     | 3/8              | 2.90                    |
| .999          | 1     | 41728          | 3/4-10              | 1   | 2 5/8   | 1 3/8 | 1/2              | 5.47                    |
| .999          | 1 1/2 | 41729          | 3/4-10              | 1   | 3 1/8   | 1 3/8 | 1/2              | 6.56                    |
| .999          | 2     | 41730          | 3/4-10              | 1   | 3 5/8   | 1 3/8 | 1/2              | 7.66                    |

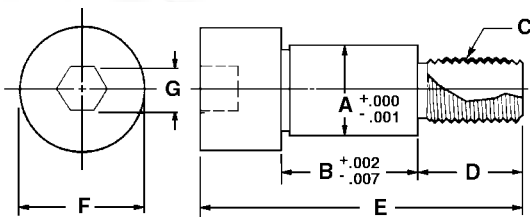
\*Conforms to TCMA

## Socket Head Shoulder Screws

### Stainless Steel



- Material: 303 Stainless



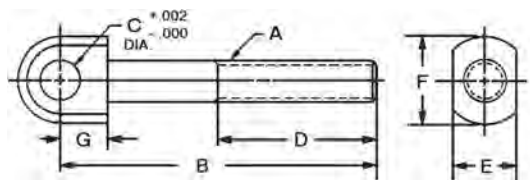
Socket Shoulder Screws are held to much closer tolerances than on standard Stripper Bolts. The "B" dimension is always a plus to eliminate the binding on movable plates. The "A" dimension is held closer for bearing-type locating. You'll get more positive holding power and greater turning leverage. Ideal for all sliding mechanisms. Nylon locking element is incorporated in all Jergens Shoulder Screws.

| Part Number | Diam. A | B   | C       | D   | E       | F    | Hex Size G | Wt. (lbs) 10 Pcs. |
|-------------|---------|-----|---------|-----|---------|------|------------|-------------------|
| 41801       | 1/4     | 1/4 | 10-24   | 3/8 | 13/16   | 3/8  | 1/8        | .09               |
| 41802       | 1/4     | 3/8 | 10-24   | 3/8 | 15/16   | 3/8  | 1/8        | .12               |
| 41803       | 1/4     | 1/2 | 10-24   | 3/8 | 1 1/16  | 3/8  | 1/8        | .13               |
| 41804       | 1/4     | 5/8 | 10-24   | 3/8 | 1 3/16  | 3/8  | 1/8        | .15               |
| 41805       | 1/4     | 3/4 | 10-24   | 3/8 | 1 5/16  | 3/8  | 1/8        | .16               |
| 41806       | 1/4     | 1   | 10-24   | 3/8 | 1 9/16  | 3/8  | 1/8        | .19               |
| 41807       | 3/8     | 1/4 | 5/16-18 | 1/2 | 1       | 9/16 | 3/16       | .30               |
| 41808       | 3/8     | 3/8 | 5/16-18 | 1/2 | 1 1/8   | 9/16 | 3/16       | .32               |
| 41809       | 3/8     | 1/2 | 5/16-18 | 1/2 | 1 1/4   | 9/16 | 3/16       | .38               |
| 41810       | 3/8     | 5/8 | 5/16-18 | 1/2 | 1 3/8   | 9/16 | 3/16       | .41               |
| 41811       | 3/8     | 3/4 | 5/16-18 | 1/2 | 1 1/2   | 9/16 | 3/16       | .45               |
| 41812       | 3/8     | 1   | 5/16-18 | 1/2 | 1 3/4   | 9/16 | 3/16       | .48               |
| 41813       | 1/2     | 3/8 | 3/8-16  | 5/8 | 1 5/16  | 3/4  | 1/4        | .68               |
| 41814       | 1/2     | 1/2 | 3/8-16  | 5/8 | 1 7/16  | 3/4  | 1/4        | .73               |
| 41815       | 1/2     | 5/8 | 3/8-16  | 5/8 | 1 9/16  | 3/4  | 1/4        | .78               |
| 41816       | 1/2     | 3/4 | 3/8-16  | 5/8 | 1 11/16 | 3/4  | 1/4        | .86               |
| 41817       | 1/2     | 1   | 3/8-16  | 5/8 | 1 15/16 | 3/4  | 1/4        | .93               |
| 41818       | 5/8     | 1/2 | 1/2-13  | 3/4 | 1 5/8   | 7/8  | 5/16       | 1.22              |
| 41819       | 5/8     | 5/8 | 1/2-13  | 3/4 | 1 3/4   | 7/8  | 5/16       | 1.36              |
| 41820       | 5/8     | 3/4 | 1/2-13  | 3/4 | 1 7/8   | 7/8  | 5/16       | 1.41              |
| 41822       | 5/8     | 1   | 1/2-13  | 3/4 | 2 1/8   | 7/8  | 5/16       | 1.85              |

## Swing Bolts (Latch Bolt)



- Material: 4140
- Finish: Black Oxide
- Heat Treat: Rc 36-40
- Thread: Class 2A-UNC



| Part Number | Thread Size A | B     | C   | D     | E   | F     | G     | Wt. (lbs) 10 Pcs. |
|-------------|---------------|-------|-----|-------|-----|-------|-------|-------------------|
| 29501*      | 3/8-16        | 2 1/2 | 3/8 | 1 3/8 | 1/2 | 3/4   | 3/8   | .93               |
| 29502       | 3/8-16        | 3 1/4 | 3/8 | 1 3/4 | 1/2 | 3/4   | 3/8   | 1.25              |
| 29513       | 1/2-13        | 2 5/8 | 3/8 | 1 1/2 | 5/8 | 1     | 7/16  | 1.95              |
| 29504*      | 1/2-13        | 3 1/8 | 1/2 | 1 3/4 | 5/8 | 1     | 7/16  | 2.04              |
| 29505       | 1/2-13        | 4 1/8 | 1/2 | 2 1/4 | 5/8 | 1     | 7/16  | 2.64              |
| 29516       | 5/8-11        | 3 3/4 | 1/2 | 2     | 3/4 | 1 1/8 | 1/2   | 3.64              |
| 29507       | 5/8-11        | 3 1/2 | 5/8 | 1 3/4 | 3/4 | 1 1/8 | 1/2   | 3.67              |
| 29508       | 5/8-11        | 4 3/4 | 5/8 | 2 1/2 | 3/4 | 1 1/8 | 1/2   | 4.75              |
| 29509       | 3/4-10        | 4 3/8 | 3/4 | 2 1/2 | 7/8 | 1 3/8 | 11/16 | 6.10              |
| 29510       | 3/4-10        | 6 1/2 | 3/4 | 3 1/4 | 7/8 | 1 3/8 | 11/16 | 8.85              |

\*Conforms to TCMA.

Not to be used for lifting.

## Swing Bolts (Latch Bolt)

### Stainless Steel

- Material: 303 Stainless
- Thread: Class 2A-UNC

| Part Number | Thread Size A | B     | C   | D     | E   | F     | G   | Wt. (lbs) 10 Pcs. |
|-------------|---------------|-------|-----|-------|-----|-------|-----|-------------------|
| 29601       | 3/8-16        | 2 1/2 | 3/8 | 1 3/8 | 1/2 | 3/4   | 1/2 | 1.1               |
| 29602       | 3/8-16        | 3 1/2 | 3/8 | 2     | 1/2 | 3/4   | 1/2 | 1.4               |
| 29603       | 1/2-13        | 3 1/8 | 1/2 | 1 5/8 | 5/8 | 1     | 5/8 | 2.6               |
| 29604       | 1/2-13        | 4-1/8 | 1/2 | 2 1/2 | 5/8 | 1     | 5/8 | 3.0               |
| 29605       | 5/8-11        | 3 1/2 | 5/8 | 1 5/8 | 3/4 | 1 1/4 | 3/4 | 4.6               |
| 29606       | 5/8-11        | 4 3/4 | 5/8 | 2 1/2 | 3/4 | 1 1/4 | 3/4 | 5.5               |

\*B dimension indicates minimum length.

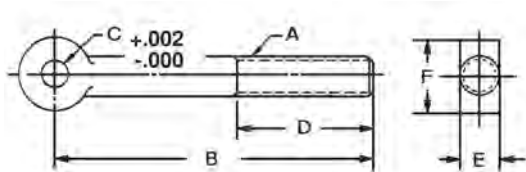
Not to be used for lifting.

## Rod Ends Threaded



- Material: Alloy Steel
- Finish: Black Oxide
- Heat Treat: 32-36 Rc
- Thread: Class 2A-UNC
- \* 150,000 PSI Tensile

Rod Ends are forged and finished for applications not requiring flat contact with the head. All holes are reamed. Rod Ends can be used with spherical flange assemblies, flange nuts and clamp assemblies.



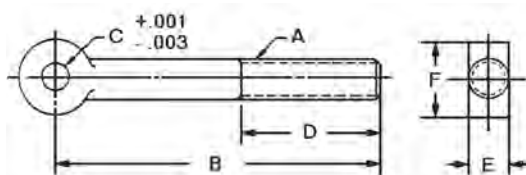
| Part Number | Thread A | B       | C    | D Minimum | E    | F     | Wt. (lbs) |
|-------------|----------|---------|------|-----------|------|-------|-----------|
| 35301*      | 1/4-20   | 2       | 3/16 | 3/4       | 1/4  | 1/2   | .04       |
| 35302       | 1/4-20   | 2       | 1/4  | 3/4       | 1/4  | 1/2   | .03       |
| 35318*      | 5/16-18  | 3       | 1/4  | 1 1/2     | 5/16 | 5/8   | .08       |
| 35319*      | 5/16-18  | 3       | 5/16 | 1 1/2     | 5/16 | 5/8   | .08       |
| 35303*      | 3/8-16   | 3       | 5/16 | 1 1/2     | 3/8  | 3/4   | .11       |
| 35320       | 3/8-16   | 4       | 5/16 | 1 3/4     | 3/8  | 3/4   | .11       |
| 35304       | 3/8-16   | 2 3/16  | 3/8  | 1 1/4     | 3/8  | 3/4   | .08       |
| 35305*      | 3/8-16   | 3       | 3/8  | 1 1/2     | 3/8  | 3/4   | .11       |
| 35306*      | 3/8-16   | 5       | 3/8  | 2 1/2     | 3/8  | 3/4   | .12       |
| 35307*      | 1/2-13   | 3 3/4   | 3/8  | 1 1/2     | 1/2  | 1     | .25       |
| 35308       | 1/2-13   | 2 11/16 | 1/2  | 1 1/2     | 1/2  | 1     | .19       |
| 35309       | 1/2-13   | 3 3/4   | 1/2  | 1 1/2     | 1/2  | 1     | .24       |
| 35310       | 1/2-13   | 5       | 1/2  | 1 1/2     | 1/2  | 1     | .31       |
| 35311       | 5/8-11   | 3 11/16 | 5/8  | 2         | 5/8  | 1 1/4 | .40       |
| 35312*      | 5/8-11   | 4 1/2   | 5/8  | 2         | 5/8  | 1 1/4 | .46       |
| 35314*      | 5/8-11   | 6       | 5/8  | 2 1/2     | 5/8  | 1 1/4 | .60       |
| 35315*      | 3/4-10   | 4 1/2   | 3/4  | 2         | 3/4  | 1 1/2 | .73       |
| 35321*      | 3/4-10   | 6       | 3/4  | 2 1/2     | 3/4  | 1 1/2 | 1.00      |
| 35317       | 1-8      | 8       | 1    | 3         | 1    | 2     | 2.25      |

\*Conforms to TCMA. **Not to be used for lifting.**

## Rod Ends Stainless Steel



- Material: 303 Stainless
- Thread Class 2A-UNC



| Part Number | Ref. A  | B     | Ref. C | D     | E    | F     |
|-------------|---------|-------|--------|-------|------|-------|
| 35721       | 1/4-20  | 2 1/8 | 3/16   | 7/8   | 1/4  | 1/2   |
| 35722       | 1/4-20  | 2 1/8 | 1/4    | 7/8   | 1/4  | 1/2   |
| 35723       | 5/16-18 | 3 1/2 | 1/4    | 1 1/2 | 5/16 | 5/8   |
| 35724       | 5/16-18 | 3 1/2 | 5/16   | 1 1/2 | 5/16 | 5/8   |
| 35725       | 3/8-16  | 3 1/2 | 3/8    | 1 1/2 | 3/8  | 3/4   |
| 35726       | 3/8-16  | 5     | 3/8    | 2 1/2 | 3/8  | 3/4   |
| 35727       | 1/2-13  | 3 3/4 | 1/2    | 1 1/2 | 1/2  | 1     |
| 35728       | 1/2-13  | 5     | 1/2    | 2     | 1/2  | 1     |
| 35729       | 5/8-11  | 4 1/2 | 5/8    | 2     | 5/8  | 1 1/4 |
| 35730       | 5/8-11  | 6     | 5/8    | 3     | 5/8  | 1 1/4 |
| 35731       | 3/4-10  | 4 1/2 | 3/4    | 2     | 3/4  | 1 1/2 |
| 35732       | 3/4-10  | 6     | 3/4    | 2 1/2 | 3/4  | 1 1/2 |

**Not to be used for lifting.**

## Rod Ends Blank Forging

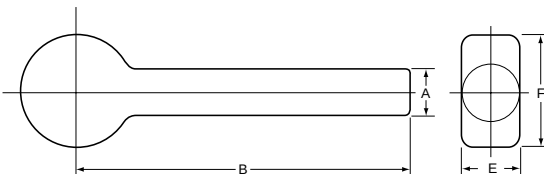
- Material: Standard, Alloy Steel Forging
- Stainless, 18-8 Forging

\* Not Heat Treated

| Part Number |                 | A   | B* | E   | Ref. F | Wt. (lbs) |
|-------------|-----------------|-----|----|-----|--------|-----------|
| Standard    | Stainless Steel |     |    |     |        |           |
| 35511       | 35701           | 1/4 | 2  | 1/4 | 1/2    | .04       |
| 35512       | 35702           | 3/8 | 5  | 3/8 | 3/4    | .13       |
| 35513       | 35703           | 1/2 | 6  | 1/2 | 1      | .44       |
| 35514       | 35704           | 5/8 | 6  | 5/8 | 1 1/4  | .70       |
| 35515       |                 | 3/4 | 6  | 3/4 | 1 1/2  | 1.8       |
| 35516       |                 | 1   | 8  | 1   | 2      | 2.5       |

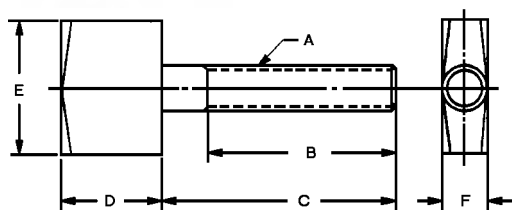
\*B dimension indicates minimum length. **Not to be used for lifting.**

Blank Rod Ends can be machined to your specifications; please send prints for quotation. Maximum thread length 1/2" from head.





## Quarter Turn Screws



- Material: Stem, Low Carbon Steel  
Head, Low Carbon Steel
- Finish: Black Oxide
- Thread: 2A-UNC (inch); Class 6g (Metric)  
2A-UNF (10-32)

The diamond on all four corners of the Jergens Quarter Turn and Half Turn Screws, makes the opening and closing of jig lids easier. Ideally suited for clamping lids, covers and swing-away type bushing arms. Quarter Turn and Half Turn Screws may be machined for finishing requirements.

| Part Number   | A       | B     | C     | D   | E     | F    | Wt. (lbs) 10 Pcs. |
|---------------|---------|-------|-------|-----|-------|------|-------------------|
| <b>34501*</b> | 10-32   | 7/8   | 1     | 1/2 | 1/2   | 3/16 | .31               |
| <b>34502*</b> | 1/4-20  | 1     | 1 1/4 | 5/8 | 3/4   | 1/4  | .47               |
| <b>34503</b>  | 1/4-20  | 1 1/2 | 1 3/4 | 5/8 | 3/4   | 1/4  | .48               |
| <b>34504*</b> | 5/16-18 | 1 1/4 | 1 1/2 | 3/4 | 1     | 5/16 | .90               |
| <b>34505</b>  | 5/16-18 | 1 3/4 | 2     | 3/4 | 1     | 5/16 | 1.10              |
| <b>34506*</b> | 3/8-16  | 1 1/4 | 1 1/2 | 1   | 1     | 3/8  | 1.25              |
| <b>34507</b>  | 3/8-16  | 1 3/4 | 2     | 1   | 1     | 3/8  | 1.45              |
| <b>34508*</b> | 1/2-13  | 1 1/2 | 1 3/4 | 1   | 1 1/4 | 1/2  | 2.35              |
| <b>34509</b>  | 1/2-13  | 2     | 2 1/4 | 1   | 1 1/4 | 1/2  | 2.65              |

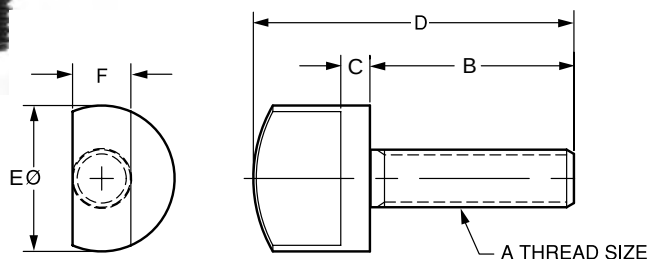
\*Conforms to TCMA

| Part Number  | A          | B  | C  | D  | E  | F  | Wt. (kg) 10 Pcs. |
|--------------|------------|----|----|----|----|----|------------------|
| <b>34571</b> | M5 x 0.8   | 22 | 25 | 13 | 13 | 5  | .14              |
| <b>34573</b> | M6 x 1.0   | 25 | 32 | 16 | 19 | 6  | .21              |
| <b>34575</b> | M8 x 1.25  | 32 | 38 | 19 | 25 | 8  | .41              |
| <b>34577</b> | M10 x 1.5  | 32 | 38 | 25 | 25 | 10 | .57              |
| <b>34579</b> | M12 x 1.75 | 38 | 44 | 25 | 32 | 13 | 1.06             |

## Half Turn Screws



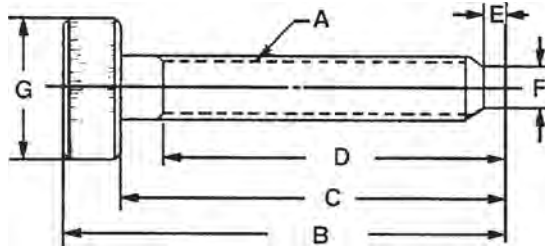
- Material: Low Carbon Steel
- Finish: Black Oxide
- Thread: 2A-UNF (10-32)  
2A-UNC (other sizes)



| Part Number  | Thread A | B     | C    | D       | E      | F    | Wt. (lbs) 10 Pcs. |
|--------------|----------|-------|------|---------|--------|------|-------------------|
| <b>34521</b> | 10-32    | 1     | 3/16 | 1-11/16 | 3/4    | 3/16 | .3                |
| <b>34522</b> | 1/4-20   | 1-1/4 | 3/16 | 2       | 3/4    | 1/4  | .3                |
| <b>34523</b> | 5/16-18  | 1-1/4 | 3/16 | 2-1/16  | 1      | 5/16 | .3                |
| <b>34524</b> | 3/8-16   | 1-3/4 | 1/4  | 1-11/16 | 1-1/16 | 3/8  | .3                |
| <b>34525</b> | 1/2-13   | 1-3/4 | 1/4  | 2-3/4   | 1-1/4  | 1/2  | .3                |

## Screws

### Thumb Screws



- Materials: 1215 Steel with black oxide finish, 303 Stainless
- Thread: 2A-UNC  
2A-UNF (10-32)

The half-dog point protects the threads in case of peening.

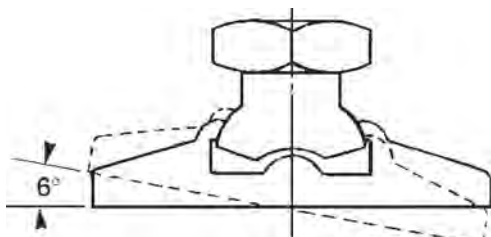
| Part No.<br>Steel | Part No.<br>Stainless | A       | B       | C     | D       | E    | F     | G     | Wt.<br>(lbs) |
|-------------------|-----------------------|---------|---------|-------|---------|------|-------|-------|--------------|
| 43901             | -                     | 10-24   | 1 9/16  | 1 1/4 | 1 1/16  | 3/64 | 1/8   | 3/4   | .44          |
| 43902             | -                     | 10-24   | 1 5/16  | 1 5/8 | 1 7/16  | 3/64 | 1/8   | 3/4   | .47          |
| 43903*            | -                     | 10-24   | 2 5/16  | 2     | 1 13/16 | 3/64 | 1/8   | 3/4   | .48          |
| -                 | 44001                 | 10-32   | 1 3/16  | 1     | 3/4     | 7/32 | 3/16  | 3/4   | .45          |
| -                 | 44002                 | 10-32   | 1 7/16  | 1 1/4 | 1       | 7/32 | 3/16  | 3/4   | .45          |
| -                 | 44004                 | 1/4-20  | 1 5/16  | 1     | 25/32   | 3/32 | 11/64 | 1     | .75          |
| 43904*            | 44005*                | 1/4-20  | 1 13/16 | 1 1/2 | 1 1/4   | 1/16 | 5/32  | 1     | .78          |
| 43905*            | 44006                 | 1/4-20  | 2 5/16  | 2     | 1 3/4   | 1/16 | 5/32  | 1     | .86          |
| 43906*            | -                     | 1/4-20  | 2 13/16 | 2 1/2 | 2 1/4   | 1/16 | 5/32  | 1     | .91          |
| 43907             | 44008                 | 5/16-18 | 2 1/8   | 1 3/4 | 1 7/16  | 5/64 | 13/64 | 1 1/8 | 1.30         |
| 43908             | 44009                 | 5/16-18 | 2 5/8   | 2 1/4 | 1 15/16 | 5/64 | 13/64 | 1 1/8 | 1.36         |
| 43909             | 44010                 | 5/16-18 | 3 1/8   | 2 3/4 | 2 7/16  | 5/64 | 13/64 | 1 1/8 | 1.50         |
| 43910*            | 44011                 | 3/8-16  | 2 7/16  | 2     | 1 5/8   | 3/32 | 1/4   | 1 1/4 | 1.93         |
| 43911*            | 44012*                | 3/8-16  | 2 15/16 | 2 1/2 | 2 1/8   | 3/32 | 1/4   | 1 1/4 | 2.00         |
| 43912*            | 44013*                | 3/8-16  | 3 7/16  | 3     | 2 5/8   | 3/32 | 1/4   | 1 1/4 | 2.20         |
| 43913             | -                     | 1/2-13  | 2 15/16 | 2 1/2 | 2 1/8   | 1/8  | 11/32 | 1 1/4 | 2.55         |
| -                 | 44014                 | 1/2-13  | 3       | 2 1/2 | 2       | 1/4  | 3/8   | 1 1/4 | 2.55         |
| 43914*            | -                     | 1/2-13  | 3 7/16  | 3     | 2 5/8   | 1/8  | 11/32 | 1 1/4 | 2.80         |
| -                 | 44015                 | 1/2-13  | 3 1/2   | 3     | 2 1/2   | 1/4  | 3/8   | 1 1/4 | 3.00         |
| 43915*            | -                     | 1/2-13  | 3 15/16 | 3 1/2 | 3 1/8   | 1/8  | 11/32 | 1 1/4 | 3.10         |
| -                 | 44016                 | 1/2-13  | 4       | 3 1/2 | 3       | 1/4  | 3/8   | 1 1/4 | 3.10         |

\* Conforms to TCMA

### Metric

| Part Number | A           | B   | C  | D  | E   | F  | G  | Wt.<br>(Kg) |
|-------------|-------------|-----|----|----|-----|----|----|-------------|
| 43971       | M5x0.8      | 30  | 25 | 20 | 1.2 | 3  | 20 | 0.20        |
| 43972       | M5x0.8      | 45  | 40 | 35 | 1.2 | 3  | 20 | 0.21        |
| 43973       | M5x0.8      | 55  | 50 | 45 | 1.2 | 3  | 20 | 0.22        |
| 43974       | M 6 x 1.0   | 50  | 40 | 35 | 1.5 | 4  | 25 | 0.35        |
| 43975       | M 6 x 1.0   | 60  | 50 | 45 | 1.5 | 4  | 25 | 0.39        |
| 43976       | M 6 x 1.0   | 75  | 65 | 55 | 1.5 | 4  | 25 | 0.41        |
| 43977       | M8 x 1.25   | 50  | 40 | 35 | 2.4 | 5  | 30 | 0.59        |
| 43978       | M8 x 1.25   | 60  | 50 | 45 | 2.4 | 5  | 30 | 0.62        |
| 43979       | M8 x 1.25   | 75  | 65 | 60 | 2.4 | 5  | 30 | 0.68        |
| 43980       | M10 x 1.5   | 60  | 50 | 45 | 2.4 | 6  | 30 | 0.88        |
| 43981       | M10 x 1.5   | 75  | 65 | 60 | 2.4 | 6  | 30 | 0.91        |
| 43982       | M10 x 1.5   | 85  | 75 | 70 | 2.4 | 6  | 30 | 1.00        |
| 43983       | M 12 x 1.75 | 90  | 75 | 70 | 3   | 11 | 30 | 1.27        |
| 43984       | M 12 x 1.75 | 105 | 90 | 85 | 3   | 11 | 30 | 1.41        |
| 43985       | M 12 x 1.75 | 80  | 65 | 55 | 3   | 11 | 30 | 1.25        |

## Tru-Center™ Toggle Products

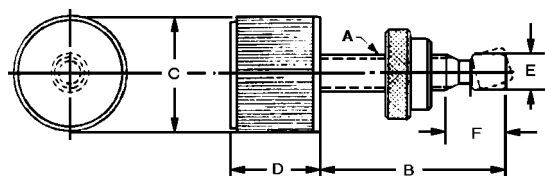


The Jergens patented “Tru-Center” products are the only pad type on the market to provide true center line clamping. The cut-away drawing illustrates how this works. The center line of the pad and the center line of the nut always intersect at the point of contact between the pad and the workpiece.

## Adjustable Torque Toggle Screws



- Material: Stem, Stressproof® Pad, 4140
- Finish: Stem, Black Oxide Head, Chrome Plate
- Thread: 2A-UNC
- Pad: Angular movement either side of center (total 16°)



Perfect for delicate and fine clamping. Once the end holding force is reached, the head breaks free. Larger radius, straight knurled head for easy turning.

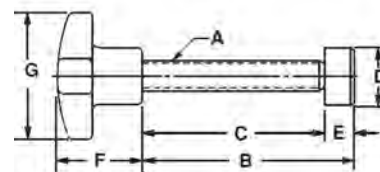
| Part Number  | A       | B     | C     | D     | E    | F     | End Force (lbs) | Wt. (lbs) 10 Pcs. |
|--------------|---------|-------|-------|-------|------|-------|-----------------|-------------------|
| <b>31101</b> | 10-24   | 1 1/4 | 1     | 23/32 | .140 | 3/16  | 0-50            | 1.7               |
| <b>31102</b> | 1/4-20  | 1 1/2 | 1     | 23/32 | .185 | 15/64 | 0-50            | 1.7               |
| <b>31103</b> | 1/4-20  | 2 1/2 | 1     | 23/32 | .185 | 15/64 | 0-50            | 1.8               |
| <b>31104</b> | 5/16-18 | 1 3/4 | 1     | 23/32 | .240 | 9/32  | 0-50            | 1.9               |
| <b>31105</b> | 5/16-18 | 2 3/4 | 1     | 23/32 | .240 | 9/32  | 0-50            | 2.1               |
| <b>31106</b> | 3/8-16  | 2     | 1 1/4 | 25/32 | .294 | 11/32 | 0-60            | 3.0               |
| <b>31107</b> | 1/2-13  | 3     | 1 1/4 | 25/32 | .400 | 7/16  | 0-60            | 4.2               |

## Hand Knob Toggle Screws



- Material: Stem, Stressproof® Pad, 4140 Head, Cast Iron
- Finish: Stem, Black Oxide Pad, Zinc Plate Head, Cadmium Plate
- Thread: 2A-UNC
- Pad: Angular movement either side of center (total 16°)

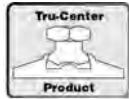
For clamping of irregular surfaces while the swivel shoe prevents marring of polished surfaces. Shoe is hardened for longer life. The cast iron hand knob is included for hand tightening. To remove pad for installation, pull and turn counter-clockwise.



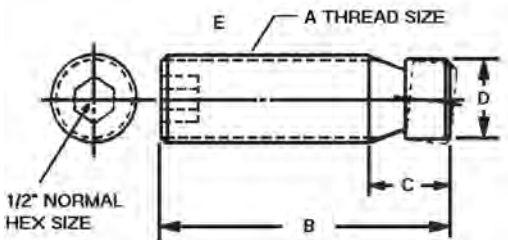
| Part Number  | A      | B     | C       | D     | E     | F     | G     | Wt. (lbs) 10 Pcs. |
|--------------|--------|-------|---------|-------|-------|-------|-------|-------------------|
| <b>36301</b> | 3/8-16 | 2     | 1 21/32 | 11/16 | 3/8   | 1 1/8 | 2     | .21               |
| <b>36302</b> | 3/8-16 | 2 3/4 | 2 13/32 | 11/16 | 3/8   | 1 1/8 | 2     | .24               |
| <b>36303</b> | 3/8-16 | 3 5/8 | 3 9/32  | 11/16 | 3/8   | 1 1/8 | 2     | .25               |
| <b>36304</b> | 1/2-13 | 2 1/8 | 1 21/32 | 13/16 | 15/32 | 1 1/2 | 2 1/2 | .44               |
| <b>36305</b> | 1/2-13 | 2 3/4 | 2 9/32  | 13/16 | 15/32 | 1 1/2 | 2 1/2 | .48               |
| <b>36306</b> | 1/2-13 | 3 3/8 | 2 29/32 | 13/16 | 15/32 | 1 1/2 | 2 1/2 | .52               |
| <b>36307</b> | 1/2-13 | 4     | 3 17/32 | 13/16 | 15/32 | 1 1/2 | 2 1/2 | .55               |
| <b>36308</b> | 5/8-11 | 3     | 2 17/32 | 15/16 | 1/2   | 2     | 3     | 1.38              |
| <b>36309</b> | 5/8-11 | 3 3/4 | 3 9/32  | 15/16 | 1/2   | 2     | 3     | 1.50              |
| <b>36310</b> | 3/4-10 | 4 7/8 | 4 11/32 | 1 1/8 | 19/32 | 2     | 3     | 1.56              |

## Tru-Center™ Toggle Products

### Socket Toggle Screws



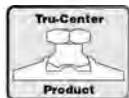
- Material: 4140
- Finish: Black Oxide
- Heat Treat: 38-42 Rc
- Screws may be inserted without removing pads.



| Part Number | Thread Size A | B     | C     | D    | E Hex Size | Wt. (lbs) 10 Pcs. |
|-------------|---------------|-------|-------|------|------------|-------------------|
| 33301*      | 1/4-20        | 1/2   | 15/64 | .185 | 1/8        | .03               |
| 33302*      | 1/4-20        | 1     | 15/64 | .185 | 1/8        | .09               |
| 33303*      | 5/16-18       | 3/4   | 9/32  | .240 | 5/32       | .09               |
| 33304*      | 5/16-18       | 1 1/2 | 9/32  | .240 | 5/32       | .24               |
| 33305*      | 3/8-16        | 1     | 11/32 | .294 | 3/16       | .20               |
| 33306*      | 3/8-16        | 2     | 11/32 | .294 | 3/16       | .45               |
| 33307*      | 1/2-13        | 1     | 7/16  | .400 | 1/4        | .30               |
| 33308*      | 1/2-13        | 2     | 7/16  | .400 | 1/4        | .78               |
| 33310*      | 5/8-11        | 2     | 17/32 | .507 | 5/16       | 1.25              |

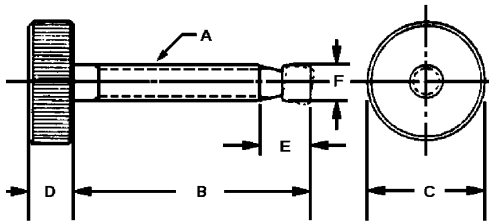
\*Conforms to TCMA

## Toggle Thumb Screws



Same as our standard Thumb Screw only with the addition of our patented swivel pad on the end.

- Material: Stem and Head 1215, Pad, 4140
- Finish: Black Oxide
- Thread: 2A-UNC



| Part Number | Thread Size A | B     | C     | D    | E     | F    | Wt. (lbs) 10 Pcs. |
|-------------|---------------|-------|-------|------|-------|------|-------------------|
| 33501       | 10-24         | 1     | 3/4   | 5/16 | 3/16  | .140 | .31               |
| 33502       | 10-24         | 1 1/2 | 3/4   | 5/16 | 3/16  | .140 | .47               |
| 33503*      | 1/4-20        | 1 1/2 | 1     | 5/16 | 15/64 | .185 | .78               |
| 33504*      | 1/4-20        | 2     | 1     | 5/16 | 15/64 | .185 | .94               |
| 33505*      | 5/16-18       | 1 1/2 | 1 1/8 | 3/8  | 9/32  | .240 | 1.05              |
| 33506*      | 5/16-18       | 2     | 1 1/8 | 3/8  | 9/32  | .240 | 1.25              |
| 33507*      | 5/16-18       | 2 1/2 | 1 1/8 | 3/8  | 9/32  | .240 | 1.40              |
| 33508*      | 3/8-16        | 1 1/2 | 1 1/4 | 7/16 | 11/32 | .294 | 1.70              |
| 33509*      | 3/8-16        | 2     | 1 1/4 | 7/16 | 11/32 | .294 | 1.88              |
| 33510*      | 3/8-16        | 2 1/2 | 1 1/4 | 7/16 | 11/32 | .294 | 2.04              |
| 33511*      | 3/8-16        | 3     | 1 1/4 | 7/16 | 11/32 | .294 | 2.20              |

\*Conforms to TCMA

## Plastic Pad Covers



- Material: Nylon

Where soft material with fine finished surfaces must be clamped with relatively high pressures, we recommend the use of the Jergens Plastic Pad Covers. Resistant to oils and cutting compounds, they snap over the swivel end of our Hand Knob Toggle Screws, Socket Toggle Screws, Toggle Thumb Screws, Toggle Pads and adjustable Torque Thumb Screws.

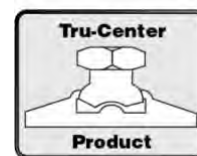
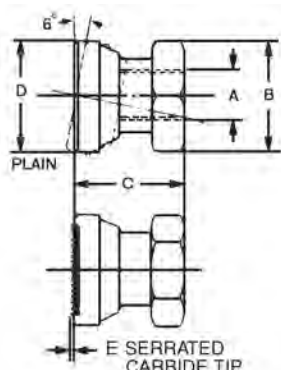
| Part Number | To Fit Over O.D. of Pad | O.D. of Plastic Pad |
|-------------|-------------------------|---------------------|
| 32901       | .140                    | .250                |
| 32902       | .185                    | .250                |
| 32903       | .240                    | .312                |
| 32904       | .294                    | .375                |
| 32905       | .400                    | .500                |

| Part Number | To Fit Over O.D. of Pad | O.D. of Plastic Pad |
|-------------|-------------------------|---------------------|
| 32907       | 9/16                    | .625                |
| 32908       | 5/8                     | .750                |
| 32909       | 11/16                   | .812                |
| 32910       | 13/16                   | .937                |
| 32911       | 15/16                   | 1.062               |

Plastic Pad Covers snap over outside diameter of Jergens swivel pads.

## Tru-Center™ Toggle Products

### Toggle Pads



Carbide Tipped Toggle Pads provide multiple point contact to compensate for surfaces that are rough or out-of-round. Points will embed themselves in the workpiece, which assures positive gripping. It eliminates possible radial load on the workpiece.

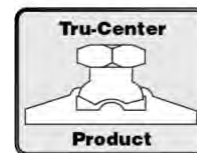
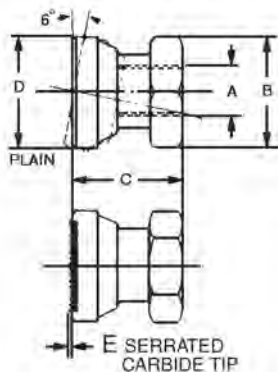
- Material: 4140 or Carbide Insert Tip
- Finish: Black Oxide
- Heat Treat: Plain Pad Rc 36-40
- Thread: 2B-UNC

| Part Number |          | Thread Size A | Across Flats B | Plain C | Serrated C | D     | E    | Wt. (lbs) 10 Pcs. |
|-------------|----------|---------------|----------------|---------|------------|-------|------|-------------------|
| Plain       | Serrated |               |                |         |            |       |      |                   |
| 43502       | 43702    | 1/4-20        | 1/2            | 1/2     | 9/16       | 9/16  | .055 | .20               |
| 43503       | 43703    | 5/16-18       | 9/16           | 11/16   | 3/4        | 5/8   | .055 | .28               |
| 43504       | 43704    | 3/8-16        | 5/8            | 25/32   | 3/4        | 11/16 | .055 | .41               |
| 43505       | 43705    | 1/2-13        | 3/4            | 7/8     | 15/16      | 13/16 | .055 | .62               |
| 43506       | 43706    | 5/8-11        | 7/8            | 1       | 1 1/32     | 15/16 | .086 | .94               |
| 43507*      | 43707    | 3/4-10        | 1 1/16         | 1 5/32  | 1 1/4      | 1 1/8 | .086 | 1.60              |

\*Plastic Pad is not available for this item.

## Toggle Pads

### Metric



- Material: 4140 or Carbide Insert Tip
- Finish: Black Oxide
- Heat Treat: Plain Pad Rc36-40
- Thread class: 6h

| Part Number |          | Thread Size A | Across Flats B | Plain C | Serrated C | D  | E   | Wt. (kg) 10 Pcs. |
|-------------|----------|---------------|----------------|---------|------------|----|-----|------------------|
| Plain       | Serrated |               |                |         |            |    |     |                  |
| 43552       | 43752    | M6 x 1.0      | 12             | 13      | 14.4       | 14 | 1.4 | .09              |
| 43553       | 43753    | M8 x 1.25     | 14             | 17      | 18.4       | 16 | 1.4 | .13              |
| 43554       | 43754    | M10 x 1.5     | 16             | 18      | 20.4       | 18 | 1.4 | .19              |
| 43555       | 43755    | M12 x 1.75    | 22             | 22      | 23.4       | 21 | 1.4 | .28              |
| 43556       | 43756    | M16 x 2.0     | 26             | 25      | 26.4       | 24 | 2.2 | .43              |
| 43557       | 43757    | M20 x 2.5     | 30             | 29      | 31.2       | 28 | 2.2 | .73              |

Note: Metric Toggle Pads have two flats instead of a hex configuration on the head.

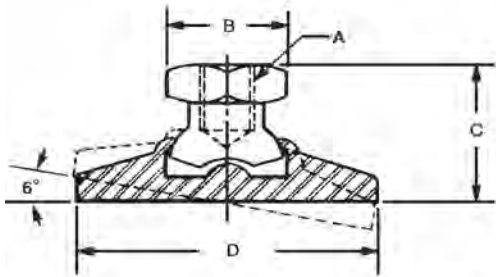


## Leveling Pads

Provides a greater surface area where heavy loads are to be applied or where heavy pressures must be exerted on flex-

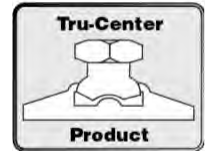
ible or softer materials. Pad face swivels and aligns with no damage to the uneven surfaces.

### Tapped



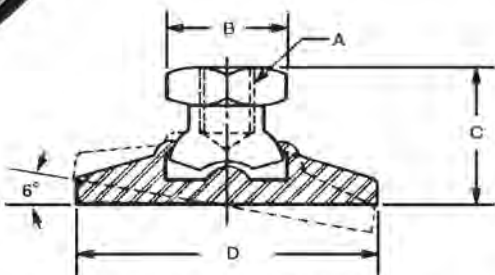
SWIVELS 6° EACH SIDE OF CENTER

- Material: 4140
- Finish: Zinc Plated
- Heat Treat: Rc 36-40
- Thread: UNC-2B



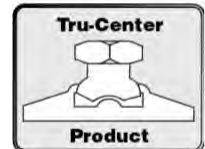
| Part Number | Thread Size A | Across Flats B | C      | D     | Load Capacity (lbs) | Wt. (lbs) |
|-------------|---------------|----------------|--------|-------|---------------------|-----------|
| 32501       | 3/8-16        | 5/8            | 3/4    | 1 1/4 | 2300                | .10       |
| 32502       | 1/2-13        | 3/4            | 1      | 1 7/8 | 4200                | .22       |
| 32503       | 5/8-11        | 7/8            | 1 1/8  | 2 1/4 | 6600                | .42       |
| 32504       | 3/4-10        | 1 1/16         | 1 7/16 | 3     | 10,000              | .84       |

### Metric Tapped



SWIVELS 6° EACH SIDE OF CENTER

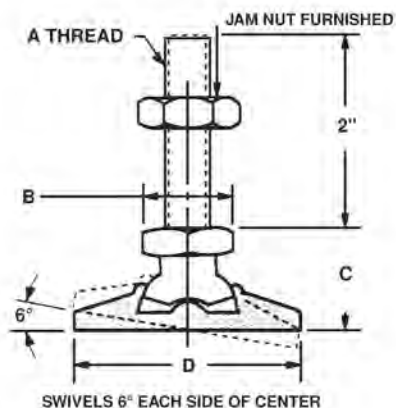
- Material: 4140
- Finish: Zinc Plated
- Heat Treat: Rc36-40
- Thread class: 6h



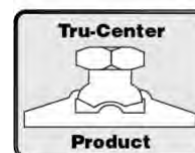
| Part Number | Thread Size A | Across Flats B | C  | D  | Load Capacity (kg) | Wt. (kg) |
|-------------|---------------|----------------|----|----|--------------------|----------|
| 32551       | M10 x 1.5     | 16             | 21 | 32 | 1000               | .05      |
| 32552       | M12 x 1.75    | 22             | 27 | 48 | 1900               | .10      |
| 32553       | M16 x 2.0     | 26             | 31 | 57 | 2900               | .19      |
| 32554       | M20 x 2.5     | 30             | 39 | 76 | 4500               | .38      |

Note: Metric Toggle Pads have two flats instead of a hex configuration on the head.

## Leveling Pads Threaded



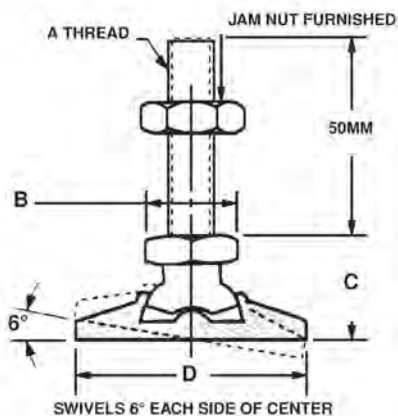
- Material: 4140
- Finish: Zinc Plated Pad
- Heat Treat: Rc 36-40
- Thread: UNC-2A



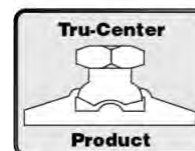
| Part Number | Thread Size A | Across Flats B | C      | D     | Load Capacity (lbs) | Wt. (lbs) |
|-------------|---------------|----------------|--------|-------|---------------------|-----------|
| 32521       | 3/8-16        | 5/8            | 3/4    | 1 1/4 | 2300                | .16       |
| 32522       | 1/2-13        | 3/4            | 1      | 1 7/8 | 4200                | .37       |
| 32523       | 5/8-11        | 7/8            | 1 1/8  | 2 1/4 | 6600                | .58       |
| 32524       | 3/4-10        | 1 1/16         | 1 7/16 | 3     | 10,000              | 1.22      |

Jam nut is furnished.

## Metric Threaded



- Material: 4140
- Finish: Zinc Plated
- Heat Treat: Rc36-40
- Thread class: 6g



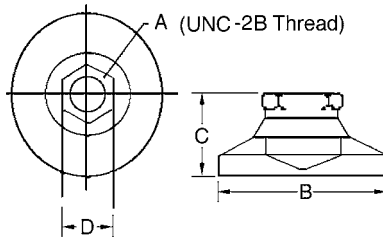
| Part Number | Thread Size A | Across Flats B | C  | D  | Load Capacity (kg) | Wt. (kg) |
|-------------|---------------|----------------|----|----|--------------------|----------|
| 32571       | M10 x 1.5     | 16             | 21 | 32 | 1000               | .07      |
| 32572       | M12 x 1.75    | 22             | 27 | 48 | 1900               | .17      |
| 32573       | M16 x 2.0     | 26             | 31 | 57 | 2900               | .26      |
| 32574       | M20 x 2.5     | 30             | 39 | 76 | 4500               | .55      |

Note: Metric Toggle Pads have two flats instead of a hex configuration on the head.

## Leveling Mounts

- Material: 1214 Steel
- Non-Skid Material: Neoprene
- Case hardened, file hard
- Swivels 10° in all directions
- Available with non-skid on base
- Available in stainless steel, or with a delrin pad, and in larger sizes upon request.

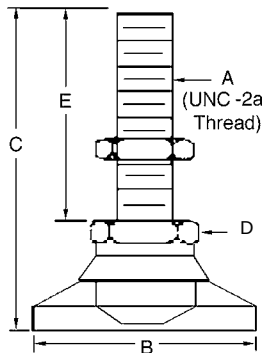
### Tapped



| Part Number |          | A      | B     | C*    | Across Flats<br>D | Maximum Load (lbs) |          |
|-------------|----------|--------|-------|-------|-------------------|--------------------|----------|
| Standard    | Non-skid |        |       |       |                   | Standard           | Non-skid |
| 32601       | 32651    | 10-32  | 3/4   | 17/32 | 3/8               | 700                | 550      |
| 32602       | 32652    | 1/4-20 | 1     | 45/64 | 1/2               | 1000               | 825      |
| 32606       | 32656    | 3/8-16 | 1 1/4 | 7/8   | 5/8               | 3750               | 2820     |
| 32608       | 32658    | 1/2-13 | 1 7/8 | 1 1/8 | 3/4               | 5000               | 3750     |
| 32610       | 32660    | 5/8-11 | 2 1/2 | 1 1/4 | 7/8               | 6000               | 5000     |
| 32612       | 32662    | 3/4-10 | 3     | 1 1/2 | 1 1/16            | 7400               | 6000     |
| 32616       | 32666    | 1-8    | 4     | 1 7/8 | 1 3/8             | 21000              | 16500    |

\*Add 1/8" to C Dimension for non-skid style.

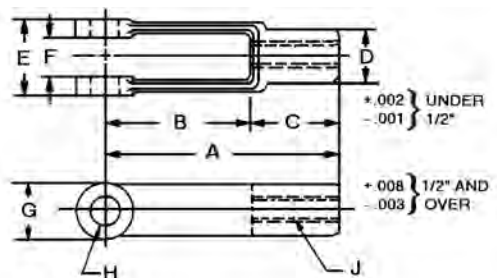
### Threaded



| Part Number |          | A      | B     | C*      | Across Flats<br>D | E     | Maximum Load (lbs) |          |
|-------------|----------|--------|-------|---------|-------------------|-------|--------------------|----------|
| Standard    | Non-skid |        |       |         |                   |       | Standard           | Non-skid |
| 32621       | 32671    | 10-32  | 3/4   | 1 17/32 | 3/8               | 1     | 700                | 550      |
| 32623       | 32673    | 1/4-20 | 1     | 1 61/64 | 1/2               | 1 1/4 | 1000               | 825      |
| 32626       | 32676    | 3/8-16 | 1 1/4 | 2 7/8   | 5/8               | 2     | 3750               | 2850     |
| 32629       | 32679    | 1/2-13 | 1 7/8 | 3 1/8   | 3/4               | 2     | 5000               | 3750     |
| 32632       | 32682    | 5/8-11 | 2 1/2 | 3 1/4   | 7/8               | 2     | 6000               | 4350     |
| 32635       | 32685    | 3/4-10 | 3     | 3 1/2   | 1 1/16            | 2     | 7400               | 5500     |
| 32640       | 32690    | 1-8    | 4     | 5 3/8   | 1 3/8             | 3 1/2 | 20000              | 16500    |

\*Add 1/8" to C Dimension for non-skid style.

## Yokes Tapped

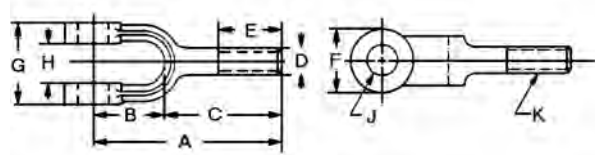


- Material: C-1021 Forging
- Finish: Black Oxide
- Thread: 2B

Jergens offers these yokes for attaching to threaded linkage at stem end. The forged holes are reamed and faced-off parallel inside and outside the yoke ends.

| Part Number<br>Coarse<br>Pitch | UNC<br>J | Part Number<br>Fine Pitch | UNF<br>J | A       | B       | C     | D      | E     | F      | G       | H    | Wt.<br>(lbs)<br>10 Pcs. |
|--------------------------------|----------|---------------------------|----------|---------|---------|-------|--------|-------|--------|---------|------|-------------------------|
|                                |          | <b>45501</b>              | 10-32    | 1 9/16  | 1       | 9/16  | 5/16   | 7/16  | 3/16   | 3/8     | 3/16 | .21                     |
| <b>45302</b>                   | 1/4-20   | <b>45502</b>              | 1/4-28   | 2       | 1 1/4   | 3/4   | 7/16   | 5/8   | 9/32   | 1/2     | 1/4  | .62                     |
| <b>45303</b>                   | 5/16-18  | <b>45503</b>              | 5/16-24  | 2 1/4   | 1 7/16  | 13/16 | 1/2    | 3/4   | 11/32  | 19/32   | 5/16 | .94                     |
| <b>45304</b>                   | 3/8-16   | <b>45504</b>              | 3/8-24   | 2 1/2   | 1 5/8   | 7/8   | 5/8    | 7/8   | 7/16   | 11/16   | 3/8  | 1.45                    |
| <b>45305</b>                   | 7/16-14  | <b>45505</b>              | 7/16-20  | 2 7/8   | 1 7/8   | 1     | 23/32  | 1     | 1/2    | 13/16   | 7/16 | 2.35                    |
| <b>45306</b>                   | 1/2-13   | <b>45506</b>              | 1/2-20   | 3       | 1 7/8   | 1 1/8 | 13/16  | 1 1/8 | 9/16   | 15/16   | 1/2  | 3.10                    |
| <b>45307</b>                   | 1/2-13   | <b>45507</b>              | 1/2-20   | 4 3/16  | 3 1/16  | 1 1/8 | 13/16  | 1 1/8 | 9/16   | 15/16   | 1/2  | 4.35                    |
| <b>45308</b>                   | 5/8-11   | <b>45508</b>              | 5/8-18   | 4 15/16 | 3 11/16 | 1 1/4 | 1 1/16 | 1 3/8 | 11/16  | 1 3/16  | 5/8  | 8.10                    |
| <b>45309</b>                   | 3/4-10   | <b>45509</b>              | 3/4-16   | 4       | 2 3/4   | 1 1/4 | 1 1/8  | 1 1/2 | 11/16  | 1 3/8   | 5/8  | 7.50                    |
| <b>45310</b>                   | 3/4-10   | —                         | —        | 6 1/16  | 4 9/16  | 1 1/2 | 1 1/4  | 1 5/8 | 13/16  | 1 7/16  | 3/4  | 15.00                   |
| <b>45312</b>                   | 1-8      | —                         | —        | 8       | 6       | 2     | 1 5/8  | 2 1/8 | 1 1/16 | 1 15/16 | 1    | 32.50                   |

## Yokes Threaded

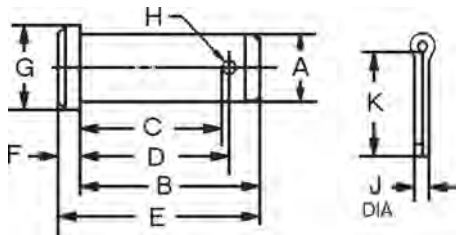


- Material: C-1021 Forging
- Finish: Black Oxide
- Thread: 2A-UNC

This style yoke is similar to the above except the stem is threaded for attaching to tapped linkage.

| Part Number | K       | A     | B       | C       | D    | E     | F       | G     | H      | J    | Wt. (lbs) 10 Pcs. |
|-------------|---------|-------|---------|---------|------|-------|---------|-------|--------|------|-------------------|
| 45902       | 1/4-20  | 1 3/4 | 5/8     | 1 1/8   | 1/4  | 3/4   | 1/2     | 5/8   | 9/32   | 1/4  | .47               |
| 45903       | 5/16-18 | 2     | 3/4     | 1 1/4   | 5/16 | 3/4   | 19/32   | 3/4   | 11/32  | 5/16 | .85               |
| 45904       | 3/8-16  | 2 1/8 | 27/32   | 1 9/32  | 3/8  | 3/4   | 11/16   | 7/8   | 7/16   | 3/8  | 1.10              |
| 45906       | 1/2-13  | 2 1/2 | 1 1/8   | 1 3/8   | 1/2  | 3/4   | 15/16   | 1 1/8 | 9/16   | 1/2  | 2.35              |
| 45907       | 5/8-11  | 2 7/8 | 1 7/16  | 1 7/16  | 5/8  | 3/4   | 1 3/16  | 1 3/8 | 11/16  | 5/8  | 4.20              |
| 45908       | 3/4-10  | 3 5/8 | 1 11/16 | 1 15/16 | 3/4  | 1 1/4 | 1 7/16  | 1 5/8 | 13/16  | 3/4  | 7.35              |
| 45910       | 1-8     | 4 1/2 | 2 1/2   | 2       | 1    | 1 1/8 | 1 15/16 | 2 1/8 | 1 1/16 | 1    | 17.50             |

## Clevis Pins



- Material: Low Carbon Steel
- All Clevis Pins supplied with cotter pins.

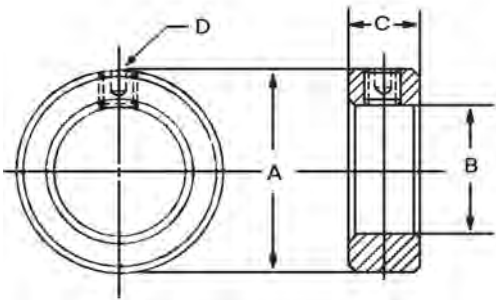
| Part Number | A    | B       | C       | D       | E       | F     | G      | H     | J    | K     | Wt. (lbs) 10 Pcs. |
|-------------|------|---------|---------|---------|---------|-------|--------|-------|------|-------|-------------------|
| 32701       | 3/16 | 37/64   | 29/64   | 31/64   | 41/64   | 1/16  | 5/16   | 5/64  | 1/16 | 1/2   | .08               |
| 32702       | 1/4  | 49/64   | 41/64   | 43/64   | 55/64   | 3/32  | 3/8    | 5/64  | 1/16 | 1/2   | .15               |
| 32703       | 5/16 | 15/16   | 49/64   | 13/16   | 1 1/32  | 3/32  | 7/16   | 7/64  | 3/32 | 1/2   | .30               |
| 32704       | 3/8  | 1 1/16  | 57/64   | 15/16   | 1 3/16  | 1/8   | 1/2    | 7/64  | 3/32 | 5/8   | .45               |
| 32705       | 7/16 | 1 3/16  | 1 1/64  | 1 1/16  | 1 11/32 | 5/32  | 9/16   | 7/64  | 3/32 | 5/8   | .60               |
| 32706       | 1/2  | 1 23/64 | 1 9/64  | 1 13/64 | 1 33/64 | 5/32  | 5/8    | 9/64  | 1/8  | 1     | 1.00              |
| 32707       | 5/8  | 1 39/64 | 1 25/64 | 1 29/64 | 1 13/16 | 13/64 | 13/16  | 9/64  | 1/8  | 1     | 1.18              |
| 32708       | 5/8  | 1 3/4   | 1 33/64 | 1 19/32 | 1 63/64 | 13/64 | 13/16  | 9/64  | 1/8  | 1     | 1.82              |
| 32709       | 3/4  | 1 29/32 | 1 41/64 | 1 23/32 | 2 5/32  | 1/4   | 15/16  | 11/64 | 5/32 | 1 1/2 | 3.00              |
| 32711       | 1    | 2 13/32 | 2 9/64  | 2 7/32  | 2 3/4   | 11/32 | 1 3/16 | 11/64 | 5/32 | 1 1/2 | 7.00              |



## Steel Shaft Collars

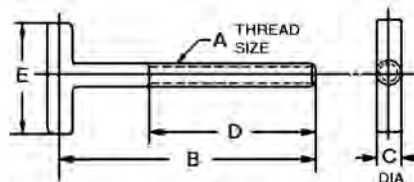


- Material: Low Carbon Steel
- Finish: Zinc Plate
- Set Screws Furnished
- Tolerances on I.D. +.005  
-.000



| Part Number | A     | B     | C     | D       | Wt. (lbs)<br>10 Pcs. |
|-------------|-------|-------|-------|---------|----------------------|
| 40101       | 1/2   | 1/4   | 5/16  | 10-32   | 0.21                 |
| 40102       | 5/8   | 5/16  | 5/16  | 10-32   | 0.21                 |
| 40103       | 3/4   | 3/8   | 3/8   | 1/4-20  | 0.4                  |
| 40104       | 1     | 1/2   | 7/16  | 1/4-20  | 0.6                  |
| 40105       | 1 1/8 | 5/8   | 1/2   | 5/16-18 | 0.94                 |
| 40106       | 1 1/4 | 3/4   | 9/16  | 5/16-18 | 1                    |
| 40107       | 1 1/2 | 7/8   | 9/16  | 5/16-18 | 1.13                 |
| 40108       | 1 5/8 | 1     | 5/8   | 5/16-18 | 1.5                  |
| 40109       | 1 3/4 | 1 1/8 | 5/8   | 5/16-18 | 2                    |
| 40110       | 2     | 1 1/4 | 11/16 | 3/8-16  | 3.5                  |
| 40111       | 2 1/8 | 1 3/8 | 11/16 | 3/8-16  | 4                    |
| 40112       | 2 1/4 | 1 1/2 | 3/4   | 3/8-16  | 4.3                  |
| 40113       | 2 3/4 | 1 3/4 | 7/8   | 1/2-13  | 10.9                 |
| 40114       | 3     | 2     | 7/8   | 1/2-13  | 9.5                  |

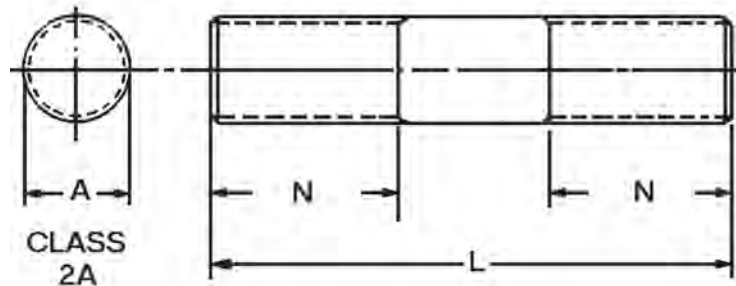
## Tee Strap Bolts



- Material: C-1021 Forging
- Finish: Black Oxide
- Thread: 2A-UNC

| Part Number | Thread Size A | B     | C   | D     | E     | Wt. (lbs) |
|-------------|---------------|-------|-----|-------|-------|-----------|
| 43101       | 1/4-20        | 2 1/2 | 1/4 | 1 1/2 | 1 1/4 | .09       |
| 43102       | 3/8-16        | 5     | 3/8 | 4     | 1 3/4 | .19       |
| 43103       | 1/2-13        | 6     | 1/2 | 5     | 3     | .44       |

## Alloy Steel Studs



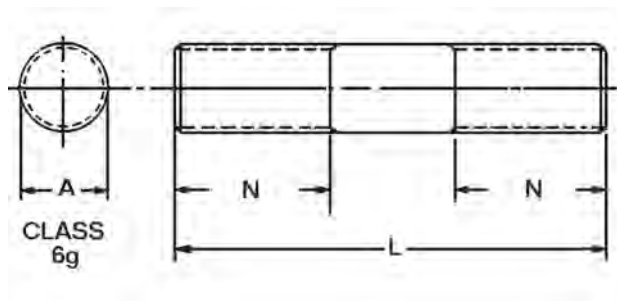
- Material:  
Stressproof®  
(125,000 psi Min.)  
Tensile  
(100,000 psi Min.)Yield
- Finish: Black Oxide
- Available in metric sizes.  
See the next page.

Longer or special studs are available upon request. Please send your print or sketch to our Customer Service Department.

| Thread A | L     | Part Number  | N     | Wt. (lbs) 10 Pcs. |
|----------|-------|--------------|-------|-------------------|
| 1/4-20   | 1 1/2 | <b>37720</b> | 7/16  | .21               |
| 1/4-20   | 2     | <b>37721</b> | 11/16 | .28               |
| 1/4-20   | 2 1/2 | <b>37722</b> | 15/16 | .35               |
| 1/4-20   | 3     | <b>37723</b> | 1     | .42               |
| 1/4-20   | 3 1/2 | <b>37724</b> | 1     | .49               |
| 1/4-20   | 4     | <b>37725</b> | 1     | .56               |
| 5/16-18  | 1 1/2 | <b>37920</b> | 7/16  | .33               |
| 5/16-18  | 2     | <b>37921</b> | 11/16 | .44               |
| 5/16-18  | 2 1/2 | <b>37922</b> | 15/16 | .55               |
| 5/16-18  | 3     | <b>37923</b> | 1 1/8 | .66               |
| 5/16-18  | 3 1/2 | <b>37924</b> | 1 1/8 | .77               |
| 5/16-18  | 4     | <b>37925</b> | 1 1/8 | .88               |
| 3/8-16   | 1 1/2 | <b>38120</b> | 3/8   | .54               |
| 3/8-16   | 2     | <b>38121</b> | 5/8   | .62               |
| 3/8-16   | 2 1/2 | <b>38122</b> | 7/8   | .77               |
| 3/8-16   | 3     | <b>38123</b> | 1 1/8 | .93               |
| 3/8-16   | 3 1/2 | <b>38124</b> | 1 1/4 | 1.10              |
| 3/8-16   | 4     | <b>38125</b> | 1 1/4 | 1.24              |
| 3/8-16   | 4 1/2 | <b>38126</b> | 1 1/4 | 1.39              |
| 3/8-16   | 5     | <b>38127</b> | 1 1/4 | 1.55              |
| 3/8-16   | 5 1/2 | <b>38128</b> | 1 1/4 | 1.71              |
| 3/8-16   | 6     | <b>38129</b> | 1 1/4 | 1.86              |
| 3/8-16   | 7     | <b>38131</b> | 1 1/4 | 2.27              |
| 3/8-16   | 8     | <b>38133</b> | 1 1/4 | 2.48              |
| 1/2-13   | 2     | <b>38321</b> | 5/8   | 1.10              |
| 1/2-13   | 2 1/2 | <b>38322</b> | 7/8   | 1.37              |
| 1/2-13   | 3     | <b>38323</b> | 1 1/8 | 1.65              |
| 1/2-13   | 3 1/2 | <b>38324</b> | 1 3/8 | 1.92              |
| 1/2-13   | 4     | <b>38325</b> | 1 1/2 | 2.20              |
| 1/2-13   | 4 1/2 | <b>38326</b> | 1 1/2 | 2.47              |
| 1/2-13   | 5     | <b>38327</b> | 1 1/2 | 2.75              |
| 1/2-13   | 5 1/2 | <b>38328</b> | 1 1/2 | 3.02              |
| 1/2-13   | 6     | <b>38329</b> | 1 1/2 | 3.30              |
| 1/2-13   | 7     | <b>38331</b> | 1 1/2 | 3.85              |
| 1/2-13   | 8     | <b>38333</b> | 1 1/2 | 4.40              |
| 1/2-13   | 9     | <b>38334</b> | 1 1/2 | 4.95              |
| 1/2-13   | 10    | <b>38335</b> | 1 1/2 | 5.50              |
| 1/2-13   | 12    | <b>38336</b> | 1 1/2 | 6.60              |

| Thread A | L     | Part Number  | N       | Wt. (lbs) 10 Pcs. |
|----------|-------|--------------|---------|-------------------|
| 5/8-11   | 2 1/2 | <b>38520</b> | 13/16   | 2.12              |
| 5/8-11   | 3     | <b>38521</b> | 1 1/16  | 2.55              |
| 5/8-11   | 3 1/2 | <b>38522</b> | 1 5/16  | 2.97              |
| 5/8-11   | 4     | <b>38523</b> | 1 9/16  | 3.40              |
| 5/8-11   | 4 1/2 | <b>38524</b> | 1 3/4   | 3.82              |
| 5/8-11   | 5     | <b>38525</b> | 1 3/4   | 3.25              |
| 5/8-11   | 5 1/2 | <b>38526</b> | 1 3/4   | 4.68              |
| 5/8-11   | 6     | <b>38527</b> | 1 3/4   | 5.10              |
| 5/8-11   | 7     | <b>38529</b> | 1 3/4   | 5.90              |
| 5/8-11   | 8     | <b>38531</b> | 1 3/4   | 6.80              |
| 5/8-11   | 9     | <b>38532</b> | 1 3/4   | 7.60              |
| 5/8-11   | 10    | <b>38533</b> | 1 3/4   | 8.50              |
| 5/8-11   | 12    | <b>38534</b> | 1 3/4   | 10.20             |
| 3/4-10   | 3     | <b>38721</b> | 15/16   | 3.75              |
| 3/4-10   | 3 1/2 | <b>38722</b> | 1 3/16  | 4.35              |
| 3/4-10   | 4     | <b>38723</b> | 1 7/16  | 5.00              |
| 3/4-10   | 4 1/2 | <b>38724</b> | 1 11/16 | 5.60              |
| 3/4-10   | 5     | <b>38725</b> | 1 15/16 | 6.20              |
| 3/4-10   | 5 1/2 | <b>38726</b> | 2       | 6.90              |
| 3/4-10   | 6     | <b>38727</b> | 2       | 7.50              |
| 3/4-10   | 7     | <b>38729</b> | 2       | 8.75              |
| 3/4-10   | 8     | <b>38731</b> | 2       | 10.00             |
| 3/4-10   | 10    | <b>38733</b> | 2       | 12.50             |
| 3/4-10   | 12    | <b>38734</b> | 2       | 15.00             |
| 7/8-9    | 4     | <b>38922</b> | 1 13/32 | 6.80              |
| 7/8-9    | 5     | <b>38923</b> | 1 29/32 | 8.50              |
| 7/8-9    | 6     | <b>38924</b> | 2 1/4   | 10.20             |
| 7/8-9    | 8     | <b>38925</b> | 2 1/4   | 13.60             |
| 7/8-9    | 10    | <b>38926</b> | 2 1/4   | 17.00             |
| 7/8-9    | 12    | <b>38927</b> | 2 1/4   | 20.40             |
| 1-8      | 4     | <b>39122</b> | 1 3/8   | 8.80              |
| 1-8      | 5     | <b>39123</b> | 1 7/8   | 11.00             |
| 1-8      | 6     | <b>39124</b> | 2 3/8   | 13.20             |
| 1-8      | 8     | <b>39125</b> | 2 1/2   | 17.60             |
| 1-8      | 10    | <b>39126</b> | 2 1/2   | 22.00             |
| 1-8      | 12    | <b>39127</b> | 2 1/2   | 26.40             |

## Studs Metric



- Material: Stressproof®  
862 Tensile (MPa)  
689 Yield (MPa)
- Finish: Black Oxide
- Longer or special studs are available on request

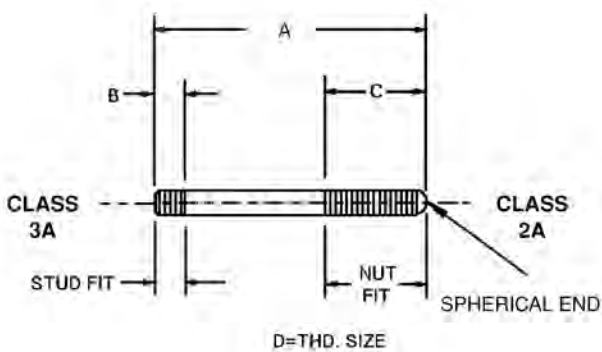
| Thread<br>A | L   | Part<br>Number | N  | Wt.<br>kg |
|-------------|-----|----------------|----|-----------|
| M6 x 1.0    | 50  | <b>37771</b>   | 18 | .04       |
| M6 x 1.0    | 66  | <b>37772</b>   | 25 | .06       |
| M6 x 1.0    | 81  | <b>37773</b>   | 28 | .06       |
| M6 x 1.0    | 96  | <b>37774</b>   | 28 | .09       |
| M8 x 1.25   | 50  | <b>37971</b>   | 18 | .09       |
| M8 x 1.25   | 66  | <b>37972</b>   | 25 | .11       |
| M8 x 1.25   | 81  | <b>37973</b>   | 32 | .13       |
| M8 x 1.25   | 96  | <b>37974</b>   | 32 | .15       |
| M8 x 1.25   | 111 | <b>37975</b>   | 32 | .18       |
| M10 x 1.5   | 50  | <b>38171</b>   | 16 | .13       |
| M10 x 1.5   | 66  | <b>38172</b>   | 23 | .18       |
| M10 x 1.5   | 80  | <b>38173</b>   | 30 | .20       |
| M10 x 1.5   | 95  | <b>38174</b>   | 35 | .24       |
| M10 x 1.5   | 110 | <b>38175</b>   | 35 | .29       |
| M10 x 1.5   | 125 | <b>38176</b>   | 39 | .31       |
| M10 x 1.5   | 140 | <b>38177</b>   | 39 | .35       |
| M10 x 1.5   | 155 | <b>38178</b>   | 39 | .40       |
| M12 x 1.75  | 50  | <b>38371</b>   | 16 | .18       |
| M12 x 1.75  | 66  | <b>38372</b>   | 23 | .24       |
| M12 x 1.75  | 81  | <b>38373</b>   | 31 | .29       |
| M12 x 1.75  | 95  | <b>38374</b>   | 40 | .33       |
| M12 x 1.75  | 111 | <b>38375</b>   | 40 | .40       |
| M12 x 1.75  | 125 | <b>38376</b>   | 40 | .46       |
| M12 x 1.75  | 141 | <b>38377</b>   | 40 | .53       |
| M12 x 1.75  | 156 | <b>38378</b>   | 40 | .55       |
| M16 x 2.0   | 80  | <b>38571</b>   | 29 | .51       |
| M16 x 2.0   | 95  | <b>38572</b>   | 36 | .59       |
| M16 x 2.0   | 110 | <b>38573</b>   | 44 | .70       |
| M16 x 2.0   | 125 | <b>38574</b>   | 47 | .81       |
| M16 x 2.0   | 150 | <b>38575</b>   | 47 | 1.00      |
| M16 x 2.0   | 175 | <b>38576</b>   | 47 | 1.17      |
| M16 x 2.0   | 200 | <b>38577</b>   | 47 | 1.36      |
| M20 x 2.5   | 81  | <b>38771</b>   | 30 | .84       |
| M20 x 2.5   | 96  | <b>38772</b>   | 37 | 1.0       |
| M20 x 2.5   | 111 | <b>38773</b>   | 45 | 1.14      |
| M20 x 2.5   | 126 | <b>38774</b>   | 52 | 1.25      |
| M20 x 2.5   | 151 | <b>38775</b>   | 48 | 1.54      |
| M20 x 2.5   | 176 | <b>38776</b>   | 56 | 1.85      |
| M20 x 2.5   | 201 | <b>38777</b>   | 56 | 2.16      |

All Dimensions in Millimeters.

## Fixture Studs Stainless Steel



• Material: 303 Stainless

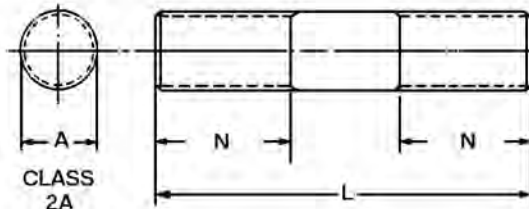


| Part Number | A     | Stud Fit B | Nut Fit C | Thread  |
|-------------|-------|------------|-----------|---------|
| 37601       | 1     | 7/32       | 1/2       | 10-32   |
| 37602       | 1 1/2 | 7/32       | 3/4       | 10-32   |
| 37603       | 2     | 7/32       | 3/4       | 10-32   |
| 37802       | 1 1/2 | 9/32       | 5/8       | 1/4-20  |
| 37804       | 2     | 9/32       | 3/4       | 1/4-20  |
| 37806       | 2 1/2 | 9/32       | 3/4       | 1/4-20  |
| 37808       | 3     | 9/32       | 1         | 1/4-20  |
| 38002       | 1 1/2 | 11/32      | 5/8       | 5/16-18 |
| 38004       | 2     | 11/32      | 1         | 5/16-18 |
| 38006       | 2 1/2 | 11/32      | 1 1/4     | 5/16-18 |
| 38008       | 3     | 11/32      | 1 3/8     | 5/16-18 |
| 38009       | 3 1/2 | 11/32      | 1 1/2     | 5/16-18 |
| 38010       | 4     | 11/32      | 1 1/2     | 5/16-18 |
| 38201       | 1 5/8 | 11/32      | 3/4       | 3/8-16  |
| 38202       | 2     | 11/32      | 1         | 3/8-16  |
| 38204       | 2 1/2 | 11/32      | 1 1/4     | 3/8-16  |
| 38206       | 3     | 11/32      | 1 3/8     | 3/8-16  |
| 38207       | 3 1/2 | 11/32      | 1 1/2     | 3/8-16  |
| 38208       | 4     | 11/32      | 1 1/2     | 3/8-16  |

## Set-Up Studs Stainless Steel



• Material: 303 Stainless

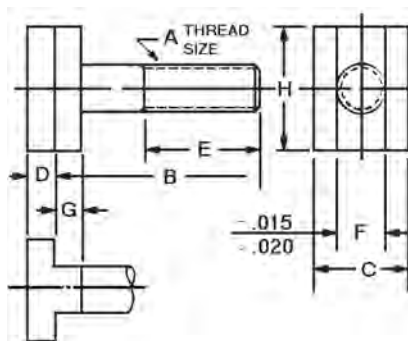


| Part Number | Thread A | L     | N     |
|-------------|----------|-------|-------|
| 38421       | 1/2-13   | 2     | 3/4   |
| 38422       | 1/2-13   | 2 1/2 | 1 1/8 |
| 38423       | 1/2-13   | 3     | 1 3/8 |
| 38424       | 1/2-13   | 3 1/2 | 1 1/2 |
| 38425       | 1/2-13   | 4     | 1 1/2 |
| 38426       | 1/2-13   | 4 1/2 | 1 1/2 |
| 38427       | 1/2-13   | 5     | 1 1/2 |
| 38428       | 1/2-13   | 5 1/2 | 1 1/2 |
| 38429       | 1/2-13   | 6     | 1 1/2 |
| 38431       | 1/2-13   | 7     | 1 1/2 |
| 38433       | 1/2-13   | 8     | 1 1/2 |
| 38434       | 1/2-13   | 9     | 1 1/2 |
| 38435       | 1/2-13   | 10    | 1 1/2 |
| 38436       | 1/2-13   | 12    | 1 1/2 |

| Part Number | Thread A | L     | N     |
|-------------|----------|-------|-------|
| 38620       | 5/8-11   | 2 1/2 | 1 1/8 |
| 38621       | 5/8-11   | 3     | 1 3/8 |
| 38622       | 5/8-11   | 3 1/2 | 1 3/4 |
| 38623       | 5/8-11   | 4     | 1 3/4 |
| 38624       | 5/8-11   | 4 1/2 | 1 3/4 |
| 38625       | 5/8-11   | 5     | 1 3/4 |
| 38626       | 5/8-11   | 5 1/2 | 1 3/4 |
| 38627       | 5/8-11   | 6     | 1 3/4 |
| 38629       | 5/8-11   | 7     | 1 3/4 |
| 38631       | 5/8-11   | 8     | 1 3/4 |
| 38632       | 5/8-11   | 9     | 1 3/4 |
| 38633       | 5/8-11   | 10    | 1 3/4 |
| 38634       | 5/8-11   | 12    | 1 3/4 |

| Part Number | Thread A | L     | N     |
|-------------|----------|-------|-------|
| 38821       | 3/4-10   | 3     | 1 3/8 |
| 38822       | 3/4-10   | 3 1/2 | 1 1/2 |
| 38823       | 3/4-10   | 4     | 1 3/4 |
| 38824       | 3/4-10   | 4 1/2 | 2     |
| 38825       | 3/4-10   | 5     | 2     |
| 38826       | 3/4-10   | 5 1/2 | 2     |
| 38827       | 3/4-10   | 6     | 2     |
| 38829       | 3/4-10   | 7     | 2     |
| 38831       | 3/4-10   | 8     | 2     |
| 38833       | 3/4-10   | 10    | 2     |
| 38834       | 3/4-10   | 12    | 2     |

## T-Slot Bolts



### Jergens Feature:

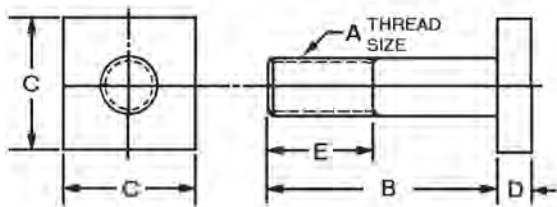
Protect your expensive machine table slots with Jergens T-Slot Bolts. The completely finished machined head provides at least 50% more bearing surface under your table slot. T-Slot Bolts outlast T-Bolts in wearability in most applications.

- Material: Alloy Steel
- Finish: Black Oxide
- Heat Treat: Rc 34-38
- Thread: 2A-UNC
- Available in lengths up to 24"

| Part Number | Thread Size A | B     | C       | D    | E     | F   | G    | H     | Wt. (lbs) |
|-------------|---------------|-------|---------|------|-------|-----|------|-------|-----------|
| 44101       | 1/2-13        | 2     | 7/8     | 5/16 | 1     | 1/2 | 9/32 | 1 1/4 | .22       |
| 44102       | 1/2-13        | 2 1/2 | 7/8     | 5/16 | 1 1/4 | 1/2 | 9/32 | 1 1/4 | .25       |
| 44103       | 1/2-13        | 3     | 7/8     | 5/16 | 1 1/2 | 1/2 | 9/32 | 1 1/4 | .27       |
| 44104       | 1/2-13        | 3 1/2 | 7/8     | 5/16 | 1 1/2 | 1/2 | 9/32 | 1 1/4 | .30       |
| 44105       | 1/2-13        | 4     | 7/8     | 5/16 | 1 1/2 | 1/2 | 9/32 | 1 1/4 | .33       |
| 44106       | 1/2-13        | 5     | 7/8     | 5/16 | 2     | 1/2 | 9/32 | 1 1/4 | .37       |
| 44107       | 1/2-13        | 6     | 7/8     | 5/16 | 2     | 1/2 | 9/32 | 1 1/4 | .44       |
| 44108       | 1/2-13        | 8     | 7/8     | 5/16 | 2     | 1/2 | 9/32 | 1 1/4 | .53       |
| 44301       | 5/8-11        | 2     | 1 1/8   | 3/8  | 1 1/4 | 5/8 | 3/8  | 1 1/2 | .39       |
| 44302       | 5/8-11        | 2 1/2 | 1 1/8   | 3/8  | 1 1/4 | 5/8 | 3/8  | 1 1/2 | .41       |
| 44303       | 5/8-11        | 3     | 1 1/8   | 3/8  | 1 1/2 | 5/8 | 3/8  | 1 1/2 | .44       |
| 44304       | 5/8-11        | 3 1/2 | 1 1/8   | 3/8  | 1 1/2 | 5/8 | 3/8  | 1 1/2 | .50       |
| 44305       | 5/8-11        | 4     | 1 1/8   | 3/8  | 1 1/2 | 5/8 | 3/8  | 1 1/2 | .55       |
| 44306       | 5/8-11        | 5     | 1 1/8   | 3/8  | 1 1/2 | 5/8 | 3/8  | 1 1/2 | .62       |
| 44307       | 5/8-11        | 6     | 1 1/8   | 3/8  | 1 1/2 | 5/8 | 3/8  | 1 1/2 | .72       |
| 44308       | 5/8-11        | 8     | 1 1/8   | 3/8  | 3     | 5/8 | 3/8  | 1 1/2 | .85       |
| 44309       | 5/8-11        | 10    | 1 1/8   | 3/8  | 3     | 5/8 | 3/8  | 1 1/2 | 1.00      |
| 44310       | 5/8-11        | 12    | 1 1/8   | 3/8  | 3     | 5/8 | 3/8  | 1 1/2 | 1.25      |
| 44502       | 3/4-10        | 2 1/2 | 1 5/16  | 7/16 | 1 1/4 | 3/4 | 7/16 | 1 3/4 | .64       |
| 44503       | 3/4-10        | 3     | 1 5/16  | 7/16 | 1 1/2 | 3/4 | 7/16 | 1 3/4 | .70       |
| 44504       | 3/4-10        | 3 1/2 | 1 5/16  | 7/16 | 1 1/2 | 3/4 | 7/16 | 1 3/4 | .77       |
| 44505       | 3/4-10        | 4     | 1 5/16  | 7/16 | 1 1/2 | 3/4 | 7/16 | 1 3/4 | .85       |
| 44506       | 3/4-10        | 5     | 1 5/16  | 7/16 | 1 1/2 | 3/4 | 7/16 | 1 3/4 | .95       |
| 44507       | 3/4-10        | 6     | 1 5/16  | 7/16 | 1 1/2 | 3/4 | 7/16 | 1 3/4 | 1.05      |
| 44508       | 3/4-10        | 8     | 1 5/16  | 7/16 | 3     | 3/4 | 7/16 | 1 3/4 | 1.25      |
| 44509       | 3/4-10        | 10    | 1 5/16  | 7/16 | 3     | 3/4 | 7/16 | 1 3/4 | 1.45      |
| 44510       | 3/4-10        | 12    | 1 5/16  | 7/16 | 3     | 3/4 | 7/16 | 1 3/4 | 1.75      |
| 44701       | 1-8           | 3 1/2 | 1 11/16 | 1/2  | 2     | 1   | 1/2  | 2 1/4 | 1.25      |
| 44702       | 1-8           | 4     | 1 11/16 | 1/2  | 2     | 1   | 1/2  | 2 1/4 | 1.50      |
| 44703       | 1-8           | 4 1/2 | 1 11/16 | 1/2  | 2 1/2 | 1   | 1/2  | 2 1/4 | 1.62      |
| 44704       | 1-8           | 5     | 1 11/16 | 1/2  | 2 1/2 | 1   | 1/2  | 2 1/4 | 1.75      |
| 44705       | 1-8           | 6     | 1 11/16 | 1/2  | 2 1/2 | 1   | 1/2  | 2 1/4 | 2.00      |
| 44706       | 1-8           | 8     | 1 11/16 | 1/2  | 3     | 1   | 1/2  | 2 1/4 | 2.40      |
| 44707       | 1-8           | 10    | 1 11/16 | 1/2  | 3     | 1   | 1/2  | 2 1/4 | 2.75      |
| 44708       | 1-8           | 12    | 1 11/16 | 1/2  | 3     | 1   | 1/2  | 2 1/4 | 3.10      |



## T-Bolts



- Material: Alloy Steel
- Finish: Black Oxide
- Heat Treat: Rc 34-38
- Thread: 2A-UNC
- Available in lengths up to 24"

| Part Number | Thread Size A | B     | C     | D   | E     | Wt. (lbs) |
|-------------|---------------|-------|-------|-----|-------|-----------|
| 42101       | 3/8-16        | 1 1/2 | 11/16 | 1/4 | 3/4   | .07       |
| 42102       | 3/8-16        | 2     | 11/16 | 1/4 | 1 1/4 | .08       |
| 42103       | 3/8-16        | 2 1/2 | 11/16 | 1/4 | 1 1/4 | .09       |
| 42104       | 3/8-16        | 3     | 11/16 | 1/4 | 1 1/2 | .11       |
| 42105       | 3/8-16        | 3 1/2 | 11/16 | 1/4 | 1 1/2 | .12       |
| 42106       | 3/8-16        | 4     | 11/16 | 1/4 | 1 1/2 | .14       |
| 42301       | 1/2-13        | 1 1/2 | 7/8   | 1/4 | 3/4   | .12       |
| 42302       | 1/2-13        | 2     | 7/8   | 1/4 | 1 1/4 | .14       |
| 42303       | 1/2-13        | 2 1/2 | 7/8   | 1/4 | 1 1/4 | .17       |
| 42304       | 1/2-13        | 3     | 7/8   | 1/4 | 1 1/2 | .20       |
| 42305       | 1/2-13        | 3 1/2 | 7/8   | 1/4 | 1 1/2 | .22       |
| 42306       | 1/2-13        | 4     | 7/8   | 1/4 | 2     | .25       |
| 42307       | 1/2-13        | 4 1/2 | 7/8   | 1/4 | 2     | .27       |
| 42308       | 1/2-13        | 5     | 7/8   | 1/4 | 2     | .30       |
| 42309       | 1/2-13        | 5 1/2 | 7/8   | 1/4 | 2     | .33       |
| 42310       | 1/2-13        | 6     | 7/8   | 1/4 | 2     | .36       |
| 42502       | 5/8-11        | 2     | 1 1/8 | 3/8 | 1 1/4 | .28       |
| 42503       | 5/8-11        | 2 1/2 | 1 1/8 | 3/8 | 1 1/4 | .33       |
| 42504       | 5/8-11        | 3     | 1 1/8 | 3/8 | 1 1/2 | .37       |
| 42505       | 5/8-11        | 3 1/2 | 1 1/8 | 3/8 | 1 1/2 | .41       |
| 42506       | 5/8-11        | 4     | 1 1/8 | 3/8 | 1 1/2 | .44       |
| 42507       | 5/8-11        | 5     | 1 1/8 | 3/8 | 1 1/2 | .53       |
| 42508       | 5/8-11        | 6     | 1 1/8 | 3/8 | 1 1/2 | .61       |
| 42509       | 5/8-11        | 8     | 1 1/8 | 3/8 | 3     | .78       |
| 42510       | 5/8-11        | 10    | 1 1/8 | 3/8 | 3     | .97       |
| 42511       | 5/8-11        | 12    | 1 1/8 | 3/8 | 3     | 1.13      |

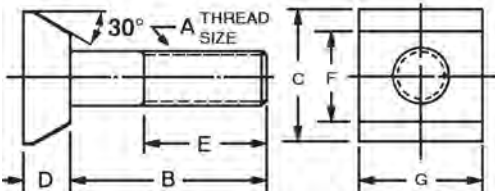
| Part Number | Thread Size A | B     | C       | D     | E     | Wt. (lbs) |
|-------------|---------------|-------|---------|-------|-------|-----------|
| 42701       | 3/4-10        | 2 1/2 | 1 1/4   | 1/2   | 1 1/4 | .48       |
| 42702       | 3/4-10        | 3     | 1 1/4   | 1/2   | 1 1/2 | .55       |
| 42703       | 3/4-10        | 3 1/2 | 1 1/4   | 1/2   | 1 1/2 | .61       |
| 42704       | 3/4-10        | 4     | 1 1/4   | 1/2   | 1 1/2 | .66       |
| 42705       | 3/4-10        | 5     | 1 1/4   | 1/2   | 1 1/2 | .78       |
| 42706       | 3/4-10        | 6     | 1 1/4   | 1/2   | 1 1/2 | .90       |
| 42707       | 3/4-10        | 8     | 1 1/4   | 1/2   | 3     | 1.17      |
| 42708       | 3/4-10        | 10    | 1 1/4   | 1/2   | 3     | 1.38      |
| 42709       | 3/4-10        | 12    | 1 1/4   | 1/2   | 3     | 1.62      |
| 42901       | 1-8           | 4     | 1 11/16 | 11/16 | 2 1/2 | 1.25      |
| 42902       | 1-8           | 5     | 1 11/16 | 11/16 | 2 1/2 | 1.50      |
| 42903       | 1-8           | 6     | 1 11/16 | 11/16 | 2 1/2 | 1.75      |
| 42911       | 1-8           | 7     | 1 11/16 | 11/16 | 2 1/2 | 1.88      |
| 42904       | 1-8           | 8     | 1 11/16 | 11/16 | 3     | 2.00      |
| 42912       | 1-8           | 9     | 1 11/16 | 11/16 | 3     | 2.25      |
| 42905       | 1-8           | 10    | 1 11/16 | 11/16 | 3     | 2.50      |
| 42906       | 1-8           | 12    | 1 11/16 | 11/16 | 3     | 3.00      |
| 42907       | 1-8           | 14    | 1 11/16 | 11/16 | 3     | 3.50      |
| 43003       | 1 1/4-7       | 8     | 1 7/8   | 7/8   | 5     | 3.65      |
| 43004       | 1 1/4-7       | 9     | 1 7/8   | 7/8   | 5     | 4.00      |
| 43005       | 1 1/4-7       | 10    | 1 7/8   | 7/8   | 5     | 4.35      |
| 43006       | 1 1/4-7       | 12    | 1 7/8   | 7/8   | 5     | 5.05      |
| 43007       | 1 1/4-7       | 14    | 1 7/8   | 7/8   | 5     | 5.75      |
| 43008       | 1 1/4-7       | 16    | 1 7/8   | 7/8   | 5     | 6.45      |
| 43009       | 1 1/4-7       | 18    | 1 7/8   | 7/8   | 5     | 7.15      |
| 43011       | 1 1/4-7       | 22    | 1 7/8   | 7/8   | 5     | 8.20      |
| 43012       | 1 1/4-7       | 24    | 1 7/8   | 7/8   | 5     | 9.25      |

## Dovetail Bolts



Dovetail Bolts can be used for clamping guide members on the front of press brakes.

- Material: Alloy Steel
- Finish: Black Oxide
- Heat Treat: Rc 34-38
- Thread: 2A-UNC

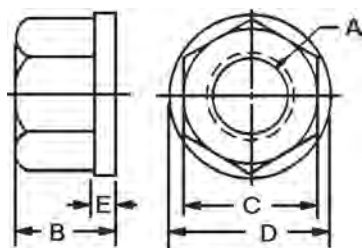


| Part Number | Thread Size A | B     | C      | D   | E     | F   | G     | Wt. (lbs) 10 Pcs. |
|-------------|---------------|-------|--------|-----|-------|-----|-------|-------------------|
| 17901       | 5/8-11        | 1 1/4 | 1 1/16 | 3/8 | 3/4   | 3/4 | 1 1/8 | 2.00              |
| 17902       | 5/8-11        | 2     | 1 1/16 | 3/8 | 1 1/8 | 3/4 | 1 1/8 | 2.30              |
| 17903       | 5/8-11        | 2 3/4 | 1 1/16 | 3/8 | 1 1/2 | 3/4 | 1 1/8 | 3.10              |
| 17904       | 5/8-11        | 3 3/4 | 1 1/16 | 3/8 | 1 1/2 | 3/4 | 1 1/8 | 5.15              |
| 17905       | 5/8-11        | 4 1/2 | 1 1/16 | 3/8 | 3/4   | 3/4 | 1 1/8 | 6.10              |

## Flange Nuts



- Material: Low Carbon Steel
- Finish: Black Oxide
- Heat Treat: Case Hardened
- Thread: 2B-UNC



- Material: 303 Stainless Steel

Where heavy clamping pressures and vibrations could cause trouble, the wide face surface of the flange nut holds through with greater friction.

### Carbon Steel

| Coarse Pitch |         | Fine Pitch  |          | B     | C       | D     | E    | Wt.<br>(lbs)<br>10 Pcs. |
|--------------|---------|-------------|----------|-------|---------|-------|------|-------------------------|
| Part Number  | A       | Part Number | A        |       |         |       |      |                         |
| 19901        | 10-24   | -           | -        | 5/16  | 3/8     | 1/2   | 7/64 | 0.15                    |
| 19902*       | 1/4-20  | 20101       | 1/4-28   | 5/16  | 1/2     | 5/8   | 7/64 | 0.15                    |
| 19903*       | 5/16-18 | 20102       | 5/16-24  | 3/8   | 9/16    | 3/4   | 7/64 | 0.19                    |
| 19904*       | 3/8-16  | 20103       | 3/8-24   | 1/2   | 11/16   | 7/8   | 1/8  | 0.51                    |
| 19905*       | 7/16-14 | 20104       | 7/16-20  | 9/16  | 3/4     | 15/16 | 1/8  | 0.62                    |
| 19906*       | 1/2-13  | 20105       | 1/2-20   | 11/16 | 7/8     | 1 1/8 | 5/32 | 1.10                    |
| 19907*       | 5/8-11  | 20106       | 5/8-18   | 13/16 | 1 1/16  | 1 3/8 | 3/16 | 1.75                    |
| 19908*       | 3/4-10  | 20107       | 3/4-16   | 1     | 1 1/4   | 1 5/8 | 1/4  | 3.20                    |
| 19909*       | 7/8-9   | 20108       | 7/8-14   | 1 1/8 | 1 7/16  | 1 3/4 | 1/4  | 4.20                    |
| 19910*       | 1-8     | 20109       | 1-14     | 1 1/4 | 1 5/8   | 2     | 1/4  | 6.00                    |
| 19911        | 1 1/8-7 | 20110       | 1 1/8-12 | 1 3/8 | 1 13/16 | 2 1/4 | 1/4  | 8.00                    |
| 19912        | 1 1/4-7 | 20111       | 1 1/4-12 | 1 3/8 | 1 13/16 | 2 1/4 | 1/4  | 7.60                    |
| 19913        | 1 1/2-6 | 20112       | 1 1/2-12 | 1 1/2 | 2 3/16  | 2 3/4 | 1/4  | 11.90                   |

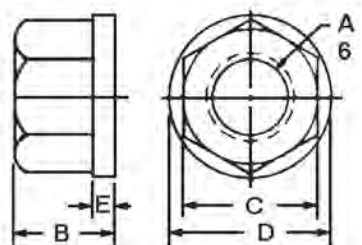
\*Conforms to TCMA

### Stainless Steel

| Part Number | A       | B     | C      | D     | E    | Wt.<br>(lbs)<br>10 Pcs. |
|-------------|---------|-------|--------|-------|------|-------------------------|
| 20002       | 1/4-20  | 5/16  | 1/2    | 5/8   | 3/32 | .15                     |
| 20003       | 5/16-18 | 3/8   | 9/16   | 3/4   | 3/32 | .19                     |
| 20004       | 3/8-16  | 1/2   | 11/16  | 7/8   | 1/8  | .51                     |
| 20006       | 1/2-13  | 11/16 | 7/8    | 1 1/8 | 5/32 | 1.10                    |
| 20007       | 5/8-11  | 13/16 | 1 1/16 | 1 3/8 | 3/16 | 1.75                    |
| 20008       | 3/4-10  | 1     | 1 1/4  | 1 5/8 | 1/4  | 3.20                    |

## Flange Nuts Metric

- Material: Low Carbon Steel
- Finish: Black Oxide
- Heat Treat: Case Hardened
- Thread: Class 6h

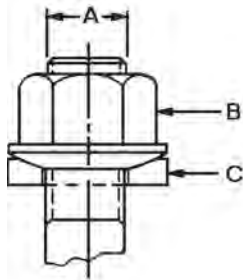


| Part Number | Thread<br>A | B  | C  | D  | E | Wt.<br>(kg) 10 pcs. |
|-------------|-------------|----|----|----|---|---------------------|
| 19952       | M6 x 1.0    | 8  | 10 | 16 | 2 | .07                 |
| 19953       | M8 x 1.25   | 10 | 13 | 19 | 2 | .09                 |
| 19954       | M10 x 1.5   | 13 | 17 | 22 | 3 | .23                 |
| 19955       | M12 x 1.75  | 17 | 19 | 25 | 5 | .50                 |
| 19957       | M16 x 2.0   | 21 | 24 | 32 | 5 | .79                 |
| 19959       | M20 x 2.5   | 25 | 30 | 38 | 6 | 1.45                |

## Spherical Flange Assemblies



Same advantages as Spherical Washers but with the addition of a nut to replace the top section of the washers. Convex bottom of nut nests into the concave bottom section for full floating action.

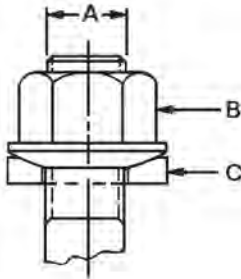


- Material: Low Carbon Steel
- Finish: Black Oxide
- Heat Treat: Case Hardened

| Part Number | A       | Nut P/N B | Washer P/N C | Wt. (lbs) 10 Pcs. |
|-------------|---------|-----------|--------------|-------------------|
| 39301       | 10-24   | 39701     | 41301        | .12               |
| 39302       | 1/4-20  | 39702     | 41302        | .16               |
| 39303       | 5/16-18 | 39703     | 41303        | .31               |
| 39304       | 3/8-16  | 39704     | 41304        | .65               |
| 39305       | 1/2-13  | 39705     | 41305        | 1.45              |
| 39306       | 5/8-11  | 39706     | 41306        | 2.44              |
| 39307       | 3/4-10  | 39707     | 41307        | 4.10              |
| 39308       | 7/8-9   | 39708     | 41308        | 6.00              |
| 39309       | 1-8     | 39709     | 41309        | 8.10              |
| 39311       | 1 1/4-7 | 39711     | 41311        | 13.40             |
| 39312       | 1 1/2-6 | 39712     | 41312        | 15.70             |

## Spherical Flange Assemblies

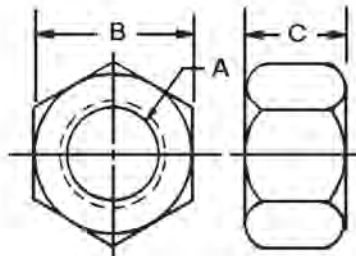
### Metric



- Material: Low Carbon Steel
- Finish: Black Oxide
- Heat Treat: Case Hardened

| Part Number | A          | Across Flats B | Washer P/N C | Wt. (kg) 10 pcs. |
|-------------|------------|----------------|--------------|------------------|
| 39352       | M6 x 1.0   | 10             | 41302        | .07              |
| 39353       | M8 x 1.25  | 13             | 41303        | .14              |
| 39354       | M10 x 1.5  | 17             | 41304        | .30              |
| 39355       | M12 x 1.75 | 19             | 41305        | .66              |
| 39356       | M16 x 2.0  | 24             | 41306        | 1.10             |
| 39357       | M20 x 2.5  | 30             | 41357        | 1.80             |

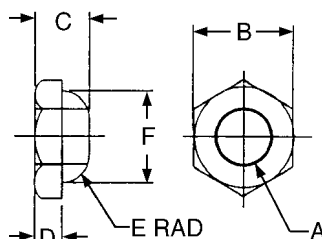
## Heavy Duty Hex Nuts



- Finish: Black Oxide
- Grade 8, Hardness HRC of 28-38

| Part Number | A       | B      | C     | Wt. (lbs) 100 Pcs. |
|-------------|---------|--------|-------|--------------------|
| 20711       | 1/4-20  | 7/16   | 7/32  | .74                |
| 20712       | 5/16-18 | 1/2    | 17/64 | 1.10               |
| 20713       | 3/8-16  | 9/16   | 21/64 | 1.60               |
| 20714       | 1/2-13  | 3/4    | 7/16  | 3.75               |
| 20716       | 5/8-11  | 15/16  | 35/64 | 7.33               |
| 20717       | 3/4-10  | 1 1/8  | 41/64 | 11.90              |
| 20718       | 7/8-9   | 1 5/16 | 3/4   | 19.00              |
| 20719       | 1-8     | 1 1/2  | 55/64 | 28.30              |

## Stainless Steel Hex Head Equalizing Nuts



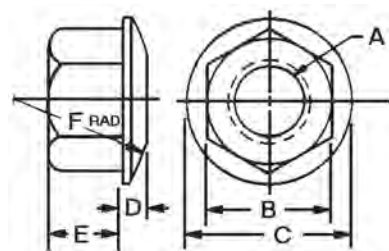
- Material: 303 Stainless

| Part Number | A       | B     | C    | D    | E    | F    |
|-------------|---------|-------|------|------|------|------|
| 12311       | 10-32   | 7/16  | 5/16 | 5/32 | 1/8  | 3/8  |
| 12312       | 1/4-20  | 1/2   | 5/16 | 5/32 | 1/8  | 7/16 |
| 12313       | 5/16-18 | 9/16  | 5/16 | 5/32 | 1/8  | 1/2  |
| 12314       | 3/8-16  | 11/16 | 3/8  | 3/16 | 3/16 | 5/8  |

## Spherical Flange Nuts



- Material: Low Carbon Steel
- Finish: Black Oxide
- Heat Treat: Case Hardened
- Thread: 2B-UNC, Class 6h

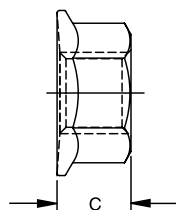
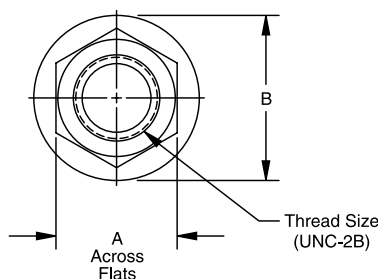


| Part Number   | A       | B       | C     | D    | E      | F     | Wt. (lbs) 10 Pcs. |
|---------------|---------|---------|-------|------|--------|-------|-------------------|
| <b>39701</b>  | 10-24   | 3/8     | 1/2   | 3/32 | 1/4    | 3/4   | .10               |
| <b>39702*</b> | 1/4-20  | 1/2     | 5/8   | 3/32 | 1/4    | 1     | .12               |
| <b>39703*</b> | 5/16-18 | 9/16    | 3/4   | 1/8  | 9/32   | 1     | .21               |
| <b>39704*</b> | 3/8-16  | 11/16   | 7/8   | 1/8  | 13/32  | 1 1/2 | .50               |
| <b>39705*</b> | 1/2-13  | 7/8     | 1 1/8 | 3/16 | 1/2    | 2     | 1.00              |
| <b>39706*</b> | 5/8-11  | 1 1/16  | 1 3/8 | 7/32 | 5/8    | 2 1/4 | 1.82              |
| <b>39707*</b> | 3/4-10  | 1 1/4   | 1 5/8 | 1/4  | 3/4    | 2 1/2 | 3.10              |
| <b>39708*</b> | 7/8-9   | 1 7/16  | 1 3/4 | 1/4  | 7/8    | 2 1/2 | 4.35              |
| <b>39709*</b> | 1-8     | 1 5/8   | 2     | 1/4  | 1      | 3 1/2 | 5.90              |
| <b>39711</b>  | 1 1/4-7 | 1 13/16 | 2 1/4 | 5/16 | 1 1/16 | 4     | 7.20              |
| <b>39712</b>  | 1 1/2-6 | 2 3/16  | 2 3/4 | 5/16 | 1 3/16 | 4 1/2 | 11.60             |

\*Conforms to TCMA.

| Part Number  | A          | B  | C  | D | E  | F  | Wt. (kg) 10 pcs. |
|--------------|------------|----|----|---|----|----|------------------|
| <b>39752</b> | M6 x1.0    | 10 | 16 | 2 | 6  | 25 | .05              |
| <b>39753</b> | M8 x 1.25  | 13 | 19 | 3 | 7  | 25 | .10              |
| <b>39754</b> | M10 x 1.5  | 17 | 22 | 4 | 10 | 38 | .23              |
| <b>39755</b> | M12 x 1.75 | 19 | 25 | 5 | 13 | 51 | .50              |
| <b>39756</b> | M16 x 2.0  | 24 | 32 | 6 | 16 | 57 | .83              |
| <b>39757</b> | M20 x 2.5  | 30 | 38 | 6 | 19 | 64 | 1.41             |

## Spinner-Grip™ Flange Lock Nuts

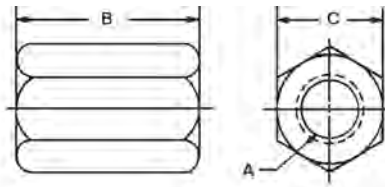


- Free spinning installation eliminates the need to wrench the nut down the fastener.
- Locks to the part, not to the threads.
- Grade 8 strength and quality, and will work with any grade fastener.
- Hardness of 28 - 38 HRC: more effective at maintaining clamp load under vibration.
- Greater temperature range than nylon insert locknuts, and will not be effected by humidity.
- Flat washers are not needed, unless in a slotted application.
- Spinner grips are not limited to 5 reuses, unlike most prevailing torque lock nuts.
- Jergens maintains inventory of Zinc plated product, as well as plain finished (un-plated) product so you can specify your plating of choice.  
(Please allow 2 - 3 weeks lead time for plating.)

| Part Number   |              |                 | Thread Size | A     | B     | C     |
|---------------|--------------|-----------------|-------------|-------|-------|-------|
| Plain Finish  | Zinc Plated  | Stainless Steel |             |       |       |       |
| <b>19800</b>  | <b>19820</b> | <b>19880</b>    | 1/4-20      | 7/16  | 19/32 | 1/4   |
| <b>19801</b>  | <b>19821</b> | <b>19881</b>    | 5/16-18     | 1/2   | 11/16 | 9/32  |
| <b>19802</b>  | <b>19822</b> | <b>19882</b>    | 3/8-16      | 9/16  | 3/4   | 11/32 |
| <b>19803</b>  | <b>19823</b> | <b>19883</b>    | 7/16-14     | 11/16 | 15/16 | 3/8   |
| <b>19804</b>  | <b>19824</b> | <b>19884</b>    | 1/2-13      | 3/4   | 1     | 7/16  |
| <b>19805</b>  | <b>19825</b> | <b>19885</b>    | 5/8-11      | 15/16 | 1 1/4 | 9/16  |
| <b>19806</b>  | <b>19826</b> | <b>19886</b>    | 3/4-10      | 1 1/4 | 1 1/2 | 11/16 |
| <b>Metric</b> |              |                 |             |       |       |       |
| <b>19807</b>  | <b>19827</b> | <b>19887</b>    | M6-1.00     | 10    | 15.1  | 6.0   |
| <b>19808</b>  | <b>19828</b> | <b>19888</b>    | M8-1.25     | 13    | 19.0  | 8.8   |
| <b>19809</b>  | <b>19829</b> | <b>19889</b>    | M10-1.50    | 15    | 24.1  | 10.0  |
| <b>19810</b>  | <b>19830</b> | <b>19890</b>    | M12-1.75    | 19    | 25.5  | 11.6  |
| <b>19811</b>  | <b>19831</b> | <b>19891</b>    | M16-2.00    | 24    | 38.0  | 17.2  |

Note: Additional charges apply to plated product.  
Charges vary by plating type.

## Coupling Nuts



- Material: Low Carbon Steel
- Finish: Black Oxide
- Heat Treat: Case Hardened
- Thread: 2B-UNC

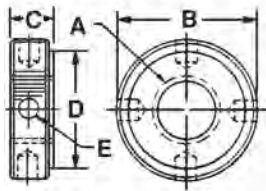
| Part Number   | A      | B     | C      | Wt. (lbs) 10 Pcs. |
|---------------|--------|-------|--------|-------------------|
| <b>18711*</b> | 3/8-16 | 1     | 11/16  | .94               |
| <b>18712*</b> | 1/2-13 | 1 1/4 | 7/8    | 2.00              |
| <b>18713*</b> | 5/8-11 | 1 5/8 | 1 1/16 | 3.40              |
| <b>18714*</b> | 3/4-10 | 1 7/8 | 1 1/4  | 5.65              |
| <b>18715</b>  | 7/8-9  | 2 1/4 | 1 7/16 | 8.60              |
| <b>18716</b>  | 1-8    | 2 1/2 | 1 5/8  | 12.50             |

\*Conforms to TCMA.

### Metric

| Part Number  | A   | B  | C  | Wt. (kg) 10 Pcs. |
|--------------|-----|----|----|------------------|
| <b>18761</b> | M10 | 25 | 16 | .05              |
| <b>18762</b> | M12 | 32 | 19 | .81              |
| <b>18763</b> | M16 | 41 | 24 | 1.55             |
| <b>18764</b> | M20 | 51 | 27 | 2.6              |

## Knurled Lock Nuts

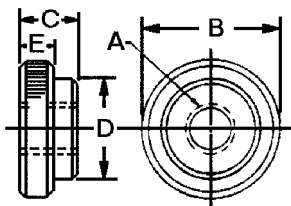


Most convenient for quick thread locking on your jig and fixture work. Straight knurled radius provides sure, non-slip finger grip in oily conditions. Faces are square with threads which assures a large locking surface.

- Material: Low Carbon Steel
- Finish: Black Oxide
- Heat Treat: Case Hardened
- Thread: 2B-UNC

| Part Number  | A      | B     | C    | D     | E    | Wt. (lbs) 10 Pcs. |
|--------------|--------|-------|------|-------|------|-------------------|
| <b>28101</b> | 3/8-16 | 1     | 3/8  | 3/4   | .188 | .62               |
| <b>28102</b> | 1/2-13 | 1 1/4 | 7/16 | 1     | .257 | 1.10              |
| <b>28103</b> | 5/8-11 | 1 3/8 | 7/16 | 1 1/8 | .257 | 1.10              |
| <b>28104</b> | 3/4-10 | 1 3/4 | 9/16 | 1 1/2 | .316 | 2.50              |
| <b>28105</b> | 1-8    | 2     | 9/16 | 1 3/4 | .316 | 3.10              |

## Check Nuts



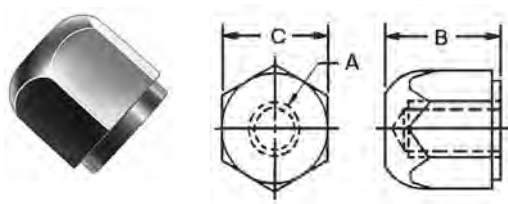
Multi-use Locknut for hand tightening applications

- Material: Low Carbon Steel
- Finish: Black Oxide
- Heat Treat: Case Hardened
- Thread: 2B-UNC

| Part Number  | A       | B   | C    | D   | E    | Wt. (lbs) 10 Pcs. |
|--------------|---------|-----|------|-----|------|-------------------|
| <b>16901</b> | 10-24   | 3/4 | 7/32 | 1/2 | 5/32 | .15               |
| <b>16902</b> | 1/4-20  | 3/4 | 7/32 | 1/2 | 5/32 | .15               |
| <b>16903</b> | 5/16-18 | 3/4 | 5/16 | 1/2 | 1/4  | .21               |
| <b>16904</b> | 3/8-16  | 3/4 | 5/16 | 1/2 | 1/4  | .21               |
| <b>16905</b> | 1/2-13  | 1   | 3/8  | 3/4 | 1/4  | .47               |



## Acorn Nuts

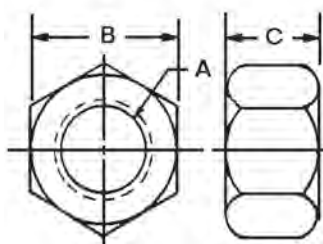


Acorn nuts are used to cover threaded ends to protect them from dirt, grit or damage to the thread.

- Material: Low Carbon Steel
- Finish: Black Oxide
- Heat Treat: Case Hardened
- Thread: 2B-UNC

| Part Number | A       | B      | C      | Wt. (lbs) 10 Pcs. |
|-------------|---------|--------|--------|-------------------|
| 10501       | 5/16-18 | 5/8    | 5/8    | .44               |
| 10502       | 3/8-16  | 3/4    | 3/4    | .78               |
| 10503       | 1/2-13  | 15/16  | 7/8    | 1.25              |
| 10504       | 5/8-11  | 1 3/16 | 1 1/16 | 2.35              |

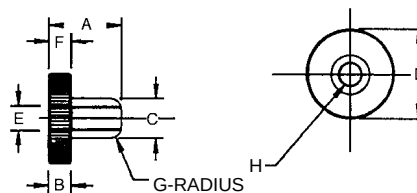
## Stainless Steel Nuts



- Material: 300 Series Stainless Steel

| Part Number | A       | B    | C     |
|-------------|---------|------|-------|
| 12321       | 10-32   | 3/8  | 1/8   |
| 12322       | 1/4-20  | 7/16 | 3/16  |
| 12323       | 5/16-18 | 1/2  | 9/32  |
| 12324       | 3/8-16  | 9/16 | 11/32 |

## Stainless Steel Knurled Equalizing Nuts



For use with stainless steel equalizing "C" washer. See page 6.37

| Part Number | A     | B    | C    | D   | E     | F   | G   | H      |
|-------------|-------|------|------|-----|-------|-----|-----|--------|
| 12301       | 3/4   | 3/16 | 3/8  | 3/4 | 13/64 | 1/4 | 1/8 | 10-32  |
| 12302       | 13/16 | 1/4  | 7/16 | 1   | 17/64 | 1/4 | 1/8 | 1/4-20 |

## Kwik-Thread™ Nut

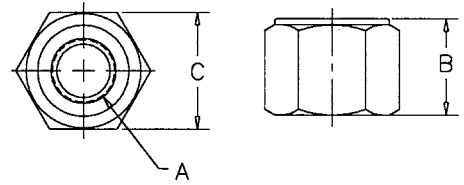


The Jergens Kwik-Thread™ Nut is a true quick change tool. It has three floating female thread segments and fits onto any standard male thread. The floating I.D. allows the Kwik-Thread Nut to quickly slide onto bolts to the workpiece being bolted down. It can then be torqued down like a standard nut.

- Material: Carbon steel housing; cap, thread, SS302 springs, alloy steel locking pins.
- Finish: Housing-black oxide, other parts plain
- Proof loads: Equal to grade 5 nuts, or grade 8.8 (metric)
- Ideal in difficult physical condition
- Slips quickly over damaged threads
- Available in three styles: Hex nut, flange nut, and threaded O.D. for use as a threaded insert
- Available in 1/2, 5/8, and 3/4 sizes
- Other sizes and materials including heat treated stainless steel available on special order, contact customer service

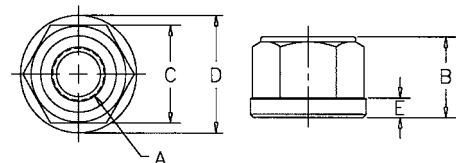
### Hex Nuts

| Part Number | Thread Size A | Height B | Across Flats C | Flange Dia. D | Flange Thk. E | External Thread F |
|-------------|---------------|----------|----------------|---------------|---------------|-------------------|
| 20604       | 1/2-13        | 3/4      | 15/16          | —             | —             | —                 |
| 20605       | 5/8-11        | 1        | 1 1/4          | —             | —             | —                 |
| 20606       | 3/4-10        | 1 3/16   | 1 7/16         | —             | —             | —                 |



### Flanged Nuts

|       |        |        |        |       |      |   |
|-------|--------|--------|--------|-------|------|---|
| 20614 | 1/2-13 | 3/4    | 15/16  | 1 1/8 | 3/16 | — |
| 20615 | 5/8-11 | 1      | 1 1/4  | 1 1/2 | 3/16 | — |
| 20616 | 3/4-10 | 1 3/16 | 1 7/16 | 1 3/4 | 1/4  | — |

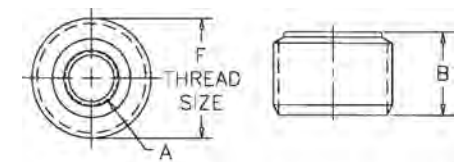


### Metric Flange Nuts

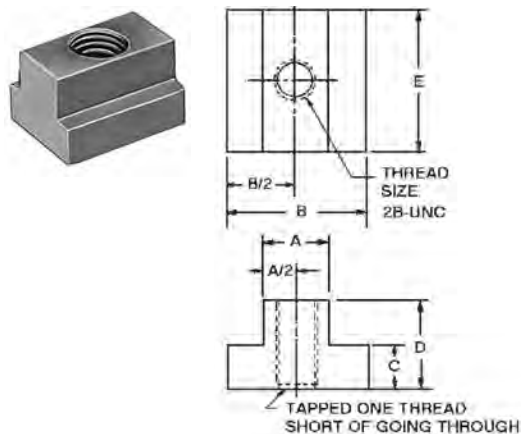
|       |          |      |      |        |       |   |
|-------|----------|------|------|--------|-------|---|
| 20664 | M12-1.75 | 19mm | 24mm | 28.5mm | 4.8mm | — |
| 20665 | M16-20   | 25mm | 32mm | 38mm   | 4.8mm | — |

### Insert Nuts

|       |        |        |   |   |   |                 |
|-------|--------|--------|---|---|---|-----------------|
| 20624 | 1/2-13 | 3/4    | — | — | — | 1 1/8-12 UNF-2A |
| 20625 | 5/8-11 | 1      | — | — | — | 1 3/8-12 UNF-2A |
| 20626 | 3/4-10 | 1 3/16 | — | — | — | 1 5/8-12 UNF-2A |



## T-Slot Nuts



### Jergens Feature:

Jergens Table-Saver design provides a safety-stop feature to prevent turning stud into tableways.

- Material: Low Carbon Steel, 303 Stainless
- Finish: Black Oxide
- Threads: 2B-UNC (Inch); Class 6h (Metric)

- Heat Treat: Case Hardened
- Available in metric sizes. See below.

| Part Number | Thread | T-slot Width A | B     | C      | D     | E     | Wt. (lbs) 10 Pcs. |
|-------------|--------|----------------|-------|--------|-------|-------|-------------------|
| *43302**    | 3/8-16 | 7/16           | 11/16 | 7/32   | 1/2   | 7/8   | 0.50              |
| *43303**    | 3/8-16 | 1/2            | 7/8   | 9/32   | 1/2   | 7/8   | .070              |
| 43301       | 3/8-16 | 9/16           | 7/8   | 1/4    | 1/2   | 7/8   | 0.70              |
| *43305**    | 1/2-13 | 9/16           | 7/8   | 11/32  | 5/8   | 1 1/8 | 1.20              |
| *43306      | 1/2-13 | 5/8            | 1     | 11/32  | 5/8   | 1 1/8 | 1.50              |
| *43304      | 1/2-13 | 11/16          | 1 1/8 | 7/16   | 3/4   | 1 1/4 | 2.10              |
| *43308**    | 5/8-11 | 11/16          | 1 1/8 | 7/16   | 3/4   | 1 1/4 | 1.14              |
| *43309      | 5/8-11 | 3/4            | 1 1/4 | 15/32  | 3/4   | 1 1/4 | 1.60              |
| *43307      | 5/8-11 | 13/16          | 1 1/4 | 9/16   | 1     | 1 1/2 | 3.11              |
| *43311**    | 3/4-10 | 13/16          | 1 1/4 | 9/16   | 1     | 1 1/2 | 3.60              |
| 43312       | 3/4-10 | 7/8            | 1 1/2 | 9/16   | 1     | 1 1/2 | 4.10              |
| *43310      | 3/4-10 | 1 1/16         | 1 5/8 | 1 1/16 | 1 1/4 | 2     | 7.20              |
| 43313**     | 7/8-9  | 1              | 1 5/8 | 5/8    | 1 1/4 | 2     | 7.30              |
| 43314       | 7/8-9  | 1 1/16         | 1 3/4 | 5/8    | 1 1/4 | 2     | 8.00              |

\*Conforms to TCMA.

\*\*Not Hardened

### Metric

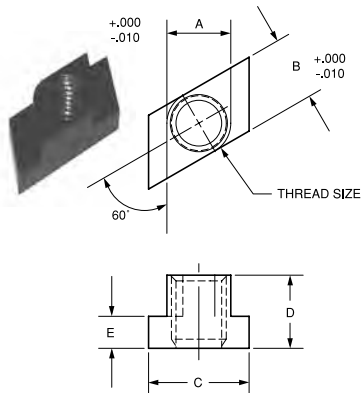
| Part Number | Thread   | T-slot Width A | B  | C  | D  | E  | Material |
|-------------|----------|----------------|----|----|----|----|----------|
| 43372       | M10x1.5  | 12             | 19 | 7  | 13 | 25 | Steel    |
| 43373       | M10x1.5  | 14             | 22 | 9  | 16 | 29 | Steel    |
| 43374       | M10x1.5  | 16             | 25 | 9  | 16 | 29 | Steel    |
| 43375       | M12x1.75 | 14             | 22 | 9  | 16 | 29 | Steel    |
| 43376       | M12x1.75 | 16             | 25 | 9  | 16 | 29 | Steel    |
| 43377       | M12x1.75 | 18             | 29 | 11 | 19 | 32 | Steel    |
| 43378       | M16x2.0  | 18             | 29 | 11 | 19 | 32 | Steel    |
| 43379       | M16x2.0  | 20             | 32 | 14 | 25 | 38 | Steel    |
| 43380       | M16x2.0  | 22             | 35 | 14 | 25 | 38 | Steel    |
| 43381       | M20x2.5  | 22             | 35 | 14 | 25 | 38 | Steel    |
| 43382       | M20x2.5  | 24             | 38 | 16 | 25 | 44 | Steel    |
| 43383       | M20x2.5  | 28             | 41 | 18 | 29 | 51 | Steel    |

### Stainless Steel

| Part Number | Thread | T-slot Width A | B     | C     | D     | E     |
|-------------|--------|----------------|-------|-------|-------|-------|
| 43402       | 3/8-16 | 7/16           | 3/4   | 7/32  | 1/2   | 1     |
| 43403       | 3/8-16 | 1/2            | 7/8   | 1/4   | 5/8   | 7/8   |
| 43405       | 1/2-13 | 9/16           | 7/8   | 5/16  | 3/4   | 1 1/4 |
| 43406       | 1/2-13 | 5/8            | 1     | 3/8   | 3/4   | 1 1/4 |
| 43408       | 5/8-11 | 11/16          | 1 1/4 | 15/32 | 1     | 1 1/2 |
| 43409       | 5/8-11 | 3/4            | 1 1/4 | 17/32 | 1 1/4 | 1 1/2 |
| 43411       | 3/4-10 | 13/16          | 1 1/2 | 9/16  | 1     | 1 3/4 |
| 43410       | 3/4-10 | 1 1/16         | 1 5/8 | 9/16  | 1     | 1 3/4 |

## Kwik-Turn T-Slot Nuts

- 1/4 turn design allows the Kwik-Turn to be installed from the top of the T-Slot, in order to avoid uninstallation of set-ups when additional nuts and studs are required
- Material: Low Carbon Steel,
- Finish: Black Oxide
- Threads: 2B-UNC (Inch)
- Heat Treat: Case Hardened



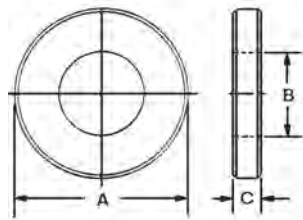
| Part Number | Thread | T-Slot | A    | B    | C     | D   | E     | Wt. (lbs) 10 pcs |
|-------------|--------|--------|------|------|-------|-----|-------|------------------|
| 43332**     | 3/8-16 | 7/16   | .432 | .432 | 11/16 | 1/2 | 7/32  | 0.27             |
| 43333       | 3/8-16 | 1/2    | .495 | .495 | 7/8   | 1/2 | 9/32  | 0.45             |
| 43334**     | 1/2-13 | 11/16  | .683 | .683 | 1-1/8 | 3/4 | 7/16  | 0.58             |
| 43335       | 1/2-13 | 9/16   | .562 | .562 | 7/8   | 5/8 | 11/32 | 0.79             |
| 43336       | 1/2-13 | 5/8    | .620 | .620 | 1     | 5/8 | 11/32 | 1.26             |
| 43338**     | 5/8-11 | 11/16  | .683 | .683 | 1-1/8 | 3/4 | 7/16  | 1.08             |
| 43339       | 5/8-11 | 3/4    | .745 | .745 | 1-1/4 | 3/4 | 15/32 | 1.44             |
| 43345       | 3/4-10 | 1      | .995 | .995 | 1-5/8 | 1   | 5/8   | 3.50             |

### Jergens Feature:

Jergens Table-Saver design provides a safety-stop feature to prevent turning stud into tableways.

\*\*Not Hardened

## Flat Washers



- Material: Cold Rolled Low Carbon Steel, 303 Stainless
- Finish: Black Oxide
- Heat Treat: Carbon Nitride to 60
- Flat and parallel within .005

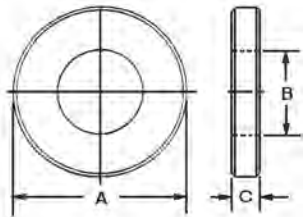
| Part Number | A     | B      | C    | Bolt Size | Wt. (lbs) 10 Pcs. |
|-------------|-------|--------|------|-----------|-------------------|
| 31901       | 1/2   | 13/64  | 3/32 | 3/16      | .04               |
| 31902*      | 5/8   | 9/32   | 1/8  | 1/4       | .05               |
| 31903*      | 3/4   | 11/32  | 1/8  | 5/16      | .10               |
| 31904*      | 7/8   | 13/32  | 1/8  | 3/8       | .21               |
| 31905*      | 1 1/8 | 17/32  | 1/8  | 1/2       | .42               |
| 31906*      | 1 3/8 | 21/32  | 1/8  | 5/8       | .63               |
| 31907*      | 1 5/8 | 25/32  | 5/32 | 3/4       | 1.10              |
| 31908*      | 1 3/4 | 29/32  | 5/32 | 7/8       | 1.20              |
| 31909*      | 2     | 1 1/32 | 3/16 | 1         | 1.70              |
| 31910       | 2 1/2 | 1 9/32 | 9/32 | 1 1/4     | 2.20              |

\*Conforms to TCMA

### Stainless Steel

| Part Number | A     | B     | C    | Bolt Size |
|-------------|-------|-------|------|-----------|
| 32001       | 7/16  | .196  | 5/64 | 3/16      |
| 32002       | 5/8   | 17/64 | 3/32 | 1/4       |
| 32003       | 11/16 | 11/32 | 1/8  | 5/16      |
| 32004       | 7/8   | 25/64 | 1/8  | 3/8       |
| 32005       | 1 1/8 | 17/32 | 1/8  | 1/2       |
| 32006       | 1 1/4 | 21/32 | 1/8  | 5/8       |
| 32007       | 1 1/2 | 25/32 | 5/32 | 3/4       |

## Heavy Duty Flat Washers



- Material: High Carbon Steel
- Finish: Black Oxide
- Heat Treat: Rc 40-45 (Through Hardened)
- Flat & Parallel within .005 (.01mm)

### Jergens Feature:

Made from high-carbon through-hardened steel which makes them up to 50% stronger than standard heavy duty washers. Also more fracture resistant under heavy loads.

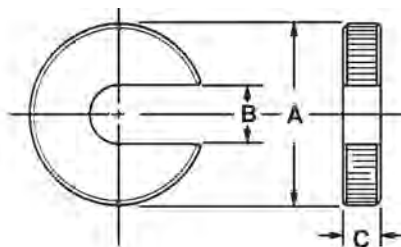
| Part Number | A     | B      | C    | Bolt Size | Wt. (lbs) 10 Pcs. |
|-------------|-------|--------|------|-----------|-------------------|
| 31967       | 5/8   | 9/32   | 3/16 | 1/4       | 0.72              |
| 31968       | 3/4   | 11/32  | 3/16 | 5/16      | 0.79              |
| 31969       | 7/8   | 13/32  | 3/16 | 3/8       | 0.87              |
| 31960       | 1 1/2 | 17/32  | 7/32 | 1/2       | 1.00              |
| 31961       | 1 1/2 | 21/32  | 7/32 | 5/8       | 0.88              |
| 31962       | 1 7/8 | 25/32  | 1/4  | 3/4       | 1.61              |
| 31963       | 2 1/8 | 29/32  | 1/4  | 7/8       | 2.31              |
| 31964       | 2 1/2 | 1 1/16 | 1/4  | 1         | 3.56              |
| 31965       | 2 1/2 | 1 5/16 | 1/4  | 1 1/4     | 3.98              |
| 31966       | 2 3/4 | 1 9/16 | 1/4  | 1 1/2     | 4.20              |

### Metric Dimensions

| Part Number | A  | B  | C   | Bolt Size | Wt. (kg) 10 Pcs. |
|-------------|----|----|-----|-----------|------------------|
| 31961       | 38 | 17 | 5.5 | 16        | 0.40             |
| 31962       | 48 | 20 | 6.5 | 18        | 0.73             |
| 31963       | 54 | 23 | 6.5 | 20        | 1.05             |
| 31964       | 64 | 27 | 6.5 | 24        | 1.62             |

## Washers

### "C" Washers



The "C" Washers are ground parallel on both surfaces with a knurled O.D.

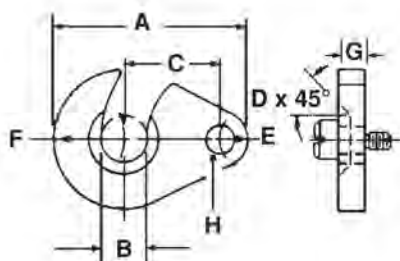
- Material: Low Carbon Steel
- Finish: Black Oxide
- Heat Treat: Case Hardened
- Faces: Ground Parallel

| Part Number | A     | B     | C    | Wt. (lbs) |
|-------------|-------|-------|------|-----------|
| 17701*      | 3/4   | 9/32  | 1/4  | .02       |
| 17702*      | 1     | 9/32  | 1/4  | .04       |
| 17703*      | 1 1/4 | 9/32  | 1/4  | .07       |
| 17704*      | 1 1/4 | 13/32 | 3/8  | .09       |
| 17705*      | 1 1/2 | 13/32 | 3/8  | .14       |
| 17706*      | 1 3/4 | 13/32 | 3/8  | .20       |
| 17707*      | 1 7/8 | 17/32 | 3/8  | .17       |
| 17708*      | 2 1/4 | 17/32 | 3/8  | .35       |
| 17709*      | 2 1/8 | 21/32 | 3/8  | .32       |
| 17710       | 2 1/2 | 21/32 | 3/8  | .53       |
| 17711*      | 2 1/2 | 25/32 | 7/16 | .55       |

\*Conforms to TCMA

## Equalizing Swing "C" Washer

### Stainless Steel

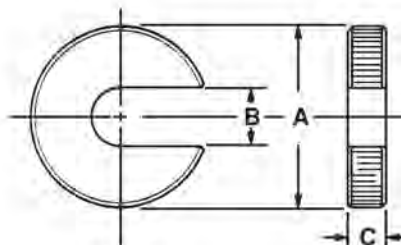


| Part Number | A     | B     | C    | D    | Radius |      | +.0000<br>-.0015<br>G | +.0005<br>-.0000<br>H |
|-------------|-------|-------|------|------|--------|------|-----------------------|-----------------------|
|             |       |       |      |      | E      | F    |                       |                       |
| 12341       | 1 1/8 | 13/64 | 9/16 | 5/64 | 3/16   | 3/8  | .1870                 | .1875                 |
| 12342       | 1 1/4 | 17/64 | 5/8  | 3/32 | 3/16   | 7/16 | .1870                 | .1875                 |
| 12343       | 1 1/2 | 21/64 | 3/4  | 1/8  | 1/4    | 1/2  | .2495                 | .250                  |
| 12344       | 1 3/4 | 25/64 | 7/8  | 1/8  | 1/4    | 5/8  | .2495                 | .250                  |

- Material: 303 Stainless

## Equalizing "C" Washers

### Stainless Steel



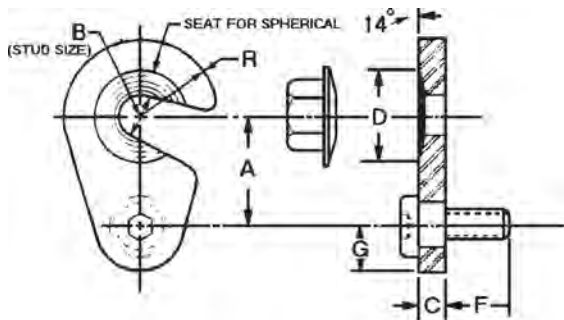
| Part Number | A     | B     | C    | Wt. lbs |
|-------------|-------|-------|------|---------|
| 12331       | 3/4   | 7/32  | 3/16 | .02     |
| 12332       | 7/8   | 9/32  | 3/16 | .04     |
| 12333       | 1     | 11/32 | 1/4  | .04     |
| 12334       | 1 1/4 | 13/32 | 5/16 | .04     |

- Material: 303 Stainless



## Washers

### Swing "C" Washer Assembly



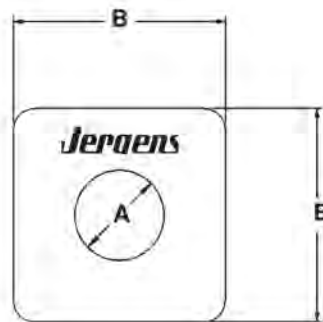
The Swing "C" Washer has a concave center for self-locating around the stud, which prevents creeping while tightening, and allows acceptance of the mating spherical flange nuts. The Spherical Flange Nut assures that the washer cannot back out either during clamping or due to vibration during the operation. The shoulder screw has a nylon lock to prevent loosening of the screw during operation.

- Material: Low Carbon Steel
- Finish: Black Oxide
- Heat Treat: Case Hardened

| Part Number | A     | Stud Size B | C   | D      | E       | F   | G    | R     | Part Number    |                      | Wt. (lbs) |
|-------------|-------|-------------|-----|--------|---------|-----|------|-------|----------------|----------------------|-----------|
|             |       |             |     |        |         |     |      |       | Shoulder Screw | Spherical Flange Nut |           |
| 37301*      | 1     | 3/8         | 1/4 | 13/16  | 5/16-18 | 1/2 | 3/8  | 3/4   | 41707          | 39704                | .12       |
| 37302       | 1 1/4 | 1/2         | 3/8 | 1 1/8  | 5/16-18 | 1/2 | 1/2  | 1     | 41708          | 39705                | .30       |
| 37303*      | 1 1/2 | 5/8         | 3/8 | 1 5/16 | 3/8-16  | 5/8 | 9/16 | 1 1/8 | 41713          | 39706                | .39       |
| 37304*      | 1 3/4 | 3/4         | 1/2 | 1 9/16 | 3/8-16  | 5/8 | 5/8  | 1 1/4 | 41714          | 39707                | .72       |

\*Conforms to TCMA

## Heavy Duty Square Washers



- Material: Low Carbon Steel
- Finish: Black Oxide
- Heat Treat: Case Hardened

| Part Number | ±.010 A | ±.010 B | Bolt Size | Thickness |
|-------------|---------|---------|-----------|-----------|
| 31920       | 11/32   | 1 3/8   | 5/16      | 3/16      |
| 31921       | 13/32   | 1 3/8   | 3/8       | 3/16      |
| 31932       | 17/32   | 1 3/8   | 1/2       | 1/4       |
| 31933       | 17/32   | 2       | 1/2       | 1/4       |
| 31934       | 21/32   | 2       | 5/8       | 1/4       |
| 31935       | 13/16   | 2       | 3/4       | 1/4       |
| 31922       | 15/16   | 2       | 7/8       | 1/4       |
| 31936       | 13/16   | 2 1/2   | 3/4       | 1/4       |
| 31923       | 15/16   | 2 1/2   | 7/8       | 1/4       |
| 31937       | 1 1/16  | 2 1/2   | 1         | 1/4       |
| 31924       | 13/16   | 3       | 3/4       | 5/16      |
| 31925       | 15/16   | 3       | 7/8       | 5/16      |
| 31926       | 1 1/16  | 3       | 1         | 5/16      |
| 31927       | 1 1/16  | 3       | 1         | 3/8       |
| 31928       | 1 5/16  | 3       | 1 1/4     | 3/8       |
| 31929       | 1 9/16  | 3       | 1 1/2     | 3/8       |

## Washers

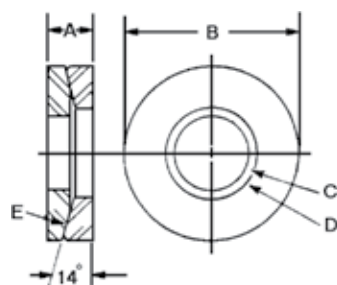
### Self Aligning Washers (Two-Piece)

Upper



Lower

These washers are ideally suited for joining machine sections which are out of parallel. They adjust themselves for a positive, firm base. With radius "E" and the angular 14° combination, line contact is formed around the two mating washer surfaces, allowing the two washers the ability to seek misalignment in the companion clamping members. The heat treated I.D. of the bottom concave piece is larger than the I.D. of the top convex section for free action. It is precision ground and the sharp edges are removed.



| Part Number | A     | B     | C       | D       | E     | Bolt Size | Wt. (lbs) |
|-------------|-------|-------|---------|---------|-------|-----------|-----------|
| 41101       | 3/16  | 1/2   | 13/64   | 15/64   | 3/4   | 3/16      | .01       |
| 41102       | 3/16  | 5/8   | 17/64   | 19/64   | 1     | 1/4       | .01       |
| 41103       | 7/32  | 3/4   | 11/32   | 23/64   | 1     | 5/16      | .01       |
| 41104       | 7/32  | 7/8   | 13/32   | 15/32   | 1 1/2 | 3/8       | .03       |
| 41105       | 9/32  | 1 1/8 | 17/32   | 19/32   | 2     | 1/2       | .08       |
| 41106       | 3/8   | 1 3/8 | 21/32   | 23/32   | 2 1/4 | 5/8       | .13       |
| 41107       | 13/32 | 1 5/8 | 25/32   | 27/32   | 2 1/2 | 3/4       | .20       |
| 41108       | 17/32 | 1 3/4 | 29/32   | 31/32   | 2 1/2 | 7/8       | .33       |
| 41109       | 9/16  | 2     | 1 1/32  | 1 3/32  | 3 1/2 | 1         | .41       |
| 41110       | 5/8   | 2 1/4 | 1 5/32  | 1 7/32  | 3 1/2 | 1 1/8     | .77       |
| 41111       | 5/8   | 2 1/4 | 1 9/32  | 1 11/32 | 4     | 1 1/4     | .62       |
| 41112       | 11/16 | 2 3/4 | 1 17/32 | 1 19/32 | 4 1/2 | 1 1/2     | .85       |

| Part Number |       |
|-------------|-------|
| Upper       | Lower |
| 41501       | 41301 |
| 41502       | 41302 |
| 41503       | 41303 |
| 41504       | 41304 |
| 41505       | 41305 |
| 41506       | 41306 |
| 41507       | 41307 |
| 41508       | 41308 |
| 41509       | 41309 |
| 41510       | 41310 |
| 41511       | 41311 |
| 41512       | 41312 |

- Material: Low Carbon Steel
- Finish: Black Oxide
- Heat Treat: Case Hardened

### Metric Two-Piece Assemblies

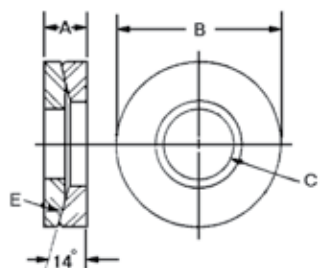
| Part Number | A    | B  | C    | D    | E    | Bolt Size | Wt. (kg) |
|-------------|------|----|------|------|------|-----------|----------|
| 41102       | 5    | 16 | 6.5  | 7.5  | 25   | M6        | .01      |
| 41103       | 5.5  | 19 | 8.5  | 9    | 25   | M8        | .01      |
| 41104       | 5.5  | 22 | 10.5 | 12   | 38   | M10       | .01      |
| 41105       | 7    | 28 | 13.5 | 15   | 51   | M12       | .03      |
| 41106       | 9.5  | 35 | 17   | 18   | 57   | M16       | .06      |
| 41157       | 10.5 | 41 | 21   | 21.5 | 63.5 | M20       | .09      |

### Single Units

| Part Number |       |
|-------------|-------|
| Upper       | Lower |
| 41502       | 41302 |
| 41503       | 41303 |
| 41504       | 41304 |
| 41505       | 41305 |
| 41506       | 41306 |
| 41557       | 41357 |

## Self Aligning Washers (Two-Piece)

### Stainless Steel



- Material: 303 Stainless

| Part Number | A    | B     | C     | E     | Bolt Size | Wt. (lbs) |
|-------------|------|-------|-------|-------|-----------|-----------|
| 41202       | 3/16 | 5/8   | 9/32  | 3/4   | 1/4       | .01       |
| 41203       | 1/4  | 3/4   | 11/32 | 1     | 5/16      | .01       |
| 41204       | 1/4  | 7/8   | 13/32 | 1 1/4 | 3/8       | .03       |
| 41205       | 5/16 | 1 1/8 | 17/32 | 1 1/2 | 1/2       | .08       |
| 41206       | 5/16 | 1 3/8 | 21/32 | 1 3/4 | 5/8       | .13       |
| 41207       | 3/8  | 1 5/8 | 25/32 | 2 1/4 | 3/4       | .20       |

## USAE™ Heavy Duty Flat Washers



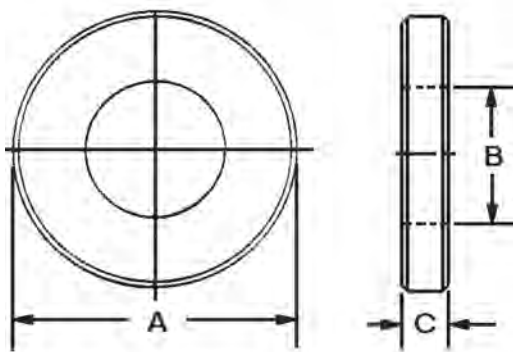
### USS + SAE = USAE

#### **What is a USAE™ Washer?**

- It is a simple but effective idea that is long overdue.
- The Outside Diameter conforms to USS standards. This provides a washer that is up to 36% larger than standard hardened washers.

#### **More Contact Area = More Holding Power**

- The Inside Diameter conforms to SAE standards. The small ID provides a more precise fit on bolts, studs, etc.
- USAE Washers are also up to 37% thicker than standard hardened washers for greater strength.
- Washers are made from mild steel. They are case hardened to 60 HRC and have a black oxide finish.
- Bolt size is stamped on each washer for easy identification.



### **USAE™ Heavy Duty Flat Washers**

| Part No. | Bolt Size | A (OD) | B (ID) | C (Thickness) |
|----------|-----------|--------|--------|---------------|
| FW00001  | 1/4       | 3/4    | 9/32   | 9/64          |
| FW00002  | 5/16      | 7/8    | 11/32  | 9/64          |
| FW00003  | 3/8       | 1      | 13/32  | 9/64          |
| FW00004  | 1/2       | 1-3/8  | 17/32  | 5/32          |
| FW00005  | 5/8       | 1-3/4  | 21/32  | 5/32          |
| FW00006  | 3/4       | 2      | 13/16  | 1/4           |
| FW00007  | 1         | 2-1/2  | 1-1/16 | 1/4           |

\*Tolerances for all dimensions are +/- .010"

## Replaceable Grippers Tapered - Hardened Steel

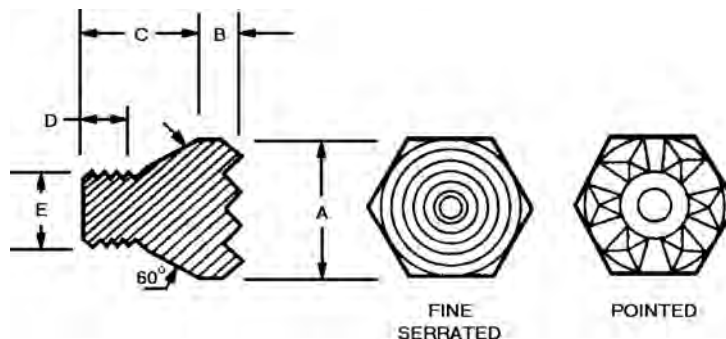


Pointed

Fine Serrated

- Material: 8620
- Finish: Black Oxide
- Heat Treat: Case Hardened
- Available in FixturePro™ Design Software

Jergens introduces a new concept in replaceable grippers. It is now easier to modify soft top jaws, strap clamps, or fixtures to hold irregularly shaped material. The grippers can be installed from one side, using a combination center drill, a tap, and a box wrench. There is no need to drill through holes from difficult to reach locations. Simply drill, tap, and install.



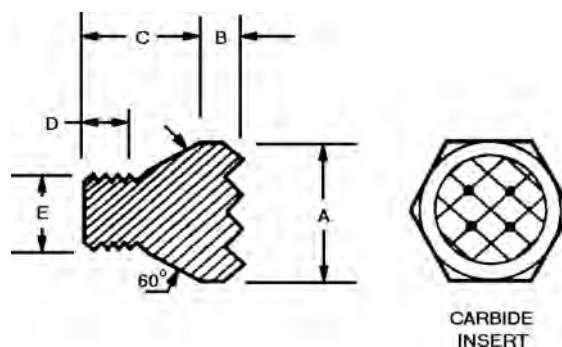
### Hardened Steel Grippers

| Part Number |         | Hex<br>A | B    | C   | D   | Thread<br>E | Center<br>Drill | Drill To<br>Diameter |
|-------------|---------|----------|------|-----|-----|-------------|-----------------|----------------------|
| Serrated    | Pointed |          |      |     |     |             |                 |                      |
| 23801       | 23811   | 5/16     | .093 | .32 | .19 | 8-32        | No. 4           | .310                 |
| 23802       | 23812   | 1/2      | .125 | .46 | .25 | 1/4-28      | No. 6           | .498                 |
| 23803       | 23813   | 3/4      | .187 | .70 | .38 | 3/8-16      | No. 8           | .745                 |

## Tapered - Carbide Tipped



- Material: Body 8620  
Insert, Carbide
- Finish: Zinc Plate
- Available in FixturePro™ Design Software



### Carbide Tipped Grippers

| Part<br>Number | Hex<br>A | B    | C   | D   | Thread<br>E | Center<br>Drill | Drill To<br>Diameter |
|----------------|----------|------|-----|-----|-------------|-----------------|----------------------|
| 23822          | 1/2      | .125 | .46 | .25 | 1/4-28      | No. 6           | .498                 |
| 23823          | 3/4      | .187 | .70 | .38 | 3/8-16      | No. 8           | .745                 |

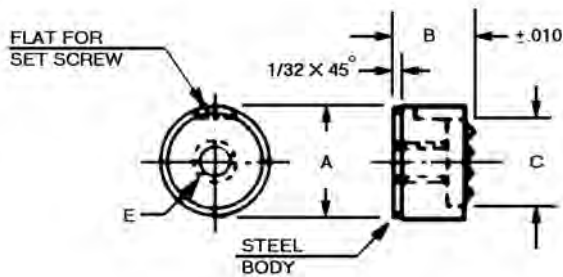
## Replaceable Grippers



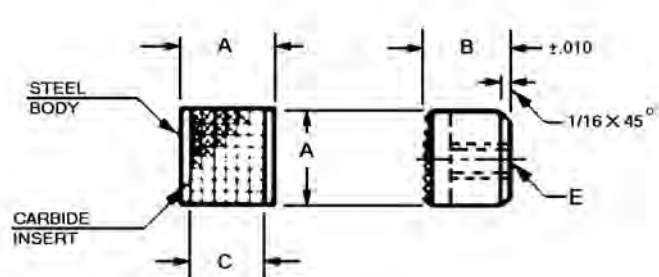
The Jergens Replaceable Grippers are available in Hardened High Speed Tool Steel or with Carbide Inserts. The points of the grippers embed themselves into the work piece giving greater holding power with less actual pressure. Jergens Grippers may be held in place using either a set screw on the flat of the gripper or the threaded hole in the back of the gripper.

Use Jergens Grippers to make hardened serrated jaws from Jergens soft top jaws or add the grippers to Jergens strap clamps for extra holding power. Use Jergens replaceable grippers anywhere that rough surfaces are being held in position for machining.

### ROUND GRIPPERS



### SQUARE GRIPPERS



- Material: Body, Low Carbon Steel  
Insert, Carbide
- Finish: Zinc Plate
- Serrations: .09" x 90°
- Available in FixturePro™ Design Software

### Carbide Tipped Grippers

| Part Number | Style  | A   | B     | C     | E             | Wt. (lbs) 10 Pcs. |
|-------------|--------|-----|-------|-------|---------------|-------------------|
| 23708       | Round  | 3/8 | 3/8   | 5/16  | 10-32 x 7/32  | .15               |
| 23707       | Round  | 1/2 | 3/8   | 3/8   | 10-32 x 7/32  | .20               |
| 23702       | Round  | 1/2 | 1/2   | 3/8   | 10-32 x 11/32 | .22               |
| 23703       | Round  | 1/2 | 21/32 | 3/8   | 10-32 x 7/16  | .30               |
| 23704       | Round  | 5/8 | 3/8   | 1/2   | 1/4-28 x 7/32 | .36               |
| 23705       | Round  | 3/4 | 3/8   | 5/8   | 1/4-28 x 7/32 | .44               |
| 23706       | Square | 1/2 | 3/8   | 13/32 | 10-32 x 1/4   | .30               |

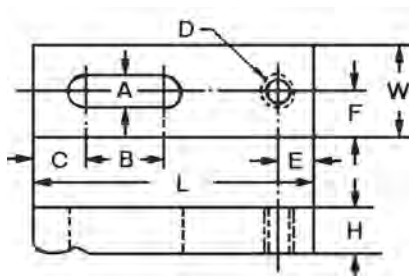
- Material: High Speed Tool Steel
- Finish: Black Oxide
- Heat Treat: Rc 60-62
- Serrations: .09" x 90°
- Available in FixturePro™ Design Software

### Hardened Tool Steel Grippers

| Part Number | Style  | A   | B     | C   | E            | Wt. (lbs) 10 Pcs. |
|-------------|--------|-----|-------|-----|--------------|-------------------|
| 23710       | Round  | 3/8 | 3/8   | 3/8 | 10-32 x 3/8  | .15               |
| 23711       | Round  | 1/2 | 3/8   | 1/2 | 10-32 x 3/8  | .20               |
| 23712       | Round  | 1/2 | 1/2   | 1/2 | 10-32 x 1/2  | .22               |
| 23713       | Round  | 1/2 | 21/32 | 1/2 | 10-32 x .651 | .30               |
| 23714       | Round  | 5/8 | 3/8   | 5/8 | 1/4-28 x 3/8 | .36               |
| 23715       | Round  | 3/4 | 3/8   | 3/4 | 1/4-28 x 3/8 | .44               |
| 23716       | Square | 1/2 | 3/8   | 1/2 | 10-32 x 3/8  | .30               |



## Miniature Straps - Radius

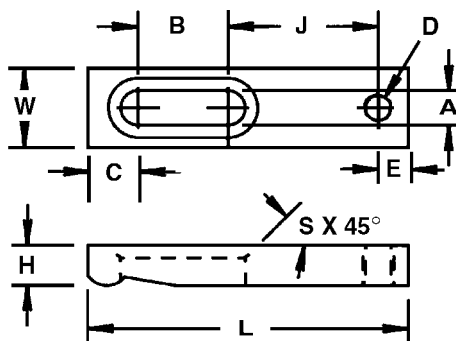


A light-duty strap with a specially designed radius end provides maximum pressure for extreme close-to-the-edge clamping. Features a tapped hole in the rear for knurled head thumb screw and a long slot for lateral adjustment.

- Material: Low Carbon Steel
- Finish: Black Oxide
- Heat Treat: Case Hardened  
Rockwell 30N Scale 59-69

| Part Number | Bolt Size | A    | B     | C    | Thread Size D | E    | F   | W   | H   | L     | Wt. (lbs) 10 Pcs. |
|-------------|-----------|------|-------|------|---------------|------|-----|-----|-----|-------|-------------------|
| 29704       | #10 or M5 | 7/32 | 7/16  | 5/16 | 10-24         | 3/16 | 1/4 | 1/2 | 1/4 | 1 1/2 | .44               |
| 29705       | #10 or M5 | 7/32 | 9/16  | 5/16 | 10-24         | 3/16 | 1/4 | 1/2 | 1/4 | 1 3/4 | .44               |
| 29706       | #10 or M5 | 7/32 | 11/16 | 5/16 | 10-24         | 3/16 | 1/4 | 1/2 | 1/4 | 2     | .44               |

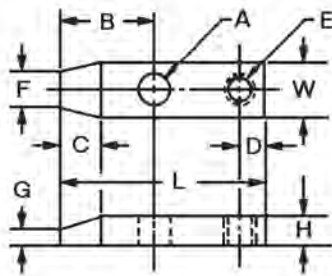
## Tapped Radius Straps Stainless Steel



- Material: 303 Stainless

| Part Number | Bolt Size  | A     | B     | C    | D       | H    | J      | L     | S    | W   |
|-------------|------------|-------|-------|------|---------|------|--------|-------|------|-----|
| 12211       | #10 or M5  | 7/32  | 5/16  | 5/16 | 10-32   | 1/4  | 11/16  | 1 1/2 | 5/64 | 1/2 |
| 12212       | #10 or M5  | 7/32  | 7/16  | 5/16 | 10-32   | 1/4  | 13/16  | 1 3/4 | 5/64 | 1/2 |
| 12213       | 1/4 or M6  | 9/32  | 1/2   | 3/8  | 1/4-20  | 5/16 | 7/8    | 2     | 3/32 | 5/8 |
| 12214       | 1/4 or M6  | 9/32  | 11/16 | 3/8  | 1/4-20  | 5/16 | 1 3/16 | 2 1/2 | 3/32 | 5/8 |
| 12215       | 5/16 or M8 | 11/32 | 1/2   | 7/16 | 5/16-18 | 3/8  | 1 3/16 | 2     | 1/8  | 3/4 |
| 12216       | 5/16 or M8 | 11/32 | 7/8   | 7/8  | 5/16-18 | 3/8  | 1 3/8  | 3     | 1/8  | 3/4 |
| 12217       | 3/8 or M10 | 13/32 | 3/4   | 9/16 | 3/8-16  | 1/2  | 1 5/16 | 3     | 1/8  | 7/8 |
| 12218       | 3/8 or M10 | 13/32 | 1 1/8 | 1/2  | 3/8-16  | 1/2  | 2      | 4     | 1/8  | 7/8 |

## Miniature Straps - Flat

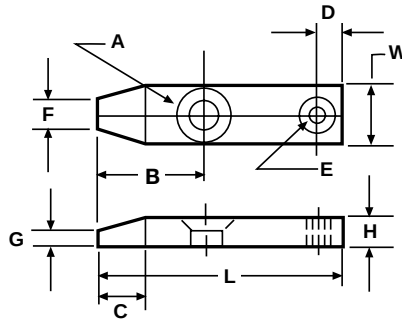


A "chisel nose", flat strap for light-duty holding where clamping is restricted. Features a tapped hole in back for heel rest and a drilled hole for stud clearance.

- Material: Low Carbon Steel
- Finish: Black Oxide
- Heat Treat: Case Hardened  
Rockwell 30N Scale 59-69

| Part Number | A    | B     | C   | D    | Thread Size E | F   | G   | W   | H    | L     | Wt. (lbs) 10 Pcs. |
|-------------|------|-------|-----|------|---------------|-----|-----|-----|------|-------|-------------------|
| 29701       | 7/32 | 5/8   | 3/8 | 3/16 | 10-24         | 1/4 | 1/8 | 1/2 | 1/4  | 1 1/2 | .47               |
| 29702       | 9/32 | 7/8   | 3/8 | 3/16 | 10-24         | 1/4 | 1/8 | 1/2 | 1/4  | 2     | .62               |
| 29703       | 9/32 | 1 1/8 | 3/8 | 3/16 | 10-24         | 1/4 | 1/8 | 1/2 | 5/16 | 2 1/2 | .94               |

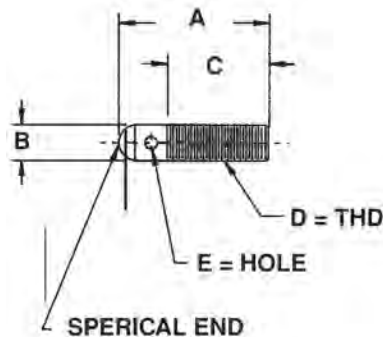
## Taper Nose Straps Stainless Steel



- Material: 303 Stainless

| Part Number | A    | B     | C   | D     | E      | F   | G   | H    | W   | L     |
|-------------|------|-------|-----|-------|--------|-----|-----|------|-----|-------|
| 12201       | 7/32 | 5/8   | 3/8 | 13/64 | 10-32  | 1/4 | 1/8 | 1/4  | 1/2 | 1 1/2 |
| 12202       | 9/32 | 7/8   | 3/8 | 3/16  | 1/4-20 | 1/4 | 1/8 | 1/4  | 1/2 | 2     |
| 12203       | 9/32 | 1 1/8 | 3/8 | 9/32  | 1/4-20 | 1/4 | 1/8 | 5/16 | 1/2 | 2 1/2 |

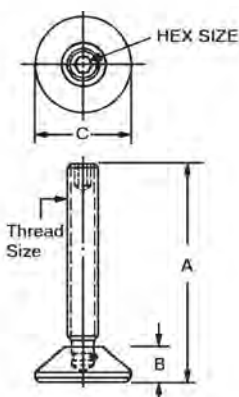
## Adjustable Clamp Rests Stainless Steel



- Material: 303 Stainless

| Part Number | A     | B    | C      | D       | E    |
|-------------|-------|------|--------|---------|------|
| 12231       | 3/4   | .190 | 1/2    | 10-32   | 1/16 |
| 12232       | 1 1/4 | .190 | 1      | 10-32   | 1/16 |
| 12233       | 1     | 1/4  | 11/16  | 1/4-20  | 5/64 |
| 12234       | 1 1/2 | 1/4  | 1 3/16 | 1/4-20  | 5/64 |
| 12235       | 1 3/8 | 5/16 | 1 1/8  | 5/16-18 | 3/32 |
| 12236       | 1 7/8 | 5/16 | 1 5/8  | 5/16-18 | 3/32 |
| 12237       | 1 5/8 | 3/8  | 1 3/8  | 3/8-16  | 1/8  |
| 12238       | 2 1/8 | 3/8  | 1 7/8  | 3/8-16  | 1/8  |

## Adjustable Clamp Heels



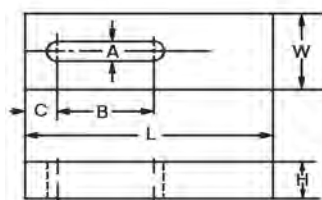
- Material: Stud, Stressproof® Pad, Low Carbon Steel
- Finish: Black Oxide
- Thread: 2B-UNC (Inch); 6h (Metric)

| Part Number | Thread Size | A | B   | C     | Hex Key Size | Wt. (lbs) |
|-------------|-------------|---|-----|-------|--------------|-----------|
| 47213       | 3/8-16      | 2 | 5/8 | 1 1/4 | 3/16         | .20       |
| 47214       | 3/8-16      | 3 | 5/8 | 1 1/4 | 3/16         | .30       |
| 47215       | 3/8-16      | 4 | 5/8 | 1 1/4 | 3/16         | .40       |
| 47201       | 1/2-13      | 3 | 5/8 | 1 1/2 | 1/4          | .40       |
| 47202       | 1/2-13      | 4 | 5/8 | 1 1/2 | 1/4          | .50       |
| 47203       | 1/2-13      | 5 | 5/8 | 1 1/2 | 1/4          | .60       |
| 47204       | 5/8-11      | 4 | 3/4 | 1 3/4 | 5/16         | .70       |
| 47205       | 5/8-11      | 5 | 3/4 | 1 3/4 | 5/16         | .80       |
| 47206       | 5/8-11      | 6 | 3/4 | 1 3/4 | 5/16         | .90       |
| 47207       | 3/4-10      | 5 | 7/8 | 2     | 3/8          | 1.20      |
| 47208       | 3/4-10      | 6 | 7/8 | 2     | 3/8          | 1.35      |
| 47209       | 3/4-10      | 7 | 7/8 | 2     | 3/8          | 1.50      |
| 47210       | 1-8         | 4 | 1   | 2 1/2 | 9/16         | 1.90      |
| 47211       | 1-8         | 6 | 1   | 2 1/2 | 9/16         | 2.30      |

### Metric

| Part Number | Thread Size | A   | B  | C  | Hex Size | Wt. (kg) |
|-------------|-------------|-----|----|----|----------|----------|
| 47263       | M10 x 1.5   | 50  | 16 | 32 | 5        | .09      |
| 47264       | M10 x 1.5   | 75  | 16 | 32 | 5        | .11      |
| 47265       | M10 x 1.5   | 100 | 16 | 32 | 5        | .11      |
| 47251       | M12 x 1.75  | 75  | 16 | 38 | 6        | .11      |
| 47252       | M12 x 1.75  | 100 | 16 | 38 | 6        | .13      |
| 47253       | M12 x 1.75  | 125 | 16 | 38 | 6        | .15      |
| 47254       | M16 x 2.0   | 100 | 19 | 44 | 8        | .25      |
| 47255       | M16 x 2.0   | 125 | 19 | 44 | 8        | .29      |
| 47256       | M16 x 2.0   | 150 | 19 | 44 | 8        | .32      |
| 47257       | M20 x 2.5   | 125 | 22 | 50 | 10       | .44      |
| 47258       | M20 x 2.5   | 150 | 22 | 50 | 10       | .46      |
| 47259       | M20 x 2.5   | 175 | 22 | 50 | 10       | .55      |
| 47260       | M24 x 3.0   | 100 | 25 | 64 | 14       | .44      |
| 47261       | M24 x 3.0   | 150 | 25 | 64 | 14       | .50      |

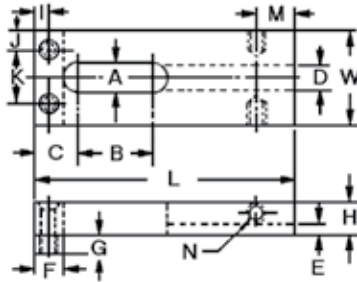
## Plain Straps



- Material: Low Carbon Steel, 2024 Aluminum

| Part Number |          | Bolt Size  | A     | B     | C      | Width |          | H   | L     | Wt. (lbs) |
|-------------|----------|------------|-------|-------|--------|-------|----------|-----|-------|-----------|
| Steel       | Aluminum |            |       |       |        | Steel | Aluminum |     |       |           |
| 33111       | 33001    | 1/4 or M6  | 9/32  | 5/8   | 3/8    | 5/8   | 3/4      | 3/8 | 2     | .09       |
| 33113       | —        | 5/16 or M8 | 11/32 | 3/4   | 9/16   | 7/8   | —        | 1/2 | 2 1/2 | .18       |
| 33114       | 33004    | 5/16 or M8 | 11/32 | 1 1/4 | 9/16   | 7/8   | 1        | 1/2 | 3 1/2 | .25       |
| 33115       | —        | 3/8 or M10 | 13/32 | 1 1/8 | 11/16  | 1 1/4 | —        | 5/8 | 3 1/2 | .61       |
| 33116       | 33006    | 3/8 or M10 | 13/32 | 1 5/8 | 11/16  | 1 1/4 | 1 1/2    | 5/8 | 4 1/2 | .90       |
| 33117       | —        | 1/2 or M12 | 17/32 | 1 1/4 | 7/8    | 1 1/2 | —        | 3/4 | 4 1/2 | 1.12      |
| 33118       | 33008    | 1/2 or M12 | 17/32 | 2     | 7/8    | 1 1/2 | 2        | 3/4 | 6     | 1.60      |
| 33119       | —        | 5/8 or M16 | 21/32 | 1 1/2 | 1 1/16 | 1 3/4 | —        | 7/8 | 5     | 1.75      |
| 33120       | —        | 5/8 or M16 | 21/32 | 2 1/2 | 1 1/16 | 1 3/4 | —        | 7/8 | 7     | 2.60      |
| 33121       | —        | 3/4 or M19 | 25/32 | 1 1/2 | 1 1/8  | 1 3/4 | —        | 1   | 5     | 2.00      |
| 33122       | —        | 3/4 or M19 | 25/32 | 2 1/2 | 1 1/8  | 1 3/4 | —        | 1   | 7     | 2.90      |

## Padded Straps



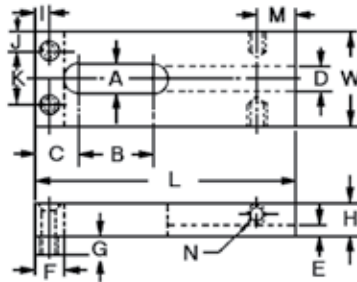
The elongated slot allows for greater clamping force on the part. A steel pad is standard. Plastic or brass pads may be ordered separately for both inch and metric straps. See page 6.7.

- Material: Low Carbon Steel
- Finish: Low Carbon Steel
- Heat Treat: Case Hardened  
Rockwell 30N Scale 59-69

| Part Number | Bolt Size  | A     | B     | C      | D   | E    | F   | G   | I    | J    | K     | M   | N       | W     | H   | L     | Wt. (lbs) |
|-------------|------------|-------|-------|--------|-----|------|-----|-----|------|------|-------|-----|---------|-------|-----|-------|-----------|
| 37101       | 1/4 or M6  | 9/32  | 5/8   | 3/8    | 1/4 | 1/8  | 1/4 | 1/8 | 9/64 | 9/64 | 11/32 | —   | —       | 5/8   | 3/8 | 2     | .09       |
| 37103       | 3/8 or M10 | 13/32 | 1 1/8 | 11/16  | 3/8 | 3/16 | 1/2 | 1/4 | 1/4  | 5/16 | 5/8   | 1/2 | 5/16-18 | 1 1/4 | 5/8 | 3 1/2 | .65       |
| 37105       | 3/8 or M10 | 13/32 | 1 5/8 | 11/16  | 3/8 | 3/16 | 1/2 | 1/4 | 1/4  | 5/16 | 5/8   | 1/2 | 5/16-18 | 1 1/4 | 5/8 | 4 1/2 | .83       |
| 37107*      | 1/2 or M12 | 17/32 | 1 1/4 | 7/8    | 3/8 | 1/4  | 5/8 | 3/8 | 5/16 | 3/8  | 3/4   | 1/2 | 5/16-18 | 1 1/2 | 3/4 | 4 1/2 | 1.24      |
| 37110*      | 1/2 or M12 | 17/32 | 2     | 7/8    | 3/8 | 1/4  | 5/8 | 3/8 | 5/16 | 3/8  | 3/4   | 1/2 | 5/16-18 | 1 1/2 | 3/4 | 6     | 1.63      |
| 37111*      | 5/8 or M16 | 21/32 | 1 1/2 | 1 1/16 | 3/8 | 1/4  | 3/4 | 1/2 | 3/8  | 1/2  | 3/4   | 3/4 | 5/16-18 | 1 3/4 | 7/8 | 5     | 1.88      |
| 37113*      | 5/8 or M16 | 21/32 | 2 1/2 | 1 1/16 | 3/8 | 1/4  | 3/4 | 1/2 | 3/8  | 1/2  | 3/4   | 3/4 | 5/16-18 | 1 3/4 | 7/8 | 7     | 2.63      |
| 37114*      | 3/4 or M20 | 25/32 | 1 1/2 | 1 1/8  | 3/8 | 1/4  | 3/4 | 1/2 | 3/8  | 1/2  | 3/4   | 3/4 | 5/16-18 | 1 3/4 | 1   | 5     | 2.12      |
| 37116*      | 3/4 or M20 | 25/32 | 2 1/2 | 1 1/8  | 3/8 | 1/4  | 3/4 | 1/2 | 3/8  | 1/2  | 3/4   | 3/4 | 5/16-18 | 1 3/4 | 1   | 7     | 2.88      |

\*Carbide Gripper Kits are available, contact Technical Sales Department for details. Gripper Part #23704.

## Padded Straps Metric



- Material: Low Carbon Steel
- Finish: Low Carbon Steel
- Heat Treat: Case Hardened  
Rockwell 30N Scale 59-69

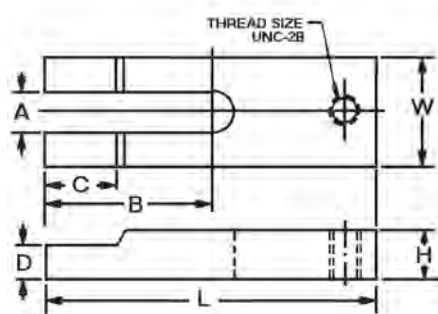
### Metric

| Part Number | Bolt Size | A  | B  | C  | D  | E | F  | G  | M  | N  | W  | H  | I  | J  | K  | L   | Wt (kg) |
|-------------|-----------|----|----|----|----|---|----|----|----|----|----|----|----|----|----|-----|---------|
| 37151       | M6        | 7  | 16 | 10 | 6  | 3 | 6  | 3  | —  | —  | 16 | 9  | 4  | 4  | 9  | 50  | .04     |
| 37153       | M8        | 10 | 28 | 17 | 10 | 5 | 13 | 6  | 13 | M8 | 32 | 16 | 6  | 8  | 16 | 89  | .29     |
| 37157       | M10       | 13 | 32 | 22 | 10 | 6 | 16 | 10 | 13 | M8 | 38 | 19 | 8  | 10 | 19 | 114 | .38     |
| 37161       | M16       | 17 | 38 | 27 | 10 | 6 | 19 | 13 | 19 | M8 | 44 | 22 | 10 | 13 | 19 | 127 | 1.19    |
| 37164       | M20       | 20 | 38 | 29 | 10 | 6 | 19 | 13 | 19 | M8 | 44 | 25 | 10 | 13 | 19 | 127 | 1.31    |

## Long Slot U-Straps



- Material: Low Carbon Steel
- Finish: Black Oxide
- Thread: UNC-2B (Inch); 6h (Metric)
- Heat Treat: Case Hardened Rockwell 30N Scale 59-69
- Designed to be used with Adjustable Clamp Heels, found on page 6.45, and Clamp Assembly Heels on page 6.2.

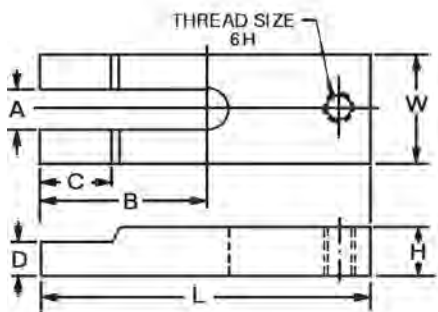


| Part Number | Bolt Size  | A      | B       | C   | D   | Thread Size | W     | H     | L  | Wt. (lbs) |
|-------------|------------|--------|---------|-----|-----|-------------|-------|-------|----|-----------|
| 47021       | 1/2 or M12 | 17/32  | 2 1/2   | —   | —   | 1/2-13      | 1 1/2 | 3/4   | 4  | 1.18      |
| 47022       | 1/2 or M12 | 17/32  | 3 1/2   | —   | —   | 1/2-13      | 1 1/2 | 3/4   | 6  | 1.92      |
| 47023       | 5/8 or M16 | 21/32  | 2 7/16  | 5/8 | 3/4 | 5/8-11      | 1 3/4 | 7/8   | 4  | 1.52      |
| 47024       | 5/8 or M16 | 21/32  | 3 15/16 | 5/8 | 3/4 | 5/8-11      | 1 3/4 | 7/8   | 7  | 2.73      |
| 47025       | 3/4 or M20 | 25/32  | 3 1/2   | 5/8 | 3/4 | 3/4-10      | 2     | 1     | 6  | 2.96      |
| 47026       | 3/4 or M20 | 25/32  | 5       | 5/8 | 3/4 | 3/4-10      | 2     | 1 1/4 | 8  | 3.99      |
| 47027       | 1 or M24   | 1 1/16 | 5 1/2   | 5/8 | 3/4 | 1-8         | 2 1/2 | 1 1/2 | 10 | 8.12      |

## Long Slot U-Straps Metric



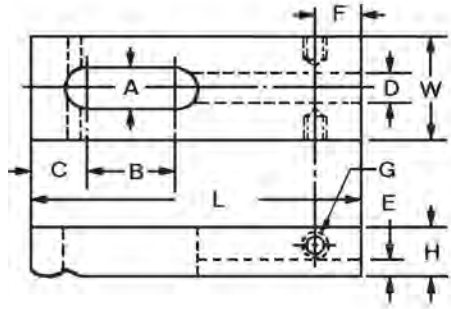
- Material: Low Carbon Steel
- Finish: Black Oxide
- Thread: UNC-2B (Inch); 6h (Metric)
- Heat Treat: Case Hardened Rockwell 30N Scale 59-69
- Designed to be used with Adjustable Clamp Heels, found on page 6.45, and Clamp Assembly Heels on page 6.2.



| Part Number | Bolt Size | A  | B   | C  | D  | Thread Size | W  | H  | L   | Wt (kg) |
|-------------|-----------|----|-----|----|----|-------------|----|----|-----|---------|
| 47071       | M12       | 13 | 64  | —  | —  | M12         | 38 | 19 | 100 | .54     |
| 47072       | M12       | 13 | 89  | —  | —  | M12         | 38 | 19 | 150 | .87     |
| 47073       | M16       | 17 | 62  | 16 | 19 | M16         | 44 | 22 | 100 | .70     |
| 47074       | M16       | 17 | 100 | 16 | 19 | M16         | 44 | 22 | 175 | 1.24    |
| 47075       | M20       | 20 | 89  | 16 | 19 | M20         | 50 | 25 | 150 | 1.34    |
| 47076       | M20       | 20 | 127 | 16 | 19 | M20         | 50 | 32 | 200 | 1.81    |
| 47077       | M24       | 27 | 140 | 16 | 19 | M24         | 64 | 38 | 250 | 3.68    |



## Radius Straps



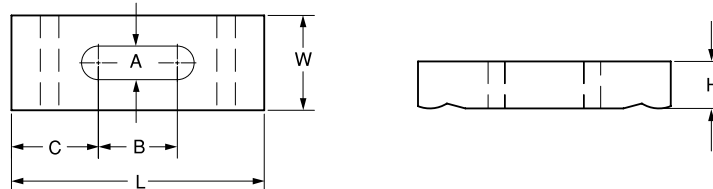
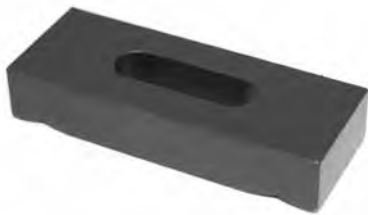
### Jergens Feature:

The elongated slot allows for greater clamping force on the part.

- Material: Low Carbon Steel
- Finish: Black Oxide
- Heat Treat: Case Hardened  
Rockwell 30N Scale 59-69

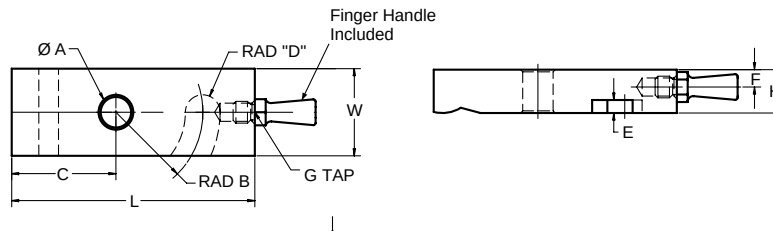
| Part Number | Bolt Size  | A     | B     | C      | D   | E    | F   | G       | W     | H   | L     | Wt. (lbs) |
|-------------|------------|-------|-------|--------|-----|------|-----|---------|-------|-----|-------|-----------|
| 36703       | 1/4 or M6  | 9/32  | 5/8   | 3/8    | 1/4 | 1/8  | -   | -       | 5/8   | 3/8 | 2     | 0.09      |
| 36708       | 1/4 or M6  | 9/32  | 1     | 3/8    | 1/4 | 1/8  | -   | -       | 5/8   | 3/8 | 2-1/2 | 0.11      |
| 36717       | 5/16       | 11/32 | 3/4   | 9/16   | 1/4 | 1/4  | -   | -       | 7/8   | 1/2 | 2-1/2 | 0.20      |
| 36718       | 5/16       | 11/32 | 1-1/4 | 9/16   | 1/4 | 1/4  | -   | -       | 7/8   | 1/2 | 3-1/2 | 0.25      |
| 36704       | 3/8 or M10 | 13/32 | 1-1/8 | 11/16  | 3/8 | 3/16 | 1/2 | 5/16-18 | 1-1/4 | 5/8 | 3-1/2 | 0.61      |
| 36719       | 3/8 or M10 | 13/32 | 1-5/8 | 11/16  | 3/8 | 3/16 | 1/2 | 5/16-18 | 1-1/4 | 5/8 | 4-1/2 | 0.71      |
| 36705       | 1/2 or M12 | 17/32 | 1-1/4 | 7/8    | 3/8 | 1/4  | 1/2 | 5/16-18 | 1-1/2 | 3/4 | 4-1/2 | 1.12      |
| 36714       | 1/2 or M12 | 17/32 | 2     | 7/8    | 3/8 | 1/4  | 1/2 | 5/16-18 | 1-1/2 | 3/4 | 6     | 1.56      |
| 36706       | 5/8 or M16 | 21/32 | 1-1/2 | 1-1/16 | 3/8 | 1/4  | 3/4 | 5/16-18 | 1-3/4 | 7/8 | 5     | 1.75      |
| 36715       | 5/8 or M16 | 21/32 | 2-1/2 | 1-1/16 | 3/8 | 1/4  | 3/4 | 5/16-18 | 1-3/4 | 7/8 | 7     | 2.44      |
| 36707       | 3/4        | 25/32 | 1-1/2 | 1-1/8  | 3/8 | 1/4  | 3/4 | 5/16-18 | 1-3/4 | 1   | 5     | 2.00      |
| 36716       | 3/4        | 25/32 | 2-1/2 | 1-1/8  | 3/8 | 1/4  | 3/4 | 5/16-18 | 1-3/4 | 1   | 7     | 2.70      |

## Double End Radius Strap



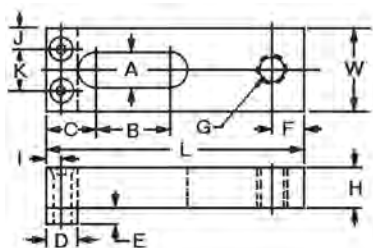
| Part Number | Bolt Size  | A     | B     | C     | H   | W     | L | Wt (lbs) |
|-------------|------------|-------|-------|-------|-----|-------|---|----------|
| 36728       | 1/2 or M12 | 17/32 | 1-1/4 | 1-3/8 | 3/4 | 1-1/2 | 4 | 0.80     |
| 36729       | 1/2 or M12 | 17/32 | 1-1/2 | 1-3/4 | 3/4 | 1-1/2 | 5 | 1.25     |
| 36730       | 5/8 or M16 | 21/32 | 1-1/2 | 2-1/4 | 7/8 | 1-3/4 | 6 | 2.20     |

## Swing Style Radius Nose Straps



| Part Number | Bolt Size | A     | B      | C      | D   | E    | F   | G       | W     | H   | L     | Wt (lbs) |
|-------------|-----------|-------|--------|--------|-----|------|-----|---------|-------|-----|-------|----------|
| 36723       | 1/4       | 5/16  | 11/16  | 1      | 1/8 | 1/8  | n/a | n/a     | 5/8   | 3/8 | 2     | 0.09     |
| 36724       | 3/8       | 7/16  | 1-1/4  | 1-1/2  | 1/4 | 3/16 | 1/4 | 5/16-18 | 1-1/4 | 5/8 | 3-1/2 | 0.61     |
| 36725       | 1/2       | 9/16  | 1-7/8  | 1-3/16 | 1/4 | 1/4  | 1/4 | 5/16-18 | 1-1/2 | 3/4 | 4-1/2 | 1.12     |
| 36726       | 5/8       | 11/16 | 2-3/16 | 2-1/16 | 1/4 | 1/4  | 1/4 | 5/16-18 | 1-3/4 | 7/8 | 5     | 1.75     |
| 36727       | 3/4       | 13/16 | 2-3/16 | 2-1/16 | 1/4 | 1/4  | 1/4 | 5/16-18 | 1-3/4 | 1   | 5     | 2.00     |

## Tapped Straps



### Jergens Feature:

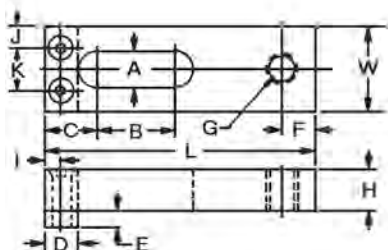
The elongated slot allows for greater clamping force on the part. A steel pad is standard. Plastic or brass pads may be ordered separately, see page 6.7.

- Material: Low Carbon Steel
- Finish: Black Oxide
- Thread: 2B-UNC
- Heat Treat: Case Hardened  
Rockwell 30N Scale 59-69
- Tapped for use with adjustable clamp heel found on page 6.45

| Part Number | Bolt Size  | A     | B     | C     | D   | E    | F    | Thread Size G | I    | J    | K     | W     | H   | L     | Wt. (lbs) |
|-------------|------------|-------|-------|-------|-----|------|------|---------------|------|------|-------|-------|-----|-------|-----------|
| 36911       | 1/4 or M6  | 9/32  | 5/8   | 3/8   | 1/4 | 1/8  | 7/32 | 1/4-20        | 9/64 | 9/64 | 11/32 | 5/8   | 3/8 | 2     | .10       |
| 36913       | 5/16 or M8 | 11/32 | 3/4   | 9/16  | 3/8 | 3/16 | 1/4  | 5/16-18       | 3/16 | 3/16 | 1/2   | 7/8   | 1/2 | 2 1/2 | .20       |
| 36914       | 5/16 or M8 | 11/32 | 1 1/4 | 9/16  | 3/8 | 3/16 | 1/4  | 5/16-18       | 3/16 | 3/16 | 1/2   | 7/8   | 1/2 | 3 1/2 | .27       |
| 36915       | 3/8 or M10 | 13/32 | 1 1/8 | 11/16 | 1/2 | 1/4  | 3/8  | 3/8-16        | 1/4  | 5/16 | 5/8   | 1 1/4 | 5/8 | 3 1/2 | .69       |
| 36916       | 3/8 or M10 | 13/32 | 1 5/8 | 11/16 | 1/2 | 1/4  | 3/8  | 3/8-16        | 1/4  | 5/16 | 5/8   | 1 1/4 | 5/8 | 4 1/2 | .88       |
| 36917*      | 1/2 or M12 | 17/32 | 1 1/4 | 7/8   | 5/8 | 3/8  | 7/16 | 1/2-13        | 1/4  | 3/8  | 3/4   | 1 1/2 | 3/4 | 4 1/2 | .70       |
| 36918*      | 1/2 or M12 | 17/32 | 2     | 7/8   | 5/8 | 3/8  | 7/16 | 1/2-13        | 1/4  | 3/8  | 3/4   | 1 1/2 | 3/4 | 6     | .90       |

\* Carbide Gripper Kits are available, contact Technical Sales Department for details. Gripper Part #23704.

## Tapped Straps Metric

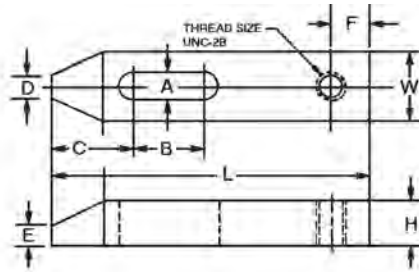


- Material: Low Carbon Steel
- Finish: Black Oxide
- Thread: 6h
- Heat Treat: Case Hardened  
Rockwell 30N Scale 59-69
- Tapped for use with adjustable clamp heel found on page 6.45

| Part Number | Bolt Size | A  | B  | C  | D  | E | F  | Thread Size 6h G | I | J | K  | W  | H  | L   | Wt. (Kg) |
|-------------|-----------|----|----|----|----|---|----|------------------|---|---|----|----|----|-----|----------|
| 36961       | M6        | 7  | 16 | 9  | 6  | 3 | 5  | M6               | 4 | 4 | 9  | 16 | 9  | 50  | .05      |
| 36963       | M8        | 9  | 19 | 14 | 9  | 5 | 6  | M8               | 5 | 5 | 12 | 22 | 13 | 63  | .11      |
| 36965       | M10       | 10 | 28 | 17 | 13 | 6 | 9  | M10              | 6 | 8 | 16 | 32 | 16 | 88  | .37      |
| 36967       | M12       | 13 | 31 | 22 | 16 | 9 | 11 | M12              | 6 | 9 | 19 | 38 | 19 | 113 | .47      |

\* Carbide Gripper Kits are available, contact Technical Sales Department for details. Gripper Part #23704.

## Taper Nose Straps



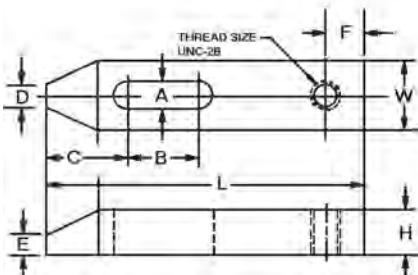
- Material: Low Carbon Steel
- Finish: Black Oxide
- Thread: UNC-2B
- Heat Treat: Case Hardened Rockwell 30N Scale 59-69
- Designed to be used with Adjustable Clamp Heels, found on page 6.45

| Part Number | Bolt Size  | A      | B     | C      | D   | E    | F     | Thread Size | W     | H     | L     | Wt. (lbs) |
|-------------|------------|--------|-------|--------|-----|------|-------|-------------|-------|-------|-------|-----------|
| 47119       | 3/8 or M10 | 13/32  | 1/2   | 13/16  | 3/8 | 3/16 | 7/16  | 3/8-16      | 1     | 1/2   | 3     | .55       |
| 47120       | 3/8 or M10 | 13/32  | 1     | 15/16  | 3/8 | 3/16 | 7/16  | 3/8-16      | 1 1/4 | 5/8   | 4     | .75       |
| 47123       | 3/8 or M10 | 13/32  | 1 1/2 | 15/16  | 3/8 | 3/16 | 7/16  | 3/8-16      | 1 1/4 | 5/8   | 5     | .90       |
| 47124       | 1/2 or M12 | 17/32  | 1/2   | 1 1/16 | 1/2 | 1/4  | 7/16  | 1/2-13      | 1 1/4 | 5/8   | 3 1/2 | .80       |
| 47125       | 1/2 or M12 | 17/32  | 1 1/4 | 1 3/16 | 1/2 | 1/4  | 7/16  | 1/2-13      | 1 1/4 | 3/4   | 4 1/2 | 1.10      |
| 47126       | 1/2 or M12 | 17/32  | 2     | 1 5/16 | 1/2 | 1/4  | 7/16  | 1/2-13      | 1 1/4 | 7/8   | 6     | 1.60      |
| 47127       | 5/8 or M16 | 21/32  | 1/2   | 1 3/16 | 5/8 | 1/4  | 1/2   | 5/8-11      | 1 1/4 | 5/8   | 4     | 1.80      |
| 47128       | 5/8 or M16 | 21/32  | 1 1/4 | 1 3/16 | 5/8 | 3/8  | 1/2   | 5/8-11      | 1 1/2 | 3/4   | 5     | 2.20      |
| 47129       | 5/8 or M16 | 21/32  | 2     | 1 5/16 | 5/8 | 3/8  | 1/2   | 5/8-11      | 1 1/2 | 7/8   | 7     | 3.10      |
| 47130       | 3/4 or M20 | 25/32  | 3/4   | 1 5/16 | 5/8 | 3/8  | 9/16  | 3/4-10      | 1 1/2 | 3/4   | 5     | 2.85      |
| 47131       | 3/4 or M20 | 25/32  | 1 1/2 | 1 1/2  | 5/8 | 3/8  | 9/16  | 3/4-10      | 1 1/2 | 1     | 6     | 3.40      |
| 47132       | 3/4 or M20 | 25/32  | 2 1/4 | 1 5/8  | 5/8 | 3/8  | 9/16  | 3/4-10      | 1 3/4 | 1 1/8 | 8     | 4.70      |
| 47134       | 1 or M24   | 1 1/16 | 2     | 2 5/8  | 7/8 | 5/8  | 11/16 | 1-8         | 2     | 1 1/2 | 10    | 9.55      |

## Metric Taper Nose Straps



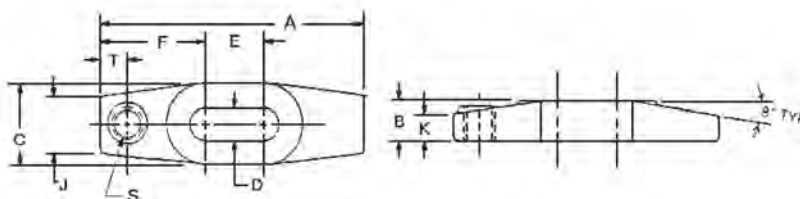
- Material: Low Carbon Steel
- Finish: Black Oxide
- Thread: 6h
- Heat Treat: Case Hardened Rockwell 30N Scale 59-69
- Designed to be used with Adjustable Clamp Heels, found on page 6.45



| Part Number | Bolt Size | A  | B  | C  | D  | E  | F  | Thread Size | W  | H  | L   | Wt. (Kg) |
|-------------|-----------|----|----|----|----|----|----|-------------|----|----|-----|----------|
| 47169       | M10       | 11 | 13 | 21 | 10 | 5  | 11 | M10 x 1.5   | 25 | 13 | 75  | .30      |
| 47175       | M12       | 13 | 33 | 30 | 13 | 10 | 11 | M12 x 1.75  | 32 | 19 | 114 | .60      |
| 47179       | M16       | 17 | 50 | 33 | 16 | 10 | 13 | M16 x 2.0   | 38 | 22 | 175 | 1.70     |
| 47182       | M20       | 21 | 57 | 41 | 16 | 10 | 14 | M20 x 2.5   | 44 | 29 | 200 | 2.53     |
| 47184       | M24       | 26 | 50 | 67 | 22 | 16 | 17 | M24 x 3.0   | 50 | 38 | 250 | 5.15     |

## Forged Strap Clamps

### Heel Clamp



• Material: C-1030 or C-1035

### Standard & Tapped Heel Clamps

| Part Number |        | Bolt Size  | A  | B     | C     | D     | E     | F       | J      | K     | S*     | T   | Wt. (lbs) |
|-------------|--------|------------|----|-------|-------|-------|-------|---------|--------|-------|--------|-----|-----------|
| Standard    | Tapped |            |    |       |       |       |       |         |        |       |        |     |           |
| 37201       | 37202  | 5/8 or M16 | 4  | 3/4   | 1 5/8 | 11/16 | 11/16 | 1 21/32 | 1 3/16 | 1/2   | 1/2-13 | 1/2 | 1.00      |
| 37203       | 37204  | 5/8 or M16 | 6  | 7/8   | 1 3/4 | 11/16 | 1 3/8 | 2 5/16  | 1 1/4  | 9/16  | 5/8-11 | 5/8 | 1.75      |
| 37205       | 37206  | 3/4 or M20 | 8  | 1 1/8 | 2 1/8 | 13/16 | 2     | 3       | 1 1/2  | 3/4   | 3/4-10 | 3/4 | 3.75      |
| 37207       | 37208  | 7/8 or M20 | 10 | 1 3/8 | 2 1/2 | 15/16 | 2 3/4 | 3 5/8   | 1 3/4  | 15/16 | 7/8-9  | 7/8 | 7.00      |

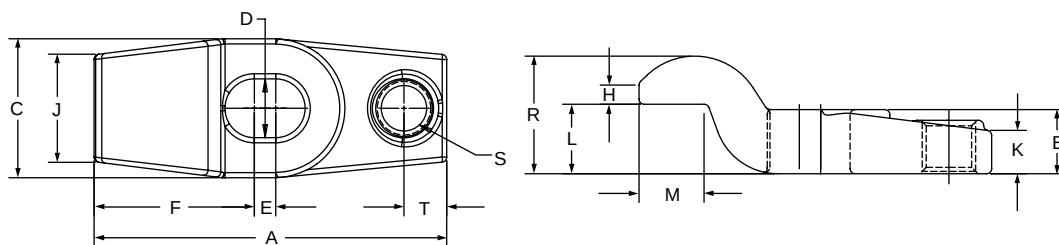
\*Applicable to Tapped Clamp Only

### Metric Standard & Tapped Heel Clamps

| Part Number |        | Bolt Size | A   | B  | C  | D  | E  | F  | J  | K  | S*         | T  | Wt. (Kg) |
|-------------|--------|-----------|-----|----|----|----|----|----|----|----|------------|----|----------|
| Standard    | Tapped |           |     |    |    |    |    |    |    |    |            |    |          |
| 37201       | 37252  | M16       | 100 | 19 | 41 | 17 | 17 | 42 | 30 | 13 | M12 x 1.75 | 13 | .53      |
| 37203       | 37254  | M16       | 150 | 22 | 44 | 17 | 35 | 59 | 32 | 14 | M16 x 2.0  | 16 | .94      |
| 37205       | 37256  | M20       | 200 | 29 | 54 | 21 | 50 | 75 | 38 | 19 | M20 x 2.5  | 19 | 2.0      |
| 37207       | 37258  | M20       | 250 | 35 | 63 | 24 | 70 | 92 | 44 | 24 | M24 x 3.0  | 22 | 3.8      |

\*Applicable to Tapped Clamp Only

### Gooseneck Clamp



### Standard & Tapped Gooseneck Clamps

| Part Number |        | Bolt Size | A | B     | C     | D     | E     | F      | H    | J      | K    | L     | M     | R      | S*     | T   | Wt. (lbs) |
|-------------|--------|-----------|---|-------|-------|-------|-------|--------|------|--------|------|-------|-------|--------|--------|-----|-----------|
| Standard    | Tapped |           |   |       |       |       |       |        |      |        |      |       |       |        |        |     |           |
| 37211       | 37212  | 5/8       | 4 | 3/4   | 1 5/8 | 11/16 | 1/4   | 1 7/8  | 3/8  | 1 3/16 | 1/2  | 13/16 | 3/4   | 1 7/16 | 5/8-11 | 1/2 | 1.00      |
| 37213       | 37214  | 5/8       | 6 | 7/8   | 1 3/4 | 11/16 | 1     | 2 1/2  | 7/16 | 1 1/4  | 9/16 | 15/16 | 1 1/8 | 1 9/16 | 5/8-11 | 5/8 | 2.00      |
| 37215       | 37216  | 3/4       | 8 | 1 1/8 | 2 1/8 | 13/16 | 1 5/8 | 3 3/16 | 9/16 | 1 1/2  | 3/4  | 1 1/8 | 1 1/4 | 2 1/16 | 5/8-11 | 1   | 4.25      |

\*Applicable to Tapped Clamp Only

| Part Number |        | Bolt Size | A   | B  | C  | D  | E  | F  | H  | J  | K  | L  | M  | R  | S*          | T | Wt. (Kg) |
|-------------|--------|-----------|-----|----|----|----|----|----|----|----|----|----|----|----|-------------|---|----------|
| Standard    | Tapped |           |     |    |    |    |    |    |    |    |    |    |    |    |             |   |          |
| 37211       | 37262  | M16       | 100 | 19 | 41 | 17 | 6  | 48 | 10 | 30 | 13 | 20 | 19 | 37 | M16 x 2.013 |   | .53      |
| 37213       | 37264  | M16       | 150 | 22 | 44 | 17 | 25 | 63 | 11 | 32 | 14 | 24 | 28 | 40 | M16 x 2.016 |   | 1.4      |
| 37215       | 37266  | M20       | 200 | 29 | 54 | 21 | 41 | 81 | 14 | 38 | 19 | 28 | 32 | 52 | M16 x 2.025 |   | 2.3      |

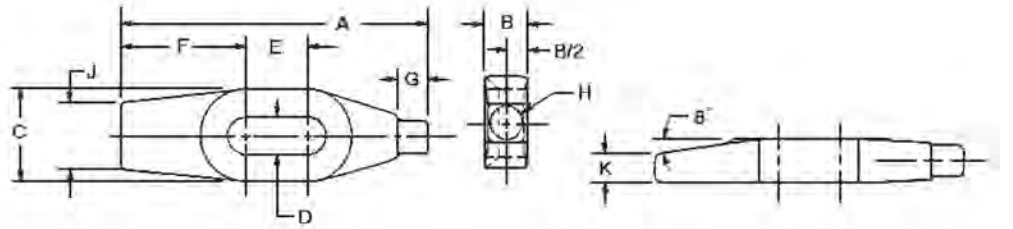
\*Applicable to Tapped Clamp Only

## Forged Strap Clamps

### Finger Clamp



- Material: C-1030 or C-1035



| Part Number | Bolt Size  | A | B     | C     | D     | E     | F       | G   | H   | J      | K    | Wt. (lbs) |
|-------------|------------|---|-------|-------|-------|-------|---------|-----|-----|--------|------|-----------|
| 37221       | 5/8 or M16 | 4 | 3/4   | 1 5/8 | 11/16 | 11/16 | 1 21/32 | 1/2 | 1/2 | 1 3/16 | 7/16 | .75       |
| 37223       | 5/8 or M16 | 6 | 7/8   | 1 3/4 | 11/16 | 1 1/4 | 2 3/8   | 5/8 | 5/8 | 1 1/4  | 1/2  | 1.50      |
| 37225       | 3/4 or M20 | 8 | 1 1/8 | 2 1/8 | 13/16 | 1 3/4 | 3 1/8   | 3/4 | 3/4 | 1 1/2  | 5/8  | 3.00      |

### Metric

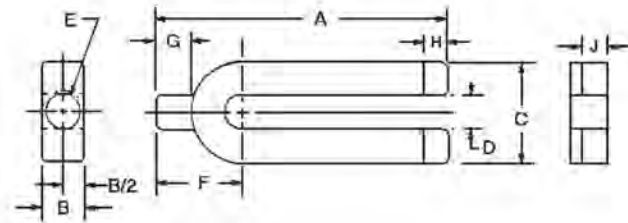
| Part Number | Bolt Size | A   | B  | C  | D  | E  | F  | G  | H  | J  | K  | Wt. (Kg) |
|-------------|-----------|-----|----|----|----|----|----|----|----|----|----|----------|
| 37221       | M16       | 100 | 19 | 41 | 17 | 17 | 42 | 13 | 13 | 30 | 11 | .40      |
| 37223       | M16       | 150 | 22 | 44 | 17 | 32 | 59 | 16 | 16 | 32 | 13 | .81      |
| 37225       | M20       | 200 | 29 | 54 | 21 | 44 | 79 | 19 | 19 | 38 | 16 | 1.6      |

## Forged Strap Clamps

### “U” Clamp



- Material: C-1030 or C-1035



| Part Number | Bolt Size  | A  | B     | C     | D      | E      | F       | G      | H   | J     | Wt. (lbs) |
|-------------|------------|----|-------|-------|--------|--------|---------|--------|-----|-------|-----------|
| 37231       | 5/8 or M16 | 4  | 3/4   | 1 3/4 | 11/16  | 9/16   | 1 7/16  | 9/16   | 1/2 | 1/2   | 1.00      |
| 37232       | 5/8 or M16 | 6  | 7/8   | 2     | 11/16  | 11/16  | 1 11/16 | 11/16  | 5/8 | 9/16  | 2.00      |
| 37233       | 3/4 or M20 | 8  | 1 1/8 | 2 3/8 | 13/16  | 13/16  | 2       | 13/16  | 3/4 | 11/16 | 4.00      |
| 37234       | 7/8 or M24 | 10 | 1 1/4 | 2 3/4 | 15/16  | 15/16  | 2 5/16  | 15/16  | 7/8 | 3/4   | 6.50      |
| 37235       | 1 or M24   | 12 | 1 3/8 | 3 1/4 | 1 1/16 | 1 1/16 | 2 11/16 | 1 1/16 | 1   | 13/16 | 9.00      |

| Part Number | Bolt Size | A   | B  | C  | D  | E  | F  | G  | H  | J  | Wt. (Kg) |
|-------------|-----------|-----|----|----|----|----|----|----|----|----|----------|
| 37231       | M16       | 100 | 19 | 44 | 17 | 14 | 37 | 14 | 13 | 13 | .53      |
| 37232       | M16       | 150 | 22 | 50 | 17 | 17 | 43 | 17 | 16 | 14 | 1.1      |
| 37233       | M20       | 200 | 29 | 59 | 21 | 21 | 50 | 21 | 19 | 17 | 2.2      |
| 37234       | M24       | 250 | 32 | 70 | 24 | 24 | 59 | 24 | 22 | 19 | 3.5      |
| 37235       | M24       | 300 | 35 | 83 | 27 | 27 | 68 | 27 | 25 | 21 | 4.9      |

## Forged Adjustable Clamps



Forged Adjustable Clamps automatically compensate for clamping height changes within their clamping ranges (see chart for ranges). The swivel bushing is permanently mounted in the clamp which alleviates lost or missing parts. The standard brass heel plate protects the machine table.



Forged Adjustable Clamp holding one side of a hydraulic vise on a milling machine table.

- Material: 1137 Forged Steel, Heat Treated
- Finish: Black Oxide
- One Piece Construction
- Versatile Clamping Height
- Made in U.S.A.

*Features high quality forging providing superior clamping strength.*

| Part Number | Bolt Size | Clamping Range | W     | T     | L     | X     | Maximum Torque (ft-lbs) | Max Holding* Force (lbs) | Wt. (lbs) |
|-------------|-----------|----------------|-------|-------|-------|-------|-------------------------|--------------------------|-----------|
| 19101       | 1/2       | 0-2            | 1 3/4 | 1 1/2 | 4 1/4 | 2 1/2 | 90                      | 6800                     | 1.1       |
| 19102       | 5/8       | 0-2 3/8        | 2     | 1 5/8 | 5     | 3     | 180                     | 10600                    | 1.7       |
| 19103       | 3/4       | 0-2 3/4        | 2 1/2 | 1 3/4 | 6 1/4 | 3 3/4 | 300                     | 16000                    | 3.0       |
| 19104       | 7/8       | 0-3 1/2        | 3     | 2 3/8 | 7     | 4 1/4 | 500                     | 21800                    | 5.3       |
| 19104       | 1         | 0-3 1/2        | 3     | 2 3/8 | 7     | 4 1/4 | 760                     | 28600                    | 5.3       |

### Metric

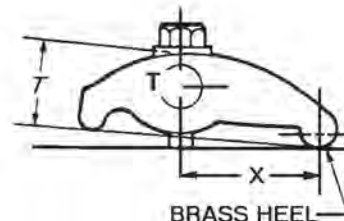
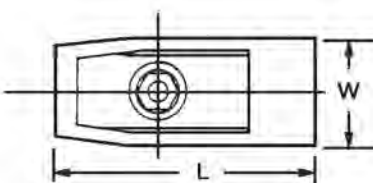
| Part Number | Bolt Size | Clamping Range | W  | T  | L   | X   | Maximum Torque (N.m) | Max Holding* Force (Kgf) | Wt. (Kg) |
|-------------|-----------|----------------|----|----|-----|-----|----------------------|--------------------------|----------|
| 19101       | M12       | 0-50           | 44 | 38 | 108 | 63  | 100                  | 2800                     | 0.60     |
| 19102       | M16       | 0-60           | 50 | 41 | 125 | 75  | 260                  | 5250                     | 0.92     |
| 19103       | M20       | 0-70           | 63 | 44 | 159 | 95  | 500                  | 8250                     | 1.60     |
| 19104       | M24       | 0-89           | 75 | 60 | 175 | 108 | 870                  | 11850                    | 2.90     |

\* Note: Holding forces are based on using Jergens heat treated alloy steel T-slot bolts, Studs, T-nuts and Flange nuts in order at the recommended torque.



### Accessories Available

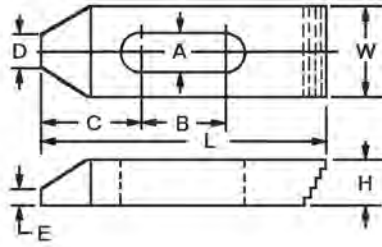
| T-Slot Bolts | Flange Nuts | T-Slot Nuts | Studs     | Washers   |
|--------------|-------------|-------------|-----------|-----------|
| Page 6.27    | Page 6.29   | Page 6.35   | Page 6.24 | Page 6.36 |





## Steel Heel Straps

### Coarse Pitch

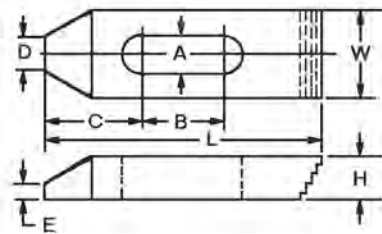


- Material: Low Carbon Steel
- Finish: Black Oxide
- Heat Treat: Case Hardened  
Rockwell 30N 50-54

The step teeth of the Coarse Pitch Steel Heel Straps match the Jergens Aluminum Step Blocks. These straps facilitate easier height adjustments on set-ups.

| Part Number | Bolt Size  | A     | B     | C      | D   | E   | H     | L     | W     | Wt. (lbs) |
|-------------|------------|-------|-------|--------|-----|-----|-------|-------|-------|-----------|
| 46814       | 1/2 or M12 | 17/32 | 1/2   | 1 1/16 | 1/2 | 1/4 | 5/8   | 2 1/2 | 1 1/4 | .46       |
| 46815       | 1/2 or M12 | 17/32 | 1 1/4 | 1 3/16 | 1/2 | 1/4 | 3/4   | 4     | 1 1/4 | .65       |
| 46816       | 1/2 or M12 | 17/32 | 2     | 1 5/16 | 1/2 | 1/4 | 7/8   | 6     | 1 1/4 | .95       |
| 46817       | 5/8 or M16 | 21/32 | 1/2   | 1 3/16 | 5/8 | 1/4 | 5/8   | 3     | 1 1/4 | .66       |
| 46818       | 5/8 or M16 | 21/32 | 1 1/4 | 1 3/16 | 5/8 | 3/8 | 3/4   | 5     | 1 1/2 | .93       |
| 46819       | 5/8 or M16 | 21/32 | 2     | 1 5/16 | 5/8 | 3/8 | 7/8   | 7     | 1 1/2 | 1.36      |
| 46820       | 3/4 or M20 | 25/32 | 3/4   | 1 5/16 | 5/8 | 3/8 | 3/4   | 4     | 1 1/2 | 1.39      |
| 46821       | 3/4 or M20 | 25/32 | 1 1/2 | 1 1/2  | 5/8 | 3/8 | 1     | 6     | 1 1/2 | 1.94      |
| 46822       | 3/4 or M20 | 25/32 | 2 1/4 | 1 5/8  | 5/8 | 3/8 | 1 1/8 | 8     | 1 3/4 | 2.48      |

## Fine Pitch



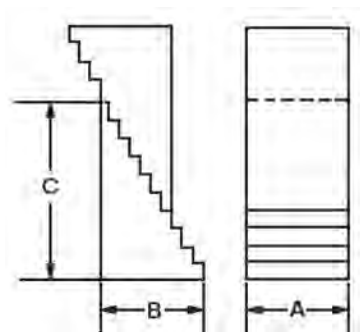
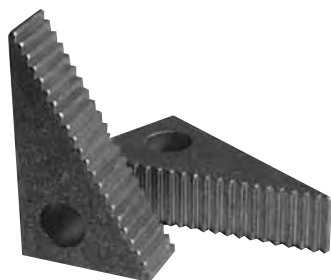
- Material: Low Carbon Steel
- Finish: Black Oxide
- Heat Treat: Case Hardened  
Rockwell 30N 50-54

The step teeth of the Fine Pitch Steel Heel Straps match the Jergens Steel Step Blocks. These straps facilitate easier height adjustment on set-ups.

| Part Number | Bolt Size  | A     | B     | C      | D   | E   | H     | L     | W     | Wt. (lbs) |
|-------------|------------|-------|-------|--------|-----|-----|-------|-------|-------|-----------|
| 46834       | 1/2 or M12 | 9/16  | 1/2   | 1 1/16 | 1/2 | 1/4 | 1/2   | 2 1/2 | 1 1/8 | .46       |
| 46835       | 1/2 or M12 | 9/16  | 1 1/4 | 1 3/16 | 1/2 | 1/4 | 3/4   | 4     | 1 1/4 | .65       |
| 46836       | 1/2 or M12 | 9/16  | 2     | 1 5/16 | 1/2 | 1/4 | 7/8   | 6     | 1 1/4 | .95       |
| 46837       | 5/8 or M16 | 11/16 | 1/2   | 1 3/16 | 5/8 | 1/4 | 5/8   | 2 1/2 | 1 1/4 | .66       |
| 46838       | 5/8 or M16 | 11/16 | 1 1/4 | 1 3/16 | 5/8 | 3/8 | 3/4   | 4     | 1 1/2 | .93       |
| 46839       | 5/8 or M16 | 11/16 | 2     | 1 5/16 | 5/8 | 3/8 | 7/8   | 6     | 1 1/2 | 1.36      |
| 46840       | 3/4 or M20 | 13/16 | 3/4   | 1 5/16 | 5/8 | 3/8 | 3/4   | 4     | 1 1/2 | 1.39      |
| 46841       | 3/4 or M20 | 13/16 | 1 1/2 | 1 1/2  | 5/8 | 3/8 | 1     | 6     | 1 5/8 | 1.94      |
| 46842       | 3/4 or M20 | 13/16 | 2 1/4 | 1 5/8  | 5/8 | 3/8 | 1 1/8 | 8     | 1 3/4 | 2.48      |

## Adjustable Step Blocks

### Aluminum — Coarse Pitch



### 1" & 2" Wide Adjustable Step Block Kits

Step blocks are made of aluminum to prevent damage to machine table surfaces.

Tooth design has no sharp edges which helps to prevent burrs and chip build-up in the steps. Blocks are completely interchangeable with each other, and with the Jergens Coarse Pitch Step Straps.

#### Standard (1" Width) Kit 21701

Included in Kit:

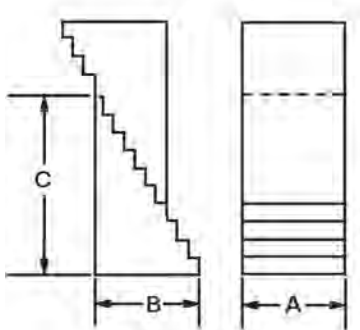
| Qty Per Kit | Part Number (Blocks Only) | A              | B      | C      | Step Elevation | Wt. (lbs) |
|-------------|---------------------------|----------------|--------|--------|----------------|-----------|
| 8           | 21705                     | 1              | 5/8    | 1 1/16 | 11/64          | .03       |
| 8           | 21702                     | 1              | 1      | 1 3/4  | 11/64          | .09       |
| 4           | 21703                     | 1              | 2 3/16 | 3 3/4  | 11/64          | .39       |
| 16          | 21706                     | Protective Pad |        |        | 11/64          | .02       |

#### Heavy Duty (2" Width) Kit 21711

Included in Kit:

| Qty Per Kit | Part Number (Blocks Only) | A              | B      | C      | Step Elevation | Wt. (lbs) |
|-------------|---------------------------|----------------|--------|--------|----------------|-----------|
| 8           | 21712                     | 2              | 5/8    | 1 1/16 | 11/64          | .06       |
| 8           | 21713                     | 2              | 1      | 1 3/4  | 11/64          | .18       |
| 4           | 21714                     | 2              | 2 3/16 | 3 3/4  | 11/64          | .78       |
| 16          | 21715                     | Protective Pad |        |        | 11/64          | .04       |

## Steel — Fine Pitch



#### Adjustable Step Block Kit 21821

Included in Kit:

| Qty Per Kit | Part Number (Blocks Only) | A                       | B      | C     | Step Elevation | Wt. (oz) |
|-------------|---------------------------|-------------------------|--------|-------|----------------|----------|
| 8           | 21831                     | 1                       | 5/8    | 1 1/8 | 3/32           | 2        |
| 8           | 21832                     | 1                       | 1 1/16 | 1 3/4 | 3/32           | 4        |
| 4           | 21833                     | 1                       | 2 3/8  | 3 7/8 | 3/32           | 14       |
| 16          | 21706                     | Protective Aluminum Pad |        |       |                |          |

Step Blocks sold individually.

### Adjustable Step Block Kit

Blocks are completely interchangeable with each other, and with the Jergens Fine Pitch Step Straps.

## 60-Piece Set-Up Kits

### Aluminum Step Blocks

Each 60-Piece Set-Up Kit is supplied with either a non-marring wooden base or a heavy duty steel holder. Tooth design has no sharp edges, which helps to prevent burrs and chips from building up on the steps. The aluminum blocks will not mar precision machine tables.

#### Each Set-Up-Kit Includes:

- Six Table Saver T-Nuts
- Six Flange Nuts
- Six Step Heel Straps
- Four Coupling Nuts
- Twenty-four Studs:  
Four each of 3", 4", 5", 6" 7", 8" lengths
- Twelve Course Pitch Aluminum Step Blocks
- One T-Slot Cleaner
- One Metal Holder



Kit with Metal Holder

| Part Number<br>Metal<br>Holder | Stud<br>T-Slot<br>Width | Thread<br>Size | Strap<br>Lengths | Wt<br>(lbs) |
|--------------------------------|-------------------------|----------------|------------------|-------------|
| 45105                          | 9/16                    | 1/2-13         | 2 1/2, 4, 6      | 20          |
| 45106                          | 5/8                     | 1/2-13         | 2 1/2, 4, 6      | 20          |
| 45104                          | 11/16                   | 1/2-13         | 2 1/2, 4, 6      | 20          |
| 45108                          | 11/16                   | 5/8-11         | 3, 5, 7          | 30          |
| 45109                          | 3/4                     | 5/8-11         | 3, 5, 7          | 30          |
| 45107                          | 13/16                   | 5/8-11         | 3, 5, 7          | 30          |

Metal kit holders are also sold separately.  
Same holder used for both kits.

| 1/2" Metal Holder | 5/8" Metal Holder |
|-------------------|-------------------|
| 45116             | 45117             |

## 60-Piece Set-Up Kits

### Steel Step Blocks

Each 60-Piece Set-Up Kit is supplied with either a non-marring wooden base or a heavy duty steel holder. The fine pitch steel blocks are compatible with other standard step blocks and straps.

NOTE: The fine pitch blocks are not compatible with the Jergens course pitch aluminum blocks.

#### Each Set-Up Kit Includes:

- Six Table Saver T-Nuts
- Six Flange Nuts
- Six Step Heel Straps
- Four Coupling Nuts
- Twenty-four Studs:  
Four each 3", 4", 5", 6", 7", 8" lengths
- Twelve Fine Pitch Steel Step Blocks
- One Metal Holder

| Part Number<br>Metal<br>Holder | Stud<br>T-Slot<br>Width | Thread<br>Size | Strap<br>Lengths | Wt.<br>(lbs) |
|--------------------------------|-------------------------|----------------|------------------|--------------|
| 45205                          | 9/16                    | 1/2-13         | 2 1/2, 4, 6      | 20           |
| 45206                          | 5/8                     | 1/2-13         | 2 1/2, 4, 6      | 20           |
| 45204                          | 11/16                   | 1/2-13         | 2 1/2, 4, 6      | 20           |
| 45208                          | 11/16                   | 5/8-11         | 2 1/2, 4, 6      | 30           |
| 45209                          | 3/4                     | 5/8-11         | 2 1/2, 4, 6      | 30           |
| 45207                          | 13/16                   | 5/8-11         | 2 1/2, 4, 6      | 30           |

## 40-Piece Clamping Kit



### Each Clamping Kit Includes:

- Four Table Saver T-Nuts
- Twenty Studs:  
Four Each 4", 5", 6", 7", 8" lengths
- Four Adjustable Clamp Heels
- Four Flange Nuts
- Four Coupling Nuts
- Four Taper Nose Straps
- One T-Slot Cleaner
- One Wooden Holder (†)

Contains the same quality components as the larger kits but without the step blocks and step heel straps. This Clamping Kit includes taper nose straps, T-nuts, coupling nuts, flange nuts, clamping heels and studs.

| Part Number    | T-Slot Width | Stud Thread Size | Strap Clamp     | Adjustable Clamp Heel | Wt. (lbs) |
|----------------|--------------|------------------|-----------------|-----------------------|-----------|
| <b>45022 †</b> | 7/16*        | 3/8-16           | 5/8 x 1 1/4 x 5 | 3/8-16 x 3            | 12        |
| <b>45023 †</b> | 1/2          | 3/8-16           | 5/8 x 1 1/4 x 5 | 3/8-16 x 3            | 12        |
| <b>45021</b>   | 9/16         | 3/8-16           | 5/8 x 1 1/4 x 5 | 3/8-16 x 3            | 12        |
| <b>45025</b>   | 9/16*        | 1/2-13           | 7/8 x 1 1/4 x 6 | 1/2-13 x 4            | 20        |
| <b>45026</b>   | 5/8          | 1/2-13           | 7/8 x 1 1/4 x 6 | 1/2-13 x 4            | 20        |
| <b>45024</b>   | 11/16        | 1/2-13           | 7/8 x 1 1/4 x 6 | 1/2-13 x 4            | 20        |
| <b>45028 †</b> | 11/16*       | 5/8-11           | 7/8 x 1 1/2 x 7 | 5/8-11 x 5            | 30        |
| <b>45029 †</b> | 3/4          | 5/8-11           | 7/8 x 1 1/2 x 7 | 5/8-11 x 5            | 30        |
| <b>45027 †</b> | 13/16        | 5/8-11           | 7/8 x 1 1/2 x 7 | 5/8-11 x 5            | 30        |
| <b>45031</b>   | 13/16*       | 3/4-10           | 1 x 1 1/2 x 6   | 3/4-10 x 6            | 40        |
| <b>45032</b>   | 7/8          | 3/4-10           | 1 x 1 1/2 x 6   | 3/4-10 x 6            | 40        |
| <b>45030</b>   | 1 1/16       | 3/4-10           | 1 x 1 1/2 x 6   | 3/4-10 x 6            | 40        |

\*T-Nuts not hardened due to thin wall.

† Includes Wood Holder.

## Die Set-Up Kits



These Die Set-Up Kits can be used with any of the Jergens heavy duty straps; however, the kits are best suited **for use with forged strap clamps** found on page 6.51 thru 6.53.

### Each Kit includes:

- Four Flange Nuts
- Four Heavy Duty Washers
- Twelve Steel Step Blocks
- Twenty Studs
- One Wooden Holder

| Thread Size | Part Number  | Stud Lengths   |
|-------------|--------------|----------------|
| 1/2-13      | <b>44921</b> | 3, 4, 5, 6, 8  |
| 5/8-11      | <b>44922</b> | 3, 4, 5, 6, 8  |
| 3/4-10      | <b>44923</b> | 4, 5, 6, 8, 10 |

## Toe Clamps

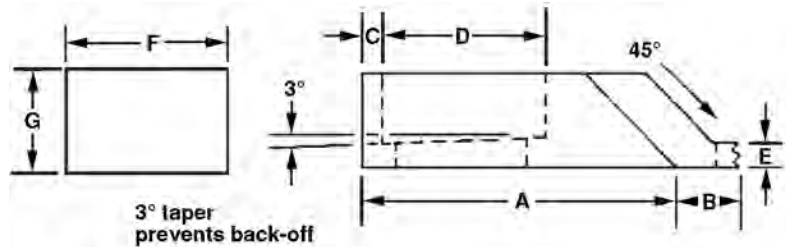
### Small



#### Jergens Feature:

**3° Taper Prevents Back-off**

Toe Clamps are powerful, low profile clamps that grip on the side of the workpiece leaving the top surface open. This minimizes interference with cutting tools or measuring instruments. Ideal for use on mills, planers, jig borers, drill presses, and faceplates.



- Steel or brass toe and special washer are included with each clamp
- Slotted for 5/16 or M8 Cap Screws
- Case hardened for maximum wear
- Black Oxide finish

| Part Number | Toe Material | Toe Style | A     | B   | C    | D     | E   | F | G   | Wt. (lbs) | Toe Only |
|-------------|--------------|-----------|-------|-----|------|-------|-----|---|-----|-----------|----------|
| 46921       | STEEL        | STANDARD  | 1 1/2 | 1/2 | 1/16 | 3/4   | 1/8 | 1 | 5/8 | .24       | 46952    |
| 46961       | BRASS        | STANDARD  | 1 1/2 | 1/2 | 1/16 | 3/4   | 1/8 | 1 | 5/8 | .24       | 46946    |
| 46971       | STEEL        | HIGH GRIP | 1 1/2 | 1/2 | 1/16 | 3/4   | 5/8 | 1 | 5/8 | .26       | 46948    |
| 46981       | BRASS        | HIGH GRIP | 1 1/2 | 1/2 | 1/16 | 3/4   | 5/8 | 1 | 5/8 | .26       | 46950    |
| 46922       | STEEL        | STANDARD  | 2     | 1/2 | 1/16 | 1 1/4 | 1/8 | 1 | 5/8 | .30       | 46952    |
| 46962       | BRASS        | STANDARD  | 2     | 1/2 | 1/16 | 1 1/4 | 1/8 | 1 | 5/8 | .30       | 46946    |
| 46972       | STEEL        | HIGH GRIP | 2     | 1/2 | 1/16 | 1 1/4 | 5/8 | 1 | 5/8 | .32       | 46948    |
| 46982       | BRASS        | HIGH GRIP | 2     | 1/2 | 1/16 | 1 1/4 | 5/8 | 1 | 5/8 | .32       | 46950    |
| 46923       | STEEL        | STANDARD  | 2 1/2 | 1/2 | 1/16 | 1 3/4 | 1/8 | 1 | 5/8 | .35       | 46952    |
| 46963       | BRASS        | STANDARD  | 2 1/2 | 1/2 | 1/16 | 1 3/4 | 1/8 | 1 | 5/8 | .35       | 46946    |
| 46973       | STEEL        | HIGH GRIP | 2 1/2 | 1/2 | 1/16 | 1 3/4 | 5/8 | 1 | 5/8 | .37       | 46948    |
| 46983       | BRASS        | HIGH GRIP | 2 1/2 | 1/2 | 1/16 | 1 3/4 | 5/8 | 1 | 5/8 | .37       | 46950    |

\* Replacement Parts available, contact customer service.

## Small Toe Clamp Kits



#### Each Clamp Kit Includes:

- Six Toe Clamps: Two of each length (1 1/2", 2", 2 1/2")
- Six Low Grip Steel Toes
- Six Toe Clamp Nuts
- Six Protective Washers
- One T-Wrench
- One Wooden Holder

| Part Number | Table Slot | Toe Clamps          | Toe Clamp Nuts | Washers | lbs Per Kit |
|-------------|------------|---------------------|----------------|---------|-------------|
| 44901       | 3/8        | 46921, 46922, 46923 | 46931          | 46942   | 3           |
| 44902       | 7/16       | 46921, 46922, 46923 | 46932          | 46942   | 3           |
| 44903       | 1/2        | 46921, 46922, 46923 | 46933          | 46942   | 3           |
| 44904       | 9/16       | 46921, 46922, 46923 | 46934          | 46942   | 3           |
| 44905       | 5/8        | 46921, 46922, 46923 | 46935          | 46942   | 3           |

Slotted for 5/16" or M8 Socket Head Cap Screws

\* Replacement Parts available, contact customer service.

## Toe Clamps

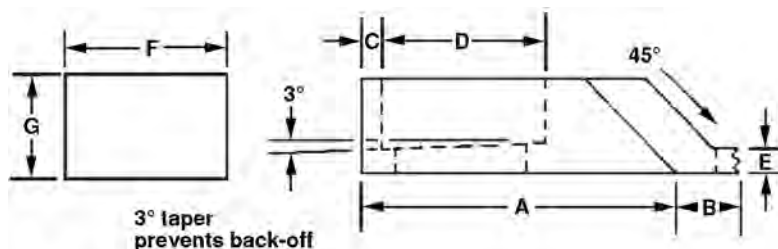


### Jergens Feature:

#### 3° Taper Prevents Back-off

Toe Clamps are powerful, low profile clamps that grip on the side of the workpiece leaving the top surface open. This minimizes interference with cutting tools or measuring instruments. Ideal for use on mills, planers, jig borers, drill presses, and faceplates.

- Steel or brass toe and special washer are included with each clamp.
- Slotted for 1/2" or M12 Cap Screws
- Low Carbon Steel hardened for maximum wear
- Black Oxide finish



| Part Number | Toe Material | Toe Style | A       | B     | C   | D     | E   | F     | G   | Wt. (lbs) | Toe Only |
|-------------|--------------|-----------|---------|-------|-----|-------|-----|-------|-----|-----------|----------|
| 46926       | STEEL        | STANDARD  | 3 1/4   | 13/16 | 1/8 | 2     | 1/4 | 1 1/2 | 7/8 | 1.0       | 46953    |
| 46966       | BRASS        | STANDARD  | 3 1/4   | 13/16 | 1/8 | 2     | 1/4 | 1 1/2 | 7/8 | 1.0       | 46947    |
| 46976       | STEEL        | HIGH GRIP | 3 1/4   | 13/16 | 1/8 | 2     | 7/8 | 1 1/2 | 7/8 | 1.3       | 46949    |
| 46986       | BRASS        | HIGH GRIP | 3 1/4   | 13/16 | 1/8 | 2     | 7/8 | 1 1/2 | 7/8 | 1.3       | 46951    |
| 46927       | STEEL        | STANDARD  | 4 11/16 | 13/16 | 1/2 | 2 3/4 | 1/4 | 1 1/2 | 7/8 | 1.4       | 46953    |
| 46967       | BRASS        | STANDARD  | 4 11/16 | 13/16 | 1/2 | 2 3/4 | 1/4 | 1 1/2 | 7/8 | 1.4       | 46947    |
| 46977       | STEEL        | HIGH GRIP | 4 11/16 | 13/16 | 1/2 | 2 3/4 | 7/8 | 1 1/2 | 7/8 | 1.7       | 46949    |
| 46987       | BRASS        | HIGH GRIP | 4 11/16 | 13/16 | 1/2 | 2 3/4 | 7/8 | 1 1/2 | 7/8 | 1.7       | 46951    |
| 46928       | STEEL        | STANDARD  | 6 5/8   | 13/16 | 1   | 3 3/4 | 1/4 | 1 1/2 | 7/8 | 2.0       | 46953    |
| 46968       | BRASS        | STANDARD  | 6 5/8   | 13/16 | 1   | 3 3/4 | 1/4 | 1 1/2 | 7/8 | 2.0       | 46947    |
| 46978       | STEEL        | HIGH GRIP | 6 5/8   | 13/16 | 1   | 3 3/4 | 7/8 | 1 1/2 | 7/8 | 2.3       | 46949    |
| 46988       | BRASS        | HIGH GRIP | 6 5/8   | 13/16 | 1   | 3 3/4 | 7/8 | 1 1/2 | 7/8 | 2.3       | 46951    |

\* 5/8 or M16 Cap Screw Slot and replacement parts available, contact customer service.

## Large Toe Clamp Kits



### Each Clamp Kit Contains:

- Six Toe Clamps: Two of each length (3 1/4", 4 11/16", 6 5/8")
- Four Low Grip Steel Toes
- Six Toe Clamp Nuts
- Six Protective Washers
- One T-Wrench
- One Wooden Holder

| Part Number | Table Slot | Toe Clamps          | Toe Clamp Nuts | Washers | lbs Per Kit |
|-------------|------------|---------------------|----------------|---------|-------------|
| 44906       | 9/16       | 46926, 46927, 46928 | 46936          | 46943   | 11          |
| 44907       | 5/8        | 46926, 46927, 46928 | 46937          | 46943   | 12          |
| 44909       | 11/16      | 46926, 46927, 46928 | 46938          | 46943   | 12          |
| 44910       | 13/16      | 46926, 46927, 46928 | 46939          | 46943   | 13          |
| 44911       | 7/8        | 46926, 46927, 46928 | 46940          | 46943   | 14          |
| 44912       | 1          | 46926, 46927, 46928 | 46941          | 46943   | 15          |

Slotted for 1/2" or M12 Socket Head Cap Screws

\* 5/8 or M16 Cap Screw Slotted Kits and replacement parts available, contact customer service.



## Lo-Profile Micro™ Clamps



**Problem:** You require a clamping device which can grip low on a work piece, has exceptional horizontal *and* vertical holding force, and can be mounted below the fixture plate surface.

**Solution:** Jergens new Lo-Profile Micro clamps are the answer!

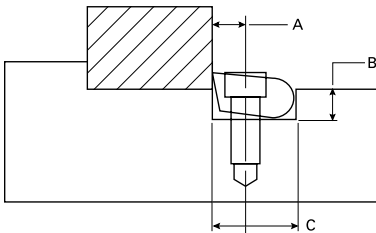
### Material:

- Available in tool steel or brass
- Extraordinary horizontal and vertical force
- Extremely low profile
- Very small foot print
- High resistance to pull-out
- Choose among three sizes with inch or metric screws
- Knife and blunt edge styles

### Lo-Profile Micro™ Clamps

| Part Number | Type                   | A    | B    | C    | Screw Size | Max.* Holding Force (lbs) | Travel (in) | Torque (in lbs) | Clamps Per Package |
|-------------|------------------------|------|------|------|------------|---------------------------|-------------|-----------------|--------------------|
| 13201       | Tool Steel, Knife Edge | .150 | .140 | .375 | 4-40       | 650                       | .0075       | 16              | 8                  |
| 13202       | Tool Steel, Blunt Edge | .150 | .140 | .375 | 4-40       | 650                       | .0075       | 16              | 8                  |
| 13203       | Brass, Blunt Edge      | .150 | .140 | .375 | 4-40       | 200                       | .0075       | 5               | 8                  |
| 13211       | Tool Steel, Knife Edge | .200 | .187 | .500 | 8-32       | 1500                      | .016        | 50              | 8                  |
| 13212       | Tool Steel, Blunt Edge | .200 | .187 | .500 | 8-32       | 1500                      | .016        | 50              | 8                  |
| 13213       | Brass, Blunt Edge      | .200 | .187 | .500 | 8-32       | 400                       | .016        | 25              | 8                  |
| 13221       | Tool Steel, Knife Edge | .300 | .280 | .750 | 1/4-20     | 3600                      | .024        | 200             | 6                  |
| 13222       | Tool Steel, Blunt Edge | .300 | .280 | .750 | 1/4-20     | 3600                      | .024        | 200             | 6                  |
| 13223       | Brass, Blunt Edge      | .300 | .280 | .750 | 1/4-20     | 950                       | .024        | 50              | 6                  |

\* Combination horizontal and vertical force.

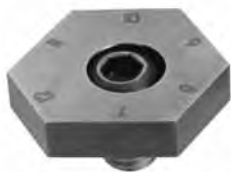


### Metric Lo-Profile Micro™ Clamps

| Part Number | Type                   | A    | B    | C     | Screw Size | Max.* Holding Force (N) | Travel (mm) | Torque (N•m) | Clamps Per Packages |
|-------------|------------------------|------|------|-------|------------|-------------------------|-------------|--------------|---------------------|
| 13251       | Tool Steel, Knife Edge | 3.81 | 3.55 | 9.52  | M2.5 x .45 | 2,800                   | .190        | 1.8          | 8                   |
| 13252       | Tool Steel, Blunt Edge | 3.81 | 3.55 | 9.52  | M2.5 x .45 | 2,800                   | .190        | 1.8          | 8                   |
| 13253       | Brass, Blunt Edge      | 3.81 | 3.55 | 9.52  | M2.5 x .45 | 875                     | .190        | 0.6          | 8                   |
| 13261       | Tool Steel, Knife Edge | 5.08 | 4.75 | 12.70 | M4 x .70   | 6,600                   | .406        | 5.6          | 8                   |
| 13262       | Tool Steel, Blunt Edge | 5.08 | 4.75 | 12.70 | M4 x .70   | 6,600                   | .406        | 5.6          | 8                   |
| 13263       | Brass, Blunt Edge      | 5.08 | 4.75 | 12.70 | M4 x .70   | 1,750                   | .406        | 2.8          | 8                   |
| 13271       | Tool Steel, Knife Edge | 7.62 | 7.11 | 19.05 | M6 x 1.0   | 16,000                  | .610        | 22.5         | 6                   |
| 13272       | Tool Steel, Blunt Edge | 7.62 | 7.11 | 19.05 | M6 x 1.0   | 16,000                  | .610        | 22.5         | 6                   |
| 13273       | Brass, Blunt Edge      | 7.62 | 7.11 | 19.05 | M6 x 1.0   | 4,200                   | .610        | 5.6          | 6                   |

\* Combination horizontal and vertical force.

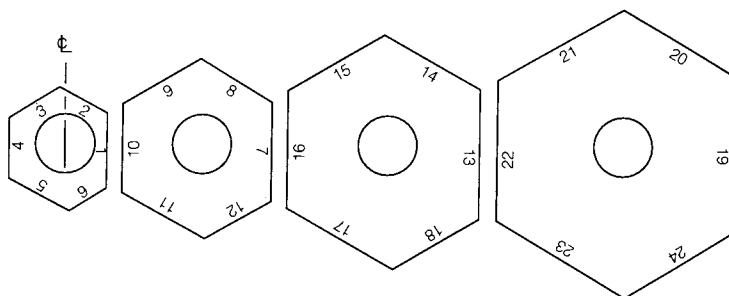
## Adjustable Micro™ Clamps



Measured from the centerline, each face of these low profile clamps increases 1mm (.0394) from the smallest to the largest face.

Adjustable Micro Clamps decrease design and set-up times for modular fixtures, work cubes, and standard fixtures. Without changing hole locations, clamping range from 12mm to 35mm can be achieved.

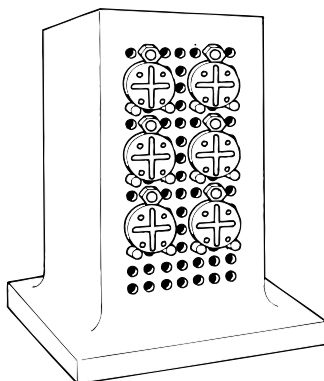
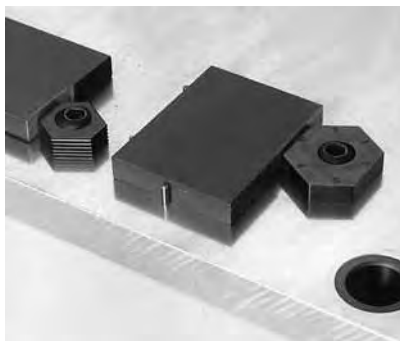
The clamps are available with either smooth or serrated faces which make them ideal for clamping machined parts, castings, and rough cut stock. The clamps work with a cam action, always following the contour of the workpiece for maximum surface contact.



- Cam action
- Low profile
- Available in four sizes
- Heat treated and plated
- Serrated or smooth edges
- Adjustable clamps and stops
- Includes Cam Screw

| Face # | Distance From Center Line | Face # | Distance From Center Line | Face # | Distance From Center Line | Face # | Distance From Center Line |
|--------|---------------------------|--------|---------------------------|--------|---------------------------|--------|---------------------------|
| 1      | .....12mm (.4724)         | 7      | .....18mm (.7086)         | 13     | .....24mm (.9449)         | 19     | .....30mm (1.1811)        |
| 2      | .....13mm (.5118)         | 8      | .....19mm (.7480)         | 14     | .....25mm (.9842)         | 20     | .....31mm (1.2205)        |
| 3      | .....14mm (.5512)         | 9      | .....20mm (.7874)         | 15     | .....26mm (1.0236)        | 21     | .....32mm (1.2598)        |
| 4      | .....15mm (.5906)         | 10     | .....21mm (.8268)         | 16     | .....27mm (1.0630)        | 22     | .....33mm (1.2992)        |
| 5      | .....16mm (.6299)         | 11     | .....22mm (.8661)         | 17     | .....28mm (1.1024)        | 23     | .....34mm (1.3386)        |
| 6      | .....17mm (.6693)         | 12     | .....23mm (.9055)         | 18     | .....29mm (1.1417)        | 24     | .....35mm (1.3780)        |

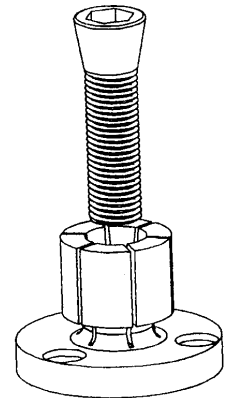
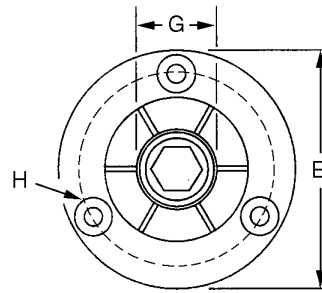
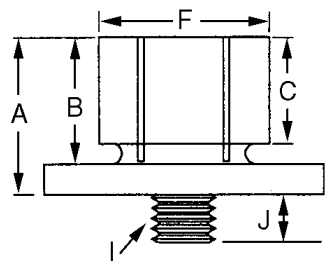
Locking Screw is 1/2-13 for inch sizes and 12M for metric sizes; total distance of movement is .100".



| Inch Part Number | Metric Part Number | Description    |
|------------------|--------------------|----------------|
| 68601            | 68651              | 1-6 smooth     |
| 68602            | 68652              | 7-12 smooth    |
| 68603            | 68653              | 13-18 smooth   |
| 68604            | 68654              | 19-24 smooth   |
| 68611            | 68661              | 1-6 serrated   |
| 68612            | 68662              | 7-12 serrated  |
| 68613            | 68663              | 13-18 serrated |
| 68614            | 68664              | 19-24 serrated |

All clamps include a cam screw. Clamps are 10mm (.394) thick.

## ID Expansion Clamp



The ID expansion clamp is the ideal way to hold parts on an inside diameter for multiple machining on a vertical or horizontal machining center.

The larger diameter of the clamp is held to a close tolerance for precision locating in a machined pocket on work cubes and fixture plates.

The customer machines the mild steel clamp to match the bore of the part ensuring proper fit. Often times the clamps can be remachined for different size jobs.

- Body Material: Mild Steel
- Low Profile
- Ideal for Secondary Operations on Lathe Parts
- Easily Machined to Size on Lathe or Mill
- Excellent for Palletized Setups
- Allows More Parts Per Workcube or Fixture Plate
- Tighten with Hex Key or Hydraulic Pull Cylinders (Drill clearance hole for longer bolt into hydraulic cylinder)
- Instructions included with each clamp



| Part Number | A    | B    | C    | D   | +0.00<br>-0.002<br>E | F    | G*   | H*                  | I       | J   | Wt.<br>(lbs) |
|-------------|------|------|------|-----|----------------------|------|------|---------------------|---------|-----|--------------|
| 68401       | .42  | .30  | .24  | .12 | .787                 | .29  | .16  | 2-56 on .540 BHC    | 2-56    | .16 | .03          |
| 68402       | .86  | .63  | .59  | .23 | 1.170                | .49  | .28  | 6-32 on .825 BHC    | 8-32    | .30 | .11          |
| 68403       | .98  | .75  | .59  | .23 | 1.240                | .56  | .48  | 6-32 on .910 BHC    | 1/4-20  | .50 | .14          |
| 68404       | .98  | .75  | .59  | .23 | 1.476                | .79  | .53  | 6-32 on 1.140 BHC   | 5/16-18 | .56 | .22          |
| 68405       | 1.13 | .88  | .69  | .25 | 1.968                | 1.06 | .71  | 8-32 on 1.550 BHC   | 3/8-16  | .71 | .45          |
| 68406       | 1.25 | 1.0  | .81  | .25 | 2.205                | 1.39 | .90  | 8-32 on 1.790 BHC   | 1/2-13  | .71 | .67          |
| 68407       | 1.56 | 1.25 | 1.06 | .31 | 2.736                | 1.65 | 1.15 | 10-32 on 2.200 BHC  | 5/8-11  | .79 | 1.34         |
| 68408       | 1.56 | 1.25 | 1.06 | .31 | 2.972                | 2.03 | 1.15 | 10-32 on 2.515 BHC  | 5/8-11  | .79 | 1.78         |
| 68409       | 1.79 | 1.48 | 1.27 | .31 | 4.232                | 3.06 | 1.15 | 1/4-20 on 3.646 BHC | 5/8-11  | .79 | 4.05         |
| 68410       | 1.79 | 1.48 | 1.27 | .31 | 5.232                | 4.06 | 1.15 | 1/4-20 on 4.648 BHC | 5/8-11  | .79 | 6.65         |

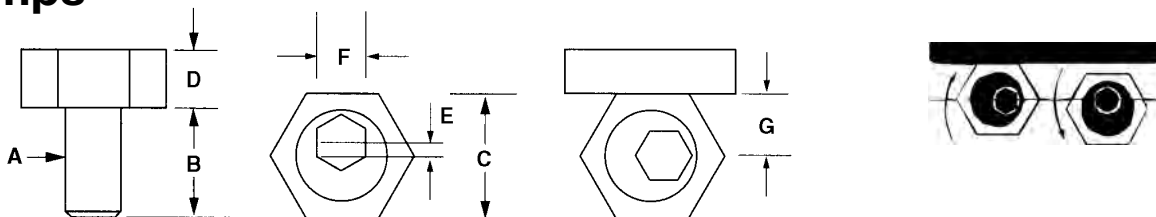
### Metric

| Part Number | A    | B    | C    | D   | +0.00<br>-0.05<br>E | F    | G*   | H*              | I   | J    | Wt.<br>(kg) |
|-------------|------|------|------|-----|---------------------|------|------|-----------------|-----|------|-------------|
| 68829       | 10.7 | 7.6  | 6.1  | 3.0 | 20.0                | 7.4  | 4.1  | M2 on 13.7 BHC  | M2  | 4.1  | .24         |
| 68830       | 21.8 | 16.0 | 15.0 | 5.9 | 29.72               | 12.4 | 8.0  | M3 on 20.95 BHC | M4  | 7.2  | .24         |
| 68831       | 24.9 | 19.0 | 15.0 | 5.9 | 31.5                | 14.2 | 12.2 | M3 on 23.1 BHC  | M6  | 11.2 | .31         |
| 68832       | 24.9 | 19.0 | 15.0 | 5.9 | 37.5                | 20.0 | 13.5 | M3 on 29.0 BHC  | M8  | 13.2 | .48         |
| 68833       | 28.6 | 22.2 | 17.5 | 6.4 | 50.0                | 27.0 | 18.0 | M4 on 39.4 BHC  | M10 | 16.3 | .92         |
| 68834       | 31.8 | 25.4 | 20.6 | 6.4 | 56.0                | 35.3 | 23.0 | M4 on 45.5 BHC  | M12 | 20.3 | 1.45        |
| 68835       | 39.6 | 31.8 | 27.0 | 7.9 | 69.5                | 42.0 | 29.3 | M5 on 55.9 BHC  | M16 | 21.4 | 3.92        |
| 68836       | 39.6 | 31.8 | 27.0 | 7.9 | 75.5                | 51.5 | 29.3 | M5 on 63.9 BHC  | M16 | 21.4 | 3.63        |
| 68837       | 45.5 | 37.6 | 32.3 | 7.9 | 107.5               | 77.7 | 29.3 | M6 on 92.6 BHC  | M16 | 19.3 | 8.91        |

\* (3) Mounting Screws Included

\* Minimum diameter the "F" dimension can be machined too.

## Micro™ Clamps



Jergens Micro Clamps feature both high hold down forces and low profiles, which makes them ideal for building fixtures on Ball Lock® fixturing plates. Two simple components make them work: a hardened steel socket cap screw with an offset head and a hexagonal washer. A half turn tightens or loosens the workpiece.

- Low profile makes computer programming easier
- Cam action provides fast, strong clamping
- Small size allows more parts per load
- Requires only a tapped hole in your fixture
- Available in stainless steel
- Note clockwise rotation recommended workpiece stop should be on the right of the Clamp.

| Part Number Steel | Part Number Stainless | A       | B     | C     | D    | Total Distance of Measurement E | Key Size F | G*   | Maximum Holding Force (lbs) |
|-------------------|-----------------------|---------|-------|-------|------|---------------------------------|------------|------|-----------------------------|
| 68501             | —                     | 8-32    | .350  | .312  | .110 | .030                            | 5/64       | .150 | 205                         |
| 68502             | —                     | 10-32   | .340  | .500  | .160 | .040                            | 3/32       | .250 | 350                         |
| 68503             | 68513                 | 1/4-20  | .470  | .625  | .190 | .040                            | 1/8        | .308 | 800                         |
| 68505             | —                     | 5/16-24 | .460  | .812  | .190 | .040                            | 3/16       | .400 | 750                         |
| 68506             | 68515                 | 5/16-18 | .460  | .812  | .190 | .040                            | 3/16       | .400 | 750                         |
| 68507             | —                     | 3/8-16  | .710  | .812  | .250 | .050                            | 3/16       | .400 | 2,000                       |
| 68509             | —                     | 1/2-13  | .900  | 1.000 | .375 | .100                            | 5/16       | .500 | 4,000                       |
| 68511             | —                     | 5/8-11  | 1.125 | 1.187 | .500 | .100                            | 3/8        | .590 | 6,000                       |

\* This measurement is the correct location to drill and tap the hole from the edge of the work piece.

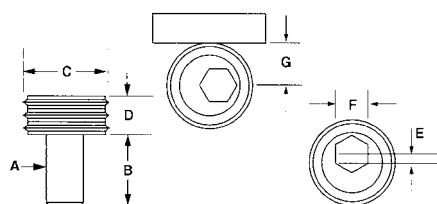
### Metric

| Part Number Steel | Part Number Stainless | A        | B    | C     | D     | Total Distance of Measurement E | Key Size F | G*    | Maximum Holding Force (N) |
|-------------------|-----------------------|----------|------|-------|-------|---------------------------------|------------|-------|---------------------------|
| 68571             | —                     | M4x0.7   | 9.6  | 7.93  | 2.8   | .76                             | 3          | 3.8   | 910                       |
| 68572             | 68551                 | M6x1.0   | 11.2 | 15.86 | 4.75  | 1.01                            | 4          | 7.8   | 3,558                     |
| 68573             | 68553                 | M8x1.25  | 15.0 | 20.61 | 4.75  | 1.01                            | 5          | 10.15 | 3,355                     |
| 68574             | —                     | M10x1.5  | 19.0 | 20.61 | 6.35  | 1.52                            | 7          | 10.15 | 8,895                     |
| 68575             | —                     | M12x1.75 | 22.8 | 25.38 | 9.52  | 2.03                            | 8          | 12.7  | 17,790                    |
| 68576             | —                     | M16x2.0  | 28.5 | 30.13 | 12.69 | 2.54                            | 12         | 15.0  | 26,680                    |

\* This measurement is the correct location to drill and tap the hole from the edge of the work piece.

Replacement Screws available, contact customer service for more information.

## Knife Edge Clamps



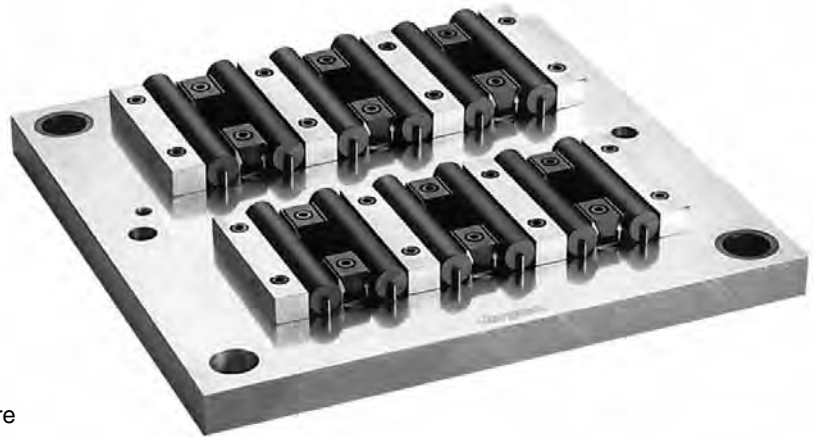
Knife edge clamps can be used for clamping rough cut stock, castings, or any material that requires a hardened clamping element. Hardened steel, brass-plated.

Replacement Screws available, contact customer service for more information.

| Part Number | A      | B     | C     | D     | E     | F    | G*    | Torque (ft. lbs) | Max. Holding Force (lbs) |
|-------------|--------|-------|-------|-------|-------|------|-------|------------------|--------------------------|
| 68547       | 3/8-16 | 0.710 | 0.812 | 0.250 | 0.050 | 3/16 | 0.400 | 16.6             | 2,000                    |
| 68548       | 1/2-13 | 0.900 | 1.000 | 0.375 | 0.100 | 5/16 | 0.500 | 52.0             | 4,000                    |
| 68549       | 5/8-11 | 1.125 | 1.187 | 0.500 | 0.100 | 3/8  | 0.590 | 80.0             | 6,000                    |
| Metric      |        |       |       |       |       |      |       | (Nm)             | (N)                      |
| 68840       | M10    | 19.0  | 1.52  | 20.60 | 6.35  | 7M   | 10.15 | 28               | 8,895                    |
| 68841       | M12    | 22.8  | 2.03  | 25.40 | 9.52  | 8M   | 12.70 | 88               | 17,790                   |
| 68842       | M16    | 28.5  | 2.54  | 30.15 | 12.70 | 12M  | 15.00 | 135              | 26,680                   |

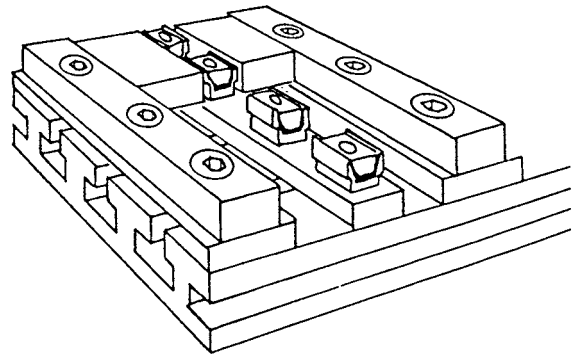
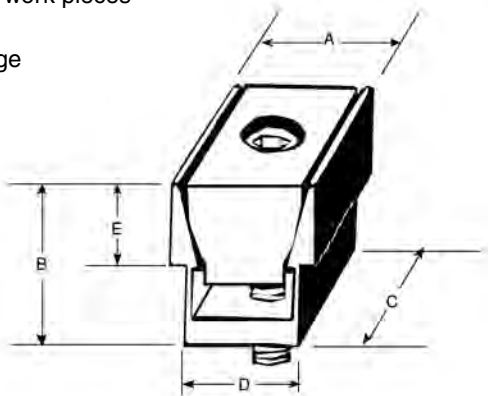
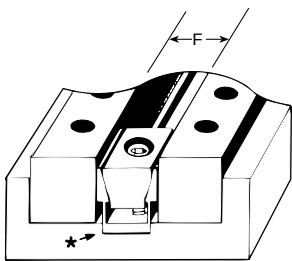
\* This measurement is the correct location to drill and tap the hole from the edge of the work piece.

## Expanding Micro™ Clamps



Jergens Expanding Micro Clamps allow you to fixture more parts on your fixture plates. The unique expanding design can hold two parts at once when used with a positive stop.

- Minimizes tool changes
- Holds two parts with equilateral clamping action
- Ideal for clamping flat or round work pieces
- Reduces wasted space
- Aluminum Housing, Steel Wedge



\*A shallow slot, a little wider than D dimension, will insure clamp remains in line with workpiece.

| Part Number | A     | B    | C     | D*    | E     | F     | Thread Size | Maximum Spread | Maximum Holding Force (lbs) | Key Size |
|-------------|-------|------|-------|-------|-------|-------|-------------|----------------|-----------------------------|----------|
| 68706       | .240  | .250 | .320  | .210  | .100  | .250  | 2-56        | .265           | 200                         | 5/64     |
| 68707       | .360  | .380 | .470  | .310  | .185  | .375  | 4-40        | .395           | 310                         | 3/32     |
| 68701       | .485  | .500 | .625  | .410  | .220  | .500  | 8-32        | .540           | 500                         | 9/64     |
| 68702       | .735  | .750 | .940  | .632  | .375  | .750  | 1/4-20      | .800           | 1500                        | 3/16     |
| 68703       | .980  | 1.00 | 1.250 | .820  | .500  | 1.000 | 5/16-18     | 1.060          | 2000                        | 1/4      |
| 68704       | 1.470 | 1.50 | 1.875 | 1.215 | .750  | 1.500 | 1/2-13      | 1.590          | 3500                        | 3/8      |
| 68705       | 1.960 | 2.00 | 2.500 | 1.625 | 1.000 | 2.000 | 5/8-11      | 2.100          | 6000                        | 1/2      |

### Metric

| Part Number | A    | B    | C    | D*   | E    | F    | Thread Size | Maximum Spread | Maximum Holding Force (N) | Key Size |
|-------------|------|------|------|------|------|------|-------------|----------------|---------------------------|----------|
| 68716       | 6.1  | 6.9  | 8.1  | 5.3  | 3.6  | 6.4  | M2          | 6.7            | 880                       | 1.5      |
| 68717       | 9.1  | 9.7  | 11.9 | 7.9  | 4.7  | 9.5  | M2.5        | 10             | 1,350                     | 2        |
| 68711       | 12.3 | 14.5 | 15.9 | 10.4 | 5.6  | 12.7 | M4          | 13.2           | 2,224                     | 3        |
| 68712       | 18.6 | 19.0 | 23.8 | 16.1 | 9.5  | 19.0 | M6          | 20.3           | 6,670                     | 5        |
| 68713       | 24.8 | 25.9 | 31.7 | 20.8 | 12.7 | 25.4 | M8          | 26.9           | 8,895                     | 6        |
| 68714       | 37.3 | 38.6 | 47.6 | 30.8 | 19.0 | 38.1 | M12         | 39.9           | 15,565                    | 10       |
| 68715       | 49.7 | 51.5 | 63.5 | 41.2 | 25.4 | 50.8 | M16         | 53.0           | 26,690                    | 14       |

\*F is the distance needed between workpieces for clamp clearance. Drill and tap mounting hole on the center of F dimension.

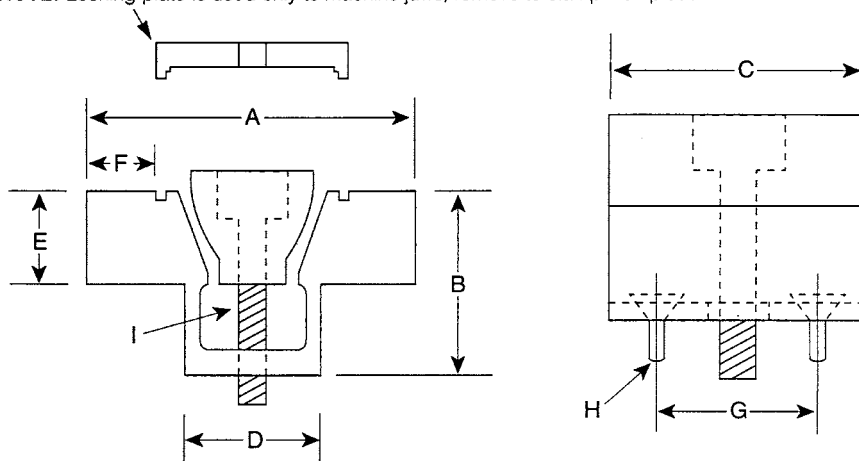
## Machinable Expanding Micro™ Clamps



The compact Machinable Expanding Micro™ Clamp is available with extra material on the clamping jaw so it can be machined to conform to the shape of your workpiece - enabling you to fixture unusual applications easily. The specially designed steel wedge spreads the clamping force uniformly on both sides of the aluminum channel. Clamps may be ordered with a unique locking plate to make the clamp rigid while machining the jaw to your specifications, without vibration.

- Material: Channel 7075-76 Aluminium
- Mounting Screws Included
- Compact Design
- Allows more parts to be mounted on Fixture

**NOTE:** Locking plate is used only to machine jaws, remove to clamp workpiece.



| Part No.<br>With<br>Locking Plate | Part No.<br>Without<br>Locking Plate | A*    | B    | C    | D     | E    | F†   | G     | Mounting<br>Screw<br>**H | I       |
|-----------------------------------|--------------------------------------|-------|------|------|-------|------|------|-------|--------------------------|---------|
| 68770                             | 68771                                | 1.125 | 0.50 | 0.62 | 0.420 | 0.18 | 0.18 | 0.400 | 2-56                     | 8-32    |
| 68772                             | 68773                                | 1.500 | 0.75 | 0.94 | 0.632 | 0.37 | 0.26 | 0.624 | 6-32                     | 1/4-20  |
| 68774                             | 68775                                | 2.000 | 1.00 | 1.25 | 0.820 | 0.50 | 0.39 | 0.812 | 6-32                     | 5/16-18 |
| 68776                             | 68777                                | 3.000 | 1.50 | 1.87 | 1.215 | 0.75 | 0.62 | 1.200 | 10-32                    | 1/2-13  |
| 68778                             | 68779                                | 4.000 | 2.00 | 2.50 | 1.625 | 1.00 | 0.80 | 1.625 | 1/4-20                   | 5/8-11  |

\* The distance needed between workpieces for clamp clearance, drill and tap mounting holes on the center of "A" dimension.

† The amount of machinable stock on jaws.

\*\* Mounting Screws Included

### Metric

| Part No.<br>With<br>Locking Plate | Part No.<br>Without<br>Locking Plate | A*    | B    | C    | D     | E    | F†   | G     | Mounting<br>Screw<br>**H | I   |
|-----------------------------------|--------------------------------------|-------|------|------|-------|------|------|-------|--------------------------|-----|
| 68870                             | 68871                                | 28.6  | 12.7 | 15.7 | 10.67 | 6.3  | 4.6  | 10.16 | M2                       | M4  |
| 68872                             | 68873                                | 38.1  | 19.1 | 23.9 | 16.05 | 9.4  | 6.6  | 15.87 | M4                       | M6  |
| 68874                             | 68875                                | 50.8  | 25.4 | 31.8 | 20.83 | 12.7 | 9.9  | 20.62 | M4                       | M8  |
| 68876                             | 68877                                | 76.2  | 38.1 | 47.5 | 30.86 | 19.1 | 15.7 | 30.48 | M5                       | M12 |
| 68878                             | 68879                                | 101.6 | 50.8 | 63.5 | 41.28 | 25.4 | 20.3 | 41.28 | M6                       | M16 |

\* The distance needed between workpieces for clamp clearance, drill and tap mounting holes on the center of "A" dimension.

† The amount of machinable stock on jaws.

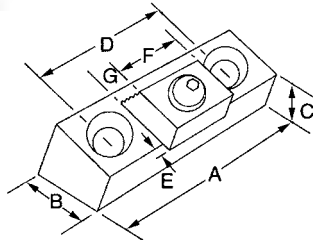
\*\* Mounting Screws Included



## Micro™ Toe Clamps



This cam action fixture clamp provides positive down force while using very little space on the fixture. Workpieces can be clamped in series by using the back surface of a clamp to locate the next workpiece. The hardened steel clamping element has both a smooth surface for machined workpieces and a serrated clamping surface for rougher work. The height of the clamp can be adjusted by milling the slot deeper in the fixture plate.



| Part Number | A    | B    | C   | D    | E†   | F    | G   | Cam Screw | Distance of Movement | Mounting Screws       |
|-------------|------|------|-----|------|------|------|-----|-----------|----------------------|-----------------------|
| 68731       | 1.70 | .75  | .50 | 1.00 | .090 | .75  | .25 | 68527     | .050                 | 5/16 - 18 x 3/4 LH    |
| 68732       | 2.12 | 1.00 | .45 | 1.32 | .110 | 1.00 | .38 | 68529     | .100                 | 3/8 - 16 x 3/4 LH     |
| 68733       | 2.95 | 1.50 | .99 | 2.00 | .130 | 1.50 | .50 | 68531     | .100                 | 1/2 - 13 x 1 1/4 SHCS |

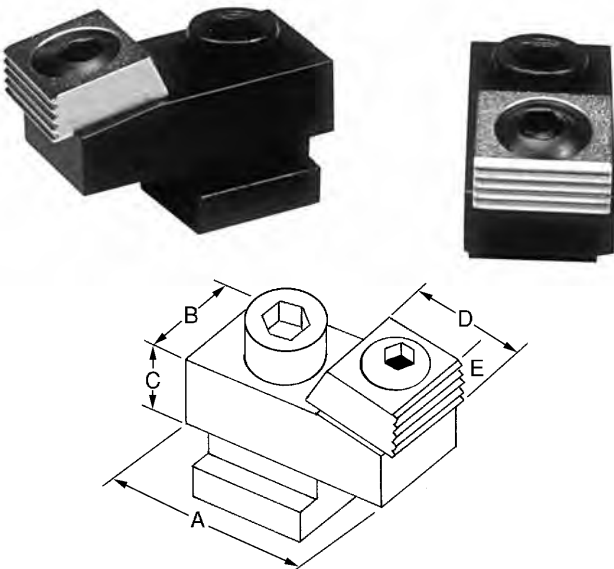
† "E" is the distance needed between the front of the clamp base and the workpiece.

### Metric

| Part Number | A    | B    | C    | D    | E†  | F    | G    | Cam Screw | Distance of Movement | Mounting Screws |
|-------------|------|------|------|------|-----|------|------|-----------|----------------------|-----------------|
| 68781       | 43.2 | 19.0 | 12.7 | 25.4 | 2.3 | 19.0 | 6.4  | M10       | 1.6                  | M8              |
| 68782       | 54.0 | 25.4 | 11.4 | 33.5 | 2.8 | 25.4 | 9.7  | M12       | 2.0                  | M10             |
| 68783       | 75.0 | 38.1 | 25.2 | 50.8 | 3.3 | 38.1 | 12.7 | M16       | 2.5                  | M12             |

† "E" is the distance needed between the front of the clamp base and the workpiece.

## Micro™ T-Slot Toe Clamps



This clamp is like the Micro Toe Clamp, only it is designed to be used in the T-slots of machine tables. It provides positive down force while maintaining a low profile. The hardened steel clamping element has both a smooth surface for machined work pieces and a serrated clamping surface for rougher work.

| A    | B    | C   | D    | E   |
|------|------|-----|------|-----|
| 1.94 | 1.12 | .62 | 1.00 | .38 |

### Metric

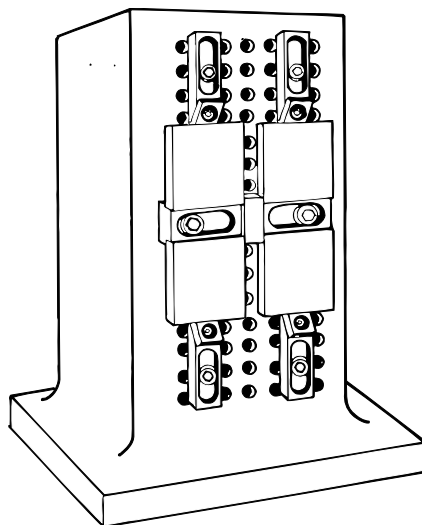
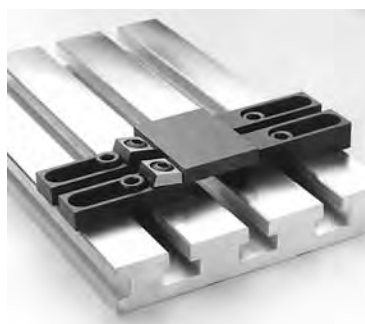
| A  | B    | C    | D    | E   |
|----|------|------|------|-----|
| 50 | 28.5 | 15.7 | 25.4 | 9.6 |

### Metric

| Part Number | T-Slot Size |
|-------------|-------------|
| 68741       | 9/16        |
| 68742       | 5/8         |
| 68743       | 11/16       |
| 68744       | 3/4         |

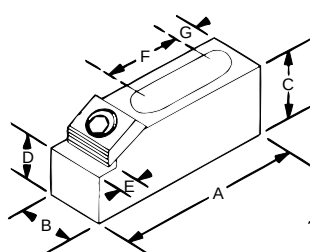
| Part Number | T-Slot Size |
|-------------|-------------|
| 68791       | 14          |
| 68792       | 16          |
| 68793       | 18          |
| 68794       | No T-Nut    |

## Micro™ Edge Clamps

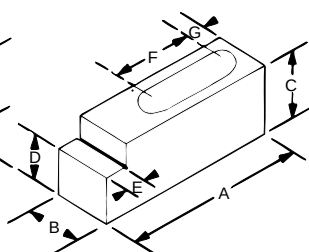


The Micro Edge Clamp offers increased versatility through its unique elevated clamping abilities.

- Workpiece is elevated for through milling and drilling
- Cam action provides positive holddown force
- Provides flexible set-ups for hard to hold parts
- Works in plates, both with tapped hole layouts or T-slot configurations
- Can be mounted vertically or horizontally
- Built-in stops locate workpiece for repeat positioning
- Larger sizes are ideal for mold shop applications
- Tapered mounting slot prevents movement when clamping pressure is applied
- Hardened steel clamping element, low carbon steel body



Closed slot style



Open slot style

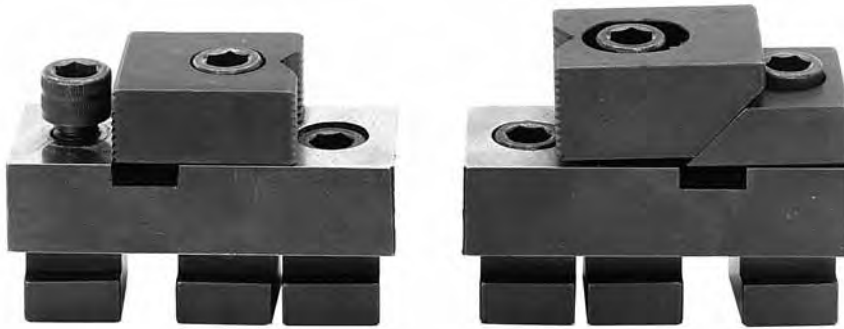
### Inch

| Part Number | Item  | A    | B    | C    | +0.0000<br>-0.0005<br>D | E   | F    | G   | Cam Screw<br>Part<br>Number | Mounting<br>Screw | Slot   |
|-------------|-------|------|------|------|-------------------------|-----|------|-----|-----------------------------|-------------------|--------|
| 68721       | Clamp | 2.50 | .75  | .62  | .4600                   | .31 | .83  | .53 | 68527                       | 5/16              | Closed |
| 68722       | Stop  | 2.50 | .75  | .75  | .4600                   | .31 | 1.11 | .53 | N/A                         | 5/16              | Closed |
| 68723       | Clamp | 3.75 | 1.12 | .62  | .4800                   | .37 | 1.68 | .50 | 68529                       | 1/2               | Closed |
| 68724       | Stop  | 3.75 | 1.12 | .87  | .4800                   | .37 | 1.68 | .50 | N/A                         | 1/2               | Closed |
| 68725       | Clamp | 4.21 | 1.50 | 1.62 | 1.3780                  | .37 | 1.82 | N/A | 68535                       | 5/8               | Open   |
| 68726       | Stop  | 4.21 | 1.50 | 2.00 | 1.3780                  | .37 | 1.82 | N/A | N/A                         | 5/8               | Open   |

### Metric

| Part Number | Item  | A     | B    | C    | +0.0000<br>-0.0130<br>D | E   | F    | G    | Cam Screw<br>Part<br>Number | Mounting<br>Screw | Slot   |
|-------------|-------|-------|------|------|-------------------------|-----|------|------|-----------------------------|-------------------|--------|
| 68821       | Clamp | 63.5  | 19.1 | 15.8 | 11.68                   | 8.0 | 21.1 | 13.5 | 68532                       | M8                | Closed |
| 68822       | Stop  | 63.5  | 19.1 | 19.1 | 11.68                   | 8.0 | 28.2 | 13.5 | NA                          | M8                | Closed |
| 68823       | Clamp | 95.3  | 28.5 | 15.8 | 12.19                   | 9.4 | 42.7 | 12.7 | 68534                       | M12               | Closed |
| 68824       | Stop  | 95.3  | 28.5 | 22.1 | 12.19                   | 9.4 | 42.7 | 12.7 | NA                          | M12               | Closed |
| 68825       | Clamp | 107.0 | 38.1 | 41.2 | 35.00                   | 9.4 | 46.2 | NA   | 68535                       | M16               | Open   |
| 68826       | Stop  | 107.0 | 38.1 | 50.8 | 35.00                   | 9.4 | 46.2 | NA   | NA                          | M16               | Open   |

## Modular Mini Vise



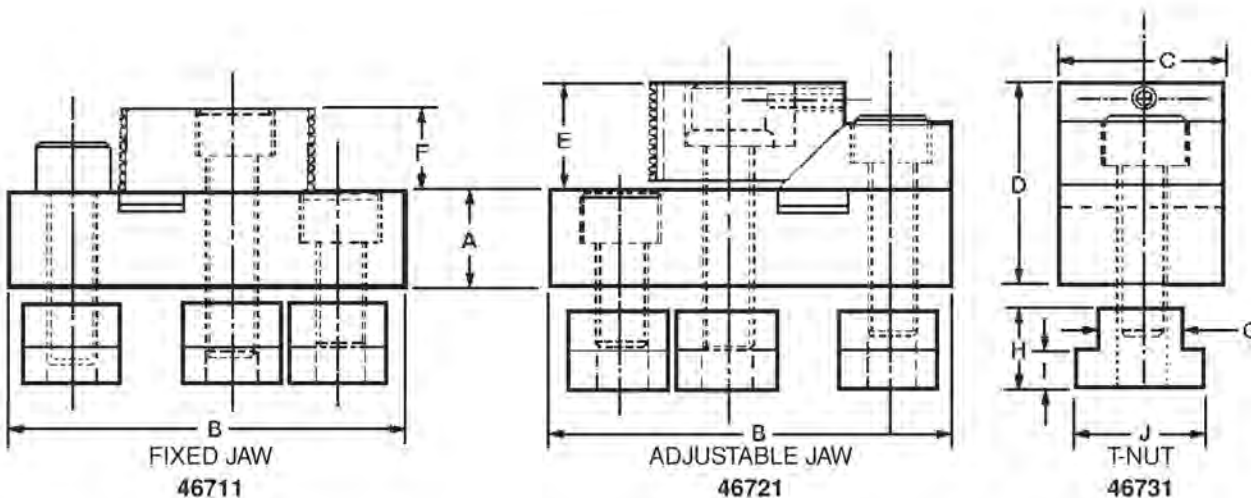
- Material: C-1018
- Finish: Black Oxide  
Case Hardened 58-62 Rc

| Description     | Part Number  |
|-----------------|--------------|
| Fixed Jaw Clamp | <b>46711</b> |
| Adj. Jaw Clamp  | <b>46721</b> |
| T-Slot Nut      | <b>46731</b> |

The Jergens Modular Mini Vise provides accurate location and positive holding. The bases are hardened and ground to the same height as Jergens Rest Pads for accurate location. The jaws are serrated and hardened to provide positive holding. These versatile clamps may be used as shown, or the jaws may be reversed to allow the workpiece to rest on the machine table or fixture base. The clamps can be made part of a dedicated fixture by removing the T-nuts and fastening the 3/8-16" cap screws directly to the fixture.

To use the Jergens Modular Mini Vise: position the fixed jaw clamp and tighten all three cap screws to secure the clamp. Position the adjustable clamp and tighten the outside cap screws. Insert the workpiece and tighten the center cap screw. The adjustable jaw will force the workpiece down against the base and over against the fixed jaw clamp.

The 46711 clamp has a fixed jaw for locating. The 46721 clamp has an adjustable jaw for clamping. Each clamp is supplied with three 3/8-16" cap screws and three 46731 T-nuts.



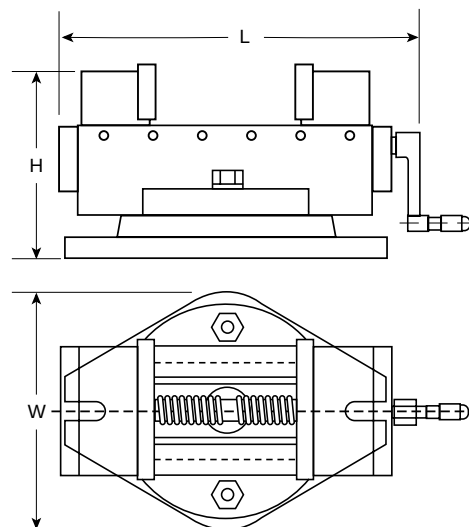
| + .0000<br>- .0005 | B | C     | Maximum<br>Height<br>D | E   | F   | Table<br>Slot<br>G | H   | I     | J |
|--------------------|---|-------|------------------------|-----|-----|--------------------|-----|-------|---|
| A                  |   |       |                        |     |     |                    |     |       |   |
| .7205              | 3 | 1 1/4 | 1-9/16                 | 3/4 | 5/8 | 5/8                | 5/8 | 11/32 | 1 |

## Precision Self Centering Vises with Swivel Base Cast Iron Shop Vises



### Characteristics

Made of close grained high tensile cast iron. Jaws ground and Hardened 55±3 HRC. Swivel base provided with positive locking and adjustable through 360°. Automatically adjusts work piece to its center. Opposite threads for quick and accurate centering.



### Technical Data

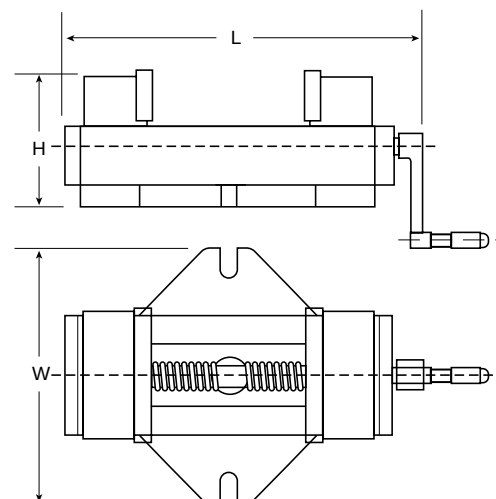
| Part No. | Jaw Width |     | Jaw Opening |     | Jaw Depth |    | Length |     | Width |     | Height |     | Net Weight<br>Kgs. |
|----------|-----------|-----|-------------|-----|-----------|----|--------|-----|-------|-----|--------|-----|--------------------|
|          | Inch      | mm  | Inch        | mm  | Inch      | mm | Inch   | mm  | Inch  | mm  | Inch   | mm  |                    |
| 110080   | 2         | 50  | 2           | 50  | 1         | 25 | 6 3/4  | 171 | 3 3/4 | 95  | 3 1/8  | 80  | 3.25               |
| 110081   | 4         | 100 | 4           | 100 | 1 5/8     | 42 | 10     | 254 | 6 1/2 | 165 | 5 1/2  | 140 | 16.00              |
| 110082   | 5         | 125 | 5           | 125 | 2         | 50 | 11 1/2 | 292 | 7 3/4 | 195 | 6      | 150 | 22.00              |
| 110083   | 6         | 150 | 6           | 150 | 2         | 50 | 14 1/2 | 367 | 8     | 200 | 6 3/8  | 162 | 32.00              |

## Precision Self Centering Vises (Low Profile) Cast Iron Shop Vises



### Characteristics

Made of close grained high tensile cast iron. Jaws ground and Hardened 55±3 HRC. Automatically adjusts workpiece to its center. Opposite threads for quick and accurate centering. This is a low profile vise.



### Technical Data

| Part No. | Jaw Width |     | Jaw Opening |     | Jaw Depth |    | Length |     | Width |     | Height |     | Net Weight<br>Kgs. |
|----------|-----------|-----|-------------|-----|-----------|----|--------|-----|-------|-----|--------|-----|--------------------|
|          | Inch      | mm  | Inch        | mm  | Inch      | mm | Inch   | mm  | Inch  | mm  | Inch   | mm  |                    |
| 110085   | 3         | 75  | 5           | 127 | 1 3/8     | 35 | 12     | 304 | 6     | 150 | 3      | 75  | 6.75               |
| 110086   | 4         | 100 | 4           | 100 | 1 3/4     | 44 | 10 1/2 | 266 | 8 1/2 | 215 | 4 1/4  | 107 | 13.00              |

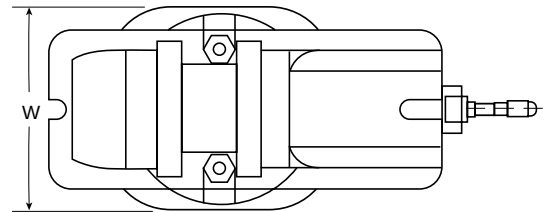
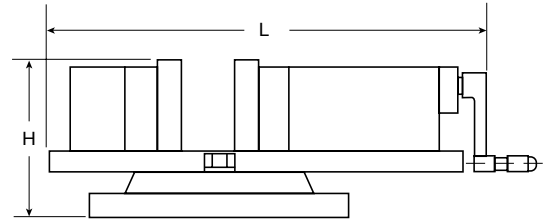
## Milling Machine Vises with Swivel Base (Heavy Duty)

### Cast Iron Shop Vises



#### Characteristics

Manufactured from close grained high tensile cast iron. Swivel is full 360°. This is very useful for heavy duty milling jobs. Vise is low height for maximum clearances. Jaws are fully ground and precision with parallelism of 0.0012 (30 microns) the hardness of jaws is 55±33 HRC.



#### Technical Data

| Part No. | Jaw Width |     | Jaw Opening |     | Jaw Depth |    | Length |     | Width  |     | Height |     | Net Weight Kgs. |
|----------|-----------|-----|-------------|-----|-----------|----|--------|-----|--------|-----|--------|-----|-----------------|
|          | Inch      | mm  | Inch        | mm  | Inch      | mm | Inch   | mm  | Inch   | mm  | Inch   | mm  |                 |
| 110230   | 4         | 100 | 4           | 100 | 1 3/4     | 45 | 15     | 381 | 8      | 200 | 5      | 125 | 19.00           |
| 110231   | 6         | 150 | 6           | 150 | 2 3/16    | 55 | 19     | 482 | 10 1/2 | 267 | 5 3/4  | 146 | 39.00           |
| 110232   | 8         | 200 | 8           | 200 | 2 3/8     | 60 | 24     | 609 | 12     | 304 | 6 1/4  | 159 | 63.00           |

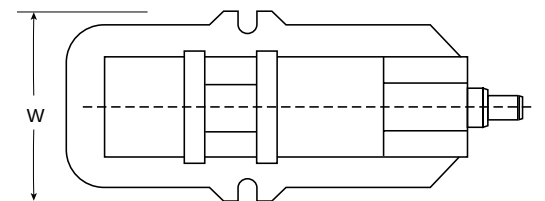
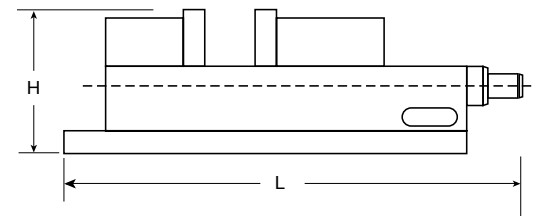
## Machine Vises

### Cast Iron Shop Vises



#### Characteristics

Manufactured from graded cast iron and precision ground. These vises have a needle bearing thrust collar. Vise jaws are in pairs and replaceable.



#### Technical Data

| Part No. | Jaw Width |     | Jaw Opening |     | Jaw Depth |    | Length |     | Width  |     | Height |     | Net Weight Kgs. |
|----------|-----------|-----|-------------|-----|-----------|----|--------|-----|--------|-----|--------|-----|-----------------|
|          | Inch      | mm  | Inch        | mm  | Inch      | mm | Inch   | mm  | Inch   | mm  | Inch   | mm  |                 |
| 110250   | 6         | 150 | 7 1/2       | 188 | 1 1/2     | 38 | 20     | 507 | 9      | 225 | 6 3/4  | 170 | 36.00           |
| 110255   | 8         | 200 | 10          | 250 | 2         | 50 | 21     | 533 | 11 1/2 | 292 | 7      | 175 | 68.00           |





## NOTES



## NOTES



## NOTES





## NOTES

# We Are Jergens

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### Support, Locate and Hold:

From standard components like toggle screws and T-bolts to vises and quick change fixture systems like Ball Lock® and ZPS.

## SPECIALTY FASTENERS



### Fasten, Strengthen and Release:

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## LIFTING SOLUTIONS



### Lift, Turn and Track:

From chain sling and eye bolts to hoist rings and our proprietary Lift ID™ Automated Inspection and Compliance program.

We got our start back in 1942, manufacturing tooling components to help American manufacturers operate quickly and more efficiently. “The Standard Components with the Highest Standards.” This founding philosophy put Jergens on the forefront of the “lean manufacturing” movement before anyone even thought to put those two words together.

In the years since, Jergens has structured its offering to advance the cause of leaner manufacturing, adding products and engineered solutions for an integrated approach to “Manufacturing Efficiency.”

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