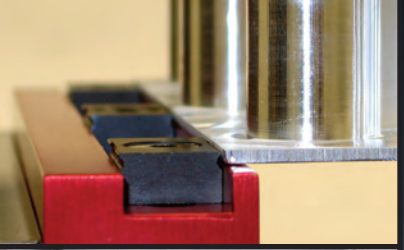
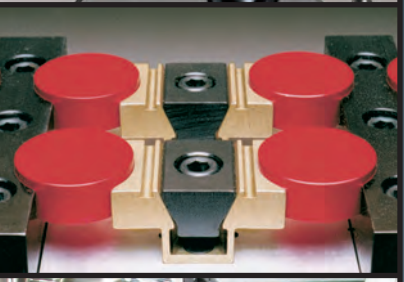
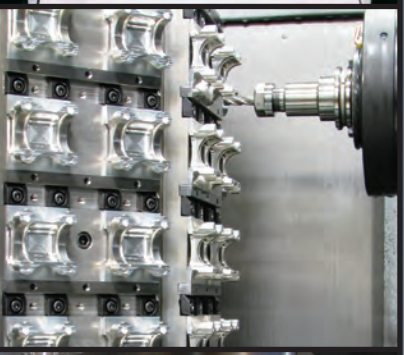
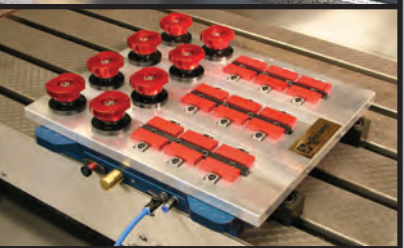
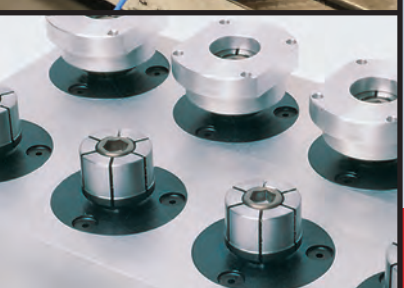








# MITEE-BITE® PRODUCTS LLC

## WORKHOLDING SPECIALISTS


*CAD FILES AVAILABLE ONLINE:* **MITEEBITE.COM**

## Mission Statement

Our goal is to serve our customers by providing a complete range of the best low profile clamps, of the highest quality at competitive prices and delivered on time. This promise is backed and supported by our knowledgeable technical and sales staff who are available to assist our distributors and customers.

## Company Profile

Mitee-Bite Products LLC was founded in 1986 and is located in a rural setting in the lakes and mountain region of New Hampshire. We are the innovator of compact, low-profile edge clamps, which improve production in CNC machining centers.

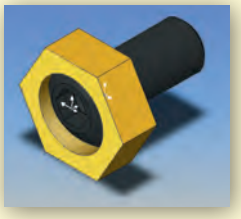
Our original cam action clamp was designed to improve the production process in a contract machine shop. Since that time many types of clamps have been added and are included in this catalog.

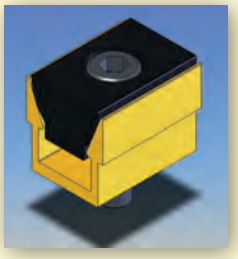
These products are readily accepted because of the benefits they offer. We are known worldwide for the quality of our products and for the service we provide our customers.

Our products are available through many qualified distributors around the world. For information on how to reach them or for more information about our products, visit our website:

**MiteeBite.com** or call us at
**1-603-539-4538** and **1-800-543-3580**

Our **CAD FILES** can now be downloaded in all formats from our website:
**MiteeBite.com**





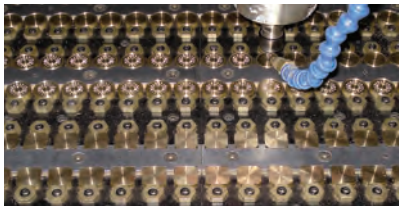
# Table of Contents

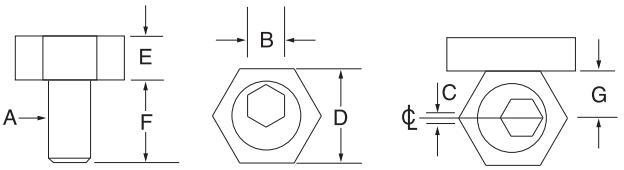
# Original Fixture Clamps

The cam action MITEE-BITE Fixture Clamp is made up of two simple components: a hardened steel socket cap screw with an offset head and a brass hexagonal washer.

- ➤ Low-profile makes computer programming easier
- ➤ Cam action provides fast, strong clamping
- ➤ Small size allows more parts per load
- ➤ Simple design keeps cost low

NOTE: Clockwise rotation is recommended. Locating pin should be on the right of workpiece.



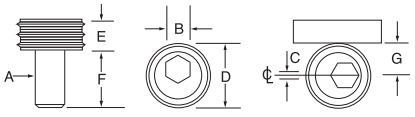



**G* -** Location to drill and tap from edge of workpiece.

| | Part Number | A | B | C | D | E | F | G* | Max. Torque (Ft/Lbs) | Holding Force | No. of Clamps Per Pack |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **INCH** | 10202 | 8 - 32 | 5/64 | .030 | .312 | .110 | .350 | .150 | 1.5 | 205 lbs | 10 |
| | 10207 | 10 - 32 | 3/32 | .040 | .500 | .160 | .340 | .250 | 2.5 | 350 lbs | 10 |
| | 10204 | 1/4 - 20 | 1/8 | .040 | .625 | .190 | .470 | .308 | 6.2 | 800 lbs | 10 |
| | 10205 | 5/16 -24 | 3/16 | .040 | .812 | .180 | .460 | .400 | 8.3 | 800 lbs | 12 |
| | 10201 | 5/16 -18 | 3/16 | .040 | .812 | .180 | .460 | .400 | 8.3 | 800 lbs | 12 |
| | 10206 | 3/8 -16 | 3/16 | .050 | .812 | .250 | .710 | .400 | 20.8 | 2,000 lbs | 10 |
| | 10208 | 1/2 -13 | 5/16 | .100 | 1.000 | .375 | .900 | .500 | 65.0 | 4,000 lbs | 8 |
| | 10210 | 5/8 -11 | 3/8 | .100 | 1.187 | .500 | 1.125 | .590 | 100.0 | 6,000 lbs | 4 |
| | | | | | | | | | **Torque (N.m.)** | | |
| **METRIC** | 50204 | M4 | 3 | .76 | 7.93 | 2.80 | 9.6 | 3.80 | 2.0 | 910 N | 10 |
| | 50206 | M6 | 4 | 1.01 | 15.86 | 4.75 | 11.2 | 7.80 | 8.5 | 3,558 N | 10 |
| | 50208 | M8 | 5 | 1.01 | 20.61 | 4.55 | 15.0 | 10.15 | 11.3 | 3,558 N | 12 |
| | 50210 | M10 | 7 | 1.27 | 20.61 | 6.35 | 19.0 | 10.15 | 28.0 | 8,895 N | 10 |
| | 50212 | M12 | 8 | 2.03 | 25.38 | 9.52 | 22.8 | 12.70 | 88.0 | 17,790 N | 8 |
| | 50216 | M16 | 12 | 2.54 | 30.13 | 12.70 | 28.5 | 15.00 | 125.0 | 26,680 N | 4 |
| **STAINLESS STEEL** | | | | | | | | | | | |
| | 10203 | 1/4 - 20 | 1/8 | .040 | .625 | .190 | .470 | .308 | 6.2 Ft. Lbs | 800 lbs | 4 |
| | 10213 | 5/16 -18 | 3/16 | .040 | .812 | .250 | .460 | .400 | 8.3 Ft. Lbs | 800 lbs | 4 |
| | 50205 | M6 | 4mm | 1.01mm | 15.86mm | 4.75mm | 11.2mm | 7.80mm | 8.50(N.m.) | 3,558 N | 4 |
| | 50207 | M8 | 5mm | 1.01mm | 20.60mm | 6.35mm | 15.0mm | 10.15mm | 11.30(N.m.) | 3,558 N | 4 |

# Knife Edge Clamps

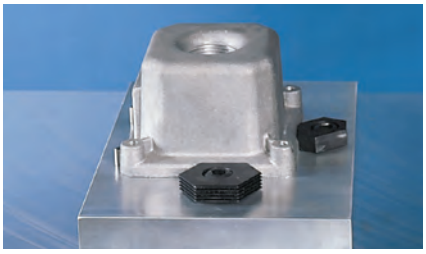
Knife Edge Clamps can be used instead of the original brass hex clamps for clamping rough cut stock, castings and any material that requires a hardened clamping element. Same “G” dimension as Original Fixture Clamps above.




| | Part Number | A | B | C | D | E | F | G | Max. Torque (Ft/Lbs) | Holding Force (Lbs) | Number of Clamps Per Pack |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **INCH** | 22584 | 3/8 - 16 | 3/16 | .050 | .812 | .250 | .710 | .400 | 16.6 | 2,000 | 8 |
| | 22588B | 1/2 - 13 | 5/16 | .080 | 1.000 | .375 | .900 | .500 | 52.0 | 4,000 | 8 |
| | 22592 | 5/8 - 11 | 3/8 | .100 | 1.187 | .500 | 1.125 | .590 | 80.0 | 6,000 | 4 |
| | | | | | | | | | **(N.m.)** | **(N.)** | |
| **METRIC** | 82584 | M10 | 7M | 1.52 | 20.60 | 6.35 | 19.0 | 10.15 | 28.00 | 8900 | 8 |
| | 82588 | M12 | 8M | 2.03 | 25.40 | 9.52 | 22.8 | 12.70 | 88.00 | 17800 | 8 |
| | 82592 | M16 | 12M | 2.54 | 30.15 | 12.70 | 28.5 | 15.00 | 135.00 | 26700 | 4 |

Not designed for clamping hardened material at maximum torque.

# Series-9 Clamps



This adjustable low profile, cam action clamp provides clamping of different size workpieces merely by rotating the clamp to one of its other edges.
The clamps are .394 (10mm) high and use a 1/2-13 (M12) cam screw. Each of the six clamping surfaces is a different distance from the centerline by .0394 (1mm) as shown in the chart. Therefore, one Series-9 Clamp can hold parts that vary up to .240 (9.4mm) simply by rotating the clamp to a different clamping surface.

- ➤ Serrated or smooth edges
- ➤ Heat treated and plated
- ➤ 4,000 lbs. (17800 N.m.) holding force

**TORQUE VALUES AND HOLDING FORCE**

| | Part Number | Screw Size | Max. Torque/Holding Force |
|---|---|---|---|
| **INCH** | 90110 - 90145 | 1/2 - 13 | 65 Ft Lbs / 4000 Lbs |
| **METRIC** | 95110 - 95145 | M12 | 88 N.m. / 17,800 N. |

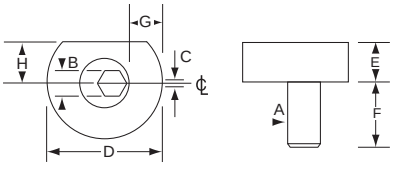
| Part Number Inch | Part Number Metric | Description | Face Number | Distance from ℄ (metric) |
|---|---|---|---|---|
| 90110 | 95110 | 1-6 Smooth | 1 | .4724 (12mm) |
| 90115 | 95115 | 1-6 Serrated | 2 | .5118 (13mm) |
| | | | 3 | .5512 (14mm) |
| | | | 4 | .5906 (15mm) |
| | | | 5 | .6299 (16mm) |
| | | | 6 | .6693 (17mm) |
| 90120 | 95120 | 7-12 Smooth | 7 | .7086 (18mm) |
| 90125 | 95125 | 7-12 Serrated | 8 | .7480 (19mm) |
| | | | 9 | .7874 (20mm) |
| | | | 10 | .8268 (21mm) |
| | | | 11 | .8661 (22mm) |
| | | | 12 | .9055 (23mm) |

| Part Number Inch | Part Number Metric | Description | Face Number | Distance from ℄ (metric) |
|---|---|---|---|---|
| 90130 | 95130 | 13-18 Smooth | 13 | .9449 (24mm) |
| 90135 | 95135 | 13-18 Serrated | 14 | .9842 (25mm) |
| | | | 15 | 1.0236 (26mm) |
| | | | 16 | 1.0630 (27mm) |
| | | | 17 | 1.1024 (28mm) |
| | | | 18 | 1.1417 (29mm) |
| 90140 | 95140 | 19-24 Smooth | 19 | 1.1811 (30mm) |
| 90145 | 95145 | 19-24 Serrated | 20 | 1.2205 (31mm) |
| | | | 21 | 1.2598 (32mm) |
| | | | 22 | 1.2992 (33mm) |
| | | | 23 | 1.3386 (34mm) |
| | | | 24 | 1.3780 (35mm) |

# Machinable Fixture Clamps

These clamps, with the machinable steel washers, provide more flexibility for holding round or unusual shaped parts. Parts can be held directly to the fixture plate surface or elevated for through drilling. A special screw is provided with each package to hold the washer in the proper place during machining.

The flat edge is the same location as our original fixture clamps. It can be used where a stronger clamping surface is required.

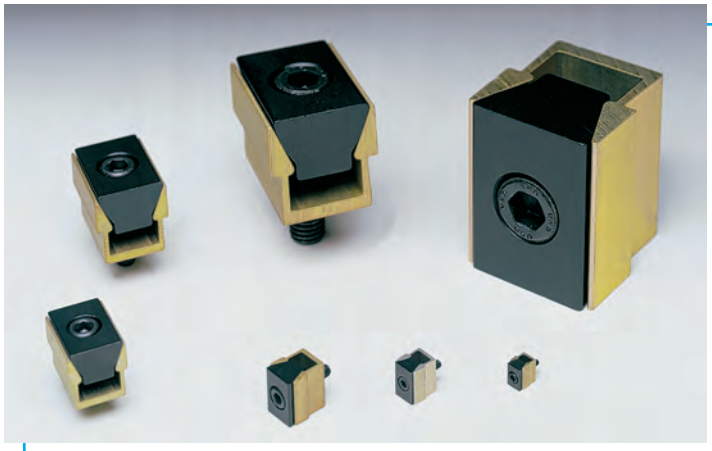



- ➤ Low profile
- ➤ Made of mild steel for machinability


| Part Number | A | B | C | D | E | F | G* | H† | Max. Torque (Ft/Lbs) | Holding Force (Lbs) | Number of Clamps Per Pack |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **INCH** | | | | | | | | | | | |
| 10504 | 1/4 - 20 | 1/8 | .040 | .980 | .250 | .470 | .250 | .308 | 6.2 | 800 | 4 |
| 10506 | 3/8 - 16 | 3/16 | .050 | 1.230 | .350 | .710 | .275 | .400 | 20.8 | 2,000 | 4 |
| 10508 | 1/2 - 13 | 5/16 | .100 | 1.480 | .450 | .900 | .300 | .500 | 65.0 | 4,000 | 4 |
| 10510 | 5/8 - 11 | 3/8 | .100 | 1.730 | .550 | 1.125 | .350 | .590 | 100.0 | 6,000 | 4 |
| | | | | | | | | | **(N.m.)** | **(N.)** | |
| **METRIC** | | | | | | | | | | | |
| 50506 | M6 | 4M | 1.01 | 24.9 | 6.4 | 11.9 | 6.4 | 7.8 | 8.5 | 3358 | 4 |
| 50510 | M10 | 7M | 1.52 | 31.2 | 8.9 | 18.0 | 7.0 | 10.2 | 28.0 | 8900 | 4 |
| 50512 | M12 | 8M | 2.03 | 37.6 | 11.4 | 22.9 | 7.6 | 12.7 | 88.0 | 17800 | 4 |
| 50516 | M16 | 12M | 2.54 | 43.9 | 14.0 | 28.6 | 8.9 | 15.0 | 135.0 | 26700 | 4 |

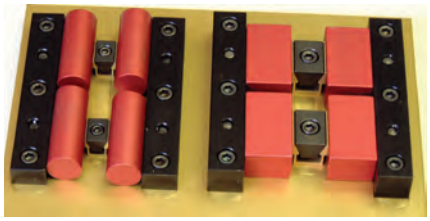
**G*** - Amount of machinable stock **H†** - The distance to drill & tap hole from edge of workpiece to use flat face.
Every package includes one machining screw

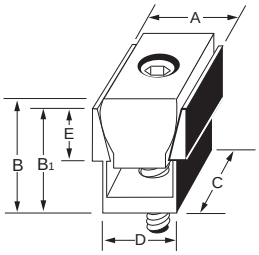
# Uniforce® Clamps

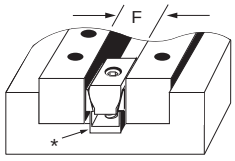


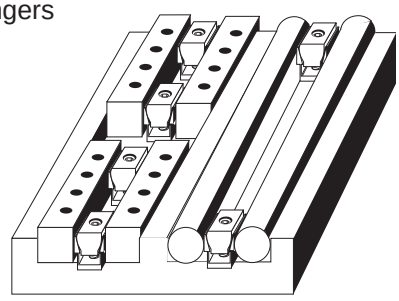
The compact, economical MITEE-BITE Uniforce® Clamp enables you to fixture more parts on the machine table. The specially designed steel wedge spreads the clamping force uniformly on both sides of the 7075-T6 aluminum channel.

- ➤ Increases production
- ➤ Minimizes tool changes
- ➤ Holds two parts with equilateral clamping action
- ➤ Ideal for clamping flat or round workpieces
- ➤ Reduces wasted space
- ➤ See Locating Rails on page 28
- ➤ Easily mated to hydraulic pull cylinders
- ➤ Ideal for pallet changers





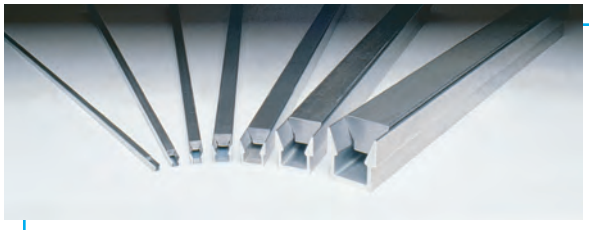



| Part Number | Model | A | B | B1 | C | D* | E | F† | Thread Size | Maximum Spread | Max. Torque (Ft/Lbs) | Holding Force (Lbs) | Number of Clamps Per Pack | Key Size |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **INCH** | | | | | | | | | | | | | | |
| 60250 | 250 | .240 | .27 | .250 | .320 | .210 | .140 | .250 | 2 - 56 | .260 | .5 | 200 | 6 | 5/64 |
| 60375 | 375 | .360 | .38 | .375 | .470 | .310 | .185 | .375 | 4 - 40 | .390 | 1.1 | 310 | 6 | 3/32 |
| 60500 | 500 | .485 | .58 | .500 | .625 | .410 | .220 | .500 | 8 - 32 | .530 | 2.5 | 500 | 8 | 9/64 |
| 60750 | 750 | .735 | .77 | .750 | .940 | .635 | .375 | .750 | 1/4 - 20 | .785 | 10.8 | 1,500 | 6 | 3/16 |
| 61000 | 1000 | .980 | 1.02 | 1.000 | 1.250 | .820 | .500 | 1.000 | 5/16-18 | 1.050 | 10.4 | 2,000 | 4 | 1/4 |
| 61500 | 1500 | 1.470 | 1.52 | 1.500 | 1.875 | 1.215 | .750 | 1.500 | 1/2 -13 | 1.560 | 28.3 | 3,500 | 2 | 3/8 |
| 62000 | 2000 | 1.960 | 2.03 | 2.000 | 2.500 | 1.625 | 1.000 | 2.000 | 5/8 -11 | 2.080 | 55.0 | 6,000 | 2 | 1/2 |
| | | | | | | | | | | | **(N.m.)** | **(N.)** | | |
| **METRIC** | | | | | | | | | | | | | | |
| 80250 | 250 | 6.1 | 6.9 | 6.40 | 8.1 | 5.3 | 3.6 | 6.4 | M2 | 6.7 | 0.70 | 880 | 6 | 1.5 |
| 80375 | 375 | 9.1 | 9.7 | 9.50 | 11.9 | 7.9 | 4.7 | 9.5 | M2.5 | 10.0 | 1.50 | 1350 | 6 | 2 |
| 80500 | 500 | 12.3 | 14.5 | 12.70 | 15.9 | 10.4 | 5.6 | 12.7 | M4 | 13.2 | 3.40 | 2225 | 8 | 3 |
| 80750 | 750 | 18.6 | 19.0 | 19.05 | 23.8 | 16.1 | 9.5 | 19.0 | M6 | 20.3 | 14.30 | 6675 | 6 | 5 |
| 81000 | 1000 | 24.8 | 25.9 | 25.40 | 31.7 | 20.8 | 12.7 | 25.4 | M8 | 26.9 | 14.50 | 8900 | 4 | 6 |
| 81500 | 1500 | 37.3 | 38.6 | 38.10 | 47.6 | 30.8 | 19.0 | 38.1 | M12 | 39.9 | 38.40 | 15575 | 2 | 10 |
| 82000 | 2000 | 49.7 | 51.5 | 50.80 | 63.5 | 41.2 | 25.4 | 50.8 | M16 | 53.0 | 74.60 | 26700 | 2 | 14 |

**D*** - A milled slot wider than D dimension will insure clamp remains in line with workpiece. Clamp sides should not come in contact with slot walls during expansion.
**F†** - The distance needed between workpieces for clamp clearance. Drill and tap mounting hole on the center of F dimension.

# Long Length Uniforce® Channel & Steel

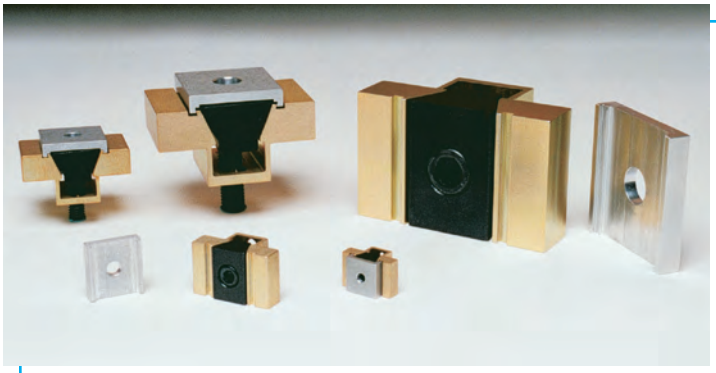


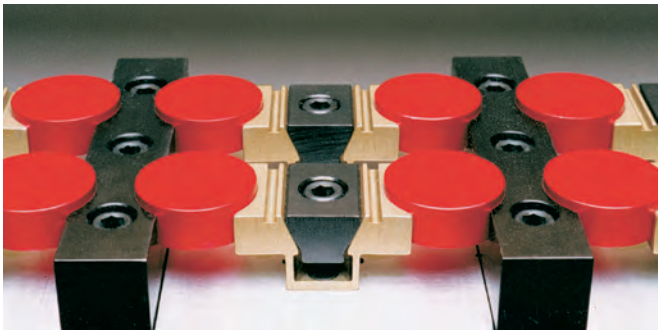
This material is available in 20" (508mm) lengths so clamps can be fabricated in different lengths to suit any requirement. Does not include plating or drilled holes.

| Part Number | Model |
|---|---|
| 62010 | 250 Channel |
| 63010 | 250 Steel |
| 62020 | 375 Channel |
| 63020 | 375 Steel |
| 62120 | 500 Channel |
| 63120 | 500 Steel |
| 62220 | 750 Channel |
| 63220 | 750 Steel |

| Part Number | Model |
|---|---|
| 62320 | 1000 Channel |
| 63320 | 1000 Steel |
| 62420 | 1500 Channel |
| 63420 | 1500 Steel |
| 62520 | 2000 Channel |
| 63520 | 2000 Steel |

# Machinable Uniforce® Clamps



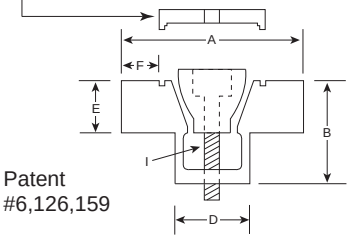


The compact MITEE-BITE Uniforce® clamp is available with extra material on the clamping jaws so it can be machined to conform to the shape of your workpiece - enabling you to fixture unusual applications easily. The specially designed steel wedge spreads the clamping force uniformly on both sides of the 7075-T6 aluminum channel.

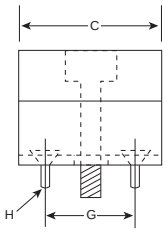
The locking plate properly expands the clamp, while making it rigid for machining. Machine to a slip fit of workpiece. Clamp retracts after removing locking plate to make it easy to load parts.

**Note:** Locking plate is used only to machine jaws, remove to clamp workpiece.

When clamp is used to hold flat stock, use locking plate to machine faces parallel.

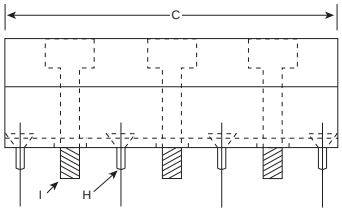



Patent #6,126,159



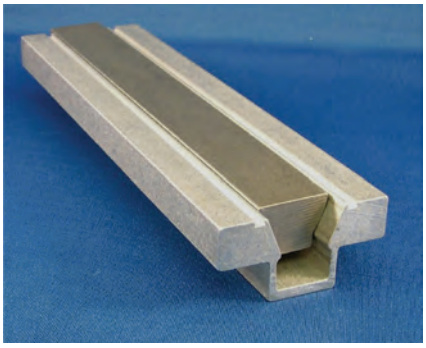

| | Model | Part No. | Description | Part No. | Description | A* | B | C | D | E | F† | G | H** | I | Max. Torque (Ft/Lbs) | Holding Force (Lbs) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INCH | 500 | 60050 | With Locking Plate | 60055 | No Locking Plate | 1.125 | .50 | .62 | .420 | .25 | .18 | .400 | 2-56 | 8-32 | 2.5 | 500 |
| | 750 | 60075 | With Locking Plate | 60080 | No Locking Plate | 1.500 | .75 | .94 | .632 | .37 | .26 | .625 | 6-32 | 1/4-20 | 10.8 | 1,500 |
| | 1000 | 60100 | With Locking Plate | 60105 | No Locking Plate | 2.000 | 1.00 | 1.25 | .820 | .50 | .39 | .812 | 6-32 | 5/16-18 | 10.4 | 2,000 |
| | 1500 | 60150 | With Locking Plate | 60153 | No Locking Plate | 3.000 | 1.50 | 1.87 | 1.215 | .75 | .62 | 1.200 | 10-32 | 1/2-13 | 28.3 | 3,500 |
| | 2000 | 60200 | With Locking Plate | 60203 | No Locking Plate | 4.000 | 2.00 | 2.50 | 1.625 | 1.00 | .80 | 1.625 | 1/4-20 | 5/8-11 | 55.0 | 6,000 |
| | | | | | | | | | | | | | | | (N.m.) | (N.) |
| METRIC | 500 | 80050 | With Locking Plate | 80055 | No Locking Plate | 28.6 | 12.7 | 15.7 | 10.67 | 6.3 | 4.6 | 10.16 | M2 | M4 | 3.40 | 2225 |
| | 750 | 80075 | With Locking Plate | 80080 | No Locking Plate | 38.1 | 19.1 | 23.9 | 16.05 | 9.4 | 6.6 | 15.87 | M4 | M6 | 14.30 | 6675 |
| | 1000 | 80100 | With Locking Plate | 80105 | No Locking Plate | 50.8 | 25.4 | 31.8 | 20.83 | 12.7 | 9.9 | 20.62 | M4 | M8 | 14.50 | 8900 |
| | 1500 | 80150 | With Locking Plate | 80155 | No Locking Plate | 76.2 | 38.1 | 47.5 | 30.86 | 19.1 | 15.7 | 30.48 | M5 | M12 | 38.40 | 15575 |
| | 2000 | 80200 | With Locking Plate | 80205 | No Locking Plate | 101.6 | 50.8 | 63.5 | 41.28 | 25.4 | 20.3 | 41.28 | M6 | M16 | 74.60 | 26700 |

**A*** - The distance needed between workpieces for clamp clearance, drill and tap mounting holes on the center of "A" dimension.
**F†** - The amount of machinable stock on jaws. **H**** - Mounting screws included.




## LONG LENGTH MACHINABLE UNIFORCE® CLAMPS

Locking plate is required to machine channel without vibration. (Sold separately, see Replacement Parts, page 36)

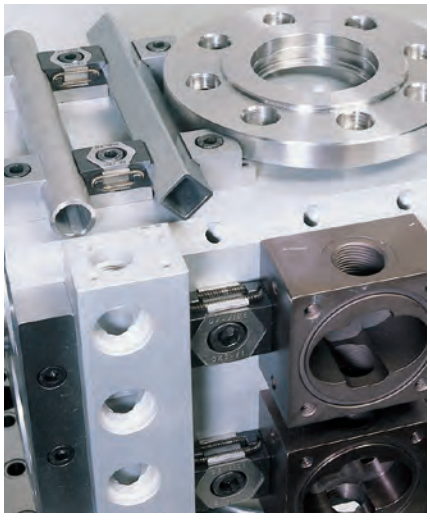


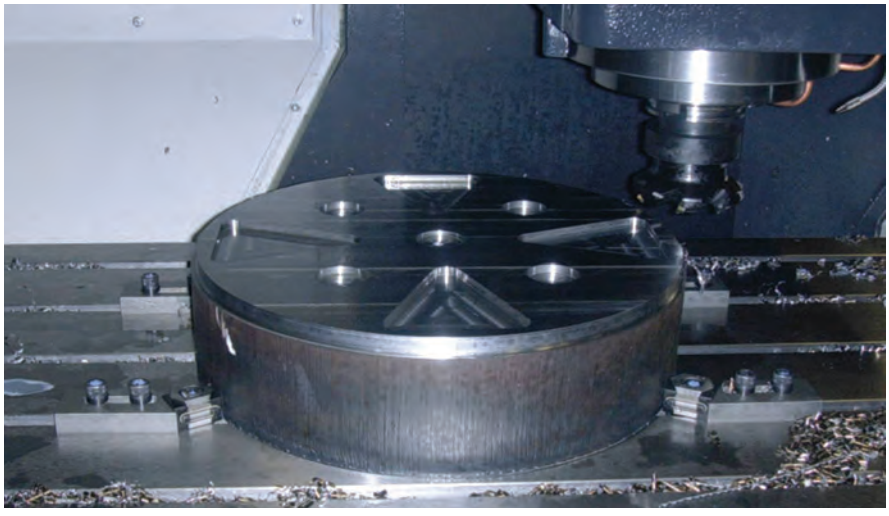
This material is available in 7 1/2" (508mm) lengths so clamps can be fabricated in different lengths to fit specific requirements. Does not include plating or drilled holes.

| Part Number | Model | A* | B | C | D | E | F† | H | I | Max. Torque (Ft/Lbs) | Holding Force (Lbs) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| INCH | | | | | | | | | | | |
| 60051 | 500 Channel | 1.125 | .50 | 7.50 | .420 | .25 | .18 | 2-56 | 8-32 | 2.5 | 500 |
| 60052 | 500 Steel Slug | | | 7.50 | | | | | | | |
| 60071 | 750 Channel | 1.500 | .75 | 7.50 | .632 | .37 | .26 | 6-32 | 1/4-20 | 10.8 | 1,500 |
| 60072 | 750 Steel Slug | | | 7.50 | | | | | | | |
| 60101 | 1000 Channel | 2.000 | 1.00 | 7.50 | .820 | .50 | .39 | 6-32 | 5/16-18 | 10.4 | 2,000 |
| 60102 | 1000 Steel Slug | | | 7.50 | | | | | | | |
| 60151 | 1500 Channel | 3.000 | 1.50 | 7.50 | 1.215 | .75 | .62 | 10-32 | 1/2-13 | 28.3 | 3,500 |
| 60152 | 1500 Steel Slug | | | 7.50 | | | | | | | |
| | | | | | | | | | | (N.m.) | (N.) |
| METRIC | | | | | | | | | | | |
| 80051 | 500 Channel | 28.6 | 12.7 | 190mm | 10.67 | 6.3 | 4.6 | M2 | M4 | 3.40 | 2225 |
| 80071 | 750 Channel | 38.1 | 19.1 | 190mm | 16.05 | 9.4 | 6.6 | M4 | M6 | 14.30 | 6675 |
| 80101 | 1000 Channel | 50.8 | 25.4 | 190mm | 20.83 | 12.7 | 9.9 | M4 | M8 | 14.50 | 8900 |
| 80151 | 1500 Channel | 76.2 | 38.1 | 190mm | 30.86 | 19.1 | 15.7 | M5 | M12 | 38.40 | 15575 |

**A*** - The distance needed between workpieces for clamp clearance, drill and tap mounting holes on the center of "A" dimension.
**F†** - The amount of machinable stock on jaws. (3) Drive Screws and (4) Mounting Screws included.

# OK-VISE® Clamps

## THREE-DIMENSIONAL MACHINING

Due to a low-profile design of OK-VISE® Clamps, it is possible to execute flexible three-directional machining of workpieces with one fastening. This ability to machine a workpiece in three planes means improved accuracy.

## PULL DOWN ACTION

The single wedge clamps keep the workpieces steadily in place, not allowing upward or downward movement. The double-wedge clamps generate a pull-down action pressing the workpieces towards the fixture base.

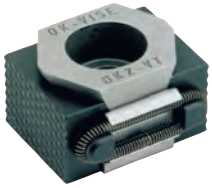
## MACHINABLE JAWS

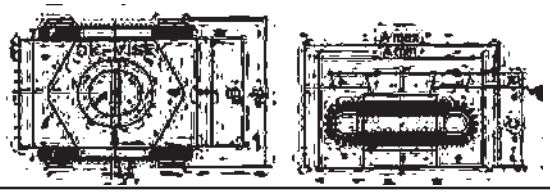
Single-wedge clamps are also available with extended jaws that can be machined to suit the geometry of the workpiece.

## SPECIAL MODEL

OK-VISE® low-profile clamp with a self adjusting steel ball is helpful when clamping castings and workpieces of an irregular shape.

## SINGLE-WEDGE OK-VISE® CLAMPS



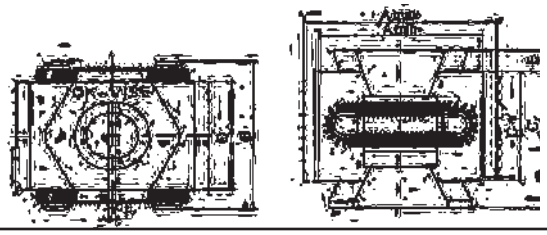


Strong lateral clamping with a single wedge design.

| Part Number | Model | A Min. | A Optimum | A Max. | B | C | D | E | F | Mounting Screw (included) | Max. Torque (Ft/Lbs) | Pressing Force of Jaws (Lbs) | Hardness of Jaws HRC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 47100* | AK2-VT-SO | .79 | .90 | .98 | .86 | .43 | .59 | .16 | .060 | 10-32 x 3/4 | 7 | 2,000 | 48-52 |
| 47110* | BK2-VT-S | 1.06 | 1.14 | 1.22 | 1.14 | .59 | .83 | .10 | .060 | 5/16-18 x 3/4 | 30 | 5,500 | 48-52 |
| 47115 | BK2-VT | 1.06 | 1.14 | 1.22 | 1.14 | .59 | .83 | .10 | .060 | 5/16-18 x 3/4 | 30 | 5,500 | 48-52 |
| 47130 | DK2-VTI | 1.65 | 1.77 | 1.93 | 1.61 | .87 | 1.18 | .16 | .080 | 1/2-13 x 1 1/4 | 110 | 14,500 | 48-52 |
| 47160 | FK2-VT | 2.24 | 2.40 | 2.60 | 2.20 | 1.14 | 1.65 | .20 | .145 | 5/8-11 x 1 1/2 | 250 | 24,900 | 48-52 |

*47100 and 47110 have smooth jaws.

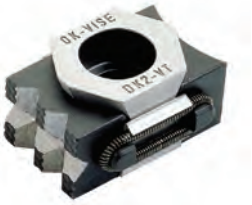
## DOUBLE-WEDGE OK-VISE®



Increased clamping force and the double wedge design pulls the workpiece down.

| Part Number | Model | A Min. | A Optimum | A Max. | B | C | C1 | D | E | F | Mounting Screw (included) | Max. Torque (Ft/Lbs) | Pressing Force of Jaws (Lbs) | Hardness of Jaws HRC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 47150 | DK2-WTI | 1.65 | 1.77 | 1.93 | 1.61 | 1.42 | 1.18 | 1.18 | .20 | .080 | 1/2-13 x 1 1/2 | 110 | 20,000 | 48-52 |
| 47180 | FK2-WT | 2.24 | 2.40 | 2.64 | 2.20 | 1.97 | 1.65 | 1.65 | .20 | .145 | 5/8-11 x 2 1/4 | 250 | 33,000 | 48-52 |

## MACHINABLE SINGLE-WEDGE OK-VISE® CLAMPS

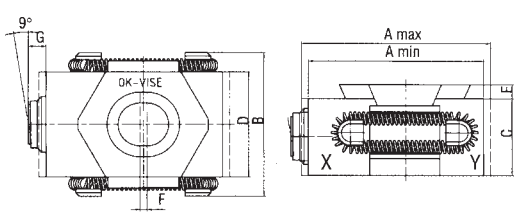


Additional material is added to these machinable jaws.

| Part Number | Model | A Min. | A Optimum | A Max. | B | C | D | E | F | Mounting Screw (included) | Max. Torque (Ft/Lbs) | Pressing Force of Jaws (Lbs) | Hardness of Jaws HRC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 47120* | BK2-VT-S+3 | 1.30 | 1.38 | 1.46 | 1.14 | .59 | .83 | .10 | .060 | 5/16-18 x 3/4 | 30 | 5,000 | 30-34 |
| 47140 | DK2-VTI+5 | 2.05 | 2.17 | 2.32 | 1.61 | .87 | 1.18 | .16 | .080 | 1/2-13 x 1 1/4 | 110 | 12,000 | 30-34 |
| 47170 | FK2-VT+5 | 2.64 | 2.80 | 2.99 | 2.20 | 1.14 | 1.65 | .20 | .145 | 5/8-11 x 1 1/2 | 250 | 22,000 | 30-34 |

*47120 has a smooth jaw.

## SPECIAL MODEL OK-VISE® CLAMPS



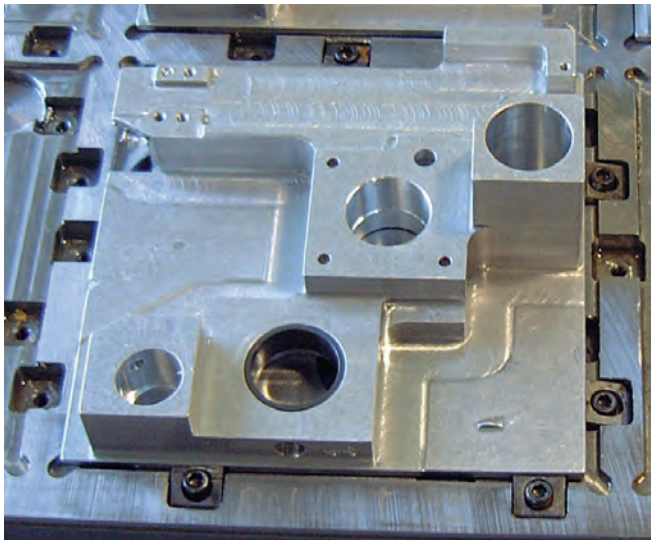

The hard pivoting ball is ideal for clamping castings and unusual shaped pieces.

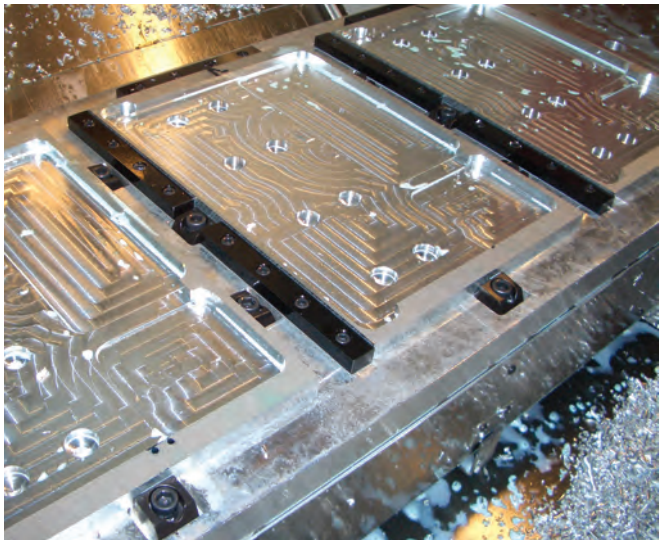
| Part Number | Model | A Min. | A Optimum | A Max. | B | C | D | E | F | G | Mounting Screw (included) | Max. Torque (Ft/Lbs) | Pressing Force of Jaws (Lbs) | Hardness of Jaws HRC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 47185 | BK2-VT-B | 1.18 | 1.26 | 1.34 | 1.14 | .59 | .83 | .10 | .060 | .12 | 5/16-18 x 3/4 | 30 | 5,500 | 48-52 |
| 47190 | DK2-VTI-B | 1.85 | 1.97 | 2.12 | 1.61 | .87 | 1.18 | .16 | .080 | .20 | 1/2-13 x 1 1/4 | 110 | 12,000 | 48-52 |

# Pitbull® Clamps

The revolutionary Pitbull® Clamp remains the lowest profile, highest holding force clamp in the industry today. High vertical and horizontal clamping forces are generated, considering the size of the Pitbull® Clamps. It uses a standard cap screw and an oil resistant O-ring. The Pitbull® Clamp is available in 5 sizes and several styles, a tool steel knife edge for aggressive stock removal, a tool steel blunt edge for general purpose and a brass version to help prevent marring the workpiece.

See Locating Rails on page 28.





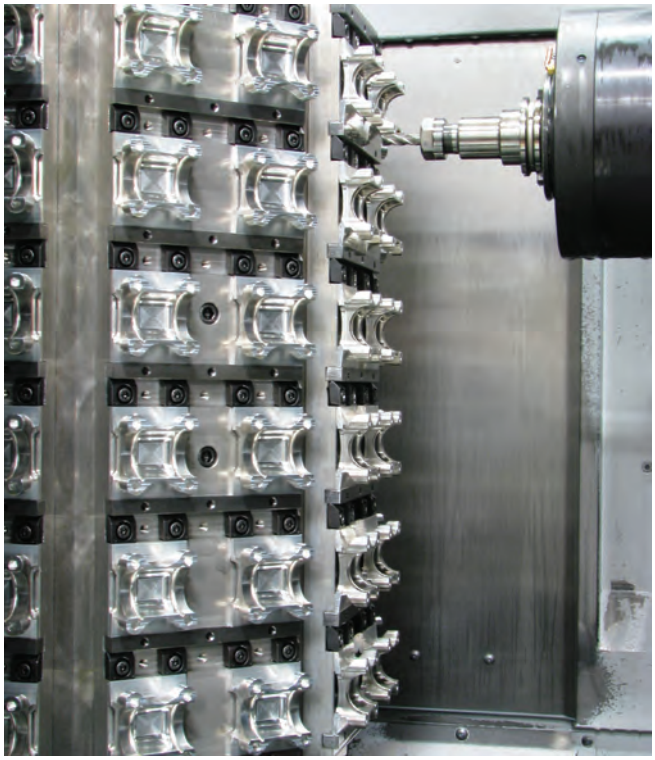
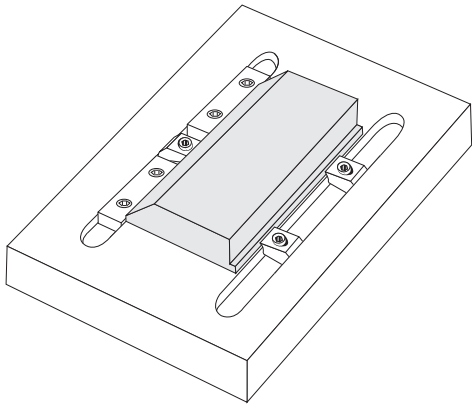


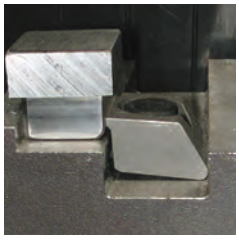
Photo courtesy of www.straitlinecomponents.com

PATENT NO. 6435496



## *Unique features of Pitbull® Clamps:*

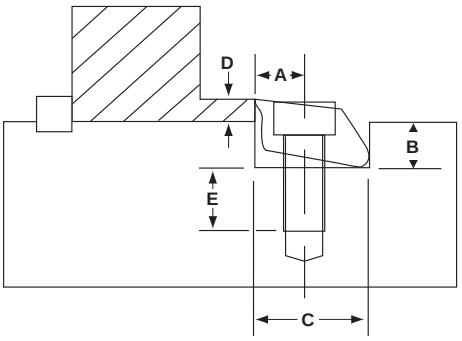
- Extremely low bite
- Positive down force
- High resistance to rip-out
- Simple, sturdy, high quality design and components
- Gain maximum tool access to your work
- Virtually eliminate lost work



## Creating Fixtures is Easy... Simply:

1. Machine a slot for the Pitbull® Clamp
2. Drill and tap a hole for the cap screw
3. Assemble the clamp as shown in diagram below
4. Position clamp as shown in diagram and loosely screw to fixture
5. Insert workpiece and tighten cap screw

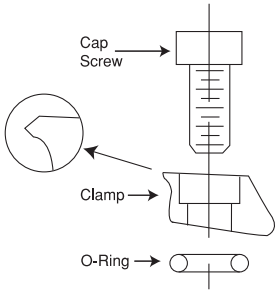
See Locating Rails page 28.



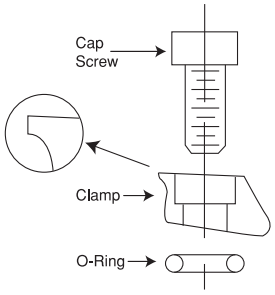

| Part Number | Description | A | B | Clamp Width C | D* | E | Screw Size | Max. Torque (Ft/Lbs) | Holding Force (Lbs) | Total Throw | No. Clamps Per Package |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **INCH** | | | | | | | | | | | |
| 26000 | Tool Steel, Knife Edge | .150 | .140 | .375 | .075 | .260 | 4-40 | 1.30 | 650 | .0075 | 8 |
| 26010 | Tool Steel, Blunt Edge | .150 | .140 | .375 | .075 | .260 | 4-40 | 1.30 | 650 | .0075 | 8 |
| 26015 | Brass, Blunt Edge | .150 | .140 | .375 | .075 | .220 | 4-40 | .41 | 200 | .0075 | 8 |
| 26020 | Tool Steel, Knife Edge | .200 | .187 | .500 | .100 | .390 | 8-32 | 3.70 | 1,500 | .0160 | 8 |
| 26030 | Tool Steel, Blunt Edge | .200 | .187 | .500 | .100 | .390 | 8-32 | 3.70 | 1,500 | .0160 | 8 |
| 26040 | Brass, Blunt Edge | .200 | .187 | .500 | .100 | .340 | 8-32 | 2.00 | 400 | .0160 | 8 |
| 26050 | Tool Steel, Knife Edge | .300 | .280 | .750 | .150 | .570 | 1/4-20 | 14.50 | 3,600 | .0240 | 6 |
| 26060 | Tool Steel, Blunt Edge | .300 | .280 | .750 | .150 | .570 | 1/4-20 | 14.50 | 3,600 | .0240 | 6 |
| 26065 | Brass, Blunt Edge | .300 | .280 | .750 | .150 | .440 | 1/4-20 | 4.10 | 950 | .0240 | 6 |
| 26070 | Tool Steel, Knife Edge | .400 | .450 | 1.000 | .250 | .710 | 3/8-16 | 30.00 | 6,000 | .0500 | 4 |
| 26075 | Tool Steel, Blunt Edge | .400 | .450 | 1.000 | .250 | .710 | 3/8-16 | 30.00 | 6,000 | .0500 | 4 |
| 26080 | Tool Steel, Knife Edge | .600 | .640 | 1.500 | .375 | .770 | 1/2-13 | 108.30 | 12,000 | .0750 | 2 |
| 26085 | Tool Steel, Blunt Edge | .600 | .640 | 1.500 | .375 | .770 | 1/2-13 | 108.30 | 12,000 | .0750 | 2 |
| | | | | | | | | (N.m.) | (N.) | | |
| **METRIC** | | | | | | | | | | | |
| 56000 | Tool Steel, Knife Edge | 3.81 | 3.55 | 9.52 | 1.90 | 6.60 | M2.5 | 1.8 | 2800 | .190 | 8 |
| 56010 | Tool Steel, Blunt Edge | 3.81 | 3.55 | 9.52 | 1.90 | 6.60 | M2.5 | 1.8 | 2800 | .190 | 8 |
| 56015 | Brass, Blunt Edge | 3.81 | 3.55 | 9.52 | 1.90 | 5.59 | M2.5 | .56 | 875 | .190 | 8 |
| 56020 | Tool Steel, Knife Edge | 5.08 | 4.75 | 12.70 | 2.54 | 9.90 | M4 | 5.6 | 6600 | .406 | 8 |
| 56030 | Tool Steel, Blunt Edge | 5.08 | 4.75 | 12.70 | 2.54 | 9.90 | M4 | 5.6 | 6600 | .406 | 8 |
| 56040 | Brass, Blunt Edge | 5.08 | 4.75 | 12.70 | 2.54 | 8.64 | M4 | 2.8 | 1750 | .406 | 8 |
| 56050 | Tool Steel, Knife Edge | 7.62 | 7.11 | 19.05 | 3.81 | 14.48 | M6 | 22.5 | 16000 | .610 | 6 |
| 56060 | Tool Steel, Blunt Edge | 7.62 | 7.11 | 19.05 | 3.81 | 14.48 | M6 | 22.5 | 16000 | .610 | 6 |
| 56065 | Brass, Blunt Edge | 7.62 | 7.11 | 19.05 | 3.81 | 11.18 | M6 | 5.6 | 4200 | .610 | 6 |
| 56070 | Tool Steel, Knife Edge | 10.16 | 11.43 | 25.40 | 6.35 | 18.03 | M10 | 40.6 | 26000 | 1.270 | 4 |
| 56075 | Tool Steel, Blunt Edge | 10.16 | 11.43 | 25.40 | 6.35 | 18.03 | M10 | 40.6 | 26000 | 1.270 | 4 |
| 56080 | Tool Steel, Knife Edge | 15.24 | 16.26 | 38.10 | 9.52 | 19.56 | M12 | 145.0 | 50000 | 1.900 | 2 |
| 56085 | Tool Steel, Blunt Edge | 15.24 | 16.26 | 38.10 | 9.52 | 19.56 | M12 | 145.0 | 50000 | 1.900 | 2 |

**D*** - Minimum clamp height

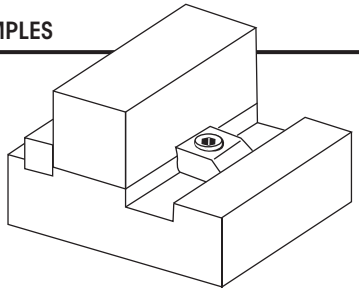
### KNIFE EDGE

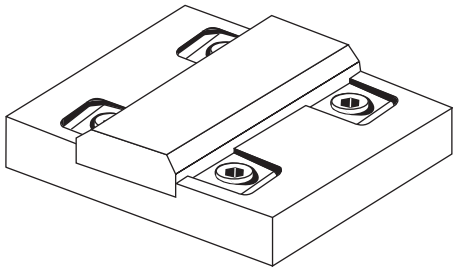



### BLUNT EDGE




### FIXTURE EXAMPLES

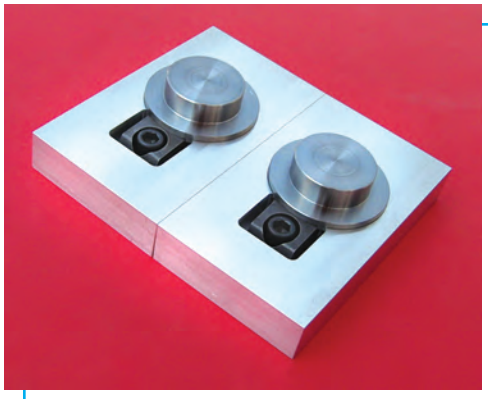




Both versions of the tool steel clamps generate the same clamping pressure. However, the Knife Edge clamps bite into the material for more aggressive machining, while the Blunt Edge is less likely to mark the workpiece.

PATENT NO. 6435496

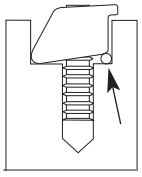
# Machinable Pitbull® Clamps

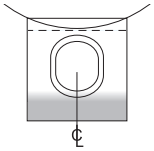


The popular Pitbull® Fixture Clamp is now available in a machinable version. The clamp has positive down force and a very low gripping profile, making it well suited for machining pieces complete in one set up.

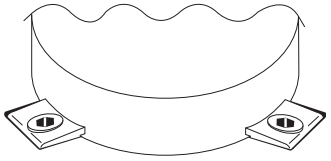
The Machinable Pitbull® Clamp is made of tool steel and heat treated to about 43RC for long life, yet still machinable. There is additional material on the clamping face to allow for machining a radius. It is available in two sizes with 6,000 and 12,000 lbs. (26000 and 50000 N) of holding force. A dowel pin is included in each package to locate clamp while machining radius.

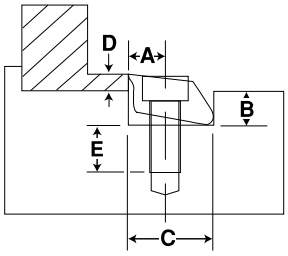
Tighten clamp on dowel pin for proper location for machining clamp. Remove pin and install o-ring to clamp workpiece.





Maximum recommended stock removal from centerline of clamp:
26077 = .060 (56077 = 1.5mm)
26088 = .180 (56088 = 4.5mm)



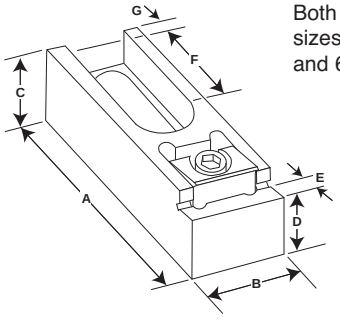


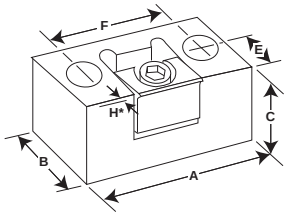

| | Part Number | Description | A | B | C | D* | E | Clamp Width | Screw Size | Max. Torque | Total Holding Force | Dowel Throw | No. Pin | Clamps Per Package |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INCH | 26077 | Tool Steel, Machinable | .400 | .450 | 1.00 | .250 | .710 | 1.00 | 3/8-16 | 30.0 (Ft/Lbs) | 6,000 (Lbs) | .050 | 1/8 | 4 |
| | 26088 | Tool Steel, Machinable | .600 | .640 | 1.50 | .375 | .770 | 1.50 | 1/2-13 | 108.3 (Ft/Lbs) | 12,000 (Lbs) | .075 | 1/4 | 2 |
| METRIC | 56077 | Tool Steel, Machinable | 10.16 | 11.43 | 25.4 | 6.35 | 18.0 | 25.4 | M10 | 40.6 (N.m.) | 26000 (N.) | 1.27 | 3.18 | 4 |
| | 56088 | Tool Steel, Machinable | 15.24 | 16.26 | 38.1 | 9.52 | 19.6 | 38.1 | M12 | 145.0 (N.m.) | 50000 (N.) | 1.90 | 6.35 | 2 |

**D*** - Minimum clamping height

# Modular Pitbull® Clamps

Both versions are produced in two sizes with holding forces of 3,600 and 6,000 lbs (16000 and 26000 N).




The Pitbull® Fixture Clamp is very well known for it's low profile and positive down force. It is now available as a modular clamp in two styles.

The slotted Modular Pitbull® Clamp with a step offers increased versatility through its unique riser design. This clamp supports the workpiece off the machine table for through milling and drilling. The hardened and ground clamps are designed for use on work cubes, as well as machined tables with tapped holes or T-slot configurations.

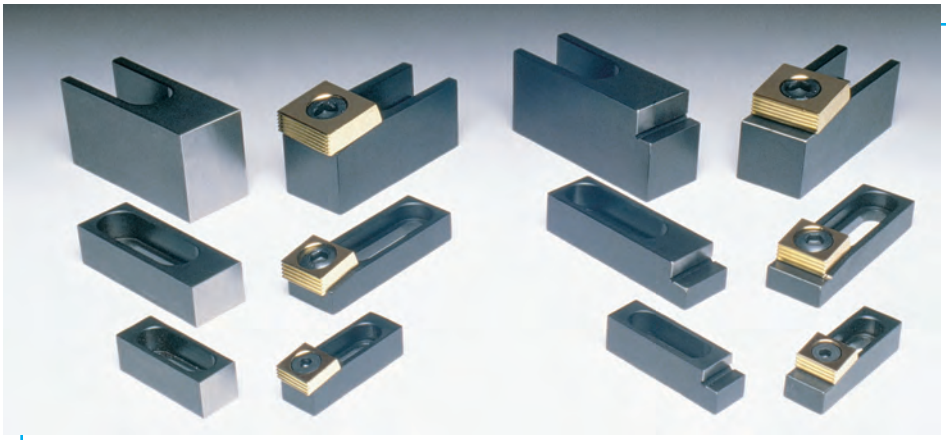
The compact Modular Pitbull® Clamp is ideal for clamping workpieces in series by using the back surface of a clamp to locate the next workpiece. The back of the clamp is ground square to the bottom for precise location of parts. The height of the clamp can be adjusted by the depth of the milled slot used to locate the clamp.

| | — Part Number — Knife Edge | Blunt Edge | Description | A | B | C | D +.0000 -.0005 | E | F | G | H* | Max. Torque (Ft/Lbs) | Holding Force (Lbs) | Mounting Screw | Slot |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INCH | 26220 | 26225 | Medium/Compact | 2.25 | 1.23 | .98 | NA | .62 | 1.50 | - | .024 | 14.5 | 3,600 | 5/16 | - |
| | 26230 | 26235 | Large/Compact | 2.70 | 1.48 | 1.24 | NA | .74 | 1.86 | - | .050 | 30.0 | 6,000 | 3/8 | - |
| | 26240 | 26245 | Medium/Slotted | 4.08 | 1.25 | .99 | .7300 | .36 | 1.70 | .50 | .024 | 14.5 | 3,600 | 1/2 | Closed |
| | 26250 | 26255 | Large/Slotted | 4.20 | 1.50 | 1.61 | 1.3780 | .36 | 1.52 | .43 | .050 | 30.0 | 6,000 | 5/8 | Closed |
| | | | | | | | D +.0000 -.013 | | | | | (N.m.) | (N.) | | |
| METRIC | 56220 | 56225 | Medium/Compact | 57.1 | 31.242 | 25.1 | NA | 15.7 | 38.1 | - | .61 | 22.5 | 16000 | M8 | - |
| | 56230 | 56235 | Large/Compact | 68.6 | 37.592 | 31.5 | NA | 18.8 | 47.0 | - | 1.27 | 40.6 | 26000 | M10 | - |
| | 56240 | 56245 | Medium/Slotted | 103.6 | 31.700 | 25.1 | 18.542 | 9.1 | 43.2 | 12.7 | .61 | 22.5 | 16000 | M12 | Closed |
| | 56250 | 56255 | Large/Slotted | 107.0 | 38.100 | 40.9 | 35.000 | 9.1 | 38.6 | 10.9 | 1.27 | 40.6 | 26000 | M16 | Closed |

**H*** - Clamp travel

PATENT NO. 6435496

# Multi-Fixture Clamps and Stops



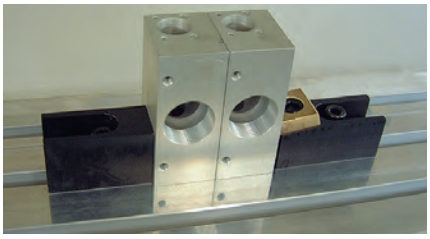
The Multi-Fixture Clamps, with a step, offer increased versatility through their unique riser clamp design. These clamps support the workpiece off the machine table for through milling and drilling.

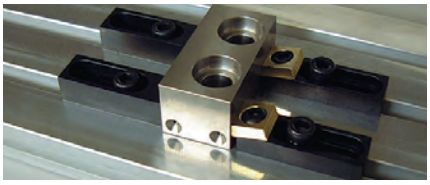
The Multi-Fixture Clamps, without a step, grip the workpiece at a higher point for more clamping strength and better stability.

The hardened and ground clamps offer quick cam action clamping and are designed for use on work cubes and machine tables with tapped holes or T-slot configurations.

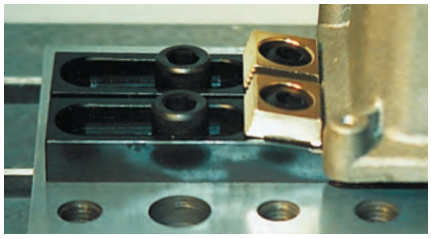
They adjust to unusually shaped parts because the cam action allows the clamping element to always make maximum contact with the workpiece for greater holding force. The tilted clamping element provides positive down force for more accurate machining.

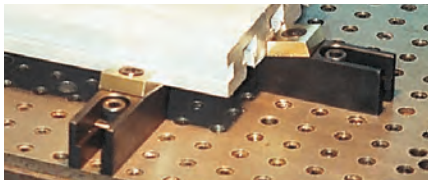
**APPLICATIONS WITHOUT STEPS**





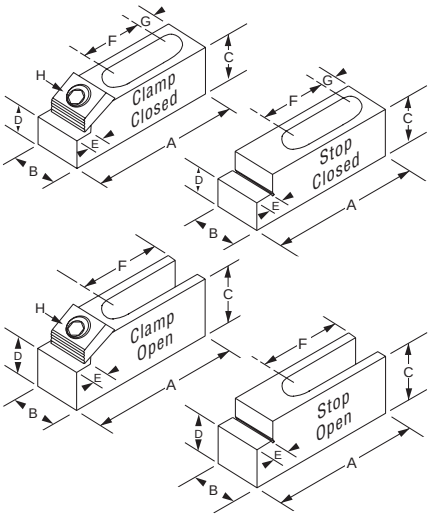
**APPLICATIONS WITH STEPS**



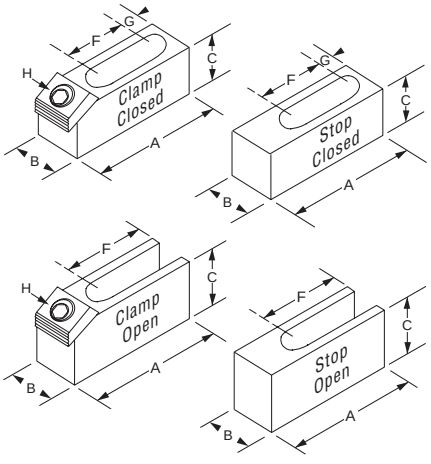


| Part Number | Item | A | B | C | D +.0000 -.0005 | E | F | G | Cam Screw H | Max. Torque (Ft/Lbs) | Holding Force (Lbs) | Mtg. Screw (not incl) | Slot |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **INCH** | | | | | | | | | | | | | |
| **WITH STEPS** | | | | | | | | | | | | | |
| 23140 | Clamp | 2.50 | .75 | .62 | .4600 | .31 | .83 | .53 | 10370 | 8.3 | 2,000 | 5/16 | Closed |
| 23180 | Stop | 2.50 | .75 | .75 | .4600 | .31 | 1.11 | .53 | NA | NA | NA | 5/16 | Closed |
| 23150 | Clamp | 3.75 | 1.12 | .62 | .4800 | .37 | 1.68 | .50 | 10372 | 65.0 | 4,000 | 1/2 | Closed |
| 23200 | Stop | 3.75 | 1.12 | .87 | .4800 | .37 | 1.68 | .50 | NA | NA | NA | 1/2 | Closed |
| 53170 | Clamp | 4.21 | 1.50 | 1.62 | 1.3780 | .37 | 1.82 | NA | 50373 | 100.0 | 6,000 | 5/8 | Open |
| 23240 | Stop | 4.21 | 1.50 | 2.00 | 1.3780 | .37 | 1.82 | NA | NA | NA | NA | 5/8 | Open |
| **WITHOUT STEPS** | | | | | | | | | | | | | |
| 23145 | Clamp | 2.16 | .75 | .62 | NA | NA | .83 | .53 | 10370 | 8.3 | 2,000 | 5/16 | Closed |
| 23148 | Stop | 2.20 | .75 | .75 | NA | NA | 1.11 | .53 | NA | NA | NA | 5/16 | Closed |
| 23155 | Clamp | 3.37 | 1.12 | .62 | NA | NA | 1.68 | .50 | 10372 | 65.0 | 4,000 | 1/2 | Closed |
| 23158 | Stop | 3.30 | 1.12 | .87 | NA | NA | 1.68 | .50 | NA | NA | NA | 1/2 | Closed |
| 53172 | Clamp | 3.80 | 1.50 | 1.62 | NA | NA | 1.82 | NA | 50373 | 100.0 | 6,000 | 5/8 | Open |
| 23178 | Stop | 3.30 | 1.50 | 2.00 | NA | NA | 1.82 | NA | NA | NA | NA | 5/8 | Open |
| | | | | | D +.0000 -.0130 | | | | | (N.m.) | (N.) | | |
| **METRIC** | | | | | | | | | | | | | |
| **WITH STEPS** | | | | | | | | | | | | | |
| 53140 | Clamp | 63.5 | 19.1 | 15.8 | 11.68 | 8.0 | 21.1 | 13.5 | 50368 | 28.00 | 8900 | M8 | Closed |
| 23180 | Stop | 63.5 | 19.1 | 19.1 | 11.68 | 8.0 | 28.2 | 13.5 | NA | 28.00 | 8900 | M8 | Closed |
| 53150 | Clamp | 95.3 | 28.5 | 15.8 | 12.19 | 9.4 | 42.7 | 12.7 | 50372 | 88.00 | 17800 | M12 | Closed |
| 23200 | Stop | 95.3 | 28.5 | 22.1 | 12.19 | 9.4 | 42.7 | 12.7 | NA | 88.00 | 17800 | M12 | Closed |
| 53170 | Clamp | 107.0 | 38.1 | 41.2 | 35.00 | 9.4 | 46.2 | NA | 50374 | 135.00 | 26700 | M16 | Open |
| 23240 | Stop | 107.0 | 38.1 | 50.8 | 35.00 | 9.4 | 46.2 | NA | NA | 135.00 | 26700 | M16 | Open |
| **WITHOUT STEPS** | | | | | | | | | | | | | |
| 53145 | Clamp | 54.9 | 19.1 | 15.8 | NA | NA | 21.1 | 13.5 | 50368 | 28.00 | 8900 | M8 | Closed |
| 23148 | Stop | 55.9 | 19.1 | 19.1 | NA | NA | 28.2 | 13.5 | NA | 28.00 | 8900 | M8 | Closed |
| 53155 | Clamp | 85.6 | 28.5 | 15.8 | NA | NA | 42.7 | 12.7 | 50372 | 88.00 | 17800 | M12 | Closed |
| 23158 | Stop | 83.5 | 28.5 | 22.1 | NA | NA | 42.7 | 12.7 | NA | 88.00 | 17800 | M12 | Closed |
| 53172 | Clamp | 96.5 | 38.1 | 41.2 | NA | NA | 46.2 | NA | 50374 | 135.00 | 26700 | M16 | Open |
| 23178 | Stop | 83.8 | 38.1 | 50.8 | NA | NA | 46.2 | NA | NA | 135.00 | 26700 | M16 | Open |

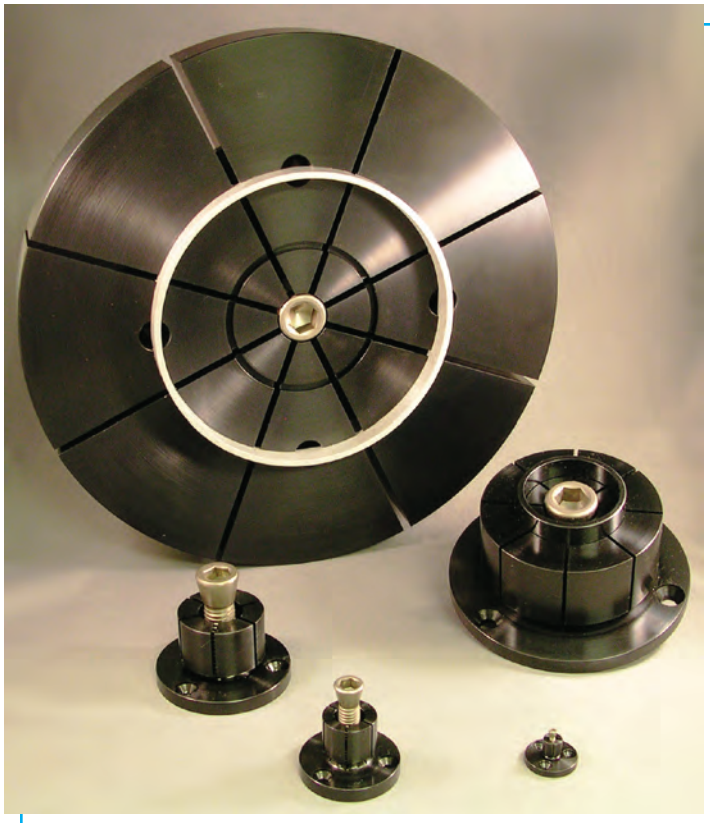
**With Steps**




**Without Steps**



# ID Xpansion® Clamp



The ID Xpansion® clamp is the ideal solution to hold parts on an inside diameter for high density machining on vertical or horizontal machining centers. It can also be used as an expanding mandrel on a lathe.

These machinable clamps are produced in 12 sizes and can hold internal diameters from under 3/16 to almost 10 inches (4.1 to over 103mm).

The flange 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 a proper fit. Often times the clamps can be remachined for different size jobs.

The low profile ID Xpansion® Clamp can hold several parts in one compact area for secondary operations without any clamping interference. They are quickly tightened with a hex key, torque driver or can be mated to hydraulic pull cylinders for automation.


Clamping and locating mill parts on two bores.

- 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 plates
- Heat-treated and coated screw for long life
- Clamp body made of mild steel for machinability
- Tighten with hex key or hydraulic pull cylinders
- Longer screws for hydraulic applications available

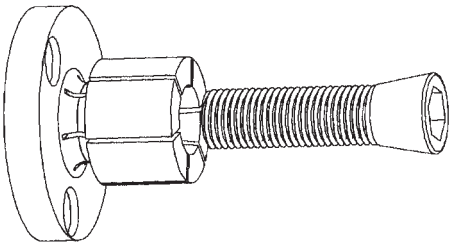
Innovative application.

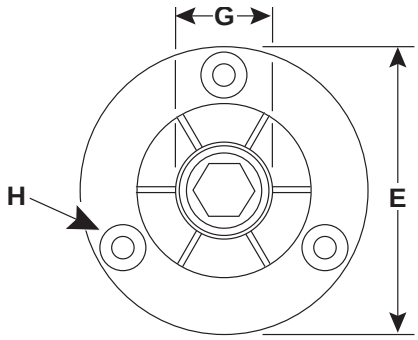
## Model #00 - #6 ID Xpansion® Clamps

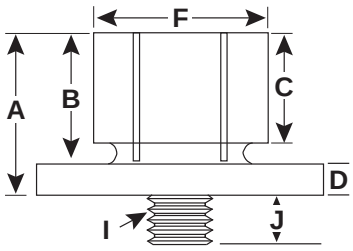
- Expand clamp approximately .002 to .003 (.1mm) over relaxed diameter and machine to fit workpiece bore, either on lathe or mill.
- If machining the clamp on a lathe use the nut provided, on the back of the clamp, to tighten the tapered screw. This nut is used only while machining the clamp.
- Machine a pocket in the fixture, for the close tolerance "E" dimension and drill and tap mounting holes per "H" column. Drill and tap a hole from the "I" column in the center of the pocket for the tapered screw.
- A recessed dowel pin may be installed into the flange for additional rigidity if required.
- Range of expansion .005 to .025 (.2 to .5mm) depending upon size.

## Model #7 - #10 ID Xpansion® Clamps

- Locking ring provided to ensure segments remain rigid while machining clamps to size.
- Insert ring and tighten drive screw, machine clamp to bore size. Remove ring to clamp workpiece.
- Aggressive material removal is not recommended when machining clamps to size.





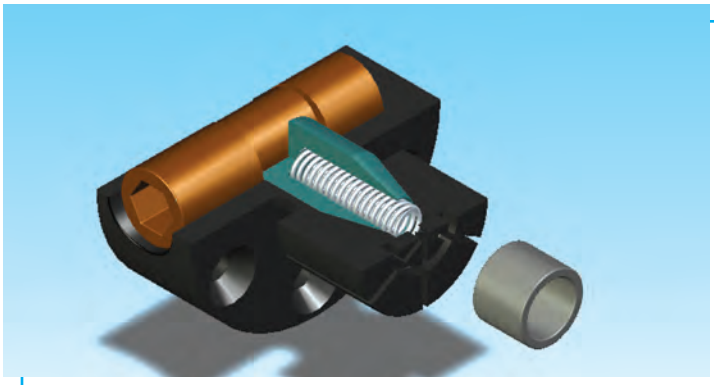



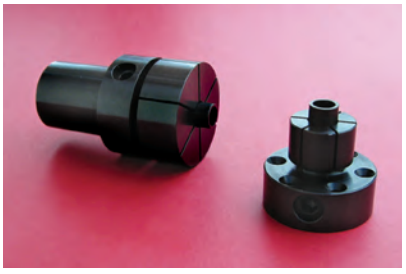

| Part Number | Model Number | A | B | C | D | E +.000 -.002 | F | G† | H* | I | J | Max. Torque (Ft/Lbs) | Holding Force (Lbs) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **INCH** | | | | | | | | | | | | | |
| 31000 | #00 | .42 | .30 | .24 | .12 | .787 | .29 | .16 | 2-56 on .540 BHC | 2-56 | .16 | 0.5 | 250 |
| 31050 | #0 | .86 | .63 | .59 | .23 | 1.170 | .49 | .28 | 6-32 on .825 BHC | 8-32 | .30 | 3.6 | 950 |
| 31100 | #1 | .98 | .75 | .59 | .23 | 1.240 | .56 | .48 | 6-32 on .910 BHC | 1/4-20 | .50 | 13.3 | 1,900 |
| 31150 | #2 | .98 | .75 | .59 | .23 | 1.476 | .79 | .53 | 6-32 on 1.140 BHC | 5/16-18 | .56 | 27.6 | 2,500 |
| 31200 | #3 | 1.13 | .88 | .69 | .25 | 1.968 | 1.06 | .71 | 8-32 on 1.550 BHC | 3/8-16 | .71 | 49.3 | 4,500 |
| 31250 | #4 | 1.25 | 1.00 | .81 | .25 | 2.205 | 1.39 | .90 | 8-32 on 1.790 BHC | 1/2-13 | .71 | 120.0 | 5,900 |
| 31300 | #5 | 1.56 | 1.25 | 1.06 | .31 | 2.736 | 1.65 | 1.15 | 10-32 on 2.200 BHC | 5/8-11 | .79 | 224.0 | 10,000 |
| 31350 | #6 | 1.56 | 1.25 | 1.06 | .31 | 2.972 | 2.03 | 1.15 | 10-32 on 2.515 BHC | 5/8-11 | .79 | 224.0 | 10,000 |
| 31400 | #7 | 1.79 | 1.48 | 1.27 | .31 | 4.232 | 3.06 | 1.15 | 1/4-20 on 3.646 BHC | 5/8-11 | .79 | 224.0 | 10,000 |
| 31450 | #8 | 1.79 | 1.48 | 1.27 | .31 | 5.232 | 4.06 | 1.15 | 1/4-20 on 4.648 BHC | 5/8-11 | .79 | 224.0 | 10,000 |
| 31500 | #9 | 1.79 | 1.48 | 1.27 | .31 | 5.232 | 6.89 | 1.15 | 1/4-20 on 4.648 BHC | 5/8-11 | .79 | 224.0 | 10,000 |
| 31550 | #10** | 1.79 | 1.48 | 1.27 | .31 | 6.000 | 9.85 | 1.15 | 1/4-20 on 5.250 BHC | 5/8-11 | .79 | 125.0 | 6,000 |
| | | | | | | E +.000 -.050 | | | | | | (N.m.) | (N.) |
| **METRIC** | | | | | | | | | | | | | |
| 38000 | #00 | 10.7 | 7.6 | 6.1 | 3.0 | 20.00 | 7.4 | 4.1 | M2 on 13.7 BHC | M2 | 4.1 | .70 | 1113 |
| 38050 | #0 | 21.8 | 16.0 | 15.0 | 5.9 | 29.72 | 12.4 | 7.1 | M3 on 20.95 BHC | M4 | 7.2 | 5.00 | 4228 |
| 38100 | #1 | 24.9 | 19.0 | 15.0 | 5.9 | 31.50 | 14.2 | 12.2 | M3 on 23.1 BHC | M6 | 11.2 | 17.00 | 8455 |
| 38150 | #2 | 24.9 | 19.0 | 15.0 | 5.9 | 37.50 | 20.0 | 13.5 | M3 on 29.0 BHC | M8 | 13.2 | 34.00 | 11125 |
| 38200 | #3 | 28.6 | 22.2 | 17.5 | 6.4 | 50.00 | 27.0 | 18.0 | M4 on 39.4 BHC | M10 | 16.3 | 60.00 | 20025 |
| 38250 | #4 | 31.8 | 25.4 | 20.6 | 6.4 | 56.00 | 35.3 | 23.0 | M4 on 45.5 BHC | M12 | 20.3 | 150.00 | 26255 |
| 38300 | #5 | 39.6 | 31.8 | 27.0 | 7.9 | 69.50 | 42.0 | 29.3 | M5 on 55.9 BHC | M16 | 21.4 | 280.00 | 44500 |
| 38350 | #6 | 39.6 | 31.8 | 27.0 | 7.9 | 75.50 | 51.5 | 29.3 | M5 on 63.9 BHC | M16 | 21.4 | 280.00 | 44500 |
| 38400 | #7 | 45.5 | 37.6 | 32.3 | 7.9 | 107.50 | 77.7 | 29.3 | M6 on 92.6 BHC | M16 | 19.3 | 280.00 | 44500 |
| 38450 | #8 | 45.5 | 37.6 | 32.3 | 7.9 | 132.90 | 103.0 | 29.3 | M6 on 188.06 BHC | M16 | 19.3 | 280.00 | 44500 |
| 38500 | #9 | 45.5 | 37.6 | 32.3 | 7.9 | 132.90 | 175.0 | 29.3 | M6 on 188.06 BHC | M16 | 19.3 | 280.00 | 44500 |
| 38550 | #10** | 45.5 | 37.6 | 32.3 | 7.9 | 152.40 | 250.2 | 29.3 | M6 on 133.35 BHC | M16 | 19.3 | 170.00 | 26000 |

**G†** - Minimum diameter the "F" dimension can be machined or turned down to. **H*** - (3) Mounting Screws included - (4) for model numbers #9 and #10.

**Model #10 Made from 7075-T6 aluminum.

# Side-Loc Xpansion Clamp



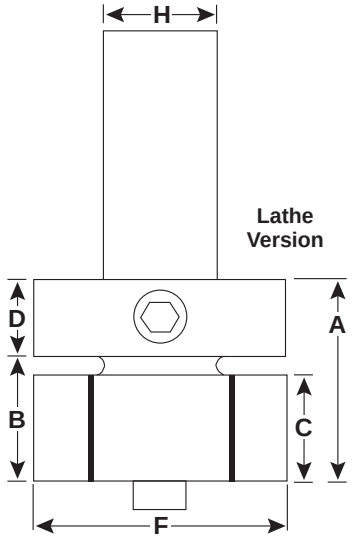


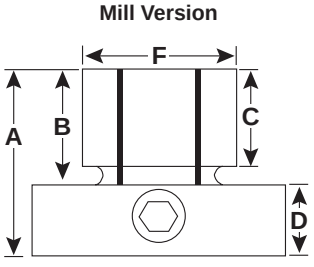
*The Side-Loc Xpansion Clamp is actuated from the side, making it perfect for blind hole applications.*

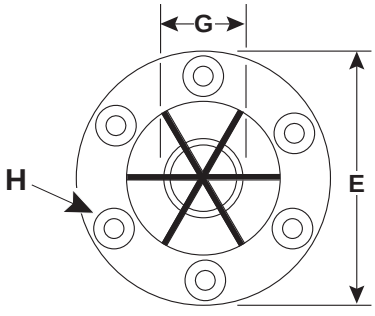
*It's produced for both mill and lathe applications. The cam shaft and plunger expands the clamp from the side. Same mounting dimensions as our original ID clamp.*

The Side-Loc Xpansion Clamp is actuated by turning a socket head cam shaft on the side, which moves a tapered plunger to expand the clamp. The locking ring provides an accurate preset diameter and rigidity for machining. Maximum torque on locking ring 10 ft. lbs. (13 N.m.). Like our original ID Xpansion® clamps, the Side-Loc Xpansion Clamp has the dead length feature which is critical for close tolerance dimensions.

The Side-Loc Xpansion Clamp is designed in two styles: one for milling operations and one for lathe applications. One size is available for each model. The mill Side-Loc Xpansion Clamp can be machined from 1.120 to .710 (28.4 to 18mm) and the lathe version from 2.09 to.710 (53 to 18mm). The lathe version has a 1" (25mm) straight shank.



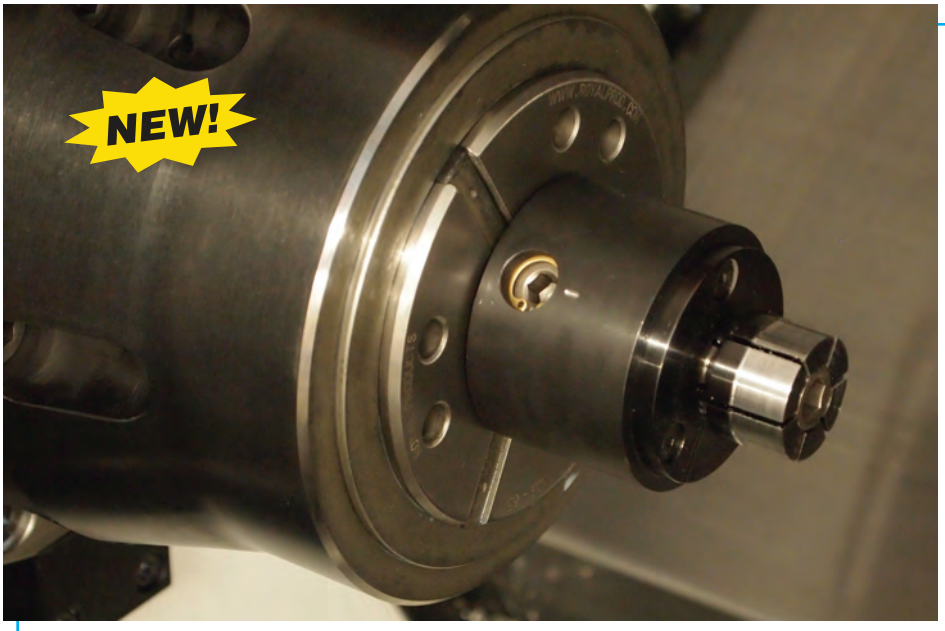



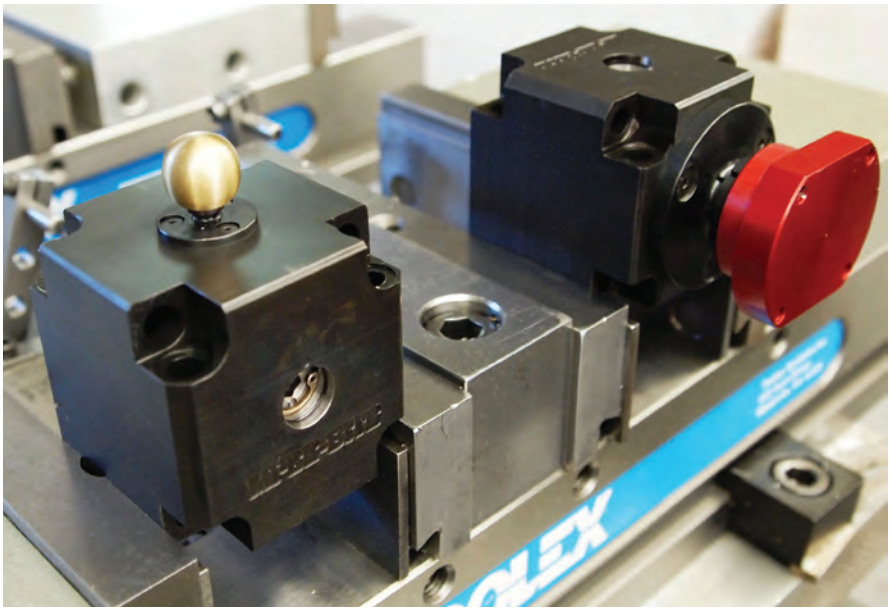

| | Part Number | Model No. | A | B | C | D | E +.000 -.002 | F | G† | H* | Hex Key | Max. Torque (Ft/Lbs) | Holding Force (Lbs) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| INCH | 31210 | Mill #3 | 1.625 | .875 | .69 | .75 | 1.968 | 1.12 | .71 | 8-32 on 1.550 BHC | M6 | 49 | 4,000 |
| | 31370 | Lathe #6 | 1.750 | 1.000 | .84 | .75 | .NA | 2.09 | .71 | 1.0 | M6 | 49 | 4,000 |
| | | | | | | | E +.000 -.050 | | | | | (N.m.) | (N.) |
| METRIC | 38210 | Mill #3 | 41.3 | 22.2 | 17.5 | 19.0 | 50.0 | 28.7 | 17.8 | M4 on 39.4 BHC | M6 | 66 | 20000 |
| | 38370 | Lathe #6 | 44.4 | 25.4 | 21.3 | 19.0 | N/A | 53.3 | 17.8 | 25 | M6 | 66 | 20000 |

G† - Minimum diameter the "F" dimension can be machined down to. H* - (6) mounting screws included.

# Manual Actuators for Mills and Lathes

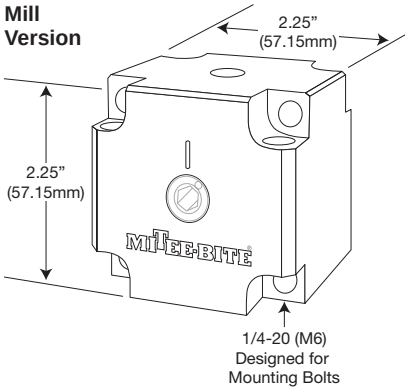



MITEE-BITE Products introduces another new and innovative workholding system. Specifically designed to clamp on Blind ID's smaller than our Side-Loc clamps would allow, for both Mill and Lathe applications. We took the design a step further increasing the functionality to clamping smaller inside diameters, and for the Mill version the option of holding the workpiece in a vertical or horizontal plane. By simply mounting our standard ID Xpansion® clamps (Model #00 thru #4) on these manual actuators, or using another style clamp that has a "straight-draw", you can now perform operations that previously required expensive hydraulic/ pneumatic pull cylinders.

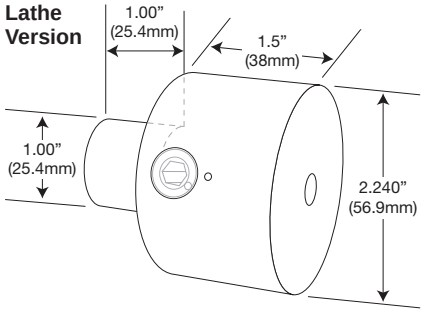


| Part Number | | Cylinder |
|---|---|---|
| Mill | Lathe | Thread |
| 34502 | 34602 | M2 |
| 34504 | 34604 | M4 |
| 34506 | 34606 | M6 |
| 34508 | 34608 | M8 |
| 34510 | 34610 | M10 |
| 34512 | 34612 | M12 |

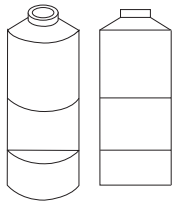
**Mill Version**




**Lathe Version**

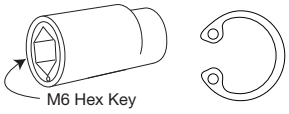



**Threaded Cylinder**



The actuators are available with heat-treated cylinders tapped for the following drive screws: M2, M4, M6, M8, M10, M12

**Actuator Drive Screw with Retaining Snap Ring**

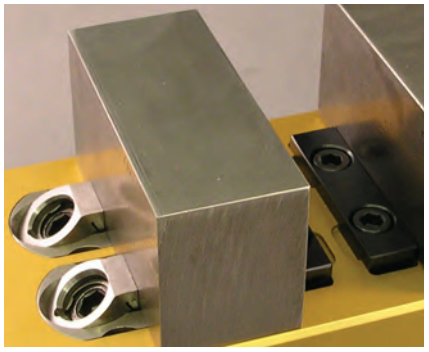



| Part Number |
|---|
| 34550 |

# Dyna-Force® Clamps

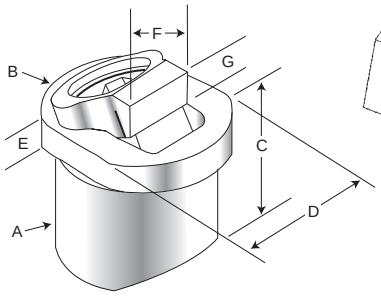
The majority of the Dyna-Force® clamp is below the surface of the fixture which provides excellent clamp support and makes for a very low profile. The clamp jaw slides on an angle for positive downforce.

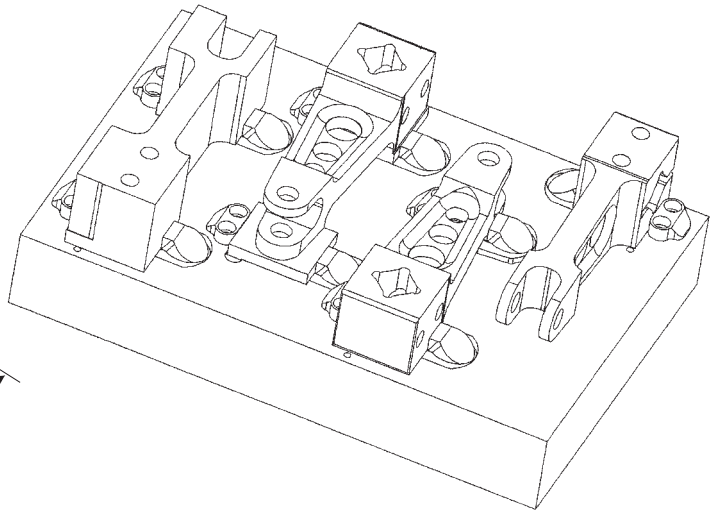
- ➤ Incredible clamping and hold down power
- ➤ Low profile, compact design
- ➤ 17-4 PH stainless steel
- ➤ Smooth or serrated jaws



The support surface of the Dyna-Force® clamp can be installed flush with the fixture plate or raised to hold the workpiece off the fixture, enabling drill through.

Use our TalonGrip™ Grippers opposite the Dyna-Force® Clamps for extremely low profile applications when high holding forces are needed. See page 22 for Gripper information.



| Part Number | Clamp Jaw† & Hardness | A* | B | C | D | E | F | G Min | G Optimum | G Max | Clamp Travel | Drive Screw | Key Size | Max. Torque | Holding Force |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 28314<br>28318 | Smooth 34RC<br>Serrated 44RC | 20.00 | 24.90 | 19.00 | 19.90 | 4.50 | 13.50 | 3.25 | 5.00 | 6.75 | 2.0 | 6mm | 5mm | 7.3 (Ft/Lbs) - 9.9 (N.m) | 2,000 (Lbs) - 8896 (N.) |
| 28320<br>28322 | Smooth34RC<br>Serrated 44RC | 25.00 | 29.90 | 24.00 | 24.90 | 5.00 | 15.00 | 4.50 | 6.50 | 8.25 | 2.2 | 8mm | 6mm | 17.6 (Ft/Lbs) - 23.9 (N.m) | 2,600 (Lbs) - 11565 (N.) |
| 28324<br>28328 | Smooth 34RC<br>Serrated 44RC | 30.00 | 37.90 | 29.00 | 29.90 | 7.00 | 20.00 | 4.50 | 7.50 | 10.75 | 3.8 | 10mm | 8mm | 35.3 (Ft/Lbs) - 41.9 (N.m) | 3,200 (Lbs) -14234 (N.) |

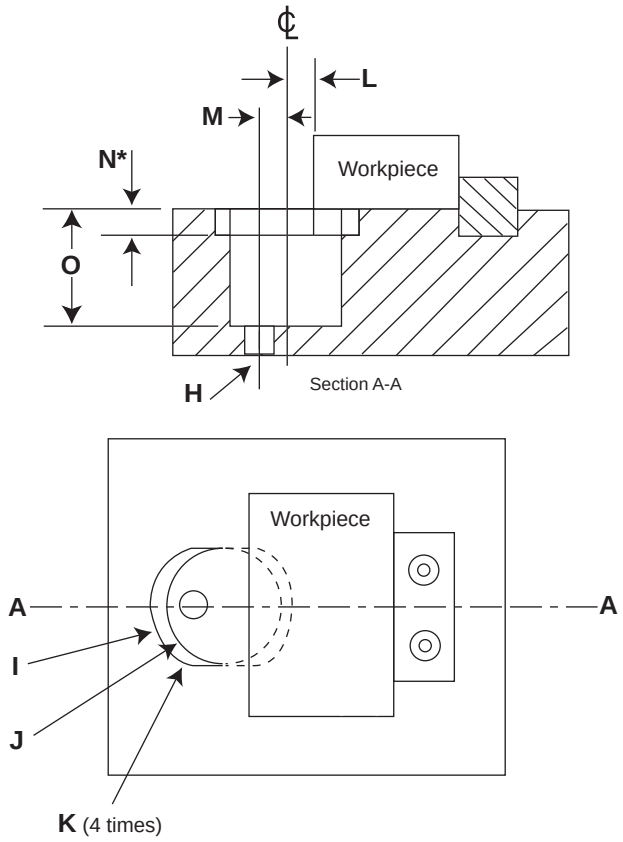
**A*** - Body diameter  † - Smooth jaw only will have relief cut

1. Bore ℄ of the hole “L” distance from edge of workpiece.
2. Drill and tap “H” to mount clamp in pocket.
3. Machine counter bore if recessing clamp into fixture.
4. Provide a back stop to locate the part.

See Locating Rails on page 28.

**NOTES:**

1. "N*" - To have rest pad flush with fixture, use the dimension provided. To have the rest pad above the fixture surface, reduce the depth accordingly.
2. For dimensions I and J, use a tolerance of +.1/-0mm. For dimension L and O, use +.1/-.1mm.




**HEIGHT OF JAW IN RELATION TO ℄ OF BORE FROM EDGE OF WORKPIECE.**

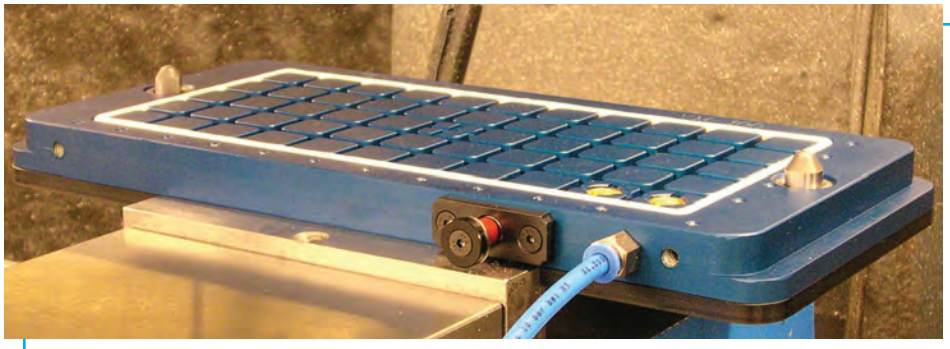
| Height of Jaw G | 20mm L | 25mm L | 30mm L |
|---|---|---|---|
| 3.25 | 5.91 | | |
| 3.50 | 5.77 | | |
| 3.75 | 5.62 | | |
| 4.00 | 5.48 | | |
| 4.25 | 5.33 | | |
| 4.50 | 5.19 | 6.81 | 8.78 |
| 4.75 | 5.05 | 6.66 | 8.63 |
| 5.00 | 4.90 | 6.52 | 8.49 |
| 5.25 | 4.76 | 6.37 | 8.35 |
| 5.50 | 5.61 | 6.23 | 8.20 |
| 5.75 | 4.47 | 6.08 | 8.06 |
| 6.00 | 4.32 | 5.94 | 7.91 |
| 6.25 | 4.18 | 5.80 | 7.77 |
| 6.50 | 4.03 | 5.65 | 7.62 |
| 6.75 | 3.89 | 5.51 | 7.48 |
| 7.00 | | 5.36 | 7.34 |
| 7.25 | | 5.22 | 7.19 |
| 7.50 | | 5.07 | 7.05 |
| 7.75 | | 4.93 | 6.90 |
| 8.00 | | 4.78 | 6.76 |
| 8.25 | | 4.64 | 6.61 |
| 8.50 | | | 6.47 |
| 8.75 | | | 6.33 |
| 9.00 | | | 6.18 |
| 9.25 | | | 6.04 |
| 9.50 | | | 5.89 |
| 9.75 | | | 5.75 |
| 10.00 | | | 5.60 |
| 10.25 | | | 5.46 |
| 10.50 | | | 5.31 |
| 10.75 | | | 5.17 |

**EXAMPLE:** 20mm clamp when ℄ of bore is 4.90mm from edge of workpiece (L - see drawing on left): jaw height is 5.00mm (G - see drawing on page 18).

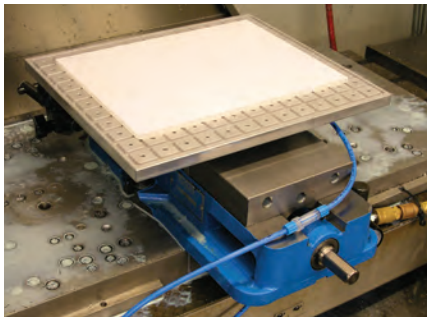
| Part Number | H | I | J | K | L | M | N | O |
|---|---|---|---|---|---|---|---|---|
| 28314 | M5 or 10-24 | 25.00 | 20.00 | 6.00 | 4.90 | 5.00 | 4.50 | 20.00 |
| 28318 | M5 or 10-24 | 25.00 | 20.00 | 6.00 | 4.90 | 5.00 | 4.50 | 20.00 |
| 28320 | M6 or 1/4-20 | 30.00 | 25.00 | 6.50 | 5.65 | 6.00 | 5.00 | 25.00 |
| 28322 | M6 or 1/4-20 | 30.00 | 25.00 | 6.50 | 5.65 | 6.00 | 5.00 | 25.00 |
| 28324 | M8 or 5/16-18 | 38.00 | 30.00 | 8.00 | 7.05 | 7.50 | 7.00 | 30.00 |
| 28328 | M8 or 5/16-18 | 38.00 | 30.00 | 8.00 | 7.05 | 7.50 | 7.00 | 30.00 |

PATENT NO. 5964458

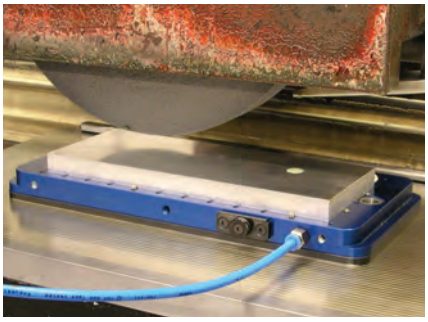
# Vacmagic® VM100



VM100 Base Unit (45375) in Vise



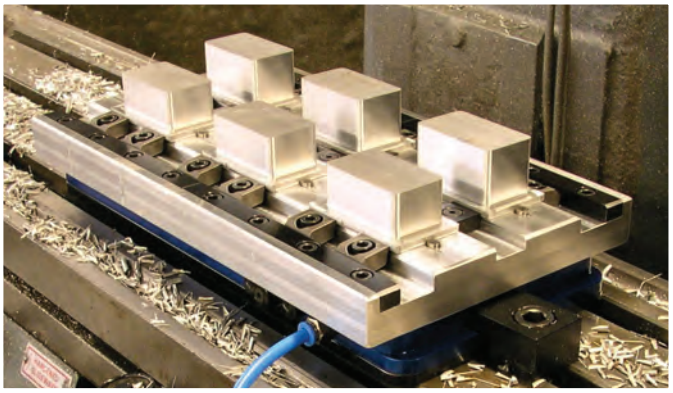
VM100 Base Unit (45375) with
VM300 Vacuum Pallet (45150)



VM100 Base Unit (45375) on
a Magnetic Chuck

## *The Simplest and Most Versatile Vacuum System on the Market*

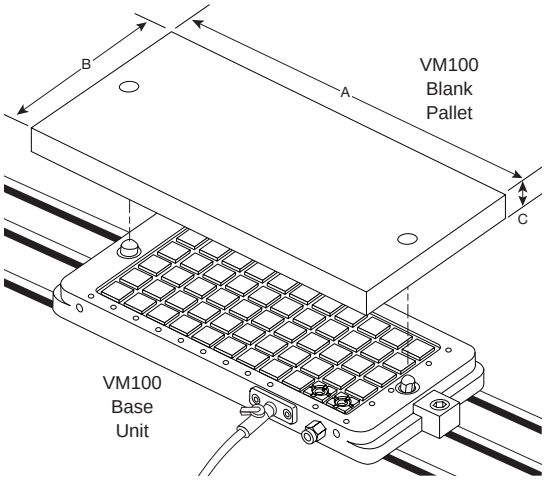
The VM100 was primarily designed for grinding non-ferrous material on a magnetic chuck. During the early stages of R & D it was discovered the VM100 could be much more. Clamp the VM100 in vise to reduce set-up time, use as a pallet changer or mount to a grid plate or T-slot table. The VM100 uses the same patented method as the VM300 to produce a vacuum strong enough for industrial applications but still operates on shop air! No need for vacuum pumps and coolant traps. We include everything necessary to get your VM100 running within minutes of opening the box.



VM100 Base Unit (45375) with a
Production Pallet (VM100 Blank Pallet - 45325)

- Operates on 70–100 PSI shop air, eliminating vacuum pumps and coolant traps
- Will accept the standard VM300 Vacuum pallet, increasing your vacuum platform to over 14” x 12” (360mm x 315mm)
- Make your own vacuum fixtures - we can help with the design and produce the fixture for your custom application
- Remove 12mm pins when grinding/machining thin material, use set screws to locate and aid in holding force

| Part Number | Description | A - Length Inch (Metric) | B - Width Inch (Metric) | C - Height Inch (Metric) |
|---|---|---|---|---|
| **VM100** | | | | |
| 45325 | Blank Pallet | 12.5″ (318mm) | 5.875″ (150mm) | 1.0″ (25mm) |
| 45150 | VM300 Vacuum Pallet | 14.2″ (360mm) | 12.4″ (315mm) | 0.63″ (16mm) |
| 45375 | Base Unit with Mounting Clamps | 12.375″ (315mm) | 5.5″ (140mm) | 1.0″ (25mm) |
| 45300 | Complete System<br>Includes: base unit, 2 blank pallets | | | |
| **VM300** | | | | |
| 45130 | Blank Pallet | 14.2″ (360mm) | 12.4″ (315mm) | 0.75″ (19mm) |
| 45150 | VM300 Vacuum Pallet | 14.2″ (360mm) | 12.4″ (315mm) | 0.63″ (16mm) |
| 45160 | VM300 Large Vacuum Pallet | 33.625″ (859mm) | 14.5″ (368mm) | .625″ (16mm) |
| 45175 | Base Unit (Receiver)<br>Includes: safety switch, required hoses | 12.75″ (323mm) | 13.0″ (330mm) | 1.375″ (35mm) |
| 45101 | Complete System<br>Includes: base unit, 2 blank pallets,1 vacuum pallet | | | |

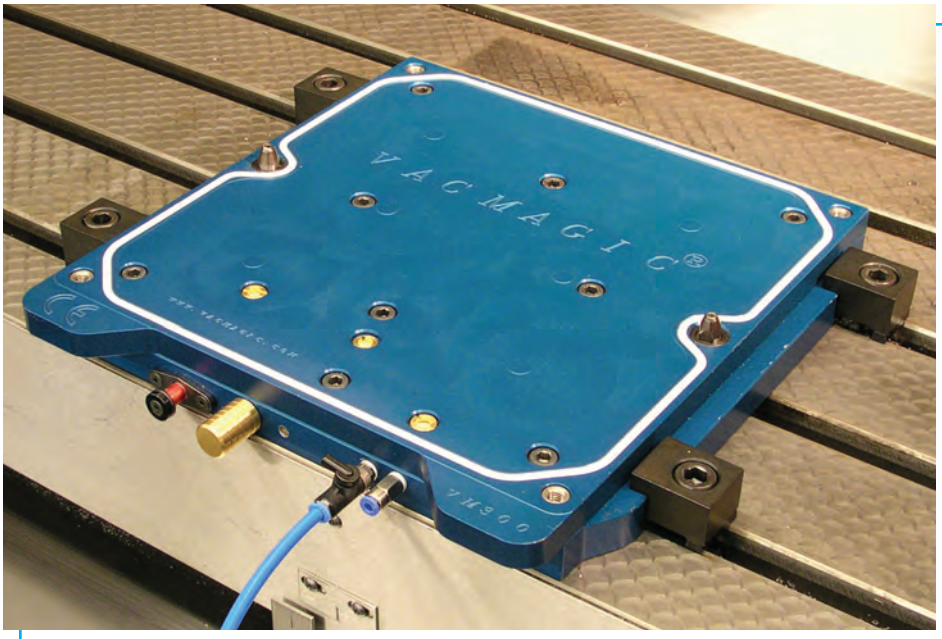



### GASKET MATERIAL (for VM300 & VM100)

| | | Part No. | Desciption | Diameter |
|---|---|---|---|---|
| **BLACK** - Excellent for long cycles and aggressive coolants. | **BLACK** | 45110 | Vacuum Gasket - per 5 ft. length | .170 |
| | | 45111 | Vacuum Gasket - by the foot | .170 |
| | | 45118 | Vacuum Gasket - per 5 ft. length | .125 |
| **WHITE** - Excellent for small parts, water based coolants or running dry. | **WHITE** | 45114 | Vacuum Gasket - by the foot | .170 |

PATENT NO. 7665717

# Vacmagic® VM300

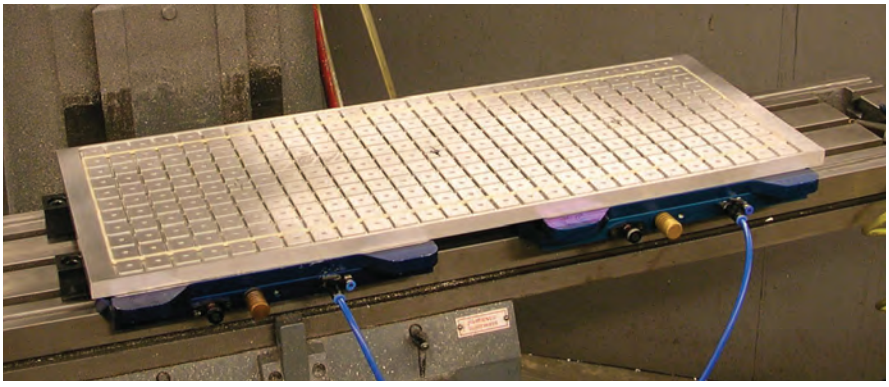



## *The All-in-One Pallet Changer and Vacuum Chuck System*

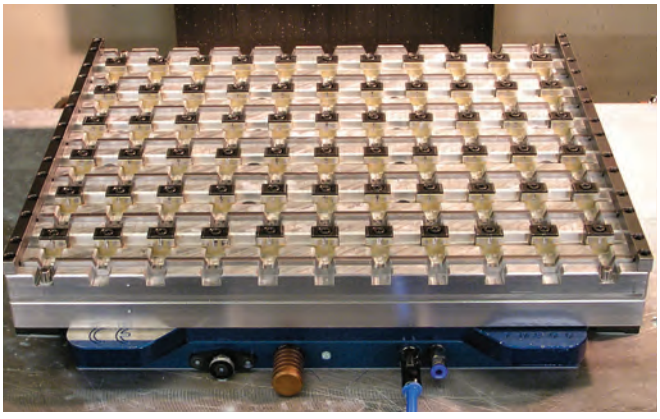
*Best Workholding Product at MACH Exhibition 2006*

In a relatively short amount of time the VM300 has established itself as the vacuum system to which all others are measured. Capabilities include traditional vacuum applications using our standard grid plate and custom vacuum applications (ie: machining blank pallet to suit specific part geometry) and the ability to perform as a rock solid pallet changer. Contact us to schedule an in-house demonstration with one of our highly qualified Manufacturing Representatives.

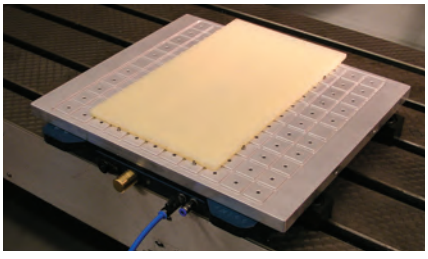
- Simple design keeps cost low
- Quick-change - swap pallets in 30 seconds or less
- Productivity maximized - load pallets while machining
- Easy to install and set-up
- Precise repeatability
- Reliable and easy to use - virtually maintenance free
- Flexible pallet design - limited only by your imagination!
- No pumps - uses standard shop air



Two VM300 Base Units (45175) and large Vacuum Pallet (45160)

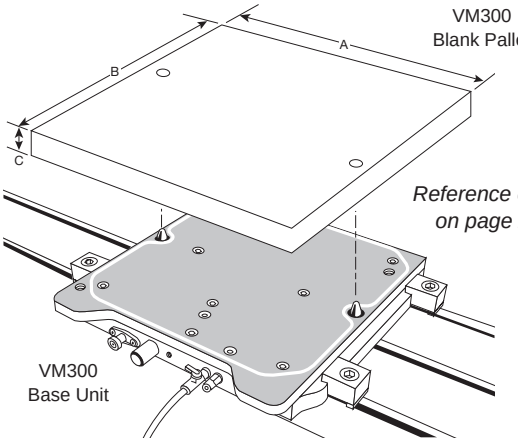


VM300 Base Unit (45175) with a Production Pallet (VM300 Blank Pallet - 45130)



Workpiece placed over gasket and pushed down to create a vacuum. Now ready for machining. (VM300 Vacuum Pallet - 45150)

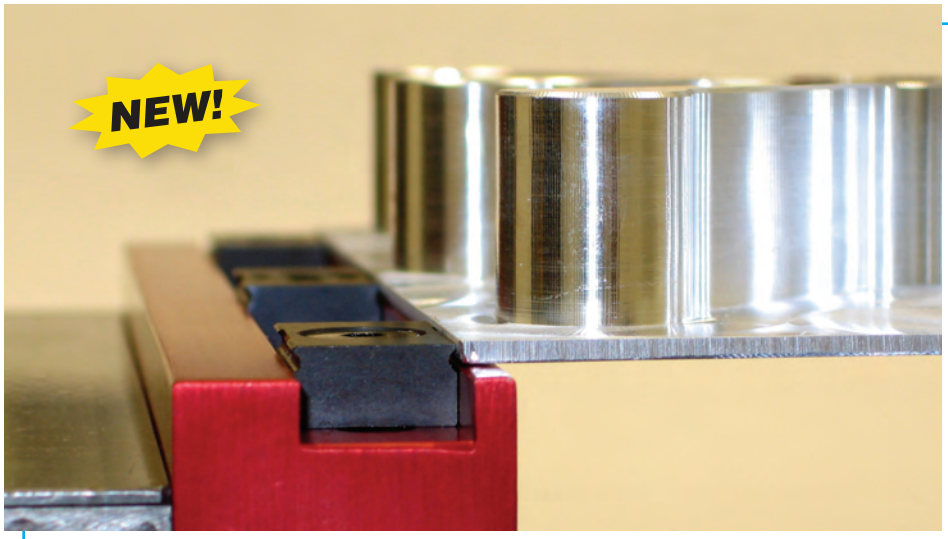
## *One Small Investment = Huge Payoffs!*



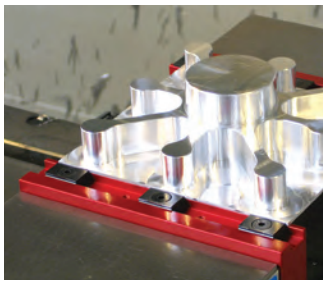

*Reference chart on page 20*

PATENT 7665717

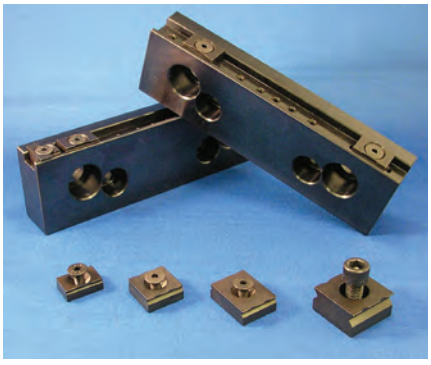
# TalonGrip™ Vise Jaws

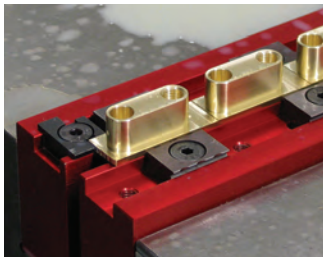



MITEE-BITE Products introduces a new and innovative product that will increase the functionality of your standard 4 and 6 inch (100mm and 150mm) vises. TalonGrip™ is a simple bolt on system that will allow you to perform aggressive machining operations while clamping on as little as .060 (1.5mm) of an inch. Ideal for small lot sizes, difficult applications or proto-type work when building a fixture would not be beneficial. TalonGrips™ are also available individually for fixturing with Pitbull® and Dyna-Force® Clamps or for soft jaw applications.

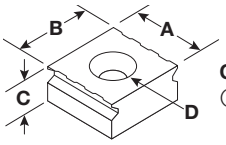


Aggressive stock removal

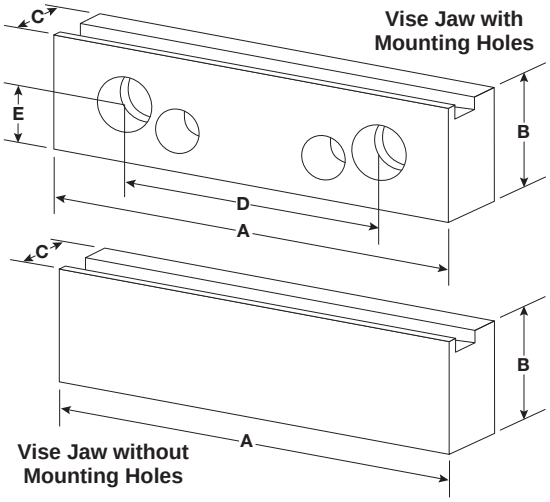




Multiple parts

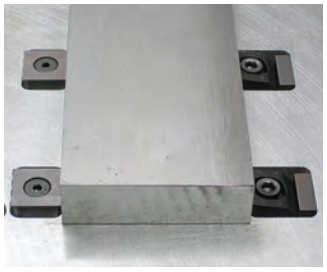



**Grip**
(Grips 52-54 RC)

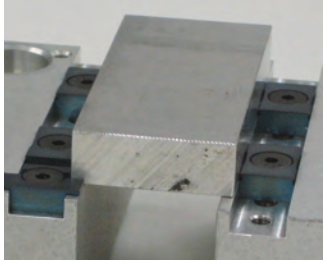



**Vise Jaw with Mounting Holes**

**Vise Jaw without Mounting Holes**



Fixture application with Pitbull® Clamps



Soft jaws

## STEEL VISE JAW SET (Set includes 4 TalonGrips™, 1 stop with M5 screws)

| Part Number | Vise (metric) | A (metric) | B (metric) | C (metric) | D (metric) | E (metric) |
|---|---|---|---|---|---|---|
| **WITH MOUNTING HOLES** | | | | | | |
| 32044 | 4" (100mm) | 4.0 (100) | 1.48 (37.59) | 1.0 (25.4) | 2.5 (63.5) | .688 (17.47) |
| 32066 | 4"/6" (100mm/150mm) | 6.0 (150) | 1.73 (43.94) | 1.0 (25.4) | 2.5/3.88 (63.5/98.55) | .688/.94 (17.47/23.87) |
| 32068 | 6" (150mm) | 8.0 (200) | 1.73 (43.94) | 1.0 (25.4) | 3.88 (98.55) | .94 (23.87) |
| **WITHOUT MOUNTING HOLES** | | | | | | |
| 33044 | 4" (100mm) | 4.0 (100) | 1.48 (37.59) | 1.0 (25.4) | - | - |
| 33066 | 4"/6" (100mm/150mm) | 6.0 (150) | 1.73 (43.94) | 1.0 (25.4) | - | - |
| 33068 | 6" (150mm) | 8.0 (200) | 1.73 (43.94) | 1.0 (25.4) | - | - |

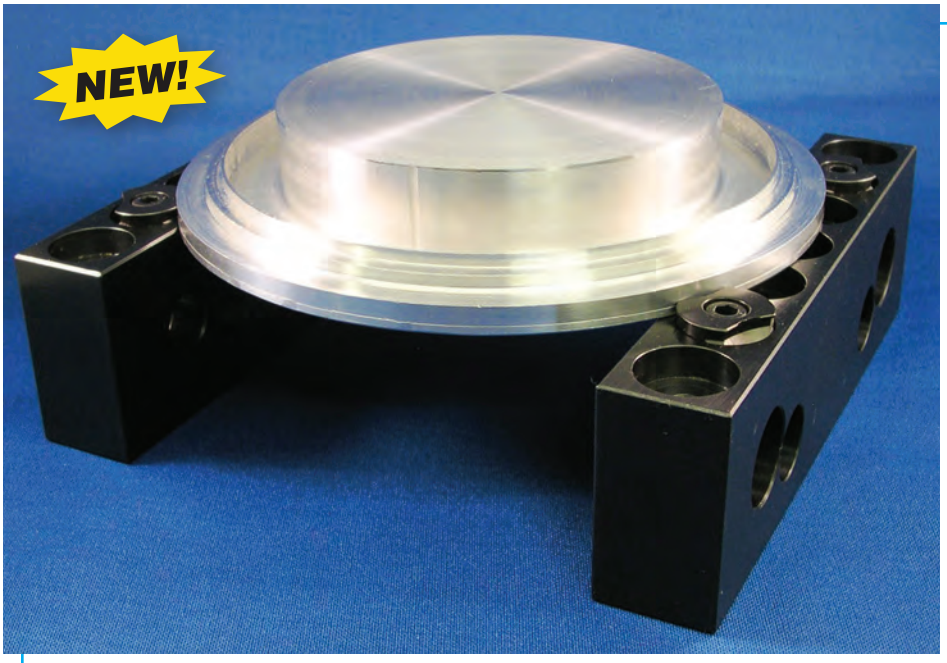
## VISE JAW GRIPS & STOPS

| | Part No. | Description | A | B | C | D | Recommended Gripping Height | No. of Grips Per Pack |
|---|---|---|---|---|---|---|---|---|
| **INCH** | 32050 | Extra Grips | .75 | .500 | .250 | 10-32 | .060-.075 | 2 |
| | 32025 | Extra Stop | - | - | - | 10-32 | - | 1 |
| **METRIC** | 33050 | Extra Grips | 19.05 | 12.7 | 6.35 | M5 | 1.5mm-1.9mm | 2 |
| | 33025 | Extra Stop | - | - | - | M5 | - | 1 |

## FIXTURE GRIPS

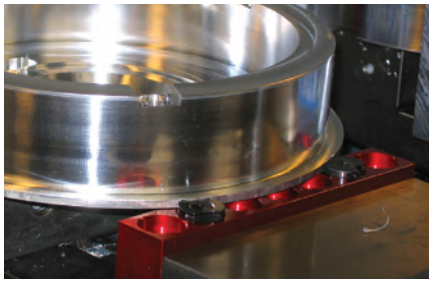
| | Part No. | A | B | C | D | Recommended Gripping Height | No. of Grips Per Pack |
|---|---|---|---|---|---|---|---|
| **INCH** | 32075 | .75 | .750 | .312 | 10-32 | .060-.120 | 2 |
| | 32100 | .75 | 1.000 | .312 | 10-32 | .060-.120 | 2 |
| | 32150 | 1.00 | 1.000 | .500 | 5/16-18 | .060-.220 | 1 |
| **METRIC** | 33075 | 19.05 | 19.05 | 7.92 | M5 | 1.5mm-3.0mm | 2 |
| | 33100 | 19.05 | 25.4 | 7.92 | M5 | 1.5mm-3.0mm | 2 |
| | 33150 | 25.4 | 25.4 | 12.7 | M8 | 1.5mm-5.6mm | 1 |

# VersaGrip™ Vise Jaws

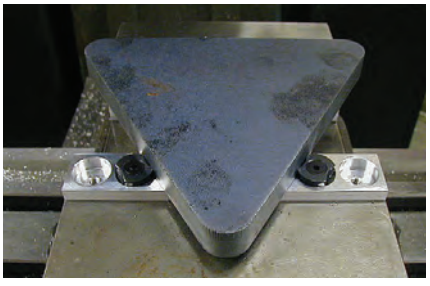



VersaGrip™, as the name implies, offers the versatility of clamping standard vise work as well as providing a solution for difficult applications that would normally require fixturing or machining soft-jaws. By simply replacing your current jaws with the VersaGrip™ system you can securely hold odd shaped parts while machining at speeds and feeds you never thought possible.

This system can accommodate a wide range of part sizes as well as holding multiple parts in a single cycle. The hardened (52-54 RC) VersaGrip™ has penetrating teeth designed to bite into your workpiece preventing lateral and horizontal movement. These grips will hold flame cut parts, castings, even parts with a negative draft!



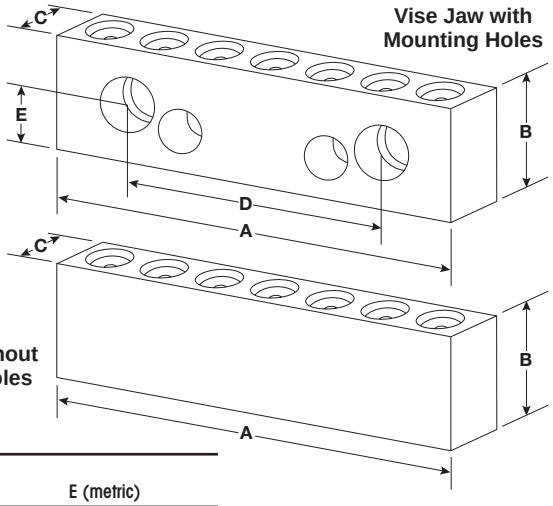
Large dimensions



Odd shaped parts

Multiple parts

Tombstone application

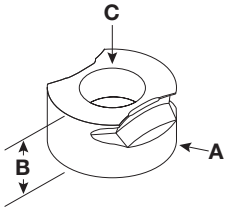



## STEEL VISE JAW SET (Set includes 4 VersaGrips™)

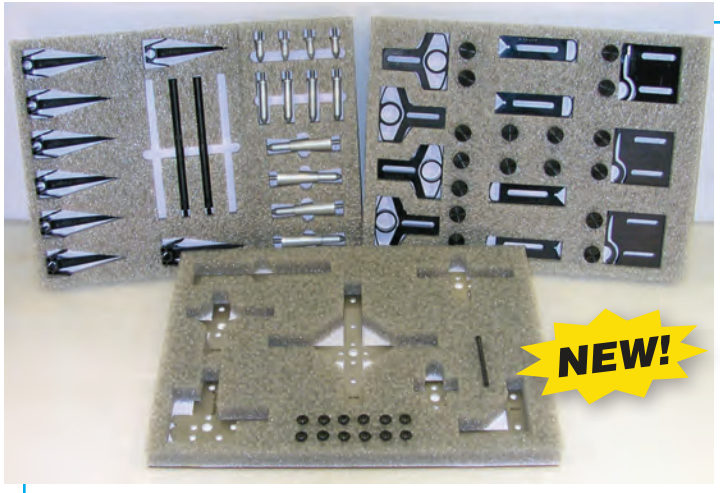
| Part Number | Vise (metric) | A (metric) | B (metric) | C (metric) | D (metric) | E (metric) |
|---|---|---|---|---|---|---|
| **WITH MOUNTING HOLES** | | | | | | |
| 32166 | 4"/6" (100mm/150mm) | 6.00 (150) | 1.88 (47.75) | 1.0 (25.4) | 2.5/3.88 (63.5/98.55) | .688/.94 (17.47/23.87) |
| 32168 | 6" (150mm) | 8.00 (200) | 1.88 (47.75) | 1.0 (25.4) | 3.88 (98.55) | .94 (23.87) |
| **WITHOUT MOUNTING HOLES** | | | | | | |
| 33166 | 6" (150mm) | 8.00 (200) | 1.88 (47.75) | 1.0 (25.4) | - | - |
| 33168 | 8" (200mm) | 8.00 (200) | 1.88 (47.75) | 1.0 (25.4) | - | - |

## VERSAGRIP™

| Part No. | A | B | C | Recommended Gripping Height | No. of Grips Per Pack |
|---|---|---|---|---|---|
| 32175 | .750 (19.05) | .375 (9.52) | M5 | .060-.140 (1.55mm-3.5mm) | 2 |

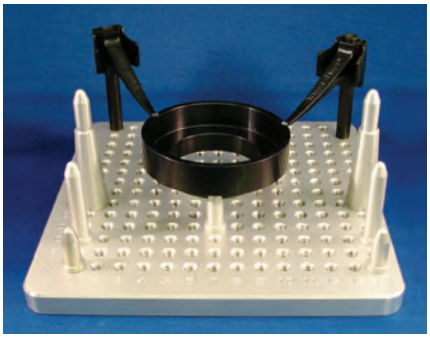


# Lean CMM Workholding System

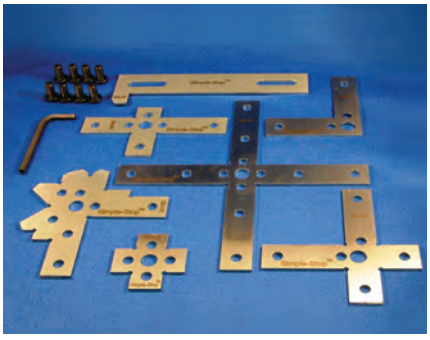



Mitee-Bite Products is pleased to introduce another new and innovative product line that is designed to improve your productivity in the QC department! The Lean CMM Workholding System is the most cost-effective solution in today's market. Simple, one-finger operation and quick adjustments allow you to process parts through inspection faster than ever before. Eliminate costly bottlenecks in the inspection room.

- Quick part change-over increases productivity and profits
- Easily design universal fixtures for multiple jobs
- Non-marring material protects your work
- Low-profile, simple designs stay out of your way
- Includes 5S-ready packaging!



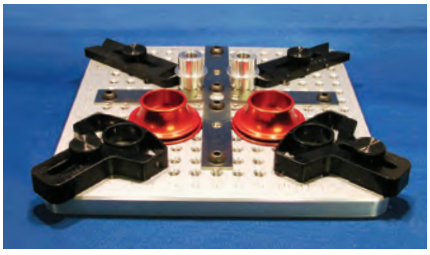
Silver-Bullet™ and Trigger-Finger™



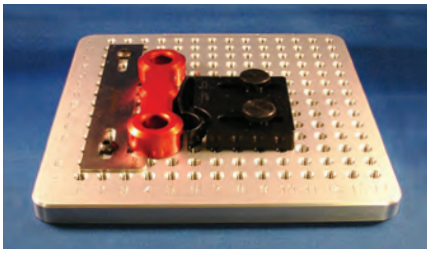
Simple-Stop™

*"We have a bottleneck in our QC department because our new Palletech machines produce parts faster than we can inspect - even with our automated CMMs. The action of these new clamps helps us inspect parts faster, boosting productivity of both machines. We're able to verify the quality of more parts early in production."*

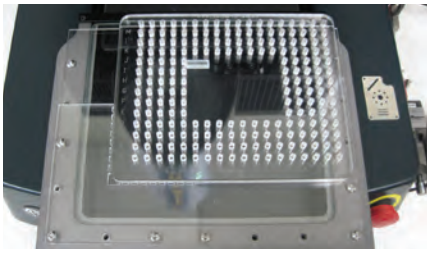
Scott Ferrecchia, Vice President,
Lincoln Tool & Machine, Hudson, MA



D-Block™ and Cross-Bow™



Trigger-Block™



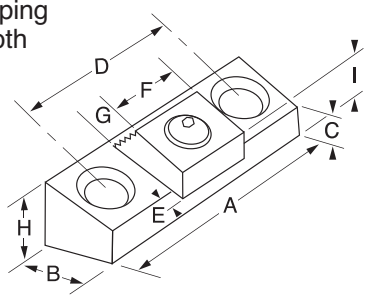
Open-Sight™ Fixture Plate

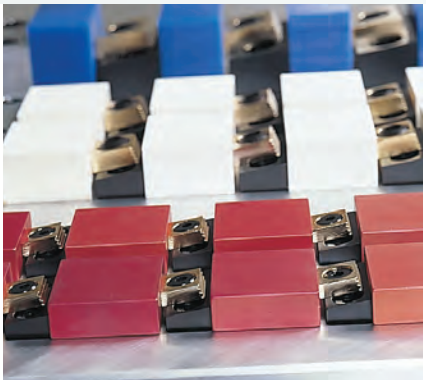
| Part Number* Inch | Metric | Model | Description |
|---|---|---|---|
| 29000 | 39000 | **Lean Kit** Complete with foam drawer inserts | 80+ Pc Kit includes: (4) Trigger-Finger™, (4) Cross-Bow™, (8) D-Block™, (3) Trigger-Block™, (4) sets Silver-Bullet™, (2) 7 pc. set Simple-Stop™. Plus thumb screws, button head screws, and foam drawer inserts! |
| 29100 | 39100 | **Extra-Lean Kit** Complete with foam drawer inserts | 162+ Pc Kit includes: (8) Trigger-Finger™, (8) Cross-Bow™, (16) D-Block™, (6) Trigger-Block™, (8) sets Silver-Bullet™, (4) 7 pc. set Simple-Stop™. Plus thumb screws, button head screws, and foam drawer inserts! |
| 29110 | 39110 | CMM Trigger Block™ (3 pk) | |
| 29115 | 39115 | CMM Trigger-Finger™ (4 pk) | 4 set module/stackable |
| 29120 | 39120 | CMM Cross-Bow™ (4 pk) | |
| 29125 | 39125 | CMM D-Block™ (8 pk) | |
| 29130 | 39130 | CMM Silver-Bullet™ (4 ea. - 12 pcs) | 1", 2", 3" Size Standoffs |
| 29135 | 39135 | CMM Simple-Stop™ | 7 pc. Set of Rails & Stops |
| 29200 | | Comparator Fixture Plate | 5"x14", Comparator Plate, 1/2" aluminum, 1/4-20 thread, 1/2" spacing |
| 29210 | | CMM Fixture Plate 10"x10" | 10"x10" (254x254mm), 1/2" aluminum, 1/4-20 thread, 1/2" spacing |
| 29228 | | CMM Fixture Plate 20"x28" | 20"x28" (508x711mm), 1/2" aluminum, 1/4-20 thread, 1/2" spacing |
| 29240 | | CMM Fixture Plate 26"x40" | 26"x40" (660x1000mm), 1/2" aluminum, 1/4-20 thread, 1/2" spacing |
| 29308 | | Open-Sight™ Vision Fixture Plate | 8 x 8" (203x203mm), 1/2" acrylic, 1/4-20 thread, 1/2" spacing |
| 29310 | | Open-Sight™ Vision Fixture Plate | 8 x 10" (203x254mm), 1/2" acrylic, 1/4-20 thread, 1/2" spacing |
| 29312 | | Open-Sight™ Vision Fixture Plate | 8 x 12" (203x305mm), 1/2" acrylic, 1/4-20 thread, 1/2" spacing |
| 29316 | | Open-Sight™ Vision Fixture Plate | 12 x 16" (305x406mm), 1/2" acrylic, 1/4-20 thread, 1/2" spacing |

*Inch: 1/4-20 threads, Metric: M6 threads

# Compact Toe Clamps

This cam action fixture clamp provides positive down force while using very little space on a 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 | H | I* | Cam Screw | Total Distance of Movement | Mounting Screws (Included) | Max. Torque (Ft/Lbs) | Holding Force (Lbs) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **INCH** | | | | | | | | | | | | | | |
| 24106 | 1.70 | .75 | .50 | 1.00 | .090 | .75 | .25 | .62 | .845 | #10370 | .050 | 5/16-18x3/4 LHCS | 20.8 | 2,000 |
| 24108 | 2.12 | 1.00 | .45 | 1.32 | .110 | 1.00 | .38 | .62 | .960 | #10372 | .100 | 3/8-16x3/4 LHCS | 65.0 | 4,000 |
| 24110 | 2.95 | 1.50 | .99 | 2.00 | .130 | 1.50 | .50 | 1.25 | 1.70 | #10376 | .100 | 1/2-13x11/4 SHCS | 100.0 | 6,000 |
| | | | | | | | | | | | | | **(N.m.)** | **(N.)** |
| **METRIC** | | | | | | | | | | | | | | |
| 54110 | 43.2 | 19.0 | 12.7 | 25.4 | 2.3 | 19.0 | 6.4 | 15.75 | 21.5 | #50368 | 1.6 | M8 | 28.20 | 8900 |
| 54112 | 54.0 | 25.4 | 11.4 | 33.5 | 2.8 | 25.4 | 9.7 | 15.75 | 24.4 | #50372 | 2.0 | M10 | 88.13 | 17800 |
| 54116 | 75.0 | 38.1 | 25.2 | 50.8 | 3.3 | 38.1 | 12.7 | 31.75 | 43.2 | #50374 | 2.5 | M12 | 135.58 | 26700 |

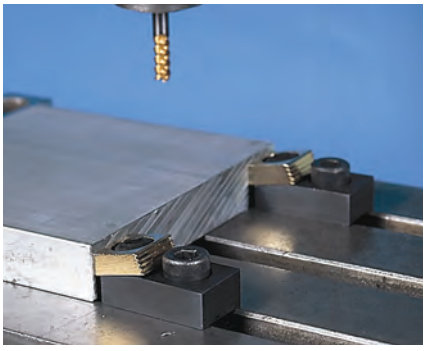
**E†** - The distance needed between the front of the clamp base and the workpiece.
**I*** - The distance from the top of the washer to the bottom of the clamp body.
Drill and tap the centerline of "B" for mounting holes.

# T-Slot Toe Clamps

This clamp is like the Compact Toe Clamp, only it is designed to be used in the T-slots of machine tables. It provides 4,000 lbs. (17800 N) positive down force while maintaining a low profile. The hardened steel clamping element has both a smooth surface for machined workpieces and a serrated clamping surface for rougher work.

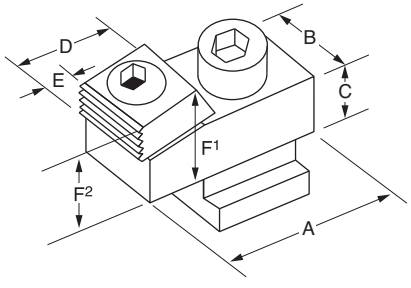
| | A | B | C | D | E | F¹ | F² | Max. Torque/ Holding Force (Ft Lbs/Lbs) |
|---|---|---|---|---|---|---|---|---|
| **INCH** | 1.94 | 1.12 | .62 | 1.00 | .38 | 1.00 | .875 | 65/4,000 |
| | | | | | | | | **(N.m./N.)** |
| **METRIC** | 50 | 28.5 | 15.7 | 25.4 | 9.6 | 25.4 | 22.2 | 88.00/17800 |

**F¹** - The distance from the top of the back of the washer to the bottom of the clamp body.
**F²** - The distance from the top of the front of the washer to the bottom of the clamp body.



| | Part Number | T-slot Size |
|---|---|---|
| **INCH** | 24000 | No T-nut or Mtg. Screw |
| | 24128 | 9/16 |
| | 24148 | 5/8 |
| | 24168 | 11/16 |
| | 24188 | 3/4 |
| **METRIC (with mtg. screw)** | 54000 | No T-nut or Mtg. Screw |
| | 54014 | 14 |
| | 54016 | 16 |
| | 54018 | 18 |

Torque mounting bolt to 110 Ft/Lbs (150N.m.).



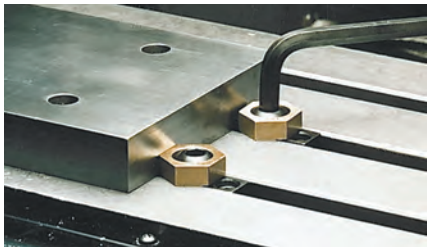
# T-Slot and Advant-*Edge* Clamps

The original MITEE-BITE T-Slot Clamp combines our unique cam action clamping element with a T-nut.

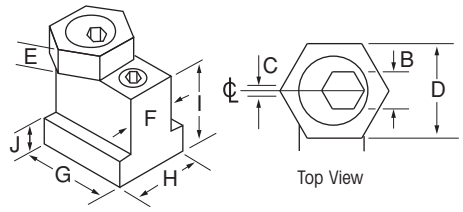
- ➤ Locks in machine T-slot for low profile clamping
- ➤ Makes fast set-ups possible right on the machine table
- ➤ Brass hex follows contour of unusual shaped parts
- ➤ Packaged in pairs or complete kits

The Mitee-Bite Kit Contains: 4 Mitee-Bite T-Nuts
6 Mitee-Bite Fixture Clamps
2 Hex Keys

## MITEE-BITE T-SLOT KITS



| Part Number | Cam Screw | T-Slot Size | B | C | D | E | F | G | H | I | J | Max. Torque (Ft/Lbs) | Holding Force (Lbs) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **INCH** | | | | | | | | | | | | | |
| 10640 | 1/4-20 | 3/8 | 1/8 | .040 | .625 | .190 | .365 | .89 | .500 | .375 | .150 | 6.2 | 800 |
| 10641 | 5/16-18 | 7/16 | 3/16 | .040 | .812 | .190 | .425 | 1.10 | .625 | .625 | .220 | 8.3 | 800 |
| 10642 | 3/8-16 | 1/2 | 3/16 | .050 | .812 | .250 | .490 | 1.20 | .750 | .625 | .235 | 20.8 | 2,000 |
| 10643 | 3/8-16 | 9/16 | 3/16 | .050 | .812 | .250 | .550 | 1.20 | .875 | .750 | .300 | 20.8 | 2,000 |
| 10644 | 1/2-13 | 5/8 | 5/16 | .100 | 1.000 | .375 | .620 | 1.27 | 1.000 | .875 | .425 | 45.0 | 3,000 |
| 10646 | 1/2-13 | 11/16 | 5/16 | .100 | 1.000 | .375 | .675 | 1.37 | 1.000 | 1.000 | .350 | 45.0 | 3,000 |



Top View

| Part Number | Cam Screw | T-Slot Size | B | C | D | E | F | G | H | I | J | Max. Torque (N.m) | Holding Force (N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **METRIC** | | | | | | | | | | | | | |
| 50642 | M6 x 1.00 | 8mm | 5mm | 1.01 | 15.86 | 4.75 | 8 | 23.2 | 12.7 | 9.5 | 4.6 | 8.55 | 3,558 |
| 50644 | M6 x 1.00 | 10mm | 5mm | 1.01 | 15.86 | 4.75 | 10 | 23.2 | 14.2 | 14.2 | 4.3 | 8.55 | 3,558 |
| 50646 | M8 x 1.25 | 12mm | 5mm | 1.01 | 20.62 | 4.75 | 12 | 27.9 | 15.9 | 15.9 | 6.4 | 11.30 | 3,355 |
| 50648 | M10 x 1.50 | 14mm | 7mm | 1.52 | 20.62 | 6.35 | 14 | 30.5 | 22.4 | 22.2 | 8.5 | 28.00 | 8,895 |
| 50650 | M12 x 1.75 | 16mm | 8mm | 2.03 | 25.40 | 9.53 | 16 | 30.9 | 25.4 | 22.2 | 9.2 | 61.00 | 13,340 |
| 50652 | M12 x 1.75 | 18mm | 8mm | 2.03 | 25.40 | 9.53 | 18 | 34.7 | 28.6 | 28.6 | 10.5 | 61.00 | 13,340 |
| 50654 | M16 x 2.00 | 20mm | 12mm | 2.54 | 30.15 | 12.70 | 20 | 39.2 | 31.8 | 31.8 | 12.6 | 135.00 | 26,680 |
| 50656 | M16 x 2.00 | 22mm | 12mm | 2.54 | 30.15 | 12.70 | 22 | 44.3 | 34.9 | 41.3 | 12.5 | 135.00 | 26,680 |

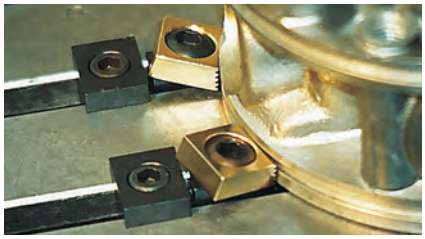
## T-SLOT CLAMPS

| Part Number | T-Slot Size | Number of Clamps Per Pack | Holding Force (Lbs) |
|---|---|---|---|
| **INCH** | | | |
| 10420 | 3/8 | 2 | 800 |
| 10421 | 7/16 | 2 | 800 |
| 10422 | 1/2 | 2 | 2,000 |
| 10423 | 9/16 | 2 | 2,000 |
| 10424 | 5/8 | 2 | 3,000 |
| 10426 | 11/16 | 2 | 3,000 |

Hex key not included.

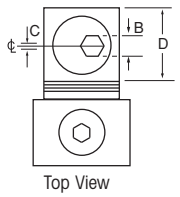
| Part Number | T-Slot Size | Number of Clamps Per Pack | Holding Force (N) |
|---|---|---|---|
| **METRIC** | | | |
| 50422 | 8mm | 2 | 3,558 |
| 50424 | 10mm | 2 | 3,558 |
| 50426 | 12mm | 2 | 3,355 |
| 50428 | 14mm | 2 | 8,895 |
| 50430 | 16mm | 2 | 13,340 |
| 50432 | 18mm | 2 | 13,340 |
| 50434 | 20mm | 2 | 26,680 |
| 50436 | 22mm | 2 | 26,680 |

## ADVANT-*EDGE* CLAMPS

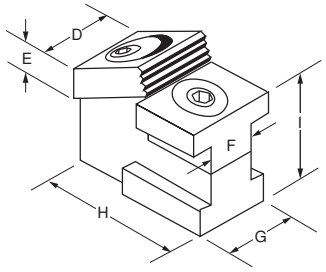


The MITEE-BITE Advant-*Edge* Clamp provides additional clamping force and improved table grip.

- ➤ Tilted clamping element creates a positive downward force and 4,000 lbs. holding force
- ➤ Hardened clamping element has both a smooth surface for machined workpieces and a serrated clamping surface for rougher work
- ➤ Improved locking mechanism secures clamp to machine table
- ➤ Packaged individually (52224) or as kit of two (52424)



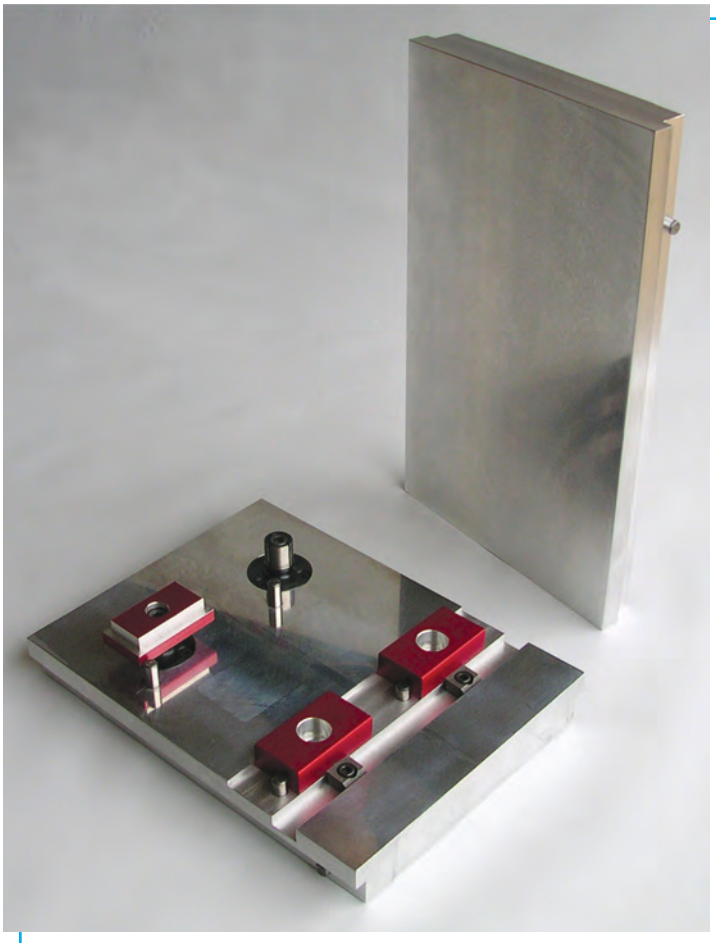
Top View




| | Part Number | Cam Screw | T-Slot Size | B | C | D | E | F | G | H | I | Max. Torque/ Holding Force (Ft Lb/Lbs) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **INCH** | 52224<br>52424 (kit) | #50372 | 5/8 | 5/16 | .100 | 1.00 | .375 | .610 | 1.12 | 1.89 | 1.1 | 65/4,000 |
| | | | | | | | | | | | | **(N.m./N.)** |
| **METRIC DIMENSIONS** | | | 16 | 8 | 2 | 25.4 | 9.5 | 16 | 28.5 | 48 | 28 | 88.00/17800 |

Torque mounting bolt to 70 Ft/Lbs (150N.m.).

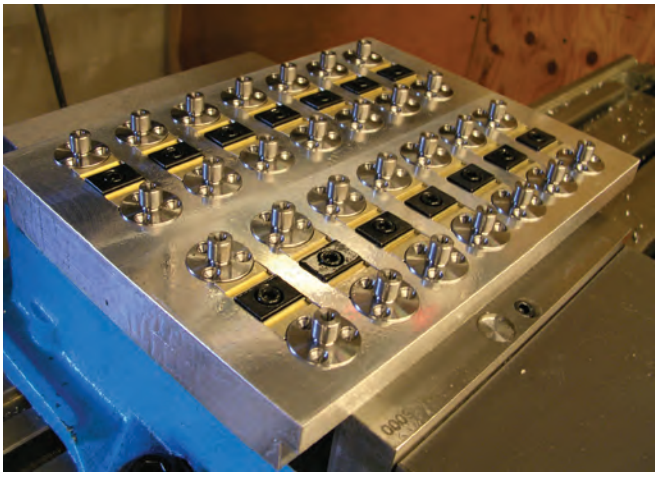
# Vise Pallet

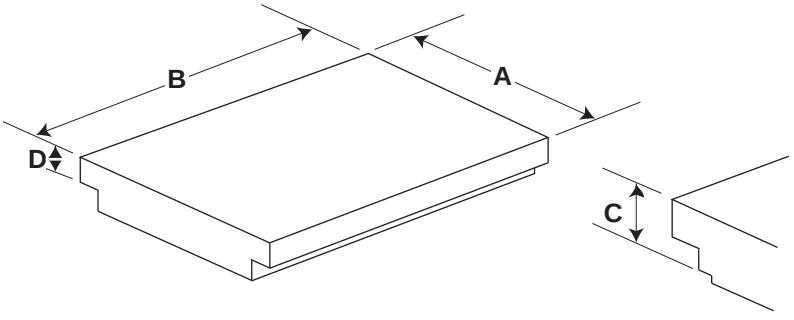


- Now you can run fixture jobs without removing your vises.
- Vise Pallets are designed to fit in all 6 inch (150mm) vises and measure approximately 6x8 and 6 x 10 inches (150 x 203mm and 150 x 254mm).
- Ideal for multiple small parts using one of several MITEE-BITE low profile edge clamps.
- The Vise Pallets are qualified in 2 places so they can rest on parallels or on the top of the jaws.

## HOW TO USE

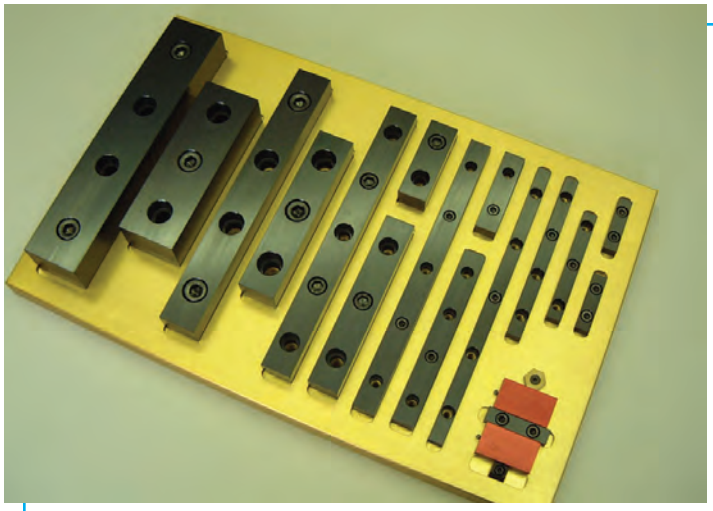
The MITEE-BITE Vise Pallet has a locating pin that makes contact with the left side of the solid jaw for repeat location of pallet. Simply slide pallet to the right of the vise and clamp in place. Pallets can be machined and tapped as required.



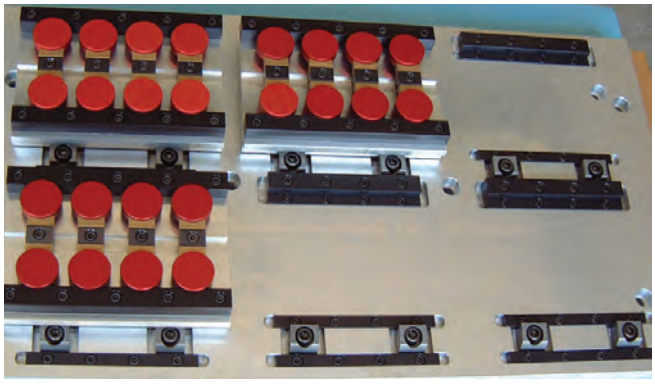



| Part Number | A (metric) | B (metric) | C (metric) | D (metric) |
|---|---|---|---|---|
| 24100 | 6.00 (150) | 8.00 (203) | .95 (24.4) | .44 (11.2) |
| 24120 | 6.00 (150) | 10.00 (254) | .95 (24.4) | .44 (11.2) |

# Locating Rails for Jigs and Fixtures



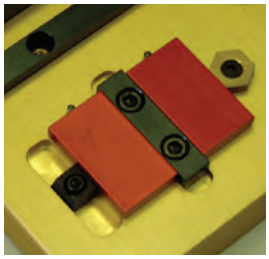
Locating rails are made of low carbon steel and are precision ground square. They are available in a number of sizes and lengths to suit most applications.



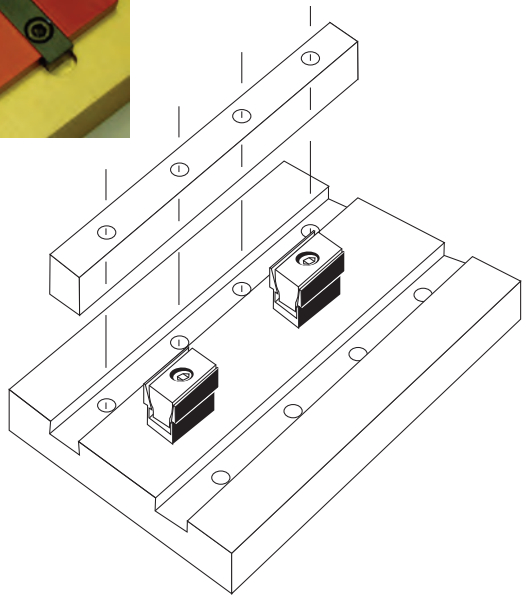
Is it taking too long to make a fixture to increase production?

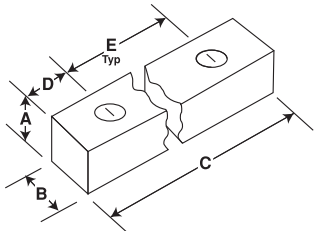
MITEE-BITE Products makes fixture building easier and quicker with the addition of ready made locating rails.

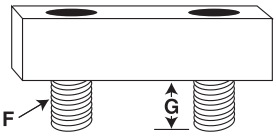
Rails are made of low carbon steel, then ground square. They are easily machined when used with our machinable clamps. Carbinite coating can be added to increase holding force (See carbinite.com for more information).



Multiple rails can be used in line for long workpieces or to hold more than one piece in a row. Dowel pins can be used for end stops.






| Part Number | A | B +/-.0005 | C | D | E | F | G | No. Holes |
|---|---|---|---|---|---|---|---|---|
| INCH | | | | | | | | |
| 33110 | .35 | .480 | .750 | NA | NA | 1/4-20 | .38 | 1 |
| 33120 | .35 | .480 | 2.00 | .50 | 1.00 | 1/4-20 | .38 | 2 |
| 33140 | .35 | .480 | 4.00 | 1.00 | 1.00 | 1/4-20 | .38 | 3 |
| 33160 | .35 | .480 | 6.00 | .75 | 1.50 | 1/4-20 | .38 | 4 |
| 33180 | .35 | .480 | 10.00 | 1.00 | 2.00 | 1/4-20 | .38 | 5 |
| 33200 | .48 | .730 | 3.00 | .75 | 1.50 | 1/4-20 | .38 | 2 |
| 33220 | .48 | .730 | 6.00 | .75 | 1.50 | 1/4-20 | .38 | 4 |
| 33240 | .48 | .730 | 10.00 | 1.00 | 2.00 | 1/4-20 | .38 | 5 |
| 33260 | .73 | .980 | 3.00 | .75 | 1.50 | 3/8-16 | .62 | 2 |
| 33280 | .73 | .980 | 6.00 | 1.00 | 2.00 | 3/8-16 | .62 | 3 |
| 33300 | .73 | .980 | 10.00 | 1.00 | 2.00 | 3/8-16 | .62 | 5 |
| 33320 | .98 | 1.230 | 6.00 | 1.00 | 2.00 | 1/2-13 | .75 | 3 |
| 33340 | .98 | 1.230 | 10.00 | 1.25 | 2.50 | 1/2-13 | .75 | 4 |
| 33360 | 1.48 | 1.980 | 6.00 | 1.00 | 2.00 | 1/2-13 | .75 | 3 |
| 33380 | 1.48 | 1.980 | 10.00 | 1.25 | 2.50 | 1/2-13 | .75 | 4 |

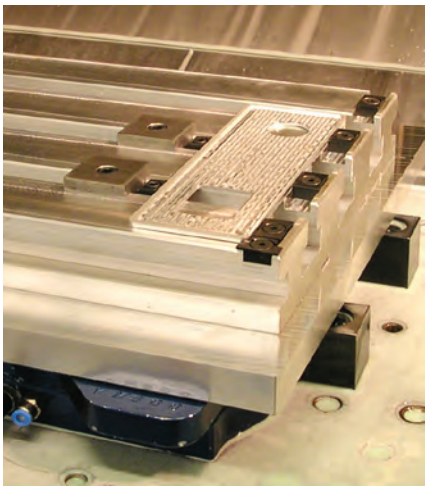
Mounting Screws included.

## Locating Rail Installation

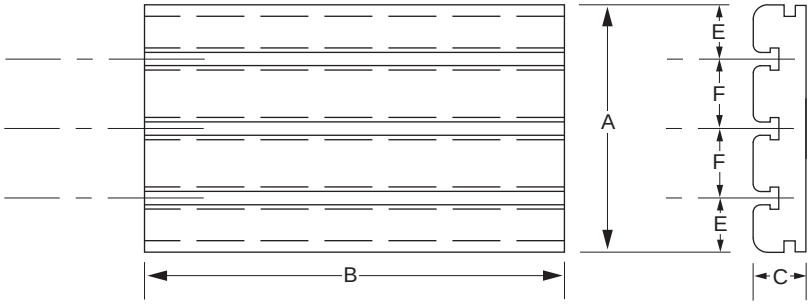
1. Mill a slot to locate the rail. Depth of the slot will determine rail height.
2. Drill and tap the required holes to mount the rail.
3. For better rigidity, the rail should be pinned to the fixture plate with dowel pins.
4. If rails are to be machined to hold round pieces, the clamps should be mounted and both rail and clamp machined at the same time.

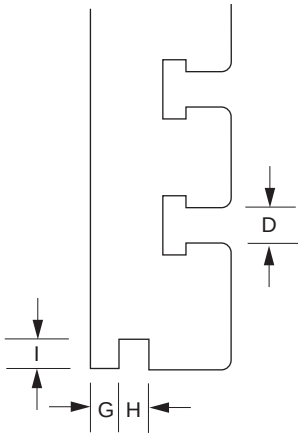
| Part Number | A | B +.000 -.013 | C | D | E | F | G | No. Holes |
|---|---|---|---|---|---|---|---|---|
| METRIC | | | | | | | | |
| 83200 | 12 | 15 | 50 | 15 | 20 | M6 | 11mm | 2 |
| 83210 | 12 | 15 | 100 | 20 | 30 | M6 | 11mm | 3 |
| 83220 | 12 | 15 | 150 | 30 | 30 | M6 | 11mm | 4 |
| 83240 | 12 | 15 | 250 | 25 | 50 | M6 | 11mm | 5 |
| 83260 | 18 | 24 | 75 | 20 | 35 | M10 | 18mm | 2 |
| 83280 | 18 | 24 | 150 | 30 | 30 | M10 | 18mm | 4 |
| 83300 | 18 | 24 | 250 | 25 | 50 | M10 | 18mm | 5 |

# Aluminum Sub Plates



Extruded Aluminum Sub Plates are available in standard sizes in stock or in custom lengths to order. Standard sizes are premachined to .005 (.13mm) flatness and parallelism per foot (300mm).



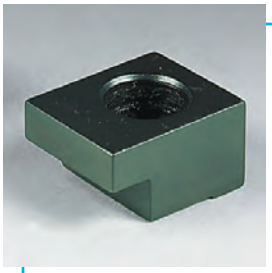

| Part Number | A x B x C (metric) | T-slots | D (metric) | E (metric) | F (metric) | G (metric) | H (metric) | I (metric) | Lbs. (KG) |
|---|---|---|---|---|---|---|---|---|---|
| 22913 | 9.0 x 13.0 x 1.48 (228 x 330 x 38) | 3 | 5/8 (16) | 2.00 (50.8) | 2.50 (63.5) | .49 (12.7) | .50 (12.7) | .50 (12.7) | 13.3 (6.1) |
| 22918 | 9.0 x 18.0 x 1.48 (228 x 457 x 38) | 3 | 5/8 (16) | 2.00 (50.8) | 2.50 (63.5) | .49 (12.7) | .50 (12.7) | .50 (12.7) | 18.5 (8.5) |
| 22924 | 9.0 x 24.0 x 1.48 (228 x 610 x 38) | 3 | 5/8 (16) | 2.00 (50.8) | 2.50 (63.5) | .49 (12.7) | .50 (12.7) | .50 (12.7) | 24.8 (11.3) |

### CUSTOM LENGTHS

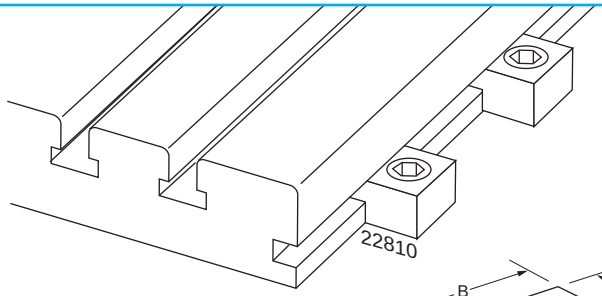
| Part Number | A (metric) | C (metric) | D (metric) | E (metric) | F (metric) | G (metric) | H (metric) | I (metric) |
|---|---|---|---|---|---|---|---|---|
| 22900 | 9.00 (228) | 1.48 (38) | 5/8 (16) | 2.00 (50.8) | 2.50 (63.5) | .49 (12.7) | .50 (12.7) | .50 (12.7) |

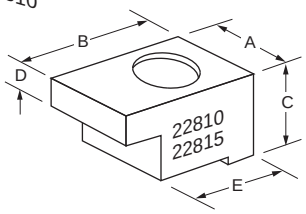
- Subplates can be ordered in lengths up to 55” (1397mm), not machined.
- The last two digits of the part number should be the length of the plate in inches.

# Mounting Clamps



Mounting clamps are designed for securing MITEE-BITE Aluminum Sub Plates, Vacmagic® and many types of machine vises.

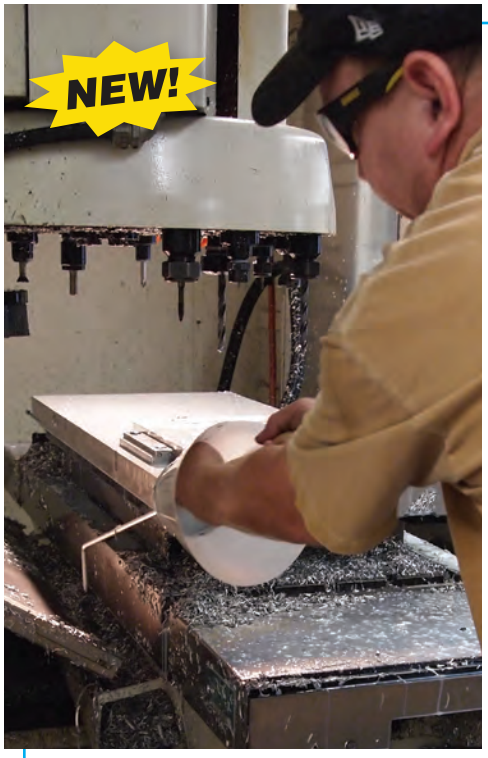



| Part Number | Screw Size (metric) | A (metric) | B (metric) | C (metric) | D (metric) | E (metric) |
|---|---|---|---|---|---|---|
| 22810* | 1/2 (M12) | 1.25 (31.8) | 1.50 (38.1) | .87 (22.1) | .35 (8.9) | 1.10 (28.0) |
| 22815** | 1/2 (M12) | 1.25 (31.8) | 1.50 (38.1) | 1.25 (31.8) | .44 (11.2) | 1.10 (28.0) |

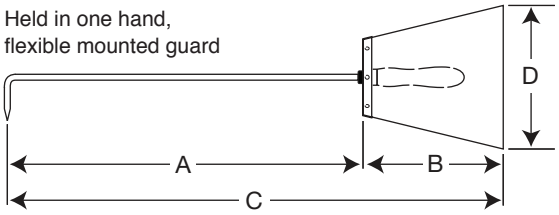
*For Vacmagic® VM100 **For Vacmagic® VM300

# Chip Hooks

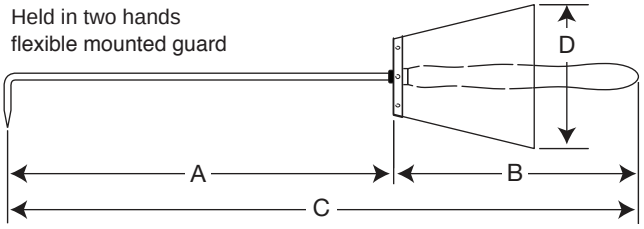



The chip hook is an essential safety tool for all shops. These galvanized steel hooks are fitted with a protective polyethylene hilt and wooden handles to ensure a firm grip. Available in several lengths and single or double handles.

**Single Handle Hook with Protecting Hilt**




**Double Handle Hook with Protecting Hilt**




| Part Number | Description | A (metric) | B (metric) | C (metric) | D (metric) |
|---|---|---|---|---|---|
| **SINGLE HANDLE** | | | | | |
| 12060 | Chip hook, single handle | 15.75 (400) | 7.0 (180) | 22.5 (570) | 7.0 (180) |
| 12070 | Chip hook, single handle | 20 (500) | 7.0 (180) | 26 (670) | 7.0 (180) |
| **DOUBLE HANDLE** | | | | | |
| 12080 | Chip hook, double handle | 20 (500) | 13 (320) | 32 (820) | 7.0 (180) |
| 12090 | Chip hook, double handle | 31.5 (800) | 13 (320) | 44 (1120) | 7.0 (180) |
| 12100 | Chip hook, double handle | 39 (1000) | 13 (320) | 52 (1320) | 7.0 (180) |

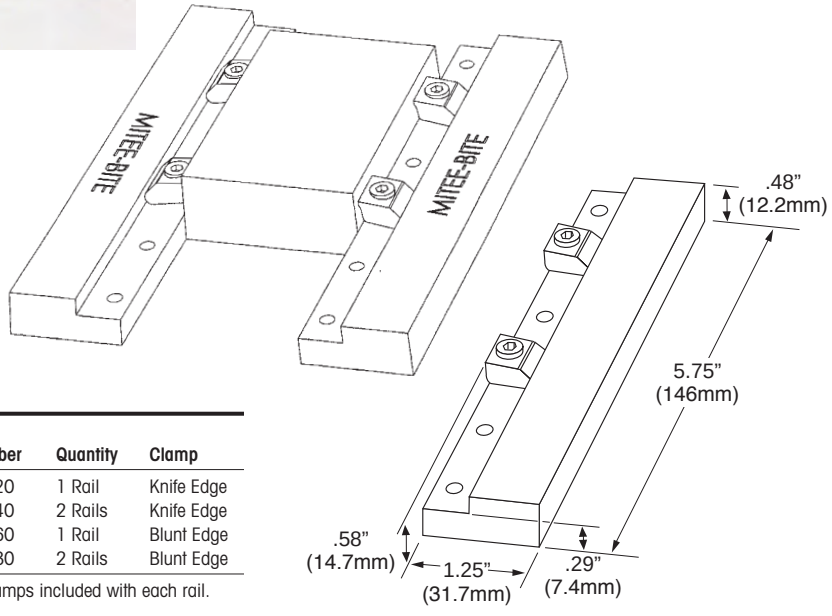
**SAFETY! A work related accident can happen very easily.** Always use a chip hook to clear away annoying chips and empty the chip trays on your machines.

# Low Profile Gripping Rail


These gripping rails are excellent for holding non-ferrous material during grinding and milling on a magnetic chuck. Grinding stainless steel, brass and plastic, while maintaining parallelism, is easy with these gripping rails from MITEE-BITE.


Longer size parts can be held by using multiple rails. Parts can be pushed against the solid rail with one or more of the gripping rails.


An increase in the clamping pressure can be achieved by placing additional steel behind the gripping rails.

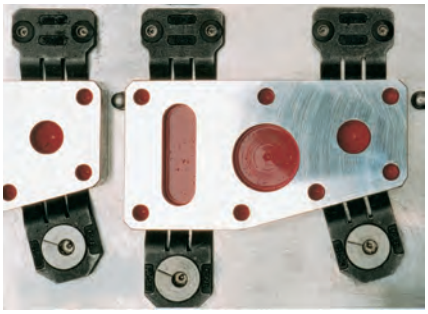



| Part Number | Quantity | Clamp |
|---|---|---|
| 26120 | 1 Rail | Knife Edge |
| 26140 | 2 Rails | Knife Edge |
| 26160 | 1 Rail | Blunt Edge |
| 26180 | 2 Rails | Blunt Edge |

2 Clamps included with each rail.

# KOPAL® Mini Clamps

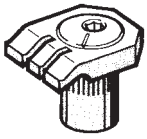
These low profile cam action clamps and stops have a holding force of 880 lbs. (3900N.) and have fingers that push the workpiece down before clamping, even on castings that have negative draft!



Ground stops are mounted with special screws to ensure high precision locating.

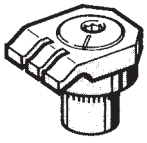
## CAM ACTION CLAMPS

The clamping element rotates around the eccentric that provides for clamping in all directions. Clamping range: .047″ (1.2mm). Made of spring steel.



**LOW PROFILE CLAMP**

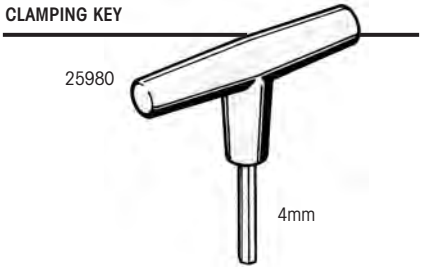
| Part Number | Clamping Height | Max. Torque |
|---|---|---|
| 25210 | .100 (2.5mm) | 6.6 Ft. Lbs. (8.95N.m.) |



**RAISED CLAMP**

| Part Number | Clamping Height | Max. Torque |
|---|---|---|
| 25215 | .300 (7.5mm) | 6.6 Ft. Lbs. (8.95N.m.) |

**CLAMPING KEY**




## KOPAL® MINI CLAMPS AND STOPS

| Part Number | Item |
|---|---|
| 25105 | Stop |
| 25110 | Stop |
| 25115 | Stop |
| 25120 | Stop |
| 25125 | Stop |
| 25130 | Stop |
| 25210 | Clamp |
| 25215 | Clamp |

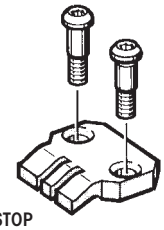
Special mounting screws included

Installation instructions and CAD files available online: **MiteeBite.com**

## STOPS/LOCATORS

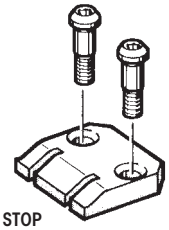
The single stop with only one rigid stop is used for pieces over 1.75″ (44.5mm) long.

The double stop with 2 rigid stops is used for small size pieces. Both are made of spring steel.



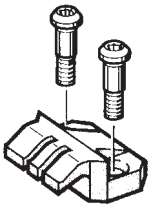
**SINGLE STOP**

| Part Number | Jaw Height |
|---|---|
| 25105 | .100 (2.5mm) |



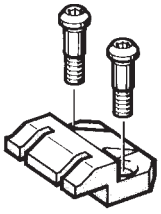
**DOUBLE STOP**

| Part Number | Jaw Height |
|---|---|
| 25110 | .100 (2.5mm) |



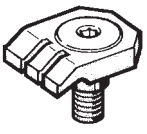
**RAISED SINGLE STOP**

| Part Number | Jaw Height |
|---|---|
| 25115 | .300 (7.5mm) |



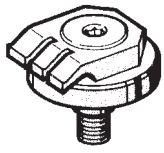
**RAISED DOUBLE STOP**

| Part Number | Jaw Height |
|---|---|
| 25120 | .300 (7.5mm) |



**SWIVEL STOP**

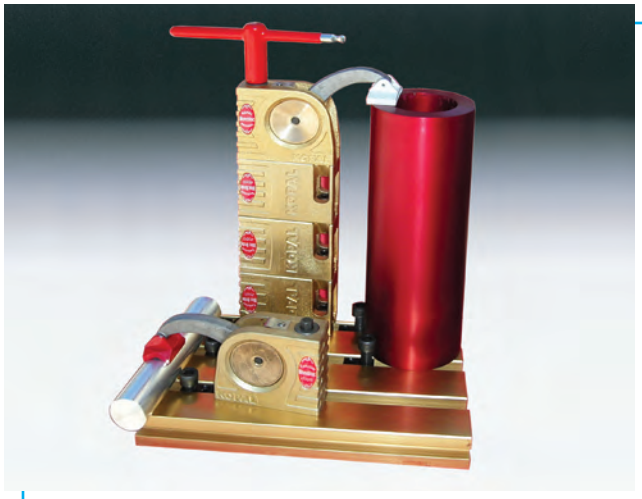
| Part Number | Jaw Height |
|---|---|
| 25125 | .100 (2.5mm) |



**RAISED SWIVEL STOP**

| Part Number | Jaw Height |
|---|---|
| 25130 | .300 (7.5mm) |

# Kopal® Clamps



Need a quick and easy way to clamp parts on a Bridgeport-style mill? Check out this versatile line-up of clamps! From the strong but compact Piccolo to the heavy-duty Big Block.

The worm and gear design ensures the clamps will not loosen with use yet the clamps are easy to set up and break down. This is ideal for short cycle times and odd shaped parts.

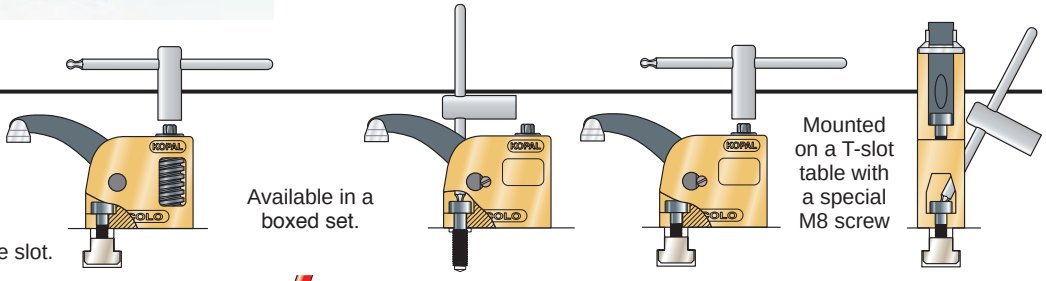
The modular design also allows adjusting clamping height by stacking the riser blocks, and the use of an extension arm increases reach!

For the complete line of Mono-Bloc style clamps, see our website:
**MiteeBite.com**

## PICCOLO

Up to 1460 lbs. (6500N) Holding Force

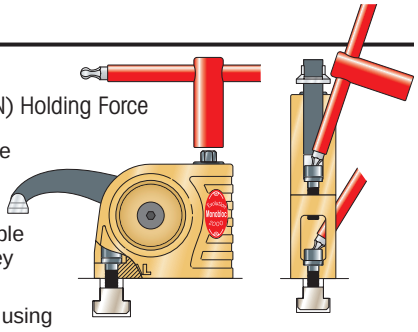
When the arm is released, the Piccolo remains in position in the slot.




## MONO BLOC

Up to 3600 lbs. (16000N) Holding Force

1. Slide the T-nut and the screw into the slot
2. Position and tighten the clamp onto the table using the clamping key provided
3. Clamp the workpiece using the same key
4. Proceed with machining

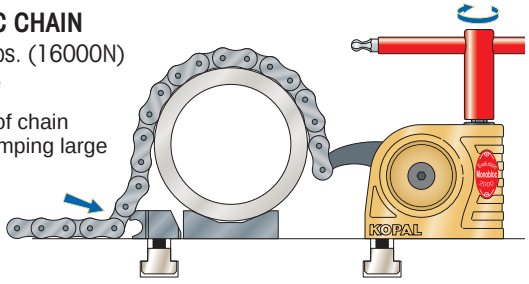


Mounted on a T-slot table with a special M10 screw

## MONO BLOC CHAIN

Up to 3600 lbs. (16000N) Holding Force

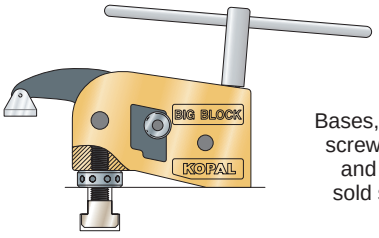
The 1 meter of chain allows for clamping large workpieces.



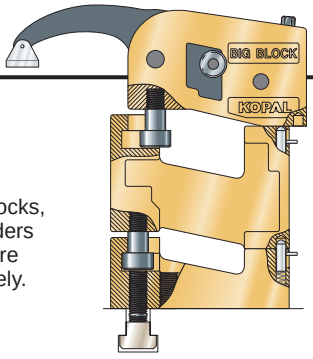

## BIG BLOCK

Up to 9000 lbs. (40000N) Holding Force

When the workpiece is released, the Big Block can either remain fixed in the slot, or slide in the slot.




Bases, riser blocks, screws, cylinders and t-nuts are sold separately.

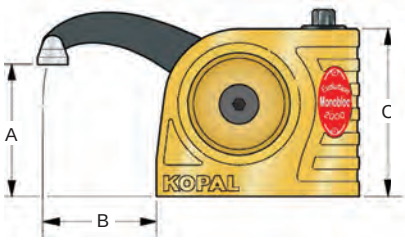


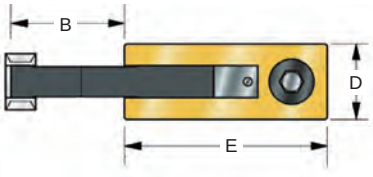

Quick mounting and dismounting

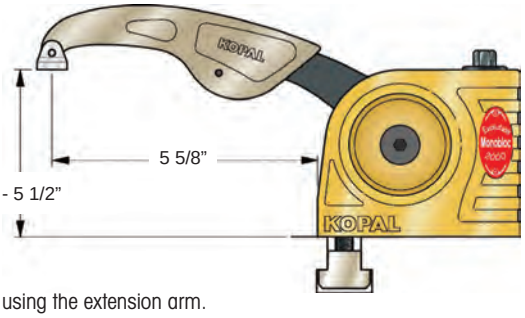
Mounted on base and riser block with adaptor and special screw

| | Part Number | A | B | C | D | E |
|---|---|---|---|---|---|---|
| Piccolo | 25500 | -.60″ – 2.28″ | 2.125″ | 2.5″ | 1.250″ | 2.87″ |
| Standard Duty | 25705 | 0″ – 4″ | 2.375″ | 3.5″ | 1.563″ | 4.25″ |
| Chain | 25040 | 0″ – 4″ | 2.375″ | 3.5″ | 1.563″ | 4.25″ |
| Big Block | 08035 | -.70 – 5.32″ | 5.700″ | 4.1″ | 2.350″ | 6.38″ |

Mono-Bloc with extension arm increases range to 5 1/2″.

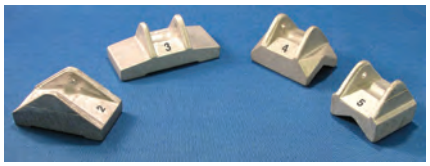



**NOTE:** Clamping force is reduced when using the extension arm.

## REPLACMENT SWIVEL SHOES



Shoes #2 & #3 give you a larger clamping surface. Shoes #4 & #5 are for holding round workpieces.

| Part Number | Model |
|---|---|
| 25518 | #2 |
| 25520 | #3 |
| 25522 | #4 |
| 25524 | #5 |
| 25530 | Set of all 4 |

For the complete line of Mono-Bloc style clamps, see our website:
**MiteeBite.com**

## DELUXE MONO-BLOC START-UP KIT

**Kit includes:** (2) standard-duty Mono-Bloc Clamps with 2 5/8" arm, (2) standard-duty Riser Blocks,
(1) Extension Arm,
(1) standard-duty T-Wrench,
(2) M10x35mm screws,
(2) M10x40mm screws,
(2) T-nuts (choose from chart at right

| Part Number | T-Slot Size |
|---|---|
| 25725 | 1/2 |
| 25727 | 9/16 |
| 25729 | 5/8 |
| 25731 | 3/4 |

High-impact plastic storage/ carrying case with room to store above tools, and space to store additional T-nuts for other size mills.

### INDIVIDUAL MONO-BLOC ITEMS

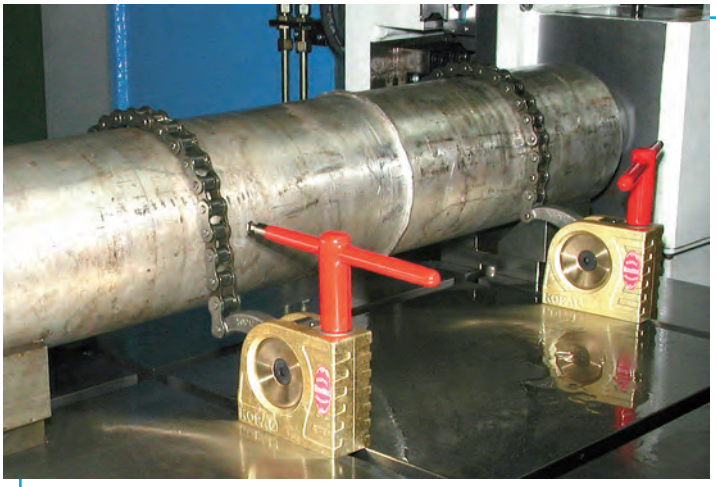
| Part Number | Description |
|---|---|
| 25705 | Standard-Duty Mono-Bloc Clamp with 2 5/8" Arm (Includes T-wrench) |
| 25710 | Standard-Duty Riser Block |
| 25515 | Replacement Swivel Shoe |
| 25720 | T-Wrench for Standard-Duty Mono-Bloc |
| 25540 | Extension Arm |
| 25310 | Worm Gear |

### SPECIAL SCREWS AND T-NUTS FOR MONO-BLOC

(Order one screw and one nut per Mono-Bloc)

| Part Number | Description |
|---|---|
| 25730 | M10 x 35mm Screw for 9/16 T-Nut |
| 25733 | M10 x 40mm Screw for 5/8 & 3/4 T-Nut |
| 25736 | M10 x 45mm Screw for 13/16 & 7/8 T-Nut |
| 25748 | 9/16 x M10 T-Nut |
| 25751 | 5/8 x M10 T-Nut |
| 25754 | 3/4 x M10 T-Nut |
| 25757 | 13/16 x M10 T-Nut |
| 25760 | 7/8 x M10 T-Nut |

# Mono-Bloc Chain Clamp

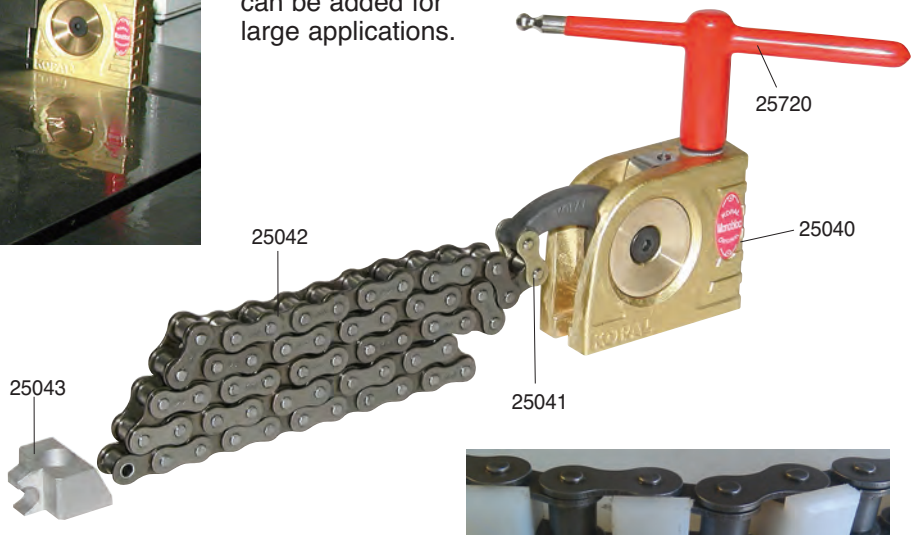


Application with large cylindrical piece.

The Mono-Bloc Chain Clamp is a simple and rapid workholding solution for a wide array of applications.

The Chain Clamp offers fast and powerful clamping with forces to 3,600 lbs. (16000N).

Additional lengths of chain can be added for large applications.




| Part Number | Description |
|---|---|
| 25040* | Mono-Bloc Chain Clamp with Master Link, 5 Protective Clips, Anchor, Key and 1 Meter of Chain |
| 25041 | Master Link |
| 25042 | Extra Chain (1 meter) |
| 25043 | Anchor |
| 25045 | Protective Clips (5/pk) |
| 25720 | Wrench |

*Includes (2) M10 mounting screws for anchor and clamp. T-nuts sold separately - see above.

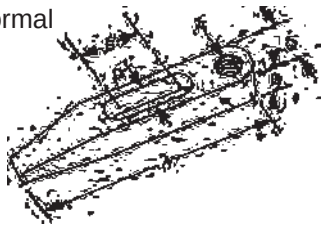


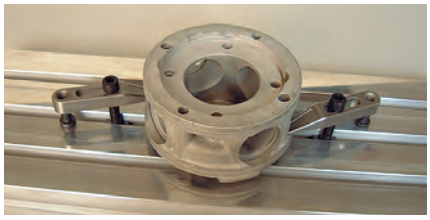
To prevent marring or scratching on delicate pieces use the protective chain clips. (25045) Minimum radius 6".

# Strap Clamps

This low profile design promotes superior clamping in both normal and restricted areas with minimal tooling interference.

- Heat treated 17-4 P.H. stainless steel



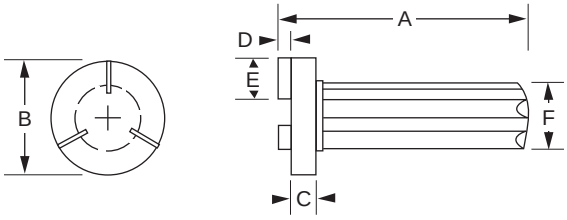


| | Part Number | A | B | C | D | E | F | Holding Force (Lbs) |
|---|---|---|---|---|---|---|---|---|
| INCH | 35100 | 3.63 | .43 | .89 | .400 | .86 | 3/8 Dia. PIN | 3,200 |
| | 35200 | 5.00 | .75 | 1.00 | .530 | 1.36 | 1/2-13 | 6,000 |
| | 35300 | 6.00 | .86 | 1.20 | .650 | 1.50 | 5/8-11 | 8,600 |
| | 35400 | 7.00 | 1.06 | 1.40 | .780 | 1.50 | 3/4-10 | 15,700 |
| | | | | | | | | (N.) |
| METRIC | 36100 | 92 | 11 | 22.6 | 10.4 | 22.0 | 9.5 Dia. Pin | 14234 |
| | 36200 | 127 | 19 | 25.4 | 13.4 | 34.5 | M12 | 26689 |
| | 36300 | 152 | 22 | 30.5 | 16.5 | 38.1 | M16 | 38254 |
| | 36400 | 178 | 27 | 35.6 | 19.8 | 38.1 | M20 | 69837 |

# Collet Wrenches

The MITEE-BITE Collet Wrench simplifies insertion and removal of collets in the spindle nose on CNC lathes.

The MITEE-BITE Collet Wrench is manufactured with a steel head and fins for greater strength and durability. The bright red handle makes it easy to locate and is designed to be comfortable to the hand. The collet wrenches are available for 5C, 16C and 3J collets.




| Part Number | Collet Sizes | Fins | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|
| 1005C | 5C | 3 | 4.25 | 1.25 | .50 | .25 | .28 | 1.13 |
| 1016C | 16C | 3 | 4.25 | 1.75 | .50 | .25 | .50 | 1.13 |
| 1003J | 3J | 4 | 4.25 | 1.75 | .50 | .25 | .50 | 1.13 |

# Collet Stop

The MITEE-BITE "front" loading Collet Stop is the most convenient 5C Collet Stop on the market. Once seated, the collet need not be removed for adjustment.

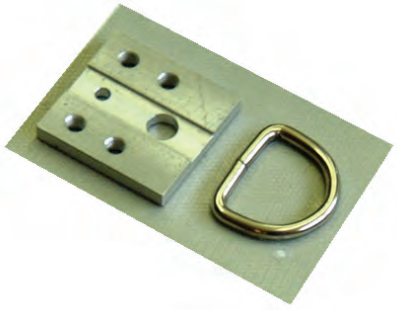
- Quick changing and easy to use
- Non clogging design
- Saves time and money
- Self centering
- Perfect for NC setups
- Reusable for different jobs

| Part Number | Length (metric) |
|---|---|
| 10105 | 24 (610) |

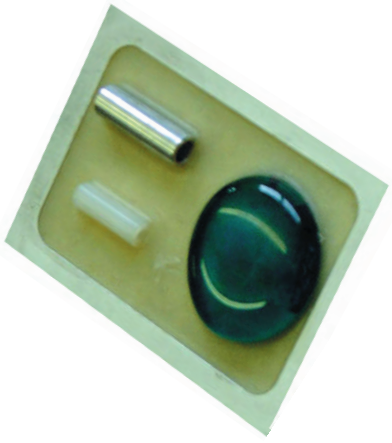
## *How to Hold a Workpiece When You Can't Use a Clamp*

Mitee-Grip™ is a heat activated wax based compound embedded in precision paper, coated on nylon mesh or in a stick form. This holding media maintains parallelism on precision parts. It is very useful for thin parts, micro machining, optical and quartz components, and jewelry related items. Approximate holding force 40 PSI.

The original paper product is excellent for holding smooth flat parts and maintaining parallelism.

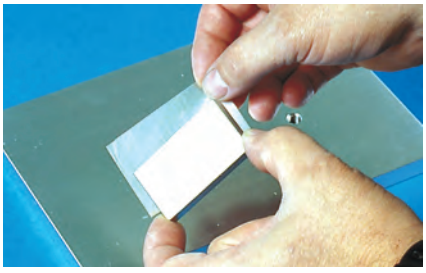


The mesh product captures additional wax material in the web and aides in holding irregular shape parts. Typically additional holding force can be attained with this material.

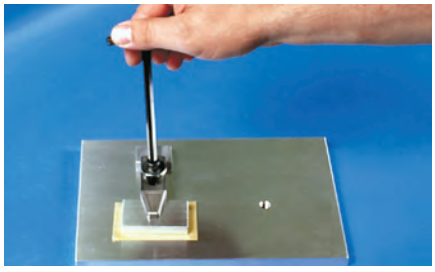


The stick form material can be used in shallow cavities for holding concave and convex pieces. It will also stabilize delicate parts during machining.

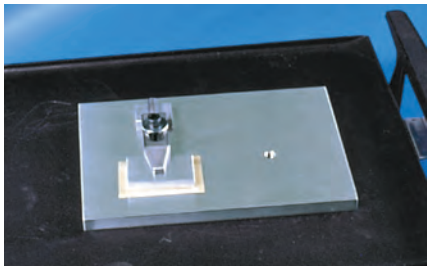
### HOW MITEE-GRIP™ WORKS



1 Place the Mitee-Grip™ sheet on the subplate leaving a 1/4" (6mm) border on all sides, or melt stick on warm subplate.



2 In some cases the part should be lightly clamped to prevent movement. **NOTE:** Over thin workpieces use a top plate for even pressure.



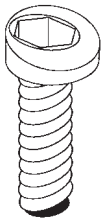
3 225°F (107°C) is application temperature and fully liquid, 186°F (85°C) is solid and becoming liquid. Some customers use an oven and record time and temp once determined by experimentation. A hot plate may also be used at higher temps if monitored. Most parts will "float" when the Mitee-Grip™ has liquefied.

4 Use air or water to cool, being careful to prevent water from going between subplate and workpiece while hot.

5 Part is ready, use coolant while machining. Reheat to remove. We have found an ultrasonic cleaner is best to remove wax residue or simply wipe part while warm using alcohol based cleaner.

| Part Number | Description | Size (Metric) |
|---|---|---|
| 10240 | Paper Roll | 12"x5' (305 x 1524) |
| 10245 | Paper Roll | 12"x25' (305 x 7620) |
| 10250 | Mesh Roll | 10"x5' (254 x 1524) |
| 10252 | Mesh Roll | 10"x25' (254 x 7620) |
| 10230 | Compound | 1 Stick |
| 10235 | Compound | 3 Sticks |

## CAM SCREWS



| Part Number | Replacement Screw for Part Number | Minimum Order |
|---|---|---|
| 10363 | 10202 | 10 |
| 10364 | 10203 | 4 |
| 10365 | 10204, 10504 | 10 |
| 10366 | 10207 | 10 |
| 10367 | 10201 | 10 |
| 10368 | 10213 | 4 |
| 10369 | 10205 | 10 |
| 10370 | 23140, 24106 | 4 |
| 10371 | 10206, 10506 | 10 |
| 10372 | 23150, 24108 | 4 |
| 10373 | 10208, 10508 | 8 |
| 10374 | Series 9, 22588B | 4 |
| 10375 | 10210 | 4 |
| 10376 | 24110 | 4 |
| 50363 | 50204 | 10 |
| 50364 | 50205 | 4 |
| 50365 | 50206 | 10 |
| 50366 | 50207 | 4 |
| 50367 | 50208 | 10 |
| 50368 | 53140, 54110 | 4 |
| 50369 | 50210 | 10 |
| 50371 | 50212 | 8 |
| 50372 | T-Slot Toe Clamps | 4 |
| 50373 | 50216 | 4 |
| 50374 | 54116 | 4 |

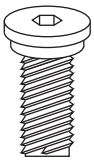
## HEX WASHERS (for Fixture Clamps)

| Part Number | Replacement Washer for Part Number (Metric) | Minimum Order |
|---|---|---|
| 10580 | 10202, (50204) | 10 |
| 10587 | 10207 | 10 |
| 10582 | 10204, (50206) | 10 |
| 10583 | 10203, (50205) | 4 |
| 10584 | 10201, 10205, (50208) | 10 |
| 10585 | (50207) | 4 |
| 10586 | 10206, (50210) | 10 |
| 10588 | 10208 | 8 |
| 10590 | (50212) | 8 |
| 10592 | 10210, (50216) | 4 |

## KNIFE EDGE WASHERS

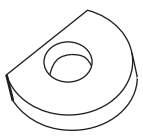
| Part Number | Replacement Washer for Part Number (Metric) | Minimum Order |
|---|---|---|
| 12584 | 22584, (82584) | 10 |
| 12588B | 22588B, (82588) | 8 |
| 12592 | 22592, (82592) | 4 |

## MACHINING SCREWS (for Machinable Fixture Clamps)



| Part Number | Hold Down Screw for Part Number | Min. Order | Part Number | Hold Down Screw for Part Number | Min. Order |
|---|---|---|---|---|---|
| INCH | | | METRIC | | |
| 10704 | 10504 | 4 | 50806 | 50506 | 4 |
| 10706 | 10506 | 4 | 50810 | 50510 | 4 |
| 10708 | 10508 | 4 | 50812 | 50512 | 4 |
| 10710 | 10510 | 4 | 50816 | 50516 | 4 |

## MACHINABLE WASHERS - Steel (for Machinable Fixture Clamps)

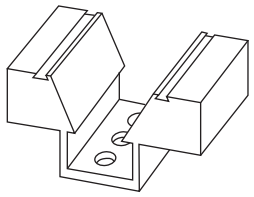


| Part Number | Replacement Washer for Part Number (Metric) | Minimum Order |
|---|---|---|
| 10604 | 10504, (50506) | 4 |
| 10606 | 10506, (50510) | 4 |
| 10608 | 10508 | 4 |
| 10610 | 10510, (50516) | 4 |
| 10612 | 50512 | 4 |

## TAPERED SCREW (For ID Xpansion® Clamp)

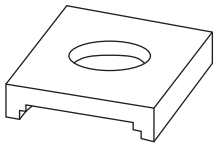
| Part Number (Metric) | Screw For: | Minimum Order |
|---|---|---|
| 31001 (38001) | Model #00 | 4 |
| 31002 (38002) | Model #0 | 4 |
| 31010 (38010) | Model #1 | 4 |
| 31020 (38020) | Model #2 | 4 |
| 31032 (38032) | Model #3 | 4 |
| 31042 (38042) | Model #4 | 4 |
| 31052 (38052) | Model #5, #6 | 2 |
| 31072 (38072) | Model #7, #8, #9, #10 | 2 |

## MACHINABLE UNIFORCE® CHANNEL



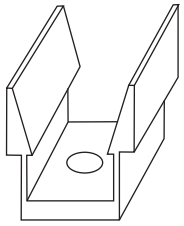
| Part Number | Model | Minimum Order |
|---|---|---|
| 60140 | 500 | 1 |
| 60125 | 750 | 1 |
| 60135 | 1000 | 1 |
| 60160 | 1500 | 1 |
| 60180 | 2000 | 1 |

## MACHINABLE UNIFORCE® LOCKING PLATE



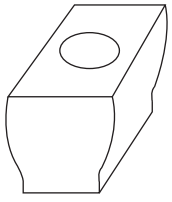
| Part Number | Model | Minimum Order |
|---|---|---|
| 60143 | 500 | 1 |
| 60145 | 750 | 1 |
| 60155 | 1000 | 1 |
| 60165 | 1500 | 1 |
| 60185 | 2000 | 1 |

## UNIFORCE® CHANNEL



| Part Number | Model | Minimum Order |
|---|---|---|
| 60205 | 250 | 6 |
| 60207 | 375 | 6 |
| 60210 | 500 | 8 |
| 60220 | 750 | 6 |
| 60230 | 1000 | 4 |
| 60240 | 1500 | 2 |
| 60245 | 2000 | 2 |

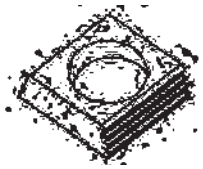
## UNIFORCE® WEDGE (Slug)



| Part Number | Model | Minimum Order |
|---|---|---|
| 60305 | 250 | 6 |
| 60307 | 375 | 6 |
| 60310 | 500 | 8 |
| 60320 | 750 | 6 |
| 60330 | 1000 | 4 |
| 60340 | 1500 | 2 |
| 60350 | 2000 | 2 |

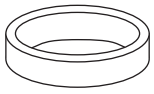
# Replacement Parts

## SQUARE WASHERS



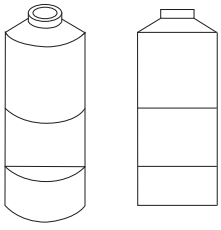
| Part Number (Metric) | Use With Cam Screw: (Metric) |
|---|---|
| 21006 | 10370 (MB-10M) |
| 21016 (51016) | 10372 (MB-12M) |
| 21026 | 10376 (MB-16M) |

## SLOT WASHERS



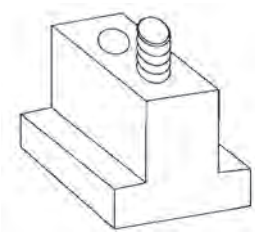
| Part Number | Use with Mounting Screw: (Metric) |
|---|---|
| 20014 | 1/2-13 (M12 Screw) |
| 20016 | 5/8 (M16 Screw) |

## THREADED CYLINDERS



| Part Number | Thread |
|---|---|
| 34002 | M2 |
| 34004 | M4 |
| 34006 | M6 |
| 34008 | M8 |
| 34010 | M10 |
| 34012 | M12 |

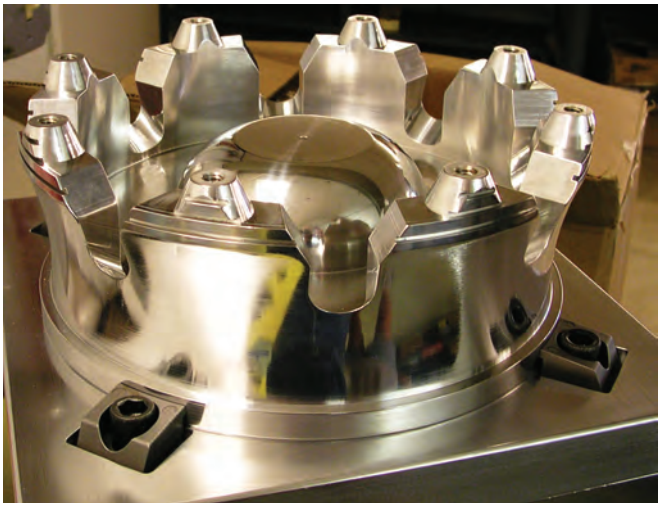
## T-NUT WITH SET SCREW



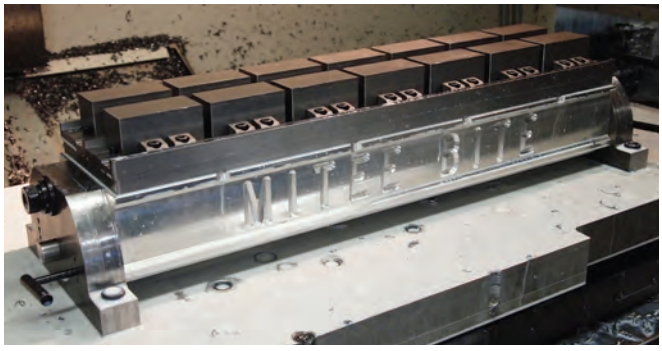
| | Part Number | T-Slot Size | Minimum Order |
|---|---|---|---|
| INCH | 10714 | 3/8 | 2 |
| | 10715 | 7/16 | 2 |
| | 10716 | 1/2 | 2 |
| | 10717 | 9/16 | 2 |
| | 10718 | 5/8 | 2 |
| | 10719 | 11/16 | 2 |
| METRIC | 50708 | 8mm | 2 |
| | 50710 | 10mm | 2 |
| | 50712 | 12mm | 2 |
| | 50714 | 14mm | 2 |
| | 50716 | 16mm | 2 |
| | 50718 | 18mm | 2 |
| | 50720 | 20mm | 2 |
| | 50722 | 22mm | 2 |

# Notes

# Customer Application Photos

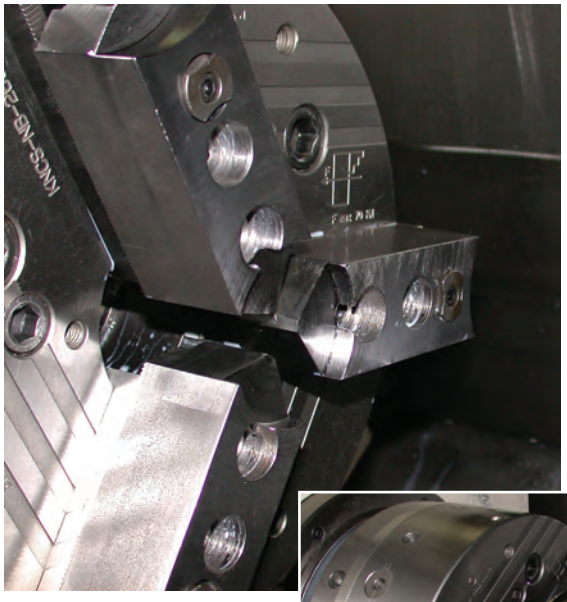


Machinable Pitbull® Clamps

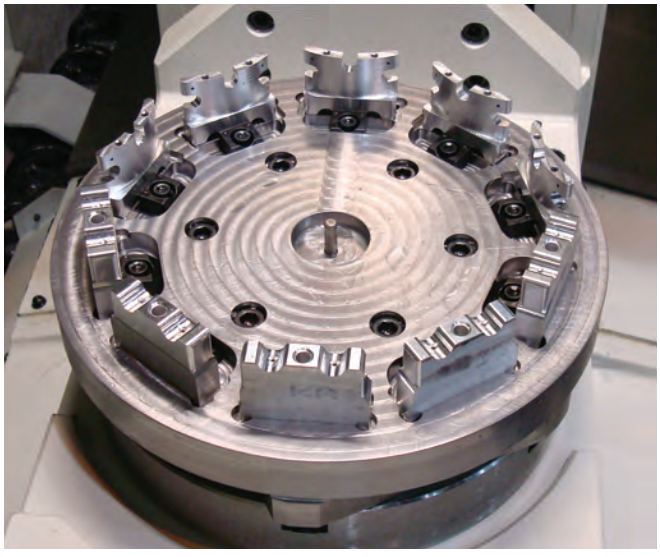


Pitbull® Clamps

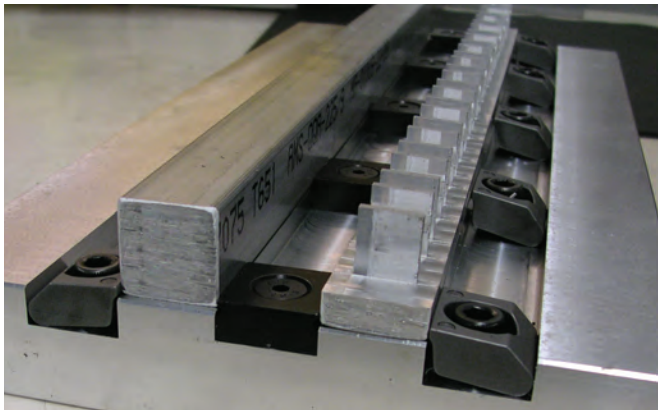
Pitbull® Clamps



VersaGrip™
On a Lathe

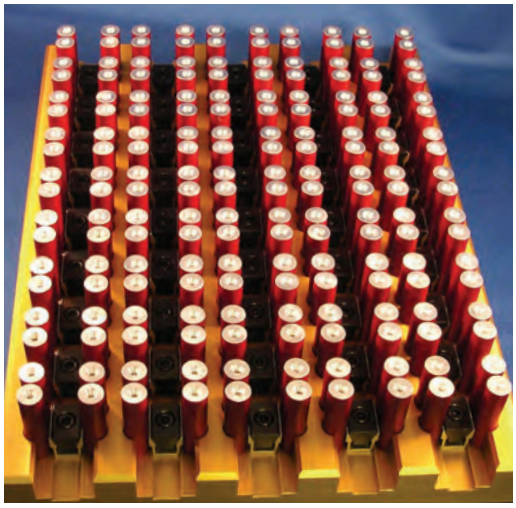


Pitbull® on 5th Axis

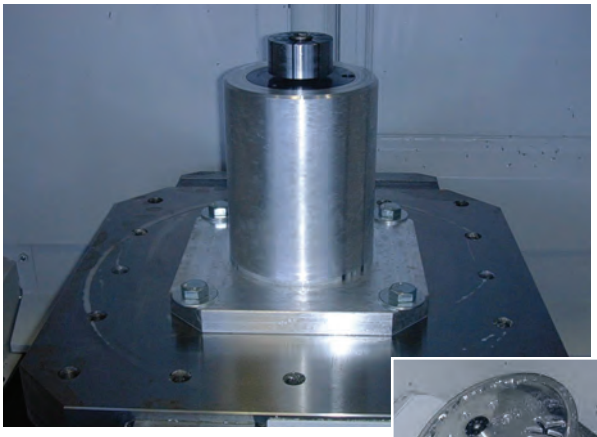


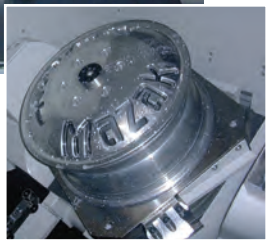
TalonGrip™ and Pitbull®

# Customer Application Photos



Uniforce® Clamps

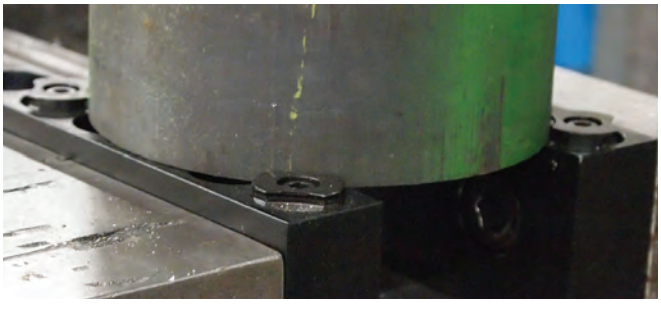




ID Xpansion™ Clamp

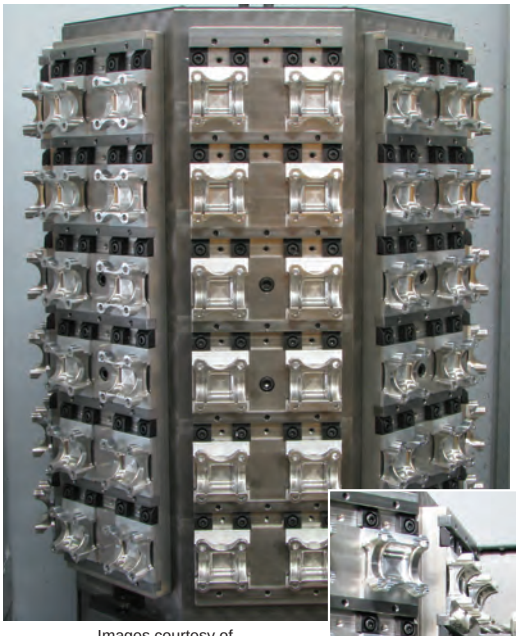
Mitee-Grip™

VacMagic™ VM300 with Custom Pallet

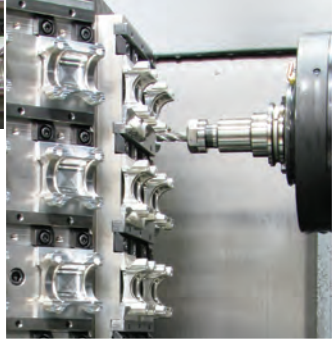


VersaGrip™ in a Vise

VersaGrip™ and Machinable Pitbull®



Images courtesy of www.straitlinecomponents.com



Tombstone with Pitbull® Clamps

MITEE-BITE® PRODUCTS LLC

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E-mail: miteebite@miteebite.com


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