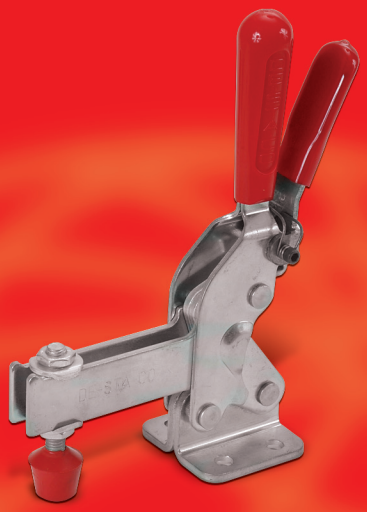
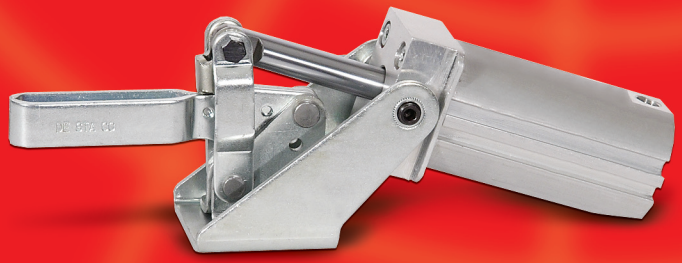
DE-STA-CO
A DOVER COMPANY

WORKHOLDING SOLUTIONS

Fall 2006



Manual Clamping Technology



Pneumatic Clamping Technology

Hydraulic Clamping Technology

TÜV MANAGEMENT SERVICE ISO 9001

www.destaco.com

So Many Possibilities. One Company.

Look for Design Xtra to see our new product improvements

Manual Clamping Technology

NEW

Series 2002, 2007, 2010:
Next generation vertical toggle clamp
Page 2.13

Series 533, 535:
Heavy-duty, hold-down clamps
Page 2.38

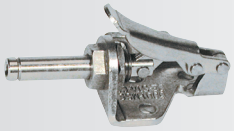
GEW-Series:
Versatility in harsh environments
Page 2.40

Model 207-SF, 207-UF:
Front mounting option for 207 series
Page 2.48

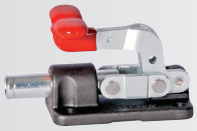
Series 2013, 2017, 2027, 2037:
Next generation horizontal toggle clamp
Page 3.4

Model 2371-U:
135% higher holding capacity
Page 3.16

Models 305-UR, 307-UR, 309-UR:
With additional safety lock
Page 3.18



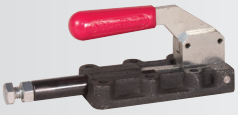
Models 6001-M and 6001-MSS:
50% higher holding capacity
Pages 4.3, 8.1



Models 6015-M, 6015-MR:
Compact and robust
Pages 4.8, 4.9

Model 603-R:
With additional safety lock
Page 4.11

Model 614-M:
Precision straight-line action clamp
Page 4.16



Models 95030, 95040, 95050, 95060:
Low-profile straight-line action clamps
Page 4.20

Models 685-S and 685-L:
Square straight-line action clamps
Page 4.21

Series FRF and FRL:
Quick–acting variable stroke clamps
Page 5.8

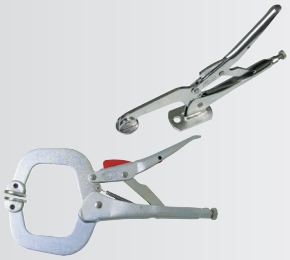
Manual Clamping Technology

Model 3011, 3011-SS:
Heavy-duty, cast latch clamp
Page 6.4

Series 353, 359:
Parting line clamp for molding applications
Page 6.18

Latch plates to complete latch clamps with hook
Pages 6.23, 8.18

Models 425, 435, 445 and 470:
For rugged clamping applications
Pages 7.6, 7.7, 7.8, 7.11



STA-GRIP series:
Plier action clamps
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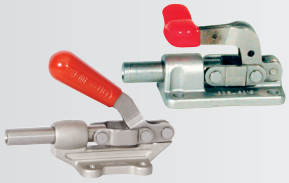

Models 603-SS, 6015-MSS:
New models in stainless steel
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Model 385-V2A:
Stainless steel version of model 385
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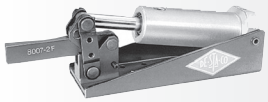
Pneumatic Clamping Technology



Model 8007:
Heavy-duty, compact clamp
Page 11.9

Models 8021, 8071, 8101:
Enclosed clamp for harsh environments
Page 11.10

Model 8031:
Enclosed clamp for harsh environments
Page 11.19

Series 89R:
Slim line of pneumatic swing clamps
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Series 9100, 9200:
Pneumatic swing clamps
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Series 82L:
Enclosed automation power clamp
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Contact

For further information please contact
our regional partners, see last page.

Your contact person in our devision:

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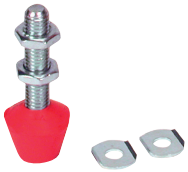
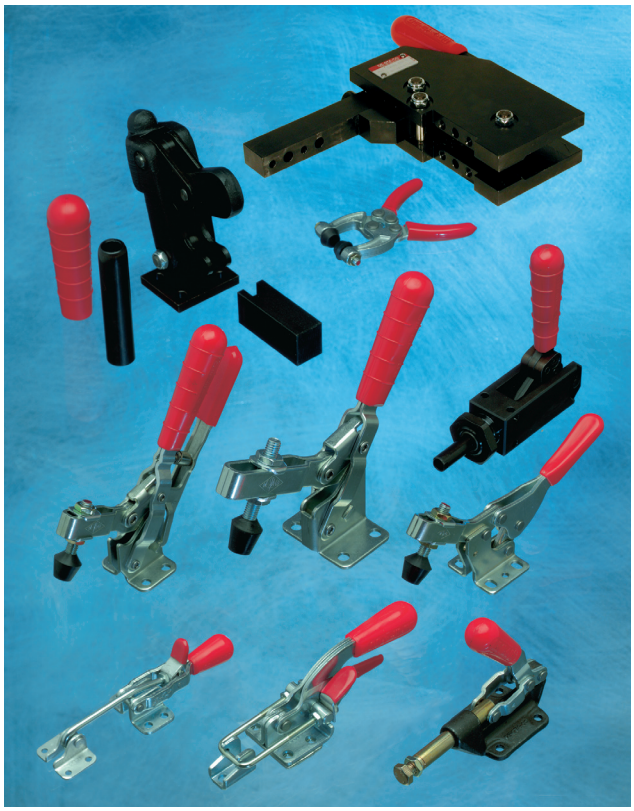
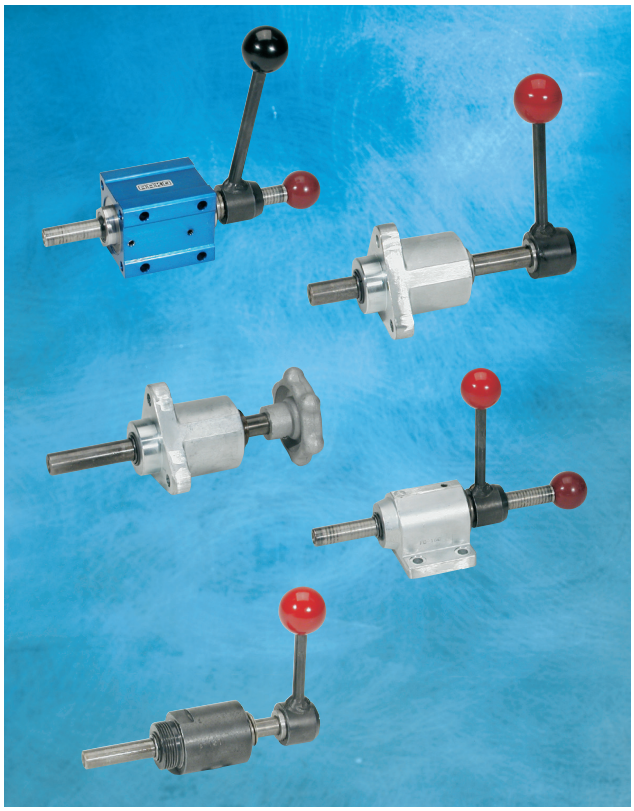


Pneumatic Clamping Technology

Hydraulic Clamping Technology



Manual Clamping Technology



Variable Stroke Straight-Line Action Clamps

Pneumatic ClampingTechnology

StrongHold Hydraulic Clamping System

What you should know about manual quick-action toggle clamps from DE-STA-CO

Your requirements

Workpieces need to be held in a specific position using a specific amount of force in the shortest period of time. Once the workpiece is clamped, the processing of it is usually carried out. This means that the following tasks must be fulfilled using clamping products:

- Quick clamping
- Secure holding
- High clamping forces in a variety of space requirements
- Distortion-free clamping of the workpiece
- Good accessibility to the workpiece

These requirements are fulfilled successfully and reliably using clamping products from DE-STA-CO.

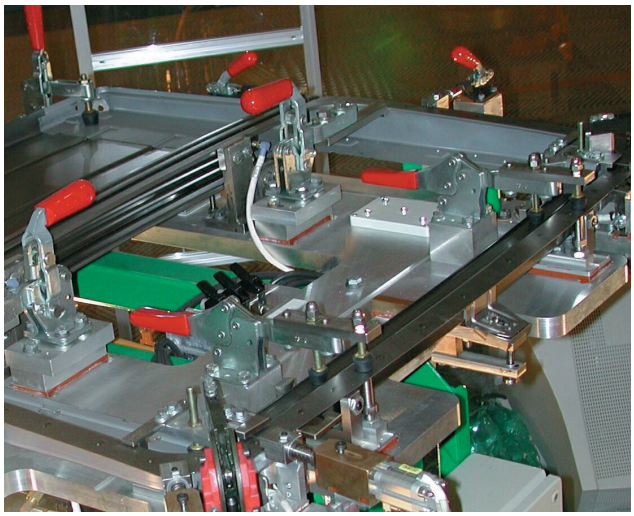
Workpieces are clamped in nearly all applications of a manufacturing environment. In the metalworking industry, reliable clamping is a basic requirement for drilling, welding, bending, grinding, testing, assembling, etc.

Additional applications that use DE-STA-CO clamping products:

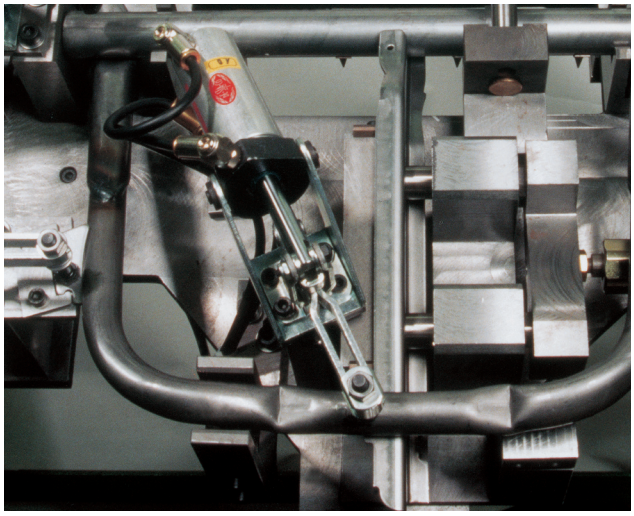
- Automobile industry
- Electrical industry
- Woodworking industry
- Plastics industry
- Textile industry
- Chemical industry
- Food industry

We can also help you with any clamping tasks that may arise in other applications not mentioned above.

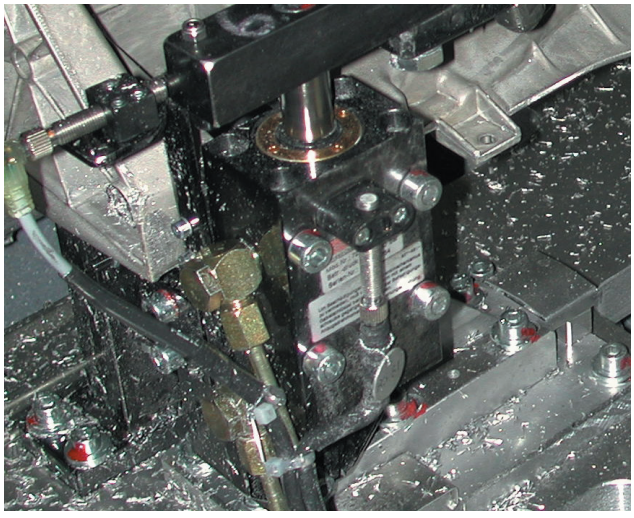
Manual Clamping Technology



Pneumatic Clamping Technology



Hydraulic Clamping Technology



How Toggle Action Works

Toggle action clamps operate through a linkage system of levers and pivots. The fixed-length levers, connected by pivot pins, supply the action and clamping force. Toggle action has an over-center lock point which is a fixed stop and linkage. Once in the over-center position, the clamp cannot move or unlock unless the linkage is moved. All types of toggle clamps have this same action, just oriented differently.

Toggle Action Force Factors

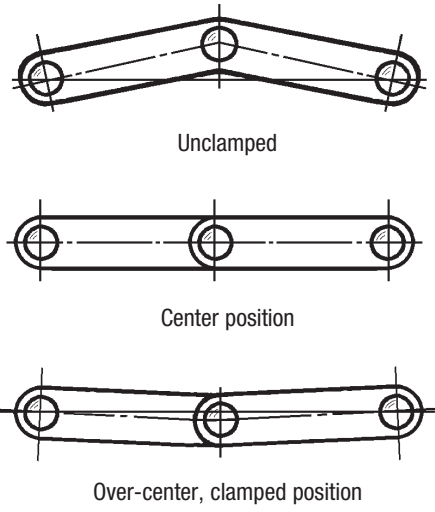
The maximum clamping or exerting force developed in any toggle action clamp is attained when the three pivot points of the mechanism are in a straight line. While this is theoretically true, it makes no allowance for vibration and intermittent load conditions found in industrial applications. Such conditions would soon unlock an improperly designed clamp. The proper amount of over-center travel to produce maximum holding force and yet ensure positive locking is a carefully calculated and controlled dimension developed by years of experimentation and experience.

Throughout this catalog each clamp is rated with its “holding capacity.” This is the maximum load or force the clamp will sustain in the closed and locked position without permanent deflection. Exerting forces applied as the clamp closes are less than the holding capacity, and are dependent on variables such as the position of the operator’s hand on the handle; amount of force applied; and position of the spindle on the bar.

Toggle Action Clamps Compared With Cam Action Clamps

Cam action uses frictional force to effect a locking condition between the cam surface on the bar and the follower on the handle. Toggle action clamps have many advantages over cam action clamps, mainly because cam action clamps allow some movement while clamping. Toggle action clamps thus provide a more consistent clamping point, can be manufactured from inexpensive materials, and are available in stainless steel for outdoor or corrosive applications. If the material being clamped has a variable thickness, however, a cam action clamp has the ability to better accommodate this application.

Toggle Action Principle



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- CAD downloads
- DE-STA-CO news and new products
- Trade show calendar
- Sales support in your immediate area
- Application examples

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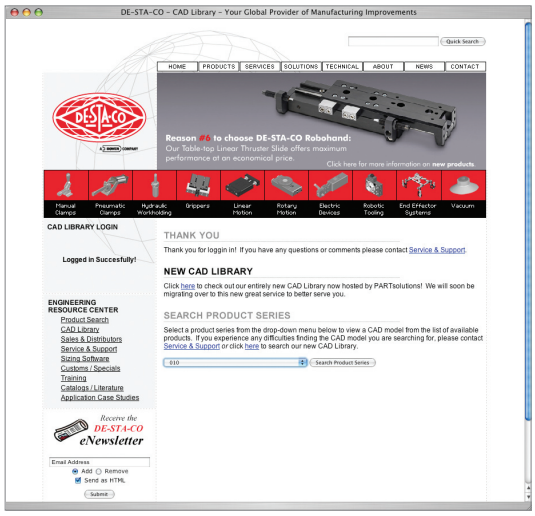
- Please visit destaco.com to receive all of our free CAD files, including native files in .dwg, .dxf, .sat, .iges, .step formats



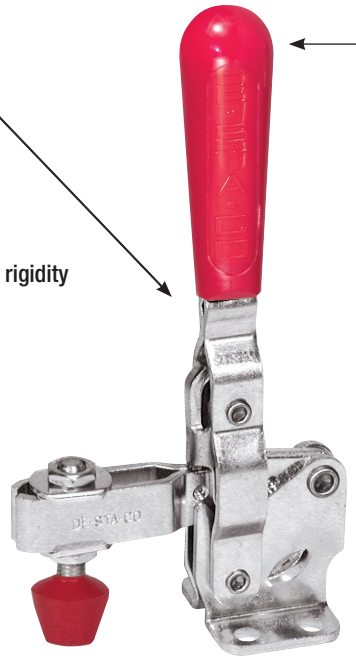
DE-STA-CO: the “Original”

The details

The clever, patented safety link
- Reduces pinch points during operation
- One of the many safety features of DE-STA-CO clamps

The sturdy clamping bar
- Ensures high holding capacities due to high rigidity
- Lateral guide in the base

The bonded neoprene spindle
- Protects sensitive workpieces
- Long service life
- High degree of flexibility and adaptation to the application
- Standard feature in all horizontal and vertical models



The standard handle
- Ergonomically shaped, for ease of operation
- Oil-resistant, suitable for many different uses
- The “Red Handle” – the Original

The long-lasting construction
- Heavy-duty rivet made of stainless steel
- Heavy-duty rivet is oiled during assembly
- Hardened knurled bushings

What about the forces?

In the case of clamping products, a clear distinction must be made between exerting forces and holding capacities. Here are the essential features:

Exerting Or Clamping Force

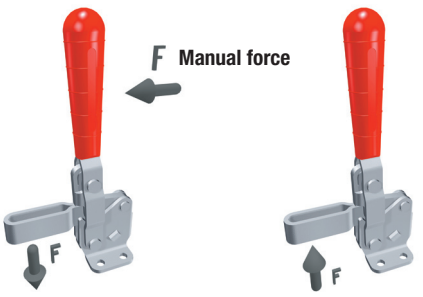
The “exerting force” of our air toggle clamps is well defined and can be found on page 11.22. Manually operated clamps present a series of variables to determine actual exerting force.

These variables are:

(a) the force exerted on the handle by the operator;
(b) the point on the handle where this force is applied;
(c) the mechanical advantage in the linkage; and
(d) the point on the work holding bar where the force will be measured. As a general rule, the mechanical advantage available throughout the line ranges from 2:1 to 10:1

Holding Capacity

The “holding capacity” of DE-STA-CO toggle clamps has been determined by actual tests. It is defined as the maximum amount of force which may be applied to the work holding bar, in the closed position, without creating permanent deformation of the clamp components. This maximum force is measured at a point closest to the base and diminishes as the spindle approaches the end of the bar. The ratings for holding capacity are maximum and should not be exceeded. These values include a safety factor.



Exerting force **Holding capacity**

How to find the most suitable clamp?

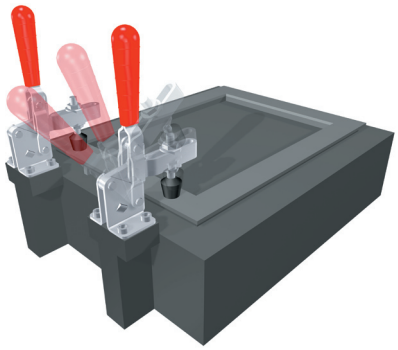
The following criteria will narrow the selection of the clamp type

- The type of fixture
- The required holding capacities
- The size conditions in and around the fixture
- Action required by clamp to perform required task

The most important models at a glance

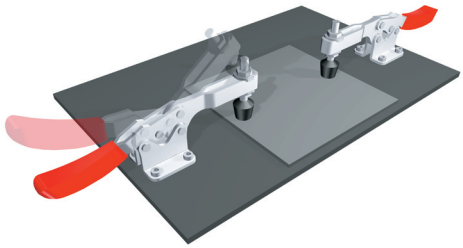
Vertical hold-down clamp

- Handle is vertical in clamped position
- Holding capacity 100 - 5,000 lbs.
- Opening angle between 65° and 215°



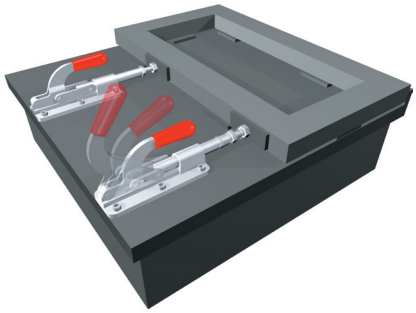
Horizontal hold-down clamp

- Very low profile
- Handle is horizontal in the clamped position
- Holding capacity 60 - 1,000 lbs.
- Opening angle between 90° and 105°



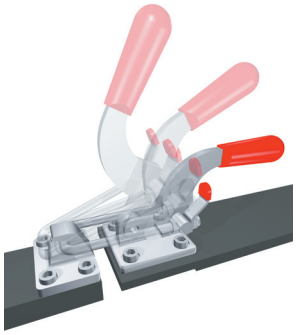
Straight line action clamp

- Forward movement of the handle pushes the plunger into the forward position
- Can be used as a push clamp and pull clamp, locking in two positions
- Holding capacity 100 - 16,000 lbs.



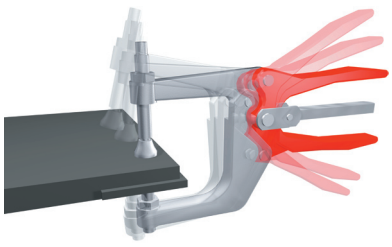
Latch clamp

- Convenient one-hand operation due to the patented thumb control lever
- Compact models
- Holding capacity 200 - 7,500 lbs.



Plier clamps

- Flexible clamping and fixturing
- Also equipped with quick release lever
- Holding capacity 100 - 2,000 lbs.



How to find the most suitable hold-down clamp?

In the case of the vertical and horizontal clamps, there are variations in the clamping bars and clamp bases:

U-shaped clamp bar

- Allows for the adjustment of the spindle in the horizontal position

Solid clamp bar

- Can be cut individually in various lengths and angles
- Bolt retainer is used to attach the spindle

Flanged mounting base

- For mounting on flat surfaces

Straight mounting base

- For mounting on vertical surfaces or with a blade

Selecting The Proper DE-STA-CO Clamp

The information contained in this catalog is designed to help you select the right clamp to accomplish your job. DE-STA-CO distributor personnel, as well as DE-STA-CO's engineering department, are qualified and willing to offer assistance in special or unusual applications. For most ordinary applications, however, consideration of the following points will lead to the proper clamp selection:

- Size and shape of the parts to be held.
- Uniformity of part size (Should you consider a spring-loaded spindle to compensate for uneven parts?)
- Holding capacity required
- Strength and dexterity of the operator
- Operator's position (Should you use horizontal or vertical handle models?)
- Frequency of operation (Should you plan for a temporary or permanent fixture?)
- Time cycle of operation (Should you consider a turntable or conveyor set-up if curing time is required?)
- Cycling time and sequence (Should you consider air-operated models that can be operated faster and in sequence?)
- Environment (Should you consider stainless steel, aluminum, or lightweight composite models?)

Processing Applications

Remember, the same toggle action force multiplying principle can be applied to other tasks besides holding. Certain DE-STA-CO models can be used to position parts, power fixtures, or perform mechanical functions such as piercing sheet metal, staking rivets, or locating.

OEM Applications

DE-STA-CO clamps provide ready-made, compact devices for moving or holding components. A little imagination will often show the product designer a way to obtain motion or locking force with no tooling costs and often at less cost than custom designed components. Thousands of DE-STA-CO clamps will be found installed as original equipment for cleanout door latches, wheel locks, positioning devices, etc.

Safety

Our concern is not only the constant high quality of our products, but also their fail-safe and foolproof handling. The knowledge gathered since 1936 guarantees a developed, safe and high-quality clamping unit.

A certain clamping force will be necessary to safely hold a part. This force is determined by taking the following into account:

(a) the part material: such as, steel, wood, plastic or glass, etc.
(b) the surface finish of the part: such as, polished, hard or soft, etc.
(c) the machining or assembly operation: such as, milling, welding, drilling, bonding, joining or sealing a mold, etc.

In order to ensure clamp strength is not compromised, use all the mounting holes provided.

Red handle grips are provided on each model. Users should only locate their hand in this area when operating the clamp, thus reducing the possibility of injury.

Safety Handle

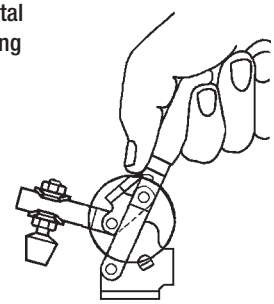
This ergonomic handle provides greater operator comfort.

Safety Feature (patented)

This safety link prevents accidental injury to an operator when opening the clamp.

Clamp Series

201, 202, 207, 210, 220, 228, 247, 267, 268

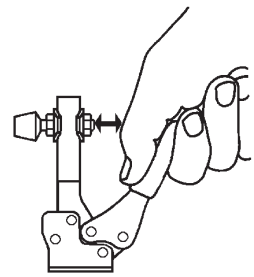


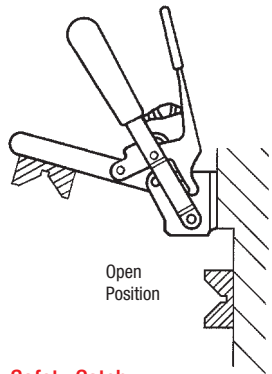
Safety Distance

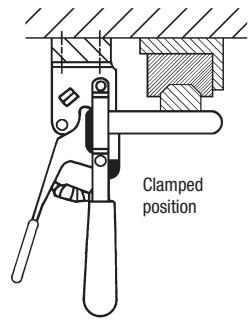
Exclusive handle design gives more hand clearance between bar and handle when clamp is in fully open position.

Clamp Series

213, 217, 227, 237, 245







Safety Catch

Handle or clamping arm on our DE-STA-CO Toggle-Lock Plus Clamps lock in the open or closed position.

Clamp Series

207-LR, 207-UR, 210-SR, 210-UR

Introduction

Specifications

Materials, finishes, treatments, etc. of DE-STA-CO products are changed from time-to-time to improve performance or reliability. These items are, naturally, subject to change without notice. In the interest of catalog longevity they are not discussed in detail throughout the catalog pages.

As of the date of going to press, however, the following specifications were in force and can be considered reasonably stable:

Forgings

Forged components (notably the squeeze action clamps) are made from C-1141 material and heat treated to RC 28-34 to improve resistance to bending and create a wear surface for the pivot pins.

Castings

Used for bases on some of the larger clamps, castings are made of ductile iron, heat treated to properties of steel. They have the wear resistance of iron together with greater strength and excellent shock and impact resistance.

Composite Materials

Clamp components and spindle assemblies are molded of Nylon 6/6 with 30% glass fiber reinforcement. Nylon is inert to most organic chemicals such as esters, ketones, alcohols, and hydrocarbons. It resists alkalis and salt solutions, but is attacked by phenols, formic acid, strong mineral acids and oxidizing agents. Maximum temperature is 170° F.

Stainless Steel

Series 300 (normally an 18-8 type 302-304) giving increased resistance to chemical and acid attacks.

This is a heat-resisting steel, non-magnetic in the annealed state and slightly magnetic when cold worked. Used in the chemical, photographic, pharmaceutical, aircraft, dairy and food processing industries, marine applications, and for surgical and dental equipment.

NOTE: Rivets are 430 stainless steel. Contact the factory to determine if optional series 300 rivets are available.

Plating

The plating on most steel toggle clamp parts is a zinc plating with a bright finish, which conforms to government specification QQZ325C Type 1, Class 3. Zinc plating typically has a useful service temperature of 250˚F (120˚C), but its corrosion inhibiting properties begin to degrade at 140˚F (60˚C). Many cast and forged bases are black oxide finished.

Power Clamps

Power clamps can be actuated by pneumatic pressure or hydraulic fluid. Most of the cylinders are of tie-rod construction for maximum strength and have hard chrome-plated or ground stainless steel piston rods. Rod seals are generally a quad-seal. The small bore cylinders, through 1-1/8", also have quad-seals for piston seals and the larger bores have U-cups. The standard cylinder is supplied with Buna N seals and may be operated over a temperature range of -40° to +250° F. Also available is a high temperature seal kit with Viton seals, which extends the temperature range from -20° to +400° F. It also can be used in service with most of the exotic fluids.

Miscellaneous

The standard light and medium-duty clamps are made from C-1008 or C-1010 low carbon, cold-rolled steel. The work holding clamp bars and other components of our medium and heavy-duty clamps are made from C-1018, a cold finished, low carbon, case hardening steel.

The pivot pins in most of our clamp models are very close-tolerance, cold-drawn, 430 stainless steel headed rivets. In the heavy-duty models, hardened and ground replaceable pins are used.

Bushings are made of low carbon steel, case hardened for wear and serrated on the circumference to ensure non-rotating, long-wearing bearing surface for the pivot pins.

Spindle assemblies are made from cold-drawn bar, Grade 2, and plated with zinc. The bonded spindle tip is oil-resistant, black neoprene with a durometer of 70-80 Shore A to provide adequate compressibility and resiliency.

Mounting The Clamp

To properly secure the clamp to the mounting surface, all mounting holes provided must be used.

Modifications

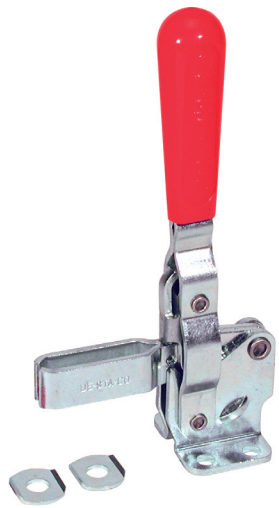
Making changes to our clamps may affect the performance of the product. The life expectancy of a clamp is dependent upon many factors, including alterations to the bar, handle or the addition of tooling. For any modification, the maximum rated capacities should not be exceeded.

All the vertical and horizontal clamps are equipped with flanged washers/bolt retainers and bonded neoprene spindles (large models have hex head spindles). Models with heavy-duty clamping bars are equipped with a bolt retainer and are supplied without a spindle.

The model number addition "-LS" also allows you to order the clamp without any spindle accessories. In this case, only flanged washers are supplied.

e.g. Model 207-U

e.g. Model 207-U-LS



With our wide variety of accessories, you can customize the functionality of the clamp to suit your specific requirements.

Available accessories include:

Adjustment Spindles
- With bonded neoprene pads
- With swivel foot
- With hex head
- With pressurematic spring loaded variability

Neoprene Caps
- Hex head adjustment spindles slip on for easy replacement
- For protection of the workpiece

Flanged washers
- For attachment of the adjustment spindles to U-shaped clamping bars

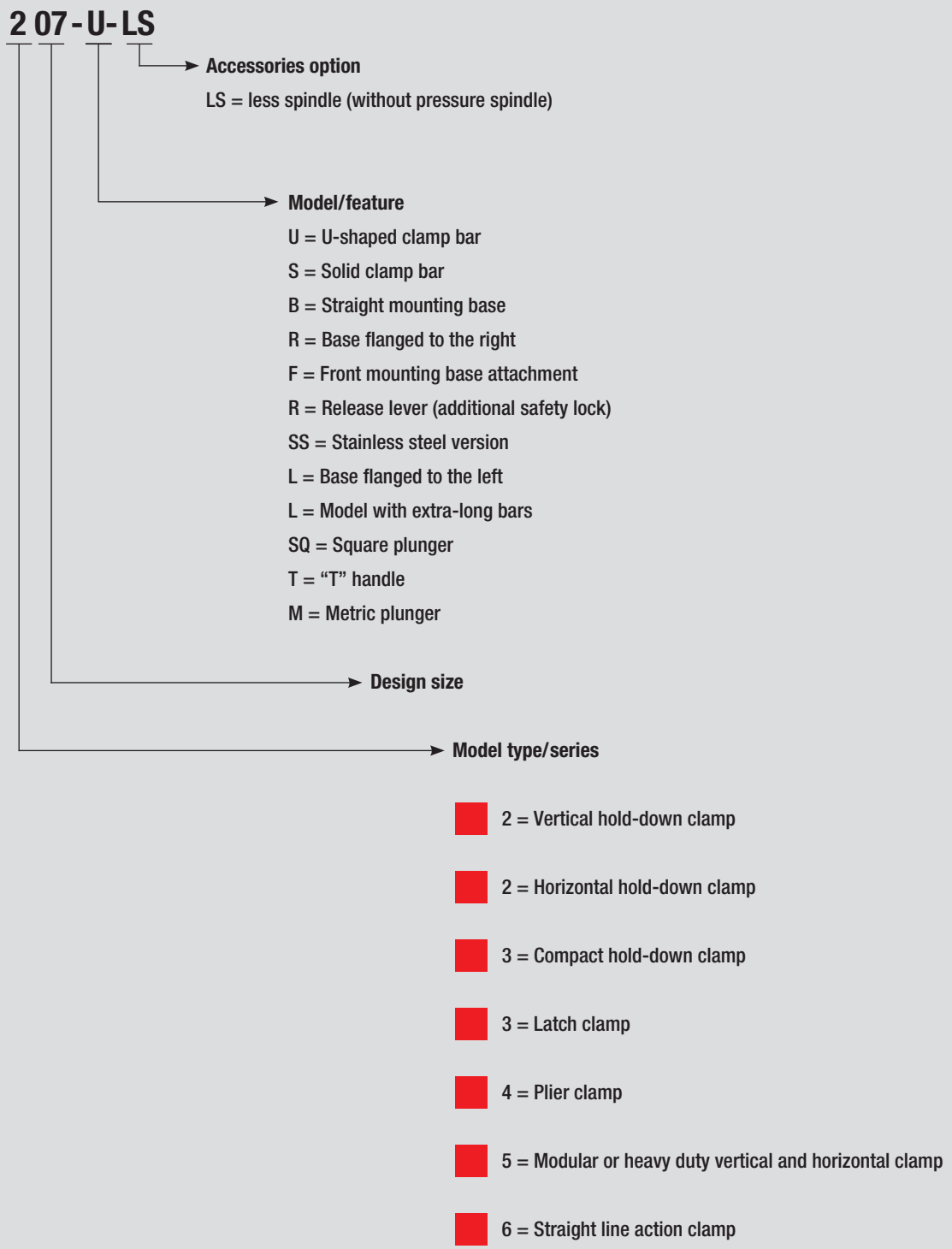
Bolt retainers
- For attachment of the adjustment spindles to solid, heavy-duty clamping bars

Crossarm sets
- Bridge for assembly of 2 adjustment spindles for multiple position clamping

Model number code

The model number code is used to distinguish between the following features:

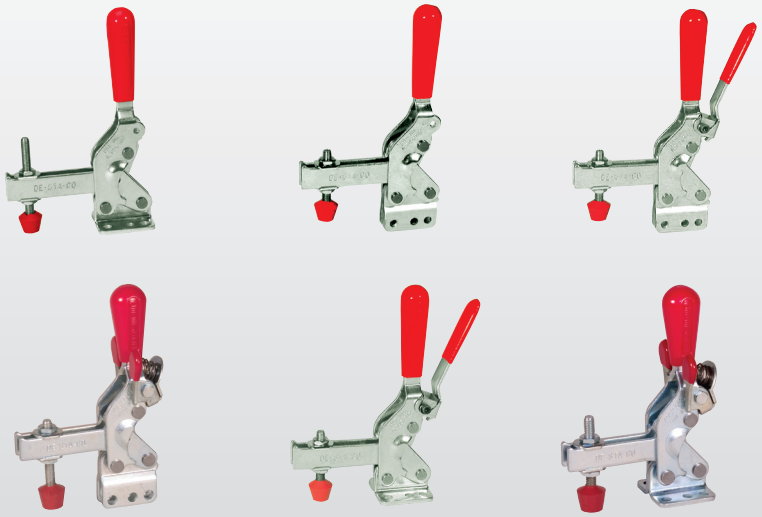
- Size
- Model
- Constructional features



NEW

The new 2000-Series: Strong and Compact

This revolutionary new DE-STA-CO toggle clamp series features high holding forces and a compact design, greater clearance, pinch point elimination, vertical movement of the spindle, no workpiece movement, open, long clamping arm for more flexibility and optimized stop point location for more durability.



page 2.12

NEW

GEW-Series: Versatility in harsh environments

These new heavy-duty, hold-down clamps offer versatility in a harsh working environment. Slotted holes along the clamping bar allow for different workholding locations. The bar is made from high-strength SAE 1045 steel. The base can be cut or welded to suit various fixture or tooling needs. The enclosed line of flux reduces the load of the fixture

page 2.40

Product group – vertical clamps

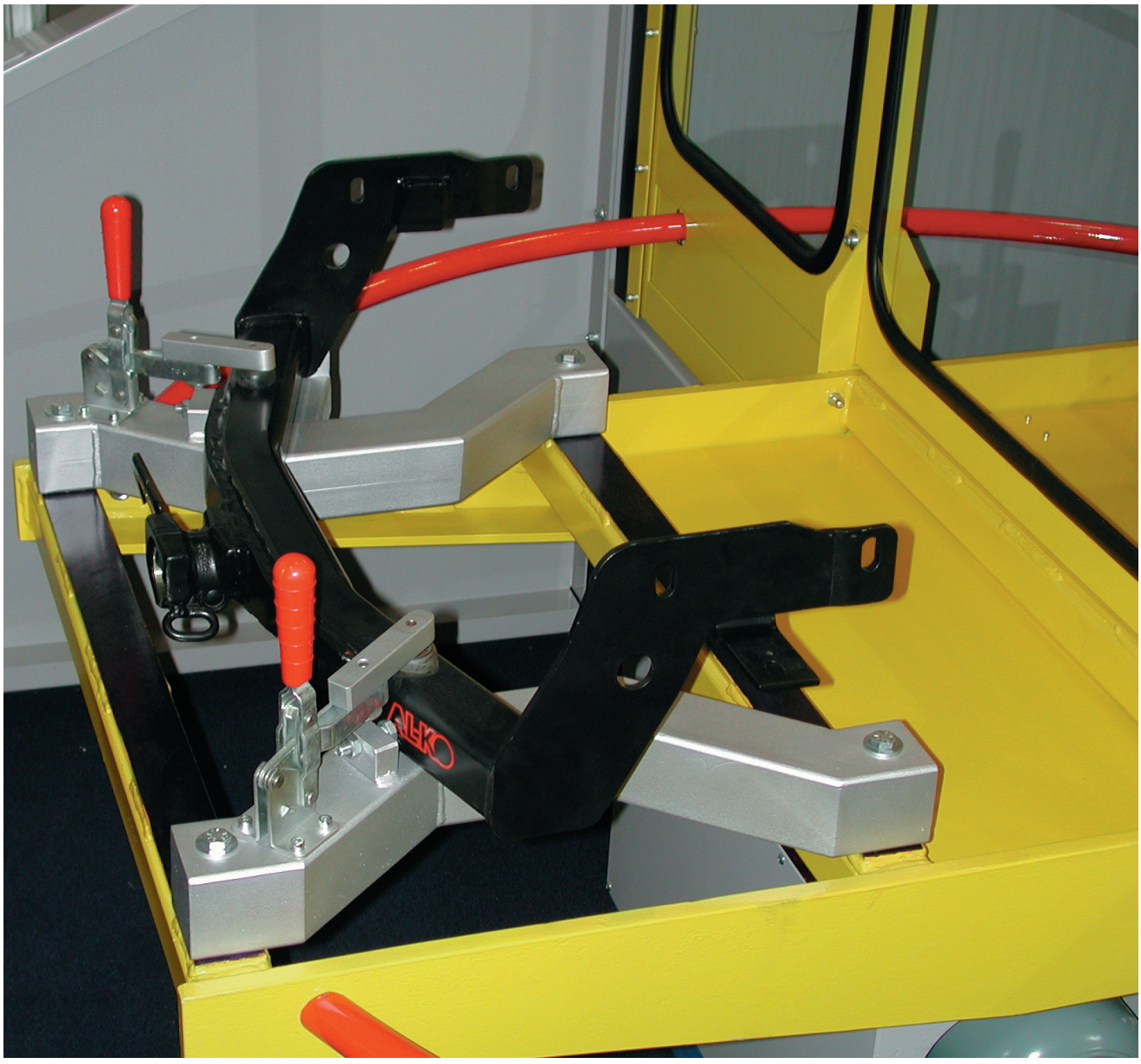
Application areas

Clamping during the assembling, drilling, testing, gluing, locking of covers, and much more. The vertical clamp is the most frequently used product whenever clamping products are to be integrated with a manual fixture.

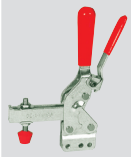
The essential product features

- In the clamping position, the handle is vertical
- Vertical clamps open at an angle between 90° and 215°
- Vertical clamps are offered with U-shaped or heavy-duty solid clamping bars
- Vertical clamps have a straight or flanged base. The heavy-duty vertical clamps possess a base that can be welded on without a hole pattern

Model 210-U clamping a frame



	Model no.	Holding Capacity max. [lbs.]	Category	Page
	2002-S 2007-S 2010-S	600 1,000 1,400	NEW! Standard NEW! Standard NEW! Standard	2.13
	2002-SB 2007-SB 2010-SB	600 1,000 1,400	NEW! Standard NEW! Standard NEW! Standard	2.13
	2002-SBR 2007-SBR 2010-SBR	600 1,000 1,400	NEW! DE-STA-CO Toggle-Lock Plus NEW! DE-STA-CO Toggle-Lock Plus NEW! DE-STA-CO Toggle-Lock Plus	2.14
	2002-SBRA 2007-SBRA 2010-SBRA	600 1,000 1,400	NEW! Standard NEW! Standard NEW! Standard	2.14
	2002-SR 2007-SR 2010-SR	600 1,000 1,400	NEW! DE-STA-CO Toggle-Lock Plus NEW! DE-STA-CO Toggle-Lock Plus NEW! DE-STA-CO Toggle-Lock Plus	2.15
	2002-SRA 2007-SRA 2010-SRA	600 1,000 1,400	NEW! DE-STA-CO Toggle-Lock Plus NEW! DE-STA-CO Toggle-Lock Plus NEW! DE-STA-CO Toggle-Lock Plus	2.15
	2002-U 2007-U 2010-U	600 1,000 1,400	NEW! Standard NEW! Standard NEW! Standard	2.16
	2002-UB 2007-UB 2010-UB	600 1,000 1,400	NEW! Standard NEW! Standard NEW! Standard	2.16

	Model no.	Holding Capacity max. [lbs.]	Category	Page
	2002-UBR 2007-UBR 2010-UBR	600 1,000 1,400	NEW! DE-STA-CO Toggle-Lock Plus NEW! DE-STA-CO Toggle-Lock Plus NEW! DE-STA-CO Toggle-Lock Plus	2.17
	2002-UBRA 2007-UBRA 2010-UBRA	600 1,000 1,400	NEW! DE-STA-CO Toggle-Lock Plus NEW! DE-STA-CO Toggle-Lock Plus NEW! DE-STA-CO Toggle-Lock Plus	2.17
	2002-UR 2007-UR 2010-UR	600 1,000 1,400	NEW! DE-STA-CO Toggle-Lock Plus NEW! DE-STA-CO Toggle-Lock Plus NEW! DE-STA-CO Toggle-Lock Plus	2.18
	2002-URA 2007-URA 2010-URA	600 1,000 1,400	NEW! DE-STA-CO Toggle-Lock Plus NEW! DE-STA-CO Toggle-Lock Plus NEW! DE-STA-CO Toggle-Lock Plus	2.19
	202 207-L 207-LO 207-S 207-SO 210-S 247-S 267-S	200 500 500 500 500 750 1,000 1,200	Standard Standard Standard Standard Standard Standard Standard Standard	2.20
	202-B 207-LB 207-LBO 207-SB 207-SBO 210-SB 247-SB	200 500 500 500 500 750 1,000	Standard Standard Standard Standard Standard Standard Standard	2.21
	207-LR 210-SR	500 750	DE-STA-CO Toggle-Lock Plus DE-STA-CO Toggle-Lock Plus	2.20
	207-LBR 210-SBR	500 750	DE-STA-CO Toggle-Lock Plus DE-STA-CO Toggle-Lock Plus	2.22

Product group – vertical clamps

	Model no.	Holding Capacity max. [lbs.]	Category	Page
	202-T	200	Standard	2.24
	207-TS	500	Standard	
	207-TL	500	Standard	
	210-TS	750	Standard	
	202-TB	200	Standard	2.24
	207-TSB	500	Standard	
	207-TLB	500	Standard	
	201-TU	100	Standard	2.25
	202-TU	200	Standard	
	207-TU	375	Standard	
	207-TUL	375	Standard	
	210-TU	600	Standard	
	201-TUB	100	Standard	2.25
	202-TUB	200	Standard	
	207-TUB	375	Standard	
	207-TULB	375	Standard	
	210-TUB	600	Standard	
	201-U	100	Standard	2.26
	202-U	200	Standard	
	202-UL	375	Standard	
	207-U	375	Standard	
	207-UL	375	Standard	
	207-UO	375	Standard	
	207-ULO	600	Standard	
	210-U	1,000	Standard	
	247-U	1,200	Standard	
	267-U			
	201-UB	100	Standard	2.28
	202-UB	200	Standard	
	207-UB	375	Standard	
	207-ULB	375	Standard	
	207-UBO	375	Standard	
	207-ULBO	375	Standard	
	210-UB	600	Standard	
	247-UB	1,000	Standard	
	267-UB	1,200	Standard	
	207-UR	375	DE-STA-CO	2.30
	210-UR	600	Toggle-Lock Plus	
			DE-STA-CO	
			Toggle-Lock Plus	
	207-UBR	375	DE-STA-CO	2.31
	210-UBR	600	Toggle-Lock Plus	
			DE-STA-CO	
			Toggle-Lock Plus	

	Model no.	Holding Capacity max. [lbs.]	Category	Page
	219	350	Standard	2.32
	229	1,000	Standard	
	516	750	Standard	2.33
	516-B	750	Standard	
	518	500	Standard	2.34
	528	1,000	Heavy-duty	2.35
	528-F	1,000	Heavy-duty	
	548	2,500	Heavy-duty	2.36
	578	4,000	Heavy-duty	
	588	6,000	Heavy-duty	
	558	2,500	Heavy-duty	2.37
	568	3,300	Heavy-duty	
	533-L	1,500	NEW! Heavy-duty	2.38
	535-L	2,200	NEW! Heavy-duty	
	533-LB	1,500	NEW! Heavy-duty	2.39
	535-LB	2,200	NEW! Heavy-duty	
	536-LB	2,900	NEW! Heavy-duty	

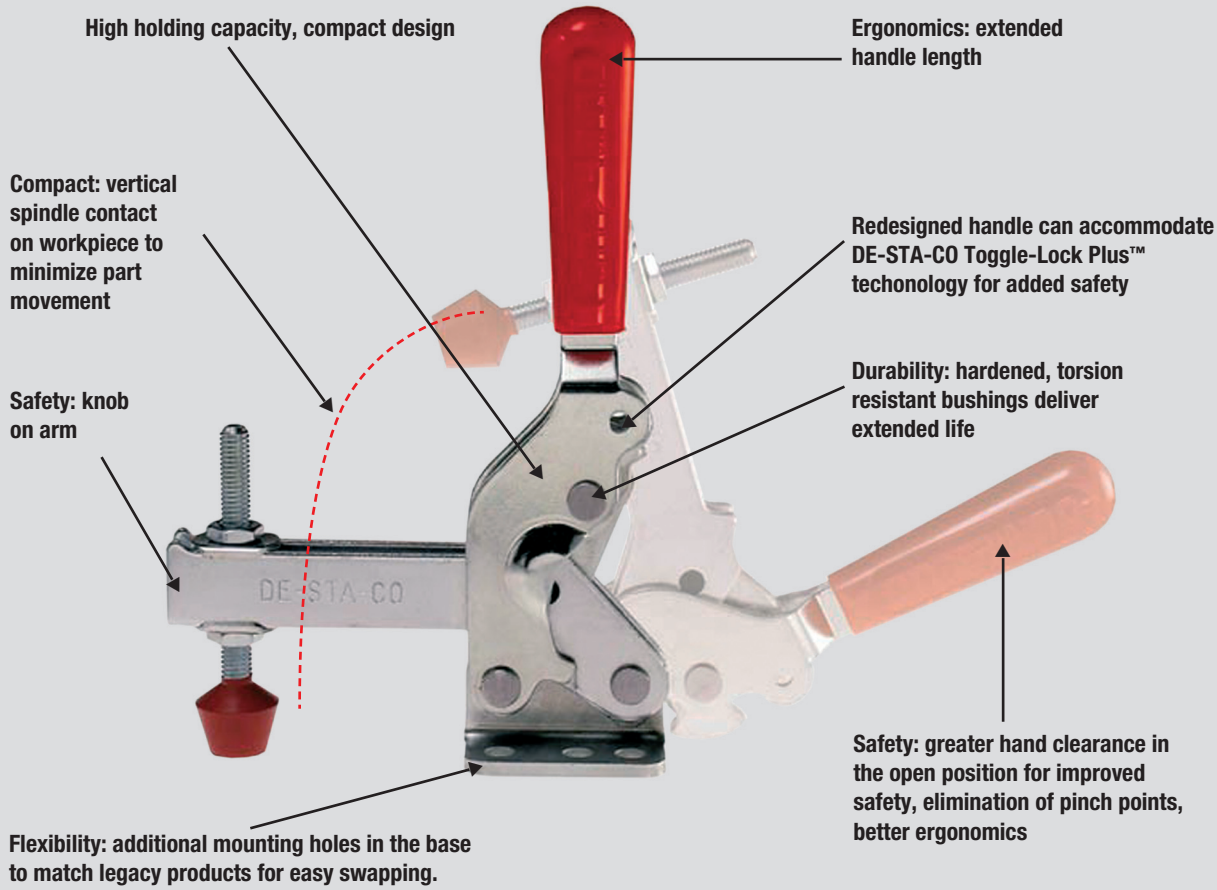
	Model no.	Holding Capacity max. [lbs.]	Category	Page
	GEW-15	335	NEW! Heavy-duty	2.40
	GEW-20	610	NEW! Heavy-duty	
	GEW-30	945	NEW! Heavy-duty	
	GEW-50	960	NEW! Heavy-duty	
	GEW-60	1,085	NEW! Heavy-duty	
	GEW-70	960	NEW! Heavy-duty	
	GEW-90	3,780	NEW! Heavy-duty	
	GEW-25-R	335	NEW! Heavy-duty	2.41
	GEW-37-R	500	NEW! Heavy-duty	
	GEW-40-R	500	NEW! Heavy-duty	
	GEW-25-RT	500	NEW! Heavy-duty	
	GEW-37-RT	500	NEW! Heavy-duty	
	GEW-40-RT	500	NEW! Heavy-duty	
	501-B	560	Modular	2.43
	503-MB	1,500	Modular	
	503-MBLSC	1,500	Modular	
	505-MB	2,400	Modular	
	505-MBLSC	2,400	Modular	
	506-MB	5,000	**Modular**	
	506-MBLSC	5,000	**Modular**	
	501-LB	560	Modular	2.44
	503-MLB	1,500	Modular	
	503-MLBLSC	1,500	Modular	
	505-MLB	2,400	Modular	
	505-MLBLSC	2,400	Modular	
	506-MLB	5,000	**Modular**	
	506-MLBLSC	5,000	**Modular**	
	7-58	600	Cam Action	2.46
	7-59	1,000	Cam Action	
	7-60	1,600	Cam Action	
	7-61	3,750	Cam Action	
	7-101	475	Cam Action	
	207-SF	500	**NEW! Standard**	2.47
	207-UF	375	**NEW! Standard**	2.48
	317-S	375	**Standard**	2.49

	Model no.	Holding Capacity max. [lbs.]	Category	Page
	317-U	375	**Standard**	2.50
	527	1,000	**Standard**	2.51
	527-F	1,000	**Standard**	2.52
	557	2,500	**Standard**	2.52
	91090	385	**Standard**	2.53
	91140	1,000		
	VH3	200	Composite	2.53

2000-Series, vertical clamps

NEW

Strength: 2-3 times higher Holding Capacity



Main Benefits:

1. **High holding capacity, compact design**
2. **Greater hand clearance, pinch point elimination**
3. **Vertical movement of the spindle, no workpiece movement**
4. **Open, long clamping bar for more flexibility**
5. **Optimized handle stop location for more durability**

Application areas:

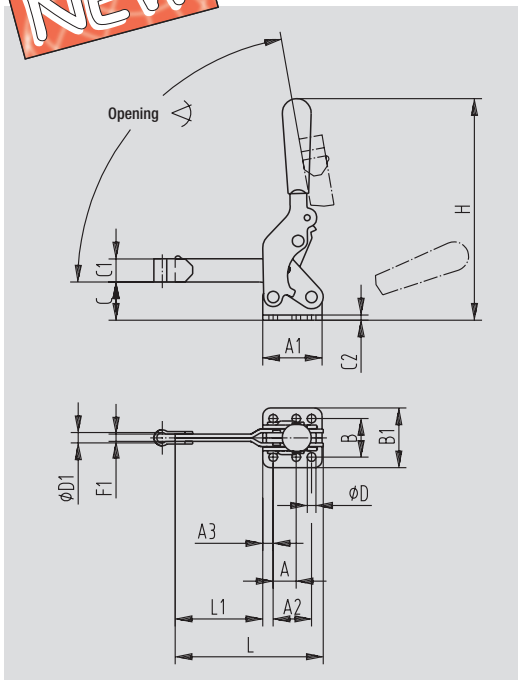
Ideal for fixtures and applications with restricted space where high holding capacity is required.

Product features:

- All pivot points are bushed yielding high lifecycles
- Rivets made of stainless steel to reduce wear
- Improved material thickness for high durability
- Ergonomically shaped handle for operator comfort

NEW

Models 2002-S, 2007-S, 2010-S



Model no.	Holding Capacity ▲ [lbs.]	Bar Opening ∢ +10°	[lbs.]	Bolt Retainer	Spindle Size (Not Supplied)
2002-S	600	75°	0.48	2002115-E	1/4 or M6
2007-S	1,000	80°	1.20	2007115-E	5/16 or M8
2010-S	1,400	80°	2.56	2010115-E	3/8 or M10

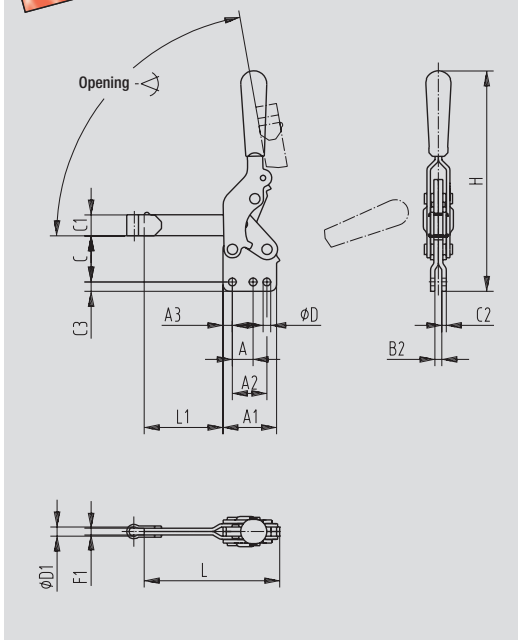
See additional adjustment spindles beginning on page 9.1.

- **Solid clamping bar with bolt retainer**
- **Flanged base**

Model no.	A	A1	A2	A3	B	B1	C	C1	C2	øD	øD1	F1	H	L	L1
2002-S	0.50	1.36	0.90	0.24	1.06	1.52	0.95	0.49	0.12	0.22	0.22	0.25	5.47	3.29	1.93
2007-S	0.75	1.93	1.25	0.33	1.25	1.94	1.25	1.24	0.16	0.28	0.28	0.34	7.64	4.81	2.88
2010-S	–	2.53	1.25	0.63	1.78	2.62	1.70	1.12	0.20	0.34	0.34	0.44	9.61	6.09	3.56

NEW

Models 2002-SB, 2007-SB, 2010-SB



Model no.	Holding Capacity ▲ [lbs.]	Bar Opening ∢ +10°	[lbs.]	Bolt Retainer	Spindle Size (Not Supplied)
2002-SB	600	75°	0.48	2002115-E	1/4 or M6
2007-SB	1,000	80°	1.20	2007115-E	5/16 or M8
2010-SB	1,400	80°	2.56	2010115-E	3/8 or M10

See additional adjustment spindles beginning on page 9.1.

- **Solid clamping bar with bolt retainer**
- **Straight base**

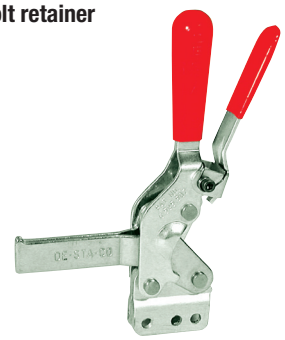
Model no.	A	A1	A2	A3	B2	C	C1	C2	øD	øD1	F1	H	L	L1
2002-SB	0.50	1.36	0.90	0.24	0.24	1.27	0.49	0.12	0.22	0.22	0.25	5.47	3.29	1.93
2007-SB	0.75	1.93	1.25	0.33	0.24	1.68	1.24	0.16	0.28	0.28	0.34	7.64	4.81	2.88
2010-SB	–	2.53	1.25	0.63	0.31	2.20	1.12	0.20	0.34	0.34	0.44	9.61	6.09	3.56

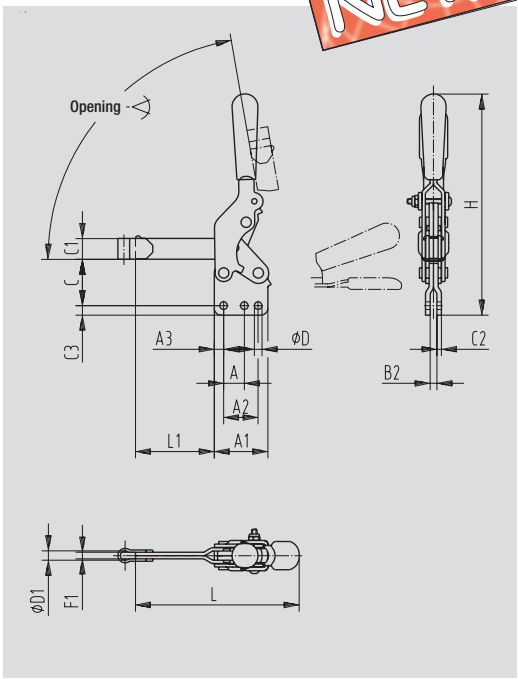
Models 2002-SBR, 2007-SBR, 2010-SBR

Model no.	Holding Capacity [lbs.]	Bar Opening +10°	[lbs.]	Bolt Retainer	Spindle Size (Not Supplied)
2002-SBR	600	75°	0.48	2002115-E	1/4 or M6
2007-SBR	1,000	80°	1.20	2007115-E	5/16 or M8
2010-SBR	1,400	80°	2.56	2010115-E	3/8 or M10

See additional adjustment spindles beginning on page 9.1.

- DE-STA-CO Toggle-Lock Plus
- Solid bar with bolt retainer
- Straight base





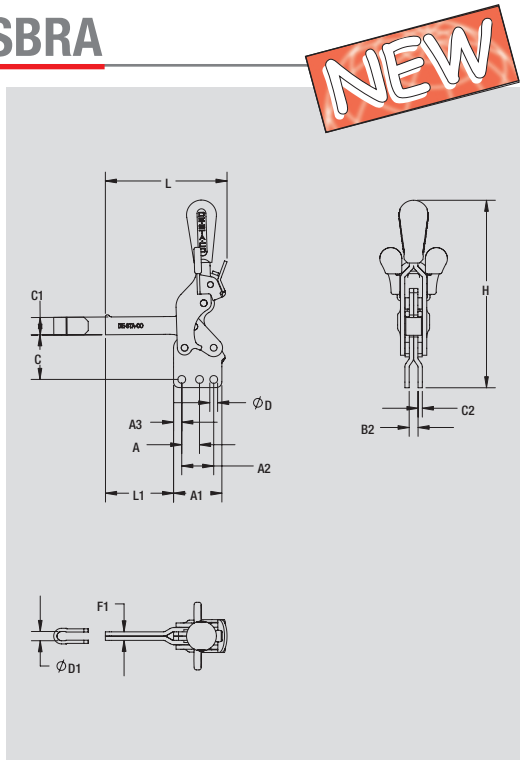
Model no.	A	A1	A2	A3	B2	C	C1	C2	øD	øD1	F1	H	L	L1			
2002-SBR	0.50	1.36	0.90	0.24	0.24	1.27	0.49	0.12	0.22	0.22	0.25	5.47	4.17	1.93			
2007-SBR	0.75	1.93	1.25	0.33	0.24	1.68	1.24	0.16	0.28	0.28	0.34	7.64	5.94	2.88			
2010-SBR	–	2.53	1.25	0.63	0.31	2.20	1.12	0.20	0.34	0.34	0.44	9.61	7.28	3.56			

Models 2002-SBRA, 2007-SBRA, 2010-SBRA

Model no.	Holding Capacity [lbs.]	Bar Opening +10°	[lbs.]	Bolt Retainer	Spindle Size (Not Supplied)
2002-SBRA	600	75°	0.48	2002115-E	1/4 or M6
2007-SBRA	1,000	80°	1.20	2007115-E	5/16 or M8
2010-SBRA	1,400	80°	2.56	2010115-E	3/8 or M10

See additional adjustment spindles beginning on page 9.1.

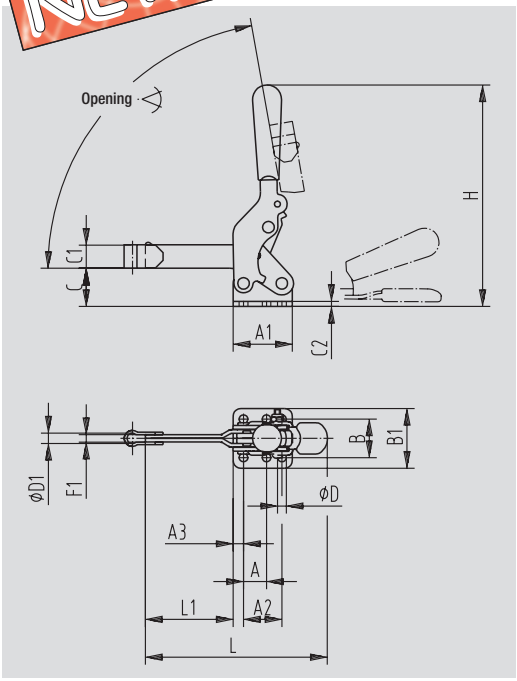
- DE-STA-CO Toggle-Lock Plus
- Solid bar with bolt retainer
- Straight base



Model no.	A	A1	A2	A3	B2	C	C1	C2	øD	øD1	F1	H	L	L1
2002-SBRA	0.50	1.36	0.90	0.24	0.24	1.27	0.49	0.12	0.22	0.22	0.25	5.47	3.50	1.93
2007-SBRA	0.75	1.93	1.25	0.33	0.24	1.68	1.24	0.16	0.28	0.28	0.34	7.64	4.94	2.88
2010-SBRA	–	2.53	1.25	0.63	0.31	2.20	1.12	0.20	0.34	0.34	0.44	9.61	6.22	3.56

NEW

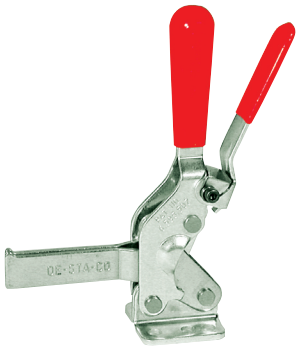
Models 2002-SR, 2007-SR, 2010-SR



Model no.	Holding Capacity [lbs.]	Bar Opening +10°	[lbs.]	Bolt Retainer	Spindle Size (Not Supplied)
2002-SR	600	75°	0.48	2002115-E	1/4 or M6
2007-SR	1,000	80°	1.20	2007115-E	5/16 or M8
2010-SR	1,400	80°	2.56	2010115-E	3/8 or M10

See additional adjustment spindles beginning on page 9.1.

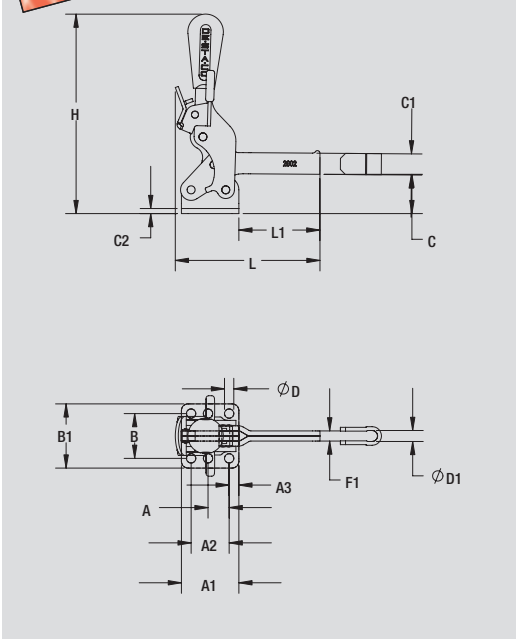
- **DE-STA-CO Toggle-Lock Plus**
- **Solid bar with bolt retainer**
- **Flanged base**



Model no.	A	A1	A2	A3	B	B1	C	C1	C2	øD	øD1	F1	H	L	L1
2002-SR	0.50	1.36	0.90	0.24	1.06	1.52	0.95	0.49	0.12	0.22	0.26	0.25	4.73	4.17	1.93
2007-SR	0.75	1.93	1.25	0.33	1.25	1.94	1.25	1.24	0.16	0.28	0.33	0.34	7.21	5.94	2.88
2010-SR	–	2.53	1.25	0.63	1.78	2.62	1.70	1.12	0.20	0.34	0.45	0.44	9.00	7.28	3.56

NEW

Models 2002-SRA, 2007-SRA, 2010-SRA



Model no.	Holding Capacity [lbs.]	Bar Opening +10°	[lbs.]	Bolt Retainer	Spindle Size (Not Supplied)
2002-SRA	600	75°	0.48	2002115-E	1/4 or M6
2007-SRA	1,000	80°	1.20	2007115-E	5/16 or M8
2010-SRA	1,400	80°	2.56	2010115-E	3/8 or M10

See additional adjustment spindles beginning on page 9.1.

- **DE-STA-CO Toggle-Lock Plus**
- **Solid bar with bolt retainer**
- **Flanged base**

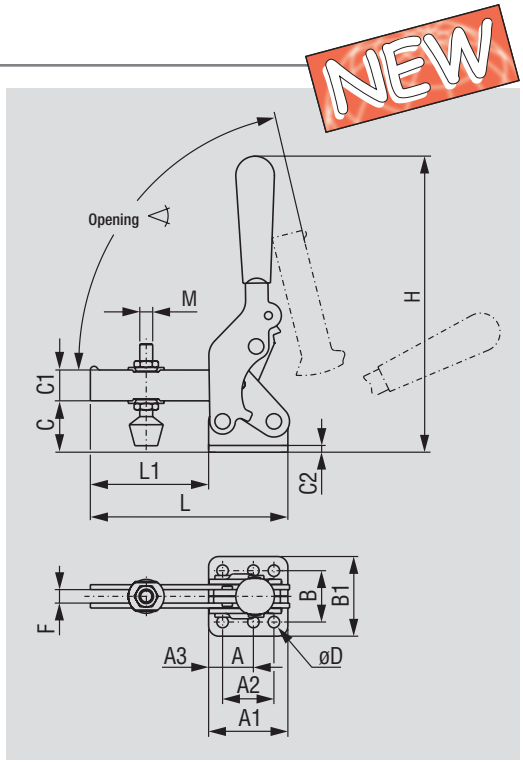
Model no.	A	A1	A2	A3	B	B1	C	C1	C2	øD	øD1	F1	H	L	L1
2002-SRA	0.50	1.36	0.90	0.24	1.06	1.52	0.95	0.49	0.12	0.22	0.26	0.25	4.73	3.50	1.93
2007-SRA	0.75	1.93	1.25	0.33	1.25	1.94	1.25	1.24	0.16	0.28	0.33	0.34	7.21	4.94	2.88
2010-SRA	–	2.53	1.25	0.63	1.78	2.62	1.70	1.12	0.20	0.34	0.45	0.44	9.00	6.22	3.56

Models 2002-U, 2007-U, 2010-U

Model no.	Holding Capacity ▲ [lbs.]	Bar Opening ◁ +10°	[lbs.]	Standard equipment	Flanged Washers
2002-U	60	75°	0.48	215208-M	215105
2002-U-LS				without spindle	215105
2007-U	1,000	80°	1.20	2007208-M	507107
2007-U-LS				without spindle	507107
2010-U	1,400	80°	2.56	240208-M	235106
2010-U-LS				without spindle	235106

See additional adjustment spindles beginning on page 9.1.

- U-bar
- Flanged base



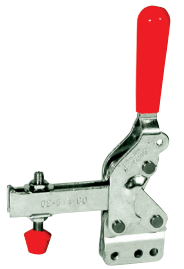
Model no.	A	A1	A2	A3	B	B1	C	C1	C2	øD	F	H	L	L1	M
2002-U	0.50	1.36	0.90	0.24	1.06	1.52	0.95	0.49	0.12	0.22	0.25	4.73	3.29	1.93	M6
2007-U	0.75	1.93	1.25	0.33	1.25	1.94	1.25	1.24	0.16	0.28	0.34	7.21	4.81	2.88	M8
2010-U	–	2.53	1.25	0.63	1.78	2.62	1.70	1.12	0.20	0.34	0.44	9.00	6.0	3.56	M10

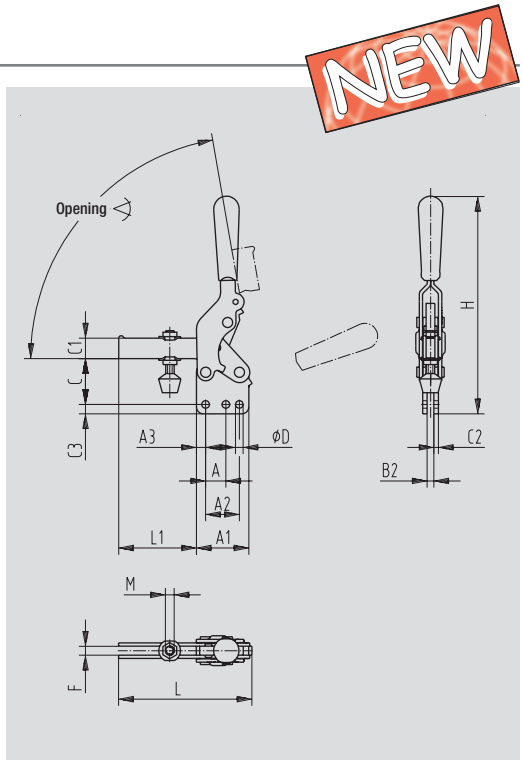
Models 2002-UB, 2007-UB, 2010-UB

Model no.	Holding Capacity ▲ [lbs.]	Bar Opening ◁ +10°	[lbs.]	Standard equipment	Flanged Washers
2002-UB	600	75°	0.48	215208-M	215105
2002-UB-LS				without spindle	215105
2007-UB	1,000	80°	1.20	2007208-M	507107
2007-UB-LS				without spindle	507107
2010-UB	1,400	80°	2.56	240208-M	235106
2010-UB-LS				without spindle	235106

See additional adjustment spindles beginning on page 9.1.

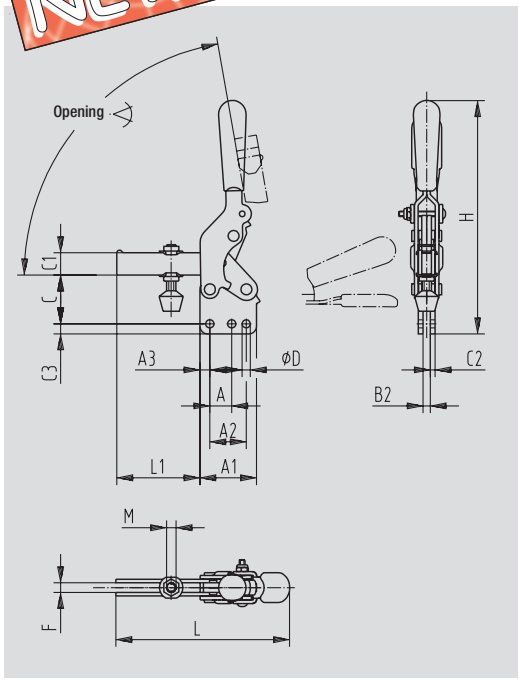
- U-bar
- Straight base





Model no.	A	A1	A2	A3	B2	C	C1	C2	øD	F	H	L	L1	M
2002-UB	0.50	1.36	0.90	0.24	0.24	1.27	0.49	0.12	0.22	0.25	5.07	3.29	1.93	M6
2007-UB	0.75	1.93	1.25	0.33	0.24	1.68	1.24	0.16	0.28	0.34	7.64	4.81	2.88	M8
2010-UB	–	2.53	1.25	0.63	0.31	2.20	1.12	0.20	0.34	0.44	9.61	6.09	3.56	M10

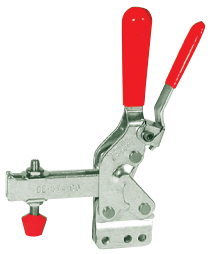
Models 2002-UBR, 2007-UBR, 2010-UBR



Model no.	Holding Capacity [lbs.]	Bar Opening +10°	[lbs.]	Standard equipment	Flanged Washers
2002-UBR	600	75°	0.48	215208-M	215105
2002-UBR-LS				without spindle	215105
2007-UBR	1,000	80°	1.20	2007208-M	507107
2007-UBR-LS				without spindle	507107
2010-UBR	1,400	80°	2.56	240208-M	235106
2010-UBR-LS				without spindle	235106

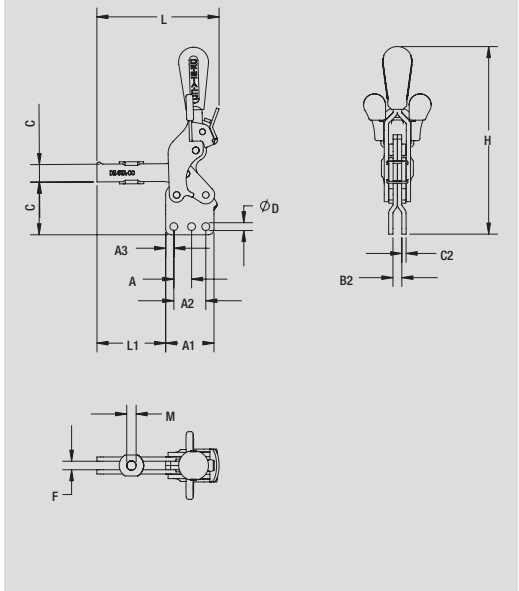
See additional adjustment spindles beginning on page 9.1.

- **DE-STA-CO Toggle-Lock Plus**
- **U-bar**
- **Straight base**



Model no.	A	A1	A2	A3	B2	C	C1	C2	ØD	F	H	L	L1	M
2002-UBR	0.50	1.36	0.90	0.24	0.24	1.27	0.49	0.12	0.22	0.25	5.07	4.17	1.93	M6
2007-UBR	0.75	1.93	1.25	0.33	0.24	1.68	1.24	0.16	0.28	0.34	7.64	5.94	2.88	M8
2010-UBR	–	2.53	1.25	0.63	0.31	2.20	1.12	0.20	0.34	0.44	9.61	7.28	3.56	M10

Models 2002-UBRA, 2007-UBRA, 2010-UBRA



Model no.	Holding Capacity [lbs.]	Bar Opening +10°	[lbs.]	Standard equipment	Flanged Washers
2002-UBRA	600	75°	0.48	215208-M	215105
2002-UBRA-LS				without spindle	215105
2007-UBRA	1,000	80°	1.20	2007208-M	507107
2007-UBRA-LS				without spindle	507107
2010-UBRA	1,400	80°	2.56	240208-M	235106
2010-UBRA-LS				without spindle	235106

See additional adjustment spindles beginning on page 9.1.

- **DE-STA-CO Toggle-Lock Plus**
- **U-bar**
- **Straight base**

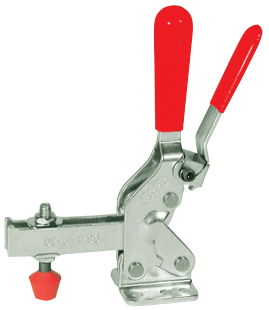
Model no.	A	A1	A2	A3	B2	C	C1	C2	ØD	F	H	L	L1	M
2002-UBRA	0.50	1.36	0.90	0.24	0.24	1.27	0.49	0.12	0.22	0.25	5.07	3.50	1.93	M6
2007-UBRA	0.75	1.93	1.25	0.33	0.24	1.68	1.24	0.16	0.28	0.34	7.64	4.94	2.88	M8
2010-UBRA	–	2.53	1.25	0.63	0.31	2.20	1.12	0.20	0.34	0.44	9.61	6.22	3.56	M10

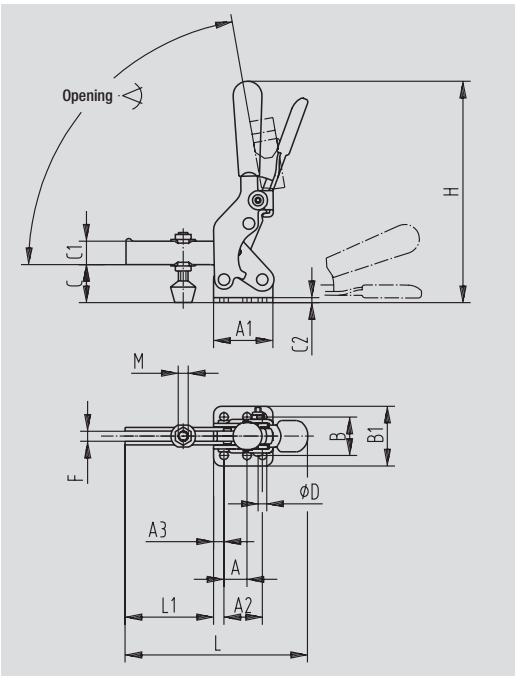
Models 2002-UR, 2007-UR, 2010-UR

NEW

Model no.	Holding Capacity [lbs.]	Bar Opening +10°	[lbs.]	Standard equipment	Flanged Washers
2002-UR	600	75°	0.48	215208-M	215105
2002-UR-LS				without spindle	215105
2007-UR	1,000	80°	1.20	2007208-M	507107
2007-UR-LS				without spindle	507107
2010-UR	1,400	80°	2.56	240208-M	235106
2010-UR-LS				without spindle	235106
Additional adjustment spindles are listed from page 9.1 forward					

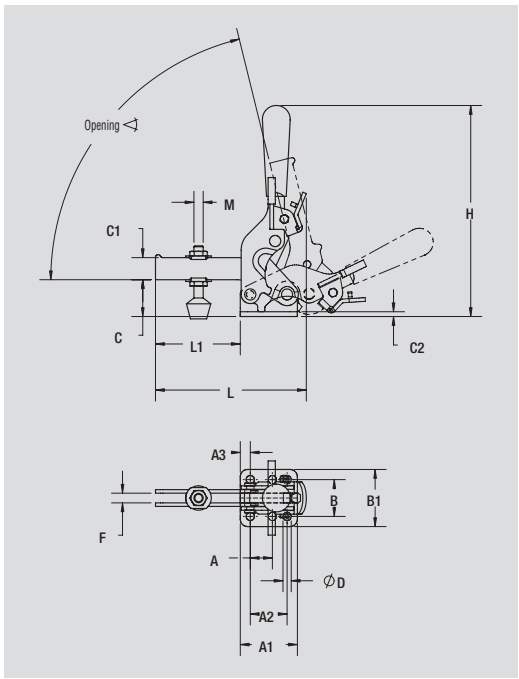
- **DE-STA-CO Toggle-Lock Plus**
- **U-bar**
- **Flanged base**





Model no.	A	A1	A2	A3	B	B1	C	C1	C2	øD	F	H	L	L1	M
2002-UR	0.50	1.36	0.90	0.24	1.06	1.52	0.95	0.49	0.12	0.22	0.25	4.73	4.17	1.93	M6
2007-UR	0.75	1.93	1.25	0.33	1.25	1.94	1.25	1.24	0.16	0.28	0.34	7.21	5.94	2.88	M8
2010-UR	-	2.53	1.25	0.63	1.78	2.62	1.70	1.12	0.20	0.34	0.44	9.00	7.28	3.56	M10

Models 2002-URA, 2007-URA, 2010-URA



Model no.	Holding Capacity ⬆ [lbs.]	Bar Opening +10°	[lbs.]	Standard equipment	Flanged Washers
2002-URA	600	75°	0.48	215208-M	215105
2002-URA-LS				without spindle	215105
2007-URA	1,000	80°	1.20	2007208-M	507107
2007-URA-LS				without spindle	507107
2010-URA	1,400	80°	2.56	240208-M	235106
2010-URA-LS				without spindle	235106

Additional adjustment spindles are listed from page 9.1 forward

- **DE-STA-CO Toggle-Lock Plus**
- **U-bar**
- **Flanged base**

Model no.	A	A1	A2	A3	B	B1	C	C1	C2	øD	F	H	L	L1	M
2002-URA	0.50	1.36	0.90	0.24	1.06	1.52	0.95	0.49	0.12	0.22	0.25	4.73	3.50	1.93	M6
2007-URA	0.75	1.93	1.25	0.33	1.25	1.94	1.25	1.24	0.16	0.28	0.34	7.21	4.94	2.88	M8
2010-URA	–	2.53	1.25	0.63	1.78	2.62	1.70	1.12	0.20	0.34	0.44	9.00	6.22	3.56	M10

Standard vertical clamps – flanged or straight base, solid bar

- **Solid clamp bar**
- **Base flanged or straight**

Application areas

Ideal for all sectors in which work is performed with holding capacities of up to 1,200 lbs. The heavy-duty clamping bar is highly suitable for adaptation to fixtures where it can be individually cut in lengths at a specific angle.

Applications include assembling, drilling, testing, gluing, and other processing operations. Suitable for use in welding fixtures and in gauge manufacturing, as well as in all sectors of the workworking industry.

Product features

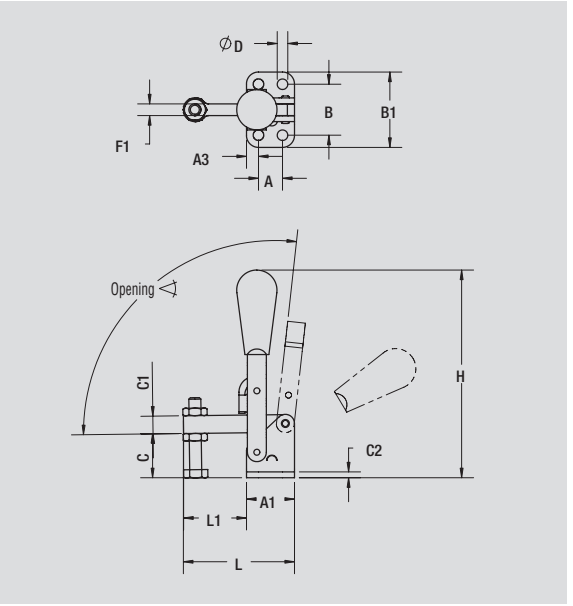
- Torsion-protected, hardened bushings
- Rivets made of stainless steel
- Zinc plated
- Oil-resistant, ergonomically shaped DE-STA-CO handle grip
- Patented intermediate safety link

Accessories

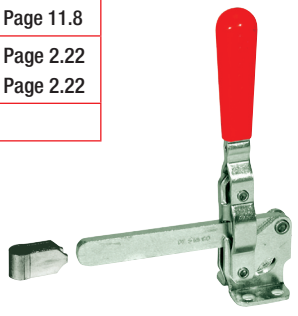
- Vertical clamps with solid bars are delivered with bolt retainers that can be welded to the clamping bar.

Models 202, 207-L, 207-LO, 207-S, 207-SO, 210-S, 247-S, 267-S

Model no.	Holding Capacity ▲ [lbs.]	Bar Opening ∢ +10°	[lbs.]	Standard equipment	Bolt Retainer
202	200	104°	0.33	202208-M	–
207-L	500	115°	0.74	without spindle	207105
207-LO	500	115°	0.74	without spindle	207105
207-S	500	115°	0.69	without spindle	207105
207-SO	500	115°	0.69	without spindle	207105
210-S	750	106°	1.29	without spindle	210114
247-S	1,000	136°	2.39	without spindle	247110
267-S	1,200	140°	4.36	without spindle	110122

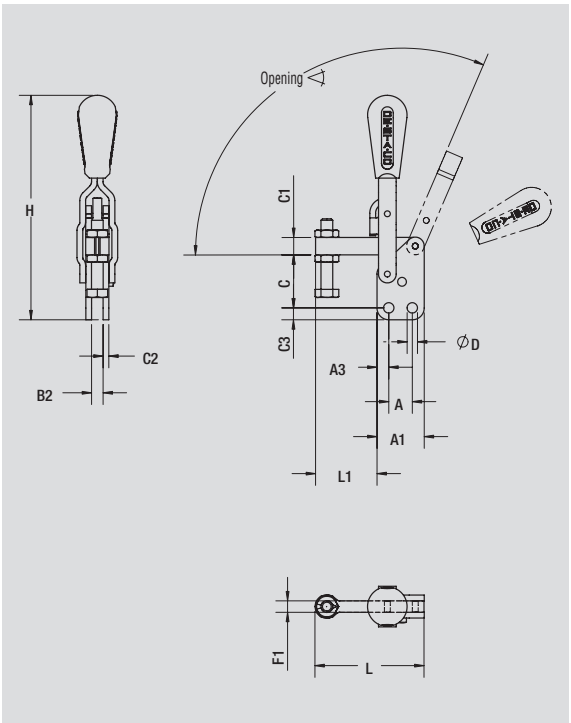


ALSO AVAILABLE		
As Air Hydraulic	Model 807-S	Page 11.8
	Model 810-S	Page 11.8
	Model 847-S	Page 11.8
As DE-STA-CO Toggle-Lock Plus	Model 207-LR	Page 2.22
	Model 210-SR	Page 2.22
See accessories beginning on page 9.1.		



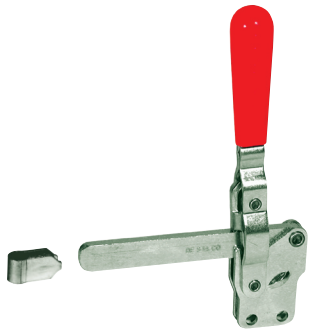
Model no.	A	A1	A3	A6	B	B1	C	C1	C2	øD	øD1	F1	H	L	L1	Spindle Size
202	0.50	1.00	0.25	–	1.06	1.56	0.94	0.37	0.12	0.22	0.39	0.24	4.21	2.31	1.31	M6 or 1/4
207-L	0.75	1.38	0.31	0.15	1.25	1.75	1.25	0.63	0.12	0.28	0.32	0.24	6.89	5.02	3.45	M8 or 5/16
207-LO	0.75	1.38	0.31	0.15	1.25	1.75	1.25	0.63	0.12	0.28	0.32	0.24	5.76	5.02	3.45	M8 or 5/16
207-S	0.75	1.38	0.31	0.15	1.25	1.75	1.25	0.63	0.12	0.28	0.32	0.24	6.89	3.75	2.19	M8 or 5/16
207-SO	0.75	1.38	0.31	0.15	1.25	1.75	1.25	0.63	0.12	0.28	0.32	0.24	5.63	3.75	2.19	M8 or 5/16
210-S	1.25	1.91	0.31	0.42	1.78	2.53	1.67	0.79	0.12	0.33	0.51	0.31	8.15	5.53	3.63	M10 or 3/8
247-S	1.25	2.00	0.37	0.47	1.78	2.53	2.00	0.87	0.19	0.34	0.57	0.38	8.69	6.87	4.87	M12 or 1/2
267-S	2.00	3.00	0.49	–	2.75	3.75	3.08	1.26	0.19	0.48	0.65	0.37	11.88	8.88	5.88	M14 or 5/8

Models 202-B, 207-LB, 207-LBO, 207-SB, 207-SBO, 210-SB, 247-SB



Model no.	Holding Capacity ▲ [lbs.]	Bar Opening +10°	[lbs.]	Standard equipment	Bolt Retainer
202-B	200	104°	0.33	202208-M	–
207-LB	500	115°	0.74	without spindle	207105
207-LBO	500	115°	0.74	without spindle	207105
207-SB	500	115°	0.69	without spindle	207105
207-SBO	500	115°	0.69	without spindle	207105
210-SB	750	106°	1.29	without spindle	210114
247-SB	1,000	136°	2.39	without spindle	247110

ALSO AVAILABLE		
As Stainless Steel	Model 202-BSS	Page 8.4
As DE-STA-CO	Model 207-LBR	Page 2.23
Toggle-Lock Plus	Model 210-SBR	Page 2.23
See accessories beginning on page 9.1.		



Model no.	A	A1	A3	A6	B2	C	C1	C2	C3	øD	øD1	F1	H	L	L1	Spindle Size
202-B	0.50	1.00	0.25	–	0.25	1.13	0.37	0.12	0.24	0.22	0.39	0.24	4.40	2.31	1.31	M6 or 1/4
207-LB	0.75	1.38	0.31	0.15	0.25	1.55	0.63	0.12	0.25	0.28	0.32	0.24	7.48	5.02	3.45	M8 or 5/16
207-LBO	0.75	1.38	0.31	0.15	0.25	1.55	0.63	0.12	0.25	0.28	0.32	0.24	6.06	5.02	3.45	M8 or 5/16
207-SB	0.75	1.38	0.31	0.15	0.25	1.55	0.63	0.12	0.25	0.28	0.32	0.24	7.48	3.75	2.19	M8 or 5/16
207-SBO	0.75	1.38	0.31	0.42	0.25	1.55	0.63	0.12	0.25	0.28	0.32	0.24	6.06	3.75	2.19	M8 or 5/16
210-SB	1.25	1.91	0.31	0.47	0.31	2.19	0.79	0.12	0.39	0.33	0.51	0.31	8.16	5.53	3.63	M10 or 3/8
247-SB ▲	1.25	2.00	0.37	–	0.38	2.25	0.87	0.19	0.37	0.34	0.57	0.38	8.94	6.87	4.87	M12 or 1/2

▲ Available upon request, as are a number of other modifications

Vertical clamps with DE-STA-CO Toggle-Lock Plus™

- **Solid clamp bar**
- **Base flanged or straight**

Application areas

The additional release lever holds the clamp in the opened and closed position. Unintentional opening and closing of the clamp is therefore impossible.

This clamp is preferred for more difficult clamping conditions, e.g. vibrating conditions, transporting of sensitive parts, and where the clamp arm is set at an angle to the base.

Product features

- Additional locking device for secure clamping
- Torsion-protected, hardened bushings
- Rivets made of stainless steel
- Zinc plated
- Oil-resistant, ergonomically shaped DE-STA-CO handle grip
- Patented intermediate safety link

Accessories

Vertical clamps with solid clamp bars are only delivered with bolt retainers that can be welded to the clamping bar.

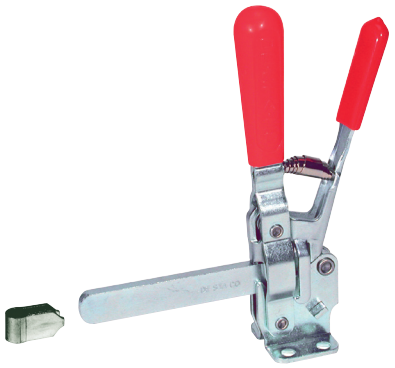
Safety instructions

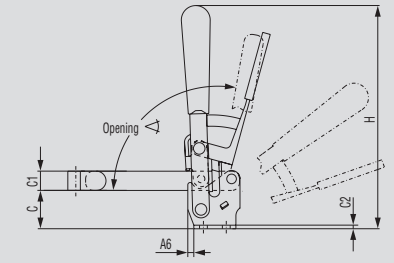
To guarantee secure locking, the clamp must be adjusted to lock in the over-center position.

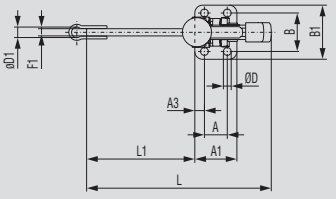
Models 207-LR, 210-SR

Model no.	Holding Capacity ▲ [lbs.]	Bar Opening ∢ +10°	[lbs.]	Standard equipment	Bolt Retainer
207-LR	500	100°	1.00	without spindle	207105
210-SR	750	103°	1.60	without spindle	210114

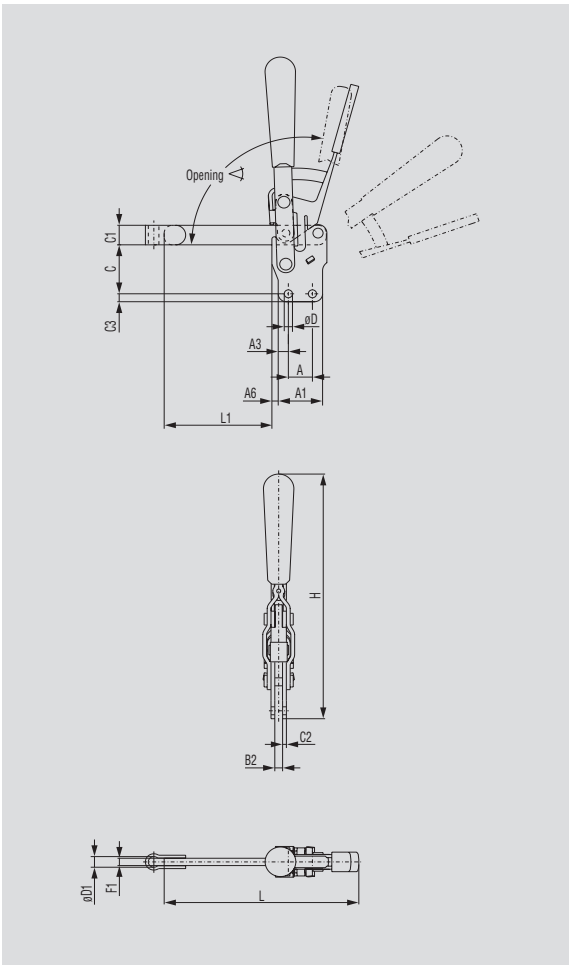
See additional adjustment spindles beginning on page 9.1.





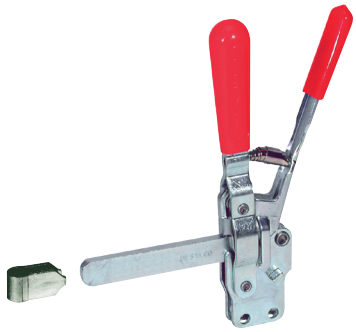


Model no.	A	A1	A3	A6	B	B1	C	C1	C2	øD	øD1	F1	H	L	L1	Spindle Size		
207-LR	0.75	1.38	0.31	0.15	1.25	1.70	1.25	0.63	0.12	0.28	0.32	0.24	6.90	4.58	3.45	M8 or 5/16		
210-SR	1.25	1.89	0.31	0.42	1.75	2.50	1.68	0.79	0.12	0.33	0.51	0.31	8.15	6.61	3.56	M10 or 3/8		



Model no.	Holding Capacity ▲ [lbs.]	Bar Opening ∢ +10°	[lbs.]	Standard equipment	Bolt Retainer
207-LBR	500	100°	1.00	without spindle	207105
210-SBR	750	103°	1.60	without spindle	210114

See additional adjustment spindles beginning on page 9.1.



Model no.	A	A1	A3	A6	B2	C	C1	C2	C3	øD	øD1	F1	H	L	L1	Spindle Size		
207-LBR ▲	0.75	1.38	0.31	0.15	0.24	1.56	0.63	0.12	0.25	0.28	0.32	0.24	7.44	4.58	3.45	M8 or 5/16		
210-SBR ▲	1.25	1.89	0.31	0.42	0.31	2.20	0.79	0.12	0.39	0.33	0.53	0.31	9.04	6.61	3.56	M10 or 3/8		

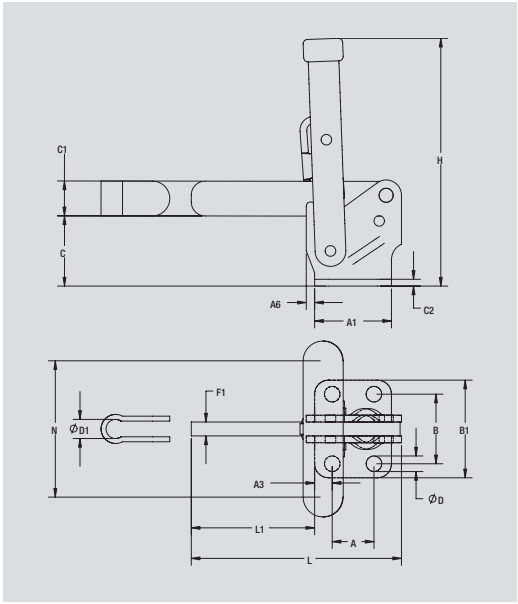
▲ Available upon request, as are a number of other modifications

Models 202-T, 207-TS, 207-TL, 210-TS

Model no.	Holding Capacity ▲ [lbs.]	Bar Opening ∢ +10°	[lbs.]	Standard equipment	Bolt Retainer
202-T	200	104°	0.36	202208-M	–
207-TS	500	115°	0.74	without spindle	207105
207-TL	500	115°	0.81	without spindle	207105
210-TS	750	106°	1.36	without spindle	235106

See additional adjustment spindles beginning on page 9.1.

- **Solid clamping bar**
- **T-handle has shorter profile and can be operated from right or left hand side**
- **Flanged base**



Model no.	A	A1	A3	A6	B	B1	C	C1	C2	øD	F	H	L	L1	L2	L3	N		Spindle Size
202-T	0.50	1.00	0.26	–	1.06	1.56	0.94	0.38	0.12	0.22	0.25	2.81	2.73	1.73	0.51	0.98	3.56		M6 or 1/4
207-TS	0.75	1.38	0.31	0.15	1.25	1.75	1.25	0.63	0.11	0.28	0.33	4.36	3.75	2.15	0.50	1.30	3.00		M8 or 5/16
207-TL ▲	0.75	1.38	0.31	0.15	1.25	1.75	1.25	0.63	0.11	0.28	0.33	4.36	5.02	3.45	0.50	2.75	3.00		M8 or 5/16
210-TS ▲	1.25	1.91	0.31	0.42	1.78	2.53	1.67	0.79	0.11	0.33	0.40	5.38	5.53	3.63	0.94	2.40	6.02		M10 or 3/8

▲ Available upon request

Models 202-TB, 207-TSB, 207-TLB

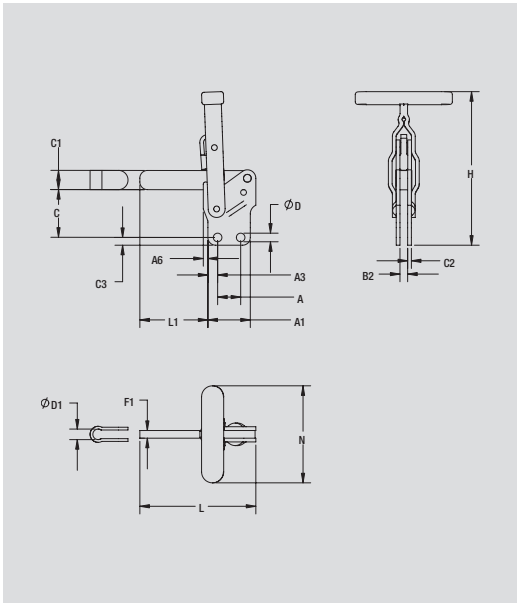
Model no.	Holding Capacity ▲ [lbs.]	Bar Opening ∢ +10°	[lbs.]	Standard equipment	Bolt Retainer
202-TB	200	104°	0.36	202208-M	215105
207-TSB	500	115°	0.74	without spindle	207105
207-TLB	500	115°	0.81	without spindle	207105

See additional adjustment spindles beginning on page 9.1.

- **Solid clamping bar**
- **T-handle**
- **Straight base**

Model 202-TB

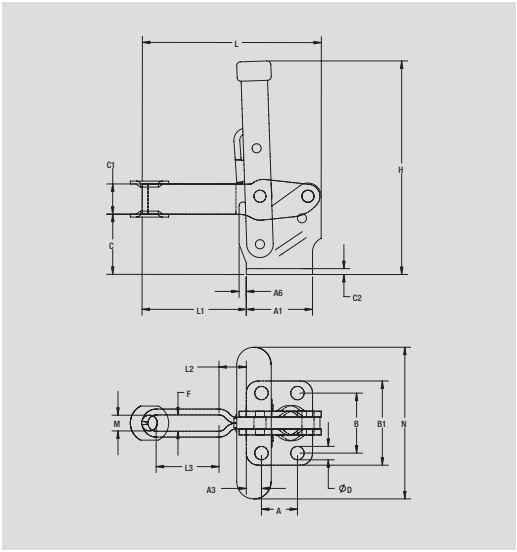
Model 207-TSB



Model no.	A	A1	A3	A6	B2	C	C1	C2	C3	øD	F	H	L	L1	L2	L3	Spindle Size	N		
202-TB*	0.50	1.00	0.26	–	0.25	1.13	0.38	0.12	0.12	0.22	0.25	3.00	2.73	1.73	0.51	0.98	M6 or 1/4	3.56		
207-TSB ▲	0.75	1.38	0.31	0.15	0.25	1.55	0.63	0.11	0.11	0.28	0.33	4.66	3.75	2.19	0.50	1.30	M8 or 5/16	3.00		
207-TLB ▲	0.75	1.38	0.31	0.15	0.25	1.55	0.63	0.11	0.11	0.28	0.33	4.66	5.03	3.45	0.50	2.75	M8 or 3/8	3.00		

▲ Available upon request

Models 201-TU, 202-TU, 207-TU, 207-TUL, 210-TU



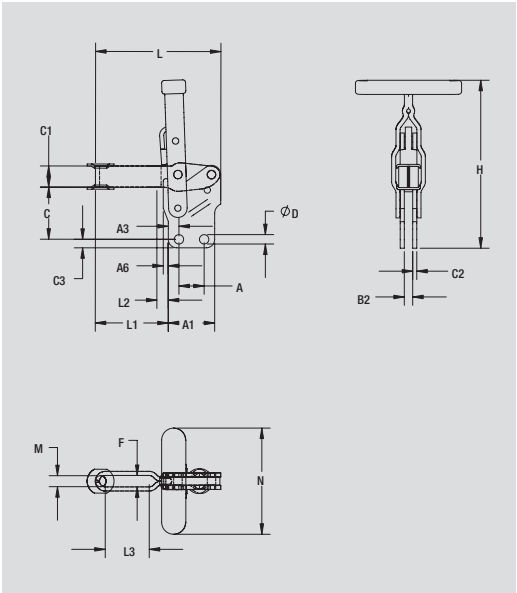
Model no.	Holding Capacity ▲ [lbs.]	Bar Opening ∢ +10°	[lbs.]	Standard equipment	Flanged Washers
201-TU	100	110°	0.17	305208-M	102111
202-TU	200	104°	0.38	202208-M	215105
207-TU	375	115°	0.72	without spindle	507107
207-TUL	375	115°	0.72	without spindle	501107
210-TU	600	106°	1.36	without spindle	235106

See additional adjustment spindles beginning on page 9.1.

- **U-bar**
- **T-handle**
- **Flanged base**

Model no.	A	A1	A3	A6	B	B1	C	C1	C2	øD	F	H	L	L1	L2	L3	M	N
201-TU	0.63	1.00	0.19	–	0.94	1.31	0.63	0.31	0.08	0.17	0.21	2.25	2.02	1.02	0.13	0.73	M5 or 10-32	1.92
202-TU	0.50	1.00	0.26	–	1.06	1.56	0.94	0.38	0.12	0.22	0.25	2.81	2.73	1.73	0.51	0.98	M6 or 1/4	3.56
207-TU	0.75	1.38	0.31	0.15	1.25	1.75	1.25	0.63	0.11	0.28	0.33	4.36	3.75	2.15	0.50	1.30	M8 or 5/16	3.00
207-TUL	0.75	1.38	0.31	0.15	1.25	1.75	1.25	0.63	0.11	0.28	0.33	4.36	5.41	3.85	0.50	2.75	M8 or 5/16	3.00
210-TU	1.25	1.91	0.31	0.42	1.78	2.53	1.67	0.79	0.11	0.33	0.40	5.38	5.53	3.63	0.94	2.40	M10 or 3/8	6.02

Models 201-TUB, 202-TUB, 207-TUB, 207-TULB, 210-TUB



Model no.	Holding Capacity ▲ [lbs.]	Bar Opening ∢ +10°	[lbs.]	Standard equipment	Flanged Washers
201-TUB	100	110°	0.17	305208-M	102111
202-TUB	200	104°	0.38	202208-M	215105
207-TUB	375	115°	0.72	without spindle	507107
207-TULB	375	115°	0.72	without spindle	501107
210-TUB	600	106°	1.36	without spindle	235106

See additional adjustment spindles beginning on page 9.1.

- **U-bar**
- **T-handle**
- **Straight base**

Model no.	A	A1	A3	A6	B2	C	C1	C2	C3	øD	F	H	L	L1	L2	L3	M	N
201-TUB ▲	0.63	1.00	0.19	–	0.16	0.88	0.31	0.08	0.08	0.17	0.21	2.41	2.02	1.02	0.13	0.73	M5 or 10-32	1.92
202-TUB ▲	0.50	1.00	0.26	–	0.25	1.13	0.38	0.12	0.12	0.22	0.25	3.00	2.73	1.73	0.51	0.98	M6 or 1/4	3.56
207-TUB ▲	0.75	1.38	0.31	0.15	0.25	1.55	0.63	0.11	0.11	0.28	0.33	4.66	3.75	2.15	0.50	1.30	M8 or 5/16	3.00
207-TULB ▲	0.75	1.38	0.31	0.15	0.25	1.55	0.63	0.11	0.11	0.28	0.33	4.66	5.41	3.85	0.50	2.75	M8 or 5/16	3.00
210-TUB ▲	1.25	1.91	0.31	0.42	0.31	2.19	0.79	0.11	0.11	0.33	0.40	5.88	5.54	3.63	0.94	2.40	M10 or 3/8	6.02

▲ Available upon request

Standard vertical clamps

- **U-shaped clamping bar**
- **Flanged base**

Application areas

Ideal for all areas in which work is performed with holding capacities of up to 1,200 lbs. For example, assembling, drilling, testing, gluing, and other processing operations. Suitable for use in welding fixtures and in checking fixtures, as well as in all sectors of the woodworking industry.

Product features

- Torsion-protected, hardened bushings in models with a holding capacity greater than 375 lbs.
- Rivets made of stainless steel
- Zinc plated
- Oil-resistant, ergonomically shaped DE-STA-CO handle grip
- Patented intermediate safety link

Accessories

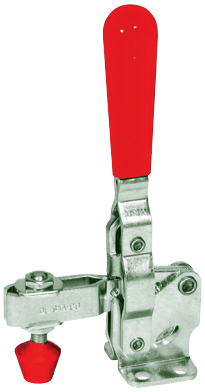
Vertical clamps with a U-shaped clamping bar can be ordered in two varieties:

- Standard model number: The matching standard adjustment spindle is included.
- Model number contains the addition "-LS": The model is delivered with two flange washers without an adjustment spindle.

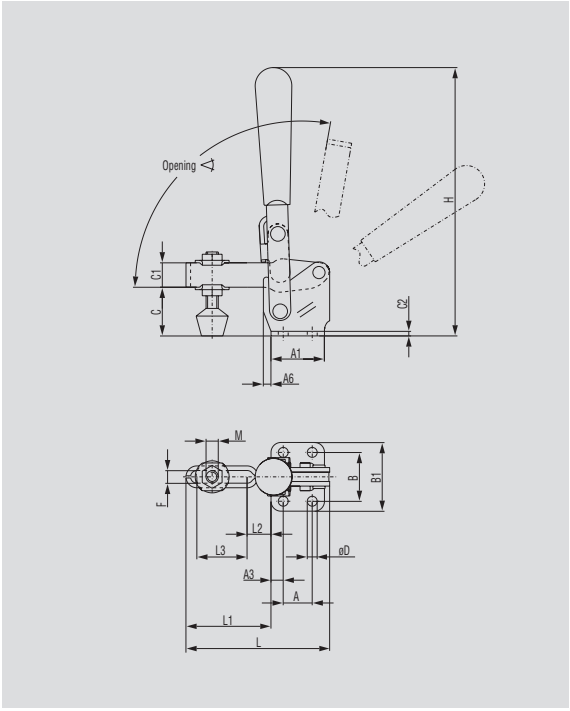
Models 201-U, 202-U, 202-UL, 207-U, 207-UL, 207-UO, 207-ULO, 210-U, 247-U, 267-U

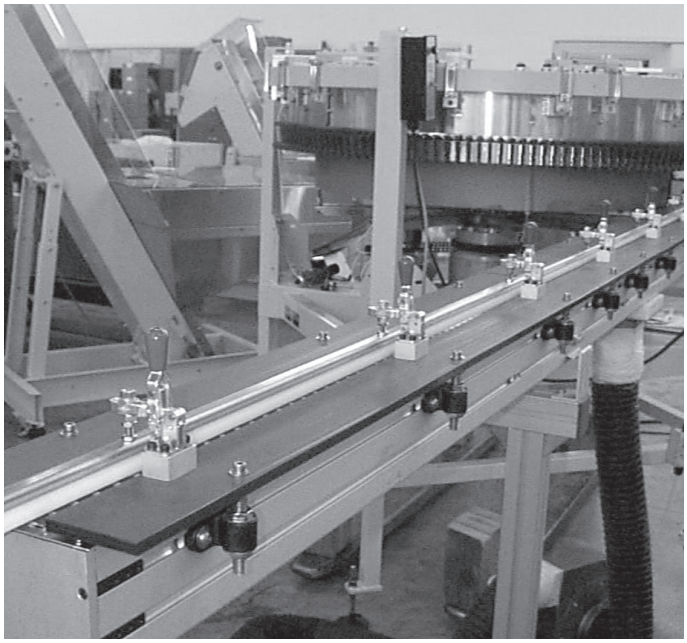
Model no.	Holding Capacity ↑ [lbs.]	Bar Opening +10°	[lbs.]	Standard equipment	Flanged Washers
201-U	100	110°	0.15	305208-M	102111
201-U-LS				without spindle	102111
202-U	200	104°	0.35	202208-M	215105
202-U-LS				without spindle	215105
202-UL	200	104°	0.36	202208-M	215105
207-U	375	115°	0.67	225208-M	507107
207-U-LS				without spindle	507107
207-UL	375	115°	0.67	225208-M	507107
207-UO	375	115°	0.67	without spindle	507107
207-ULO	375	115°	0.67	without spindle	507107
210-U	600	106°	1.29	240208-M	235106
210-U-LS				without spindle	235106
247-U	1,000	136°	2.36	247208-M	247109
247-U-LS				without spindle	247109
267-U	1,200	140°	4.80	267203-M	267102
267-U-LS				without spindle	267102

ALSO AVAILABLE		
As Air Hydraulic	Model 807-U	Page 11.7
	Model 810-U	Page 11.7
	Model 812-U	Page 11.7
	Model 847-U	Page 11.7
As Stainless Steel	Model 201-USS	Page 8.3
	Model 202-USS	Page 8.3
	Model 207-USS	Page 8.3
	Model 210-USS	Page 8.3
As DE-STA-CO Toggle-Lock Plus	Model 207-UR	Page 2.30
	Model 210-UR	Page 2.30
See accessories beginning on page 9.1.		



Models 201-U, 202-U, 202-UL, 207-U, 207-UL, 207-UO, 207-ULO, 210-U, 247-U, 267-U





Several Model 201-U clamps, with hex-head spindles, are used to secure a guide in a bottle capping application.

Model no.	A	A1	A3	A6	B	B1	C	C1	C2	øD	F	H	L	L1	L2	L3	M
201-U	0.63	1.00	0.19	–	0.94	1.31	0.63	0.31	0.08	0.17	0.21	3.03	2.02	1.02	0.13	0.73	M5 or 10-32
202-U	0.50	1.00	0.26	–	1.06	1.56	0.94	0.38	0.12	0.22	0.25	4.21	2.73	1.73	0.51	0.98	M6 or 1/4
202-UL	0.50	1.00	0.26	–	1.06	1.56	0.94	0.38	0.12	0.22	0.25	4.21	3.27	2.27	0.51	1.54	M6 or 1/4
207-U	0.75	1.38	0.31	0.15	1.25	1.75	1.25	0.63	0.11	0.28	0.33	6.89	3.68	2.15	0.50	1.30	M8 or 5/16
207-UL	0.75	1.38	0.31	0.15	1.25	1.75	1.25	0.63	0.11	0.28	0.33	6.89	5.41	3.85	0.50	2.75	M8 or 5/16
207-UO	0.75	1.38	0.31	0.15	1.25	1.75	1.25	0.63	0.11	0.28	0.33	5.63	3.75	2.15	0.50	1.30	M8 or 5/16
207-ULO	0.75	1.38	0.31	0.15	1.25	1.75	1.25	0.63	0.11	0.28	0.33	5.63	5.41	3.85	0.50	2.75	M8 or 5/16
210-U	1.25	1.91	0.31	0.42	1.78	2.53	1.67	0.79	0.11	0.33	0.40	8.15	5.54	3.63	0.94	2.40	M10 or 3/8
247-U	1.25	2.00	0.37	0.47	1.78	2.53	2.00	0.83	0.19	0.34	0.53	8.69	6.87	4.87	1.36	3.06	M12 or 1/2
267-U	2.00	3.00	0.49	–	2.75	3.75	3.08	1.26	0.19	0.48	0.65	11.88	8.92	5.92	1.44	4.00	M16 or 5/8

Standard vertical clamps

- **U-shaped clamping bar**
- **Straight base**

Application areas

Ideal for all sectors in which work is performed with holding capacities of up to 1,200 lbs., including assembling, drilling, testing, gluing, and other processing operations. Suitable for use in welding fixtures and in checking fixtures, as well as in all sectors of the woodworking industry.

Product features

- Torsion-protected, hardened bushings in models with a holding force greater than 375 lbs.
- Rivets made of stainless steel
- Zinc plated
- Oil-resistant, ergonomically shaped DE-STA-CO handle grip
- Patented intermediate safety link

Accessories

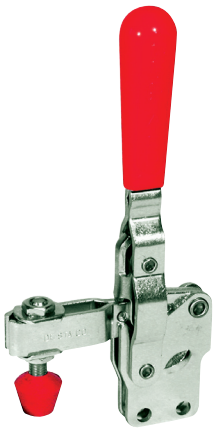
Vertical clamps with a U-shaped clamping bar can be ordered in two varieties:

- Standard model number: The matching standard adjustment spindle is included.
- Model number contains the addition "-LS": The model is delivered with two flange washers without an adjustment spindle.

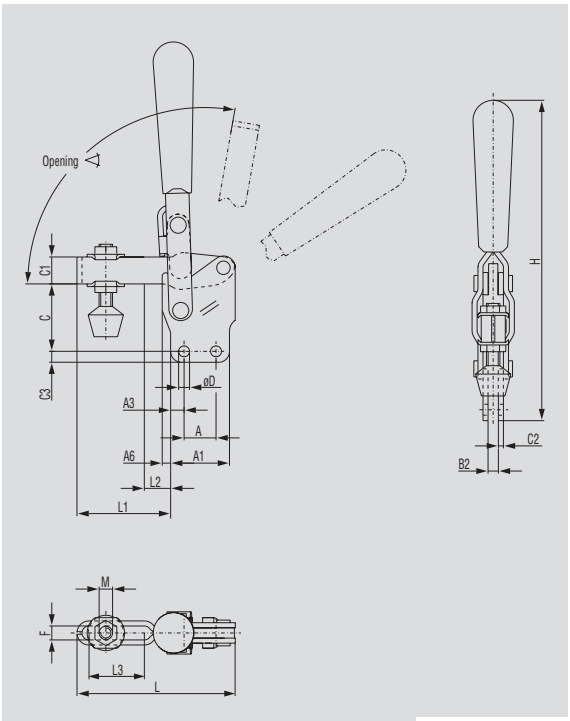
Models 201-UB, 202-UB, 207-UB, 207-ULB, 207-UBO, 207-ULBO, 210-UB, 247-UB, 267-UB

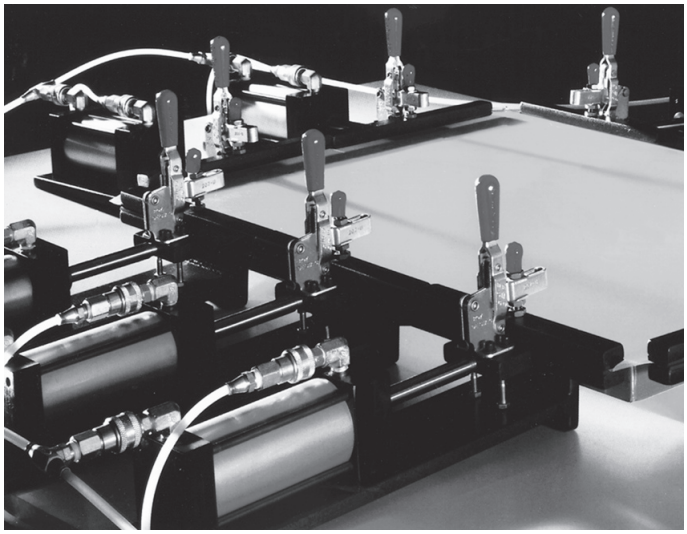
Model no.	Holding Capacity ▲ [lbs.]	Bar Opening ◁ +10°	[lbs.]	Standard equipment	Flanged Washers
201-UB	100	110°	0.15	305208-M	102111
201-UB-LS				without spindle	102111
202-UB	200	104°	0.35	202208-M	215105
202-UB-LS				without spindle	215105
207-UB	375	115°	0.67	225208-M	507107
207-UB-LS				without spindle	507107
207-ULB	375	115°	0.67	225208-M	507107
207-UBO	375	115°	0.67	without spindle	507107
207-ULBO	375	115°	0.67	without spindle	507107
210-UB	600	106°	1.29	240208-M	235106
210-UB-LS				without spindle	235106
247-UB	1,000	136°	2.36	247208-M	247109
247-UB-LS				without spindle	247109
267-UB	1,200	140°	4.80	267203-M	267102
267-UB-LS				without spindle	267102

ALSO AVAILABLE		
As Stainless Steel	Model 202-UBSS	Page 8.5
As DE-STA-CO	Model 207-UBR	Page 2.31
Toggle-Lock Plus	Model 210-UBR	Page 2.31
See accessories beginning on page 9.1.		



Models 201-UB, 202-UB, 207-UB, 207-ULB, 207-UBO, 207-ULBO, 210-UB, 247-UB, 267-UB





Model 207-UO hold-down clamps used in fixturing material in a silk screening application.

Model no.	A	A1	A3	A6	B2	C	C1	C2	C3	øD	F	H	L	L1	L2	L3	M
201-UB	0.63	1.00	0.19	–	0.16	0.88	0.31	0.08	0.08	0.17	0.21	3.13	2.02	1.02	0.13	0.73	M5
202-UB	0.50	1.00	0.26	–	0.24	1.13	0.38	0.12	0.12	0.22	0.25	4.40	2.73	1.73	0.51	0.98	M6
207-UB	0.75	1.38	0.31	0.15	0.25	1.55	0.63	0.11	0.11	0.28	0.33	7.48	3.68	2.15	0.50	1.30	M8
207-ULB	0.75	1.38	0.31	0.15	0.25	1.55	0.63	0.11	0.11	0.28	0.33	7.48	5.41	3.85	0.50	2.75	M8
207-UBO	0.75	1.38	0.31	0.15	0.25	1.55	0.63	0.11	0.11	0.28	0.33	6.06	3.75	2.15	0.50	1.30	M8
207-ULBO	0.75	1.38	0.31	0.15	0.25	1.55	0.63	0.11	0.11	0.28	0.33	6.06	5.41	3.85	0.50	2.75	M8
210-UB	1.25	1.91	0.31	0.42	0.31	2.19	0.79	0.11	0.11	0.33	0.40	8.16	5.54	3.63	0.94	2.40	M10
247-UB ▲	1.25	2.00	0.37	0.47	0.38	2.25	0.83	0.19	0.19	0.34	0.53	8.94	6.87	4.87	1.36	3.06	M12

▲ Available upon request

Vertical clamps with DE-STA-CO Toggle-Lock Plus

- **U-shaped clamping bar**
- **Flanged or straight base**

Application areas

The additional release lever holds the clamp in the opened and closed position. Unintentional opening and closing of the clamp is therefore impossible.

This clamp is preferred for more difficult clamping conditions, e.g. vibrating conditions, transporting of sensitive parts, and where the clamp bar is set at an angle to the base.

Product features

- Additional locking device for secure clamping
- Torsion-protected, hardened bushings
- Rivets made of stainless steel
- Zinc plated
- Oil-resistant, ergonomically shaped DE-STA-CO handle grip
- Patented intermediate safety link

Accessories

Vertical clamps with a U-shaped clamping bar can be ordered in two varieties:

- Standard model number: The matching standard adjustment spindle is included.
- Model number contains the addition “-LS”: The model is delivered with two flange washers without an adjustment spindle.

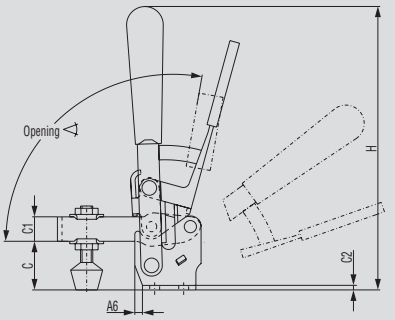
Safety instructions

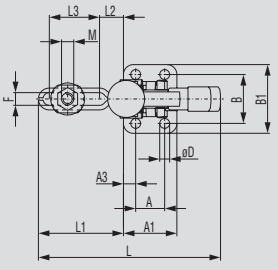
To guarantee secure locking, the clamp must be adjusted to lock in the over-center position.

Models 207-UR, 210-UR

Model no.	Holding Capacity ▲ [lbs.]	Bar Opening ◁ +10°	[lbs.]	Standard equipment	Flanged Washers
207-UR	375	100°	1.00	225208-M	507107
207-UR-LS				without spindle	507107
210-UR	600	100°	1.60	240208-M	235106
210-UR-LS				without spindle	235106

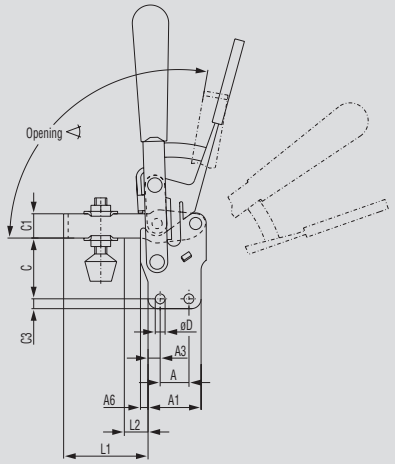
See additional adjustment spindles beginning on page 9.1.

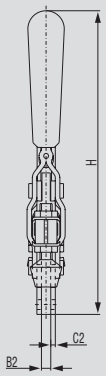


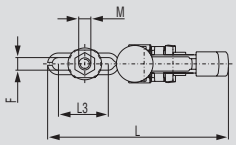


Model no.	A	A1	A3	A6	B	B1	C	C1	C2	øD	F	H	L	L1	L2	L3	M	
207-UR	0.75	1.38	0.31	0.15	1.25	1.70	1.25	0.63	0.12	0.28	0.33	6.90	4.58	2.09	0.50	1.30	M8 or 5/16	
210-UR	1.25	1.89	0.31	0.42	1.75	2.50	1.68	0.79	0.12	0.33	0.25	8.15	6.72	3.66	0.94	2.41	M10 or 3/8	

Models 207-UBR, 210-UBR

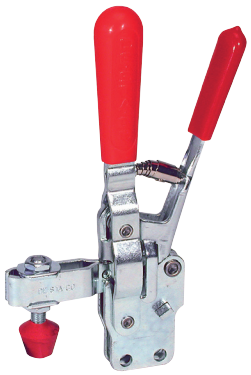






Model no.	Holding Capacity ▲ [lbs.]	Bar Opening ∢ +10°	[lbs.]	Standard equipment	Flanged Washers
207-UBR	375	100°	1.00	225208-M	507107
207-UBR-LS				without spindle	507107
210-UBR	600	103°	1.60	240208-M	235106
210-UBR-LS				without spindle	235106

See additional adjustment spindles beginning on page 9.1.



Model no.	A	A1	A3	A6	B2	C	C1	C2	C3	øD	F	H	L	L1	L2	L3	M		
207-UBR ▲	0.75	1.38	0.31	0.15	0.24	1.56	0.63	0.12	0.25	0.28	0.33	7.44	4.58	2.09	0.50	1.30	M8 or 5/16		
210-UBR ▲	1.25	1.89	0.31	0.42	0.31	2.20	0.79	0.12	0.39	0.33	0.25	9.04	6.72	3.66	0.94	2.41	M10 or 3/8		

▲ Available upon request

Models 219, 229

Applications areas

Featuring a unique cam action, these clamps will hold workpieces of inconsistent height. Ideal for castings or forgings, these models – once set for the nominal or average piece height – allow for a deviation larger or smaller than average.

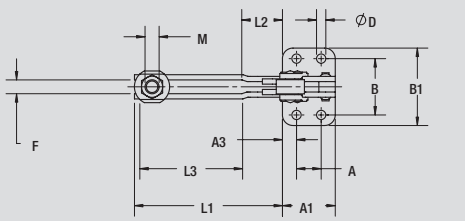
Model 219 has an overall clamping range of 13/64", while Model 229 has an overall clamping range of 5/16" and accommodates any 1/2", M10, or M12 spindle.

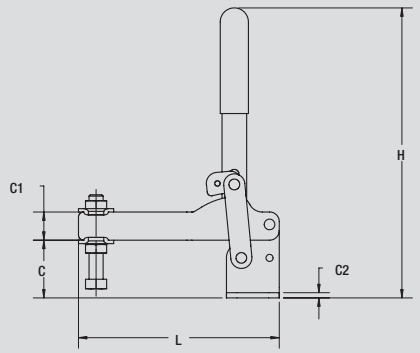
Product features

- Torsion-protected, hardened bushings in models with a holding force greater than 375 lbs.
- Rivets made of stainless steel
- Zinc plated
- Oil-resistant, ergonomically shaped DE-STA-CO handle grip

Model no.	Holding Capacity ▲ [lbs.]	Bar Opening ◁ +10°	[lbs.]	Standard equipment	Flanged Washers
219	350	115°	1.75	210203	235106
229	1,000	115°	2.59	229203	247109

See additional adjustment spindles beginning page 9.1.





Model no.	A	A1	A3	B	B1	C	C1	C2	øD	F	H	L	L1	L2	L3		M
219 ▲	0.75	1.50	0.38	1.50	2.26	1.56	0.75	0.12	0.28	0.46	7.50	5.75	4.25	1.25	3.00		M8 or 5/16
229	0.88	1.88	0.50	2.00	2.75	2.05	1.00	0.19	0.33	0.49	9.94	7.14	5.26	1.45	3.81		M10 or 3/8

▲ Available upon request

- **Solid clamping bar**
- **Flanged base**
- **Straight base**

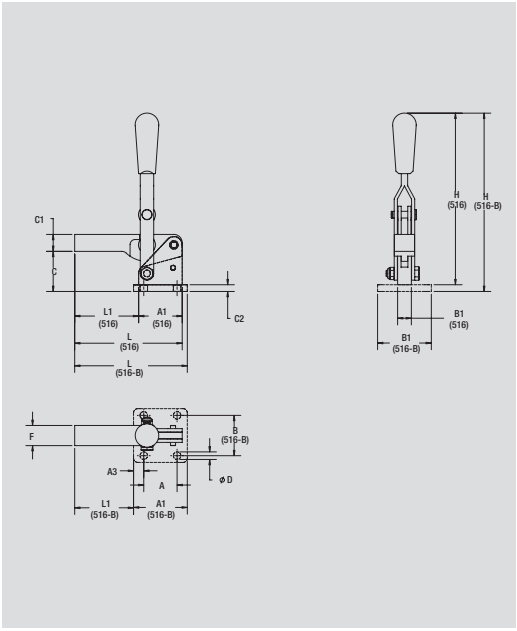
Applications areas

This series of models is extremely robust. Heavy-duty clamping tasks are easily fulfilled and rough handling is not a problem for this series. The heavy-duty vertical clamps are therefore especially suitable for welding and milling applications, for locking foam molds and similar sever clamping applications. The heavy-duty clamping bar can be shortened, welded to or have holes drilled to suit the application.

Product features

- Hardened, polished bushings
- Parts drop forged
- Oil-resistant, ergonomically shaped DE-STA-CO handle grip

Models 516, 516-B



Model no.	Holding Capacity [lbs.]	Bar Opening +10°	[lbs.]	Standard equipment
516	750	122°	1.25	None
516-B	750	122°	1.69	None

ALSO AVAILABLE		
As Air Hydraulic	Model 846	Page 11.11

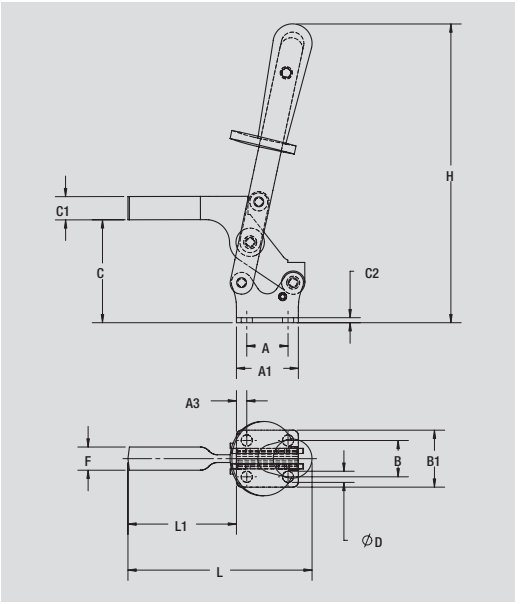
Model no.	A	A1	A3	B	B1	C	C1	C2	øD	F	H	L	L1				
516	–	1.62	–	–	0.51	1.24	0.63	–	–	0.75	6.38	4.00	2.38				
516-B	1.24	2.00	0.38	1.50	2.00	1.49	0.63	0.25	0.28	0.75	6.38	4.19	2.19				

Model 518

Applications areas

This model features a forged hold-down bar and improved ergonomic grip with handle stop built in. The forged hold-down bar can be cut or welded to suit the user's fixture. One of the major features of this clamp is the greater clearance under the bar. Due to the bar design, there is twice the normal clearance in this size clamp.

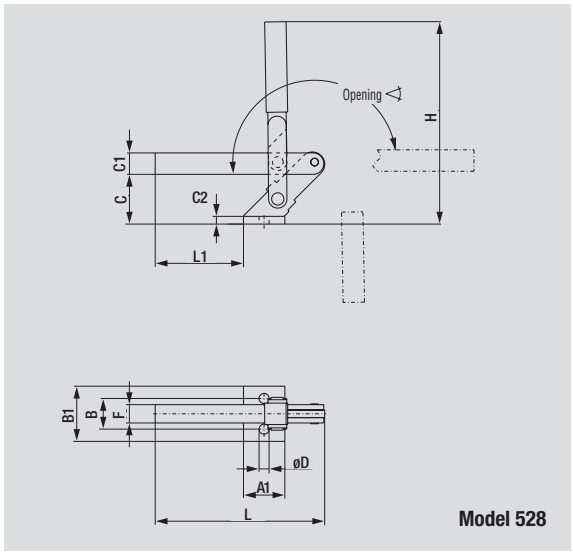
Model no.	Holding Capacity ⬆ [lbs.]	Bar Opening +10°	[lbs.]	Standard equipment
518	500	90°	0.82	None



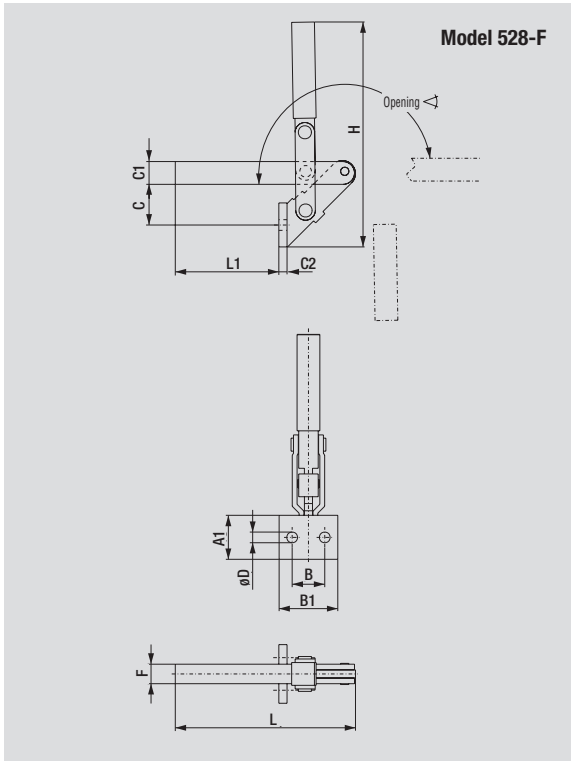
Model no.	A	A1	A3	B	B1	C	C1	C2	øD	F	H	L	L1				
518	1.00	1.50	0.25	0.88	1.38	2.49	0.56	0.12	0.27	0.56	7.24	4.46	2.63				

Applications areas

For tough, heavy-duty, workholding. Clamps have square cold-drawn steel hold-down bars. Pivot points have serrated, hardened bushings. Models 527 and 528 are supplied with flanged base. Also available with front mounting base as Model 527-F. Models 528 and 528-F are vertical handle variations of Models 527 and 527-F. All models provided with red handle grip. Hold-down bars can be machined to meet the application requirements.



Model 528



Model 528-F

Model no.	Holding Capacity ▲ [lbs.]	Bar Opening ◁ +10°	[lbs.]	Standard equipment
528	1,000	195°	2.50	None
528-F	1,000	195°	2.50	None

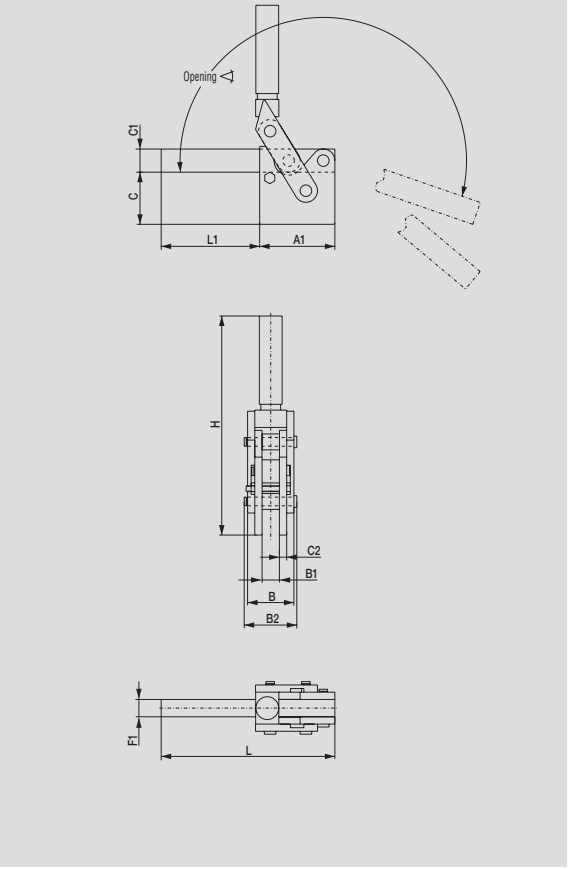
Model 528

Model 528-F

Model no.	A1	B	B1	C	C1	C2	øD	F	H	L	L1
528	1.50	1.25	2.25	2.09	0.88	0.21	0.41	0.75	8.13	6.88	3.63
528-F	1.50	1.25	2.25	1.84	0.88	0.21	0.41	0.75	7.38	6.88	4.00

Models 548, 578, 588

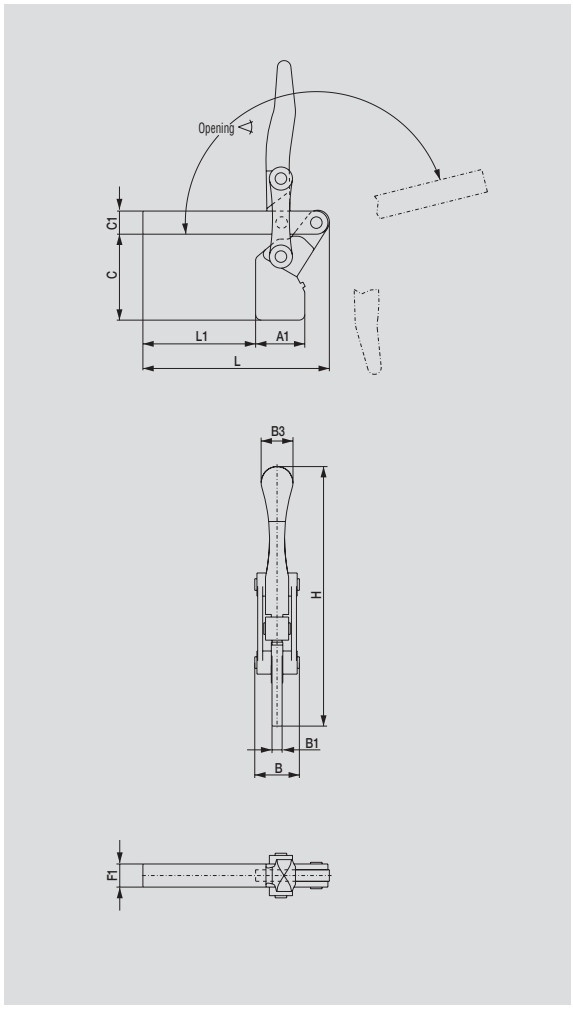
Model no.	Holding Capacity [lbs.]	Bar Opening +10°	[lbs.]	Standard equipment
548	2,500	199°	5.30	None
578	4,000	199°	9.12	None
588	6,000	199°	14.75	None



Model no.	A1	B	B1	B2	C	C1	C2	F1	H	L	L1
548	3.25	2.01	0.75	2.00	2.25	1.00	0.31	0.75	9.20	7.50	4.25
578	4.00	1.38	0.88	2.38	2.75	1.25	0.63	0.88	10.92	8.63	4.63
588	5.00	1.38	1.00	2.75	3.25	1.50	0.63	1.00	12.70	9.75	4.75

Applications areas

These clamps are designed for the most rugged production jobs. Handle and links are forged alloy steel, coined and machined to close tolerances. Have hardened pivot pins and serrated hardened bushings. Model 557 has a variable position straight base. Model 558 is a vertical handle variation of Model 557. All hold-down bars can be machined to meet your needs.



Model no.	Holding Capacity [lbs.]	Bar Opening +10°	[lbs.]	Standard equipment
558	2,500	192°	5.00	None
568	3,300	186°	5.95	None

ALSO AVAILABLE

As Air Hydrauic	Model 858	Page 11.13

See additional adjustment spindles beginning page 9.1.

Model no.	A1	B	B1	B3	C	C1	F1	H	L	L1
558 ▲	2.13	1.93	0.44	1.38	3.75	1.00	1.00	11.25	8.00	4.81
568 ▲	2.13	1.93	0.44	1.38	3.35	1.38	0.98	11.25	8.00	4.81

▲ Available upon request

Heavy-duty vertical clamps

- **Heavy-duty clamping bar**
- **Flanged or straight bases with standard hole pattern**

Application areas

This series of models is extremely robust. Heavy-duty clamping tasks are easily fulfilled and rough handling is not a problem for this series. The heavy-duty vertical clamps are especially suitable for welding and milling applications, for locking foam molds and similar severe clamping applications. The heavy-duty clamping bar can be shortened, welded to or have holes drilled to suit the application.

Product features

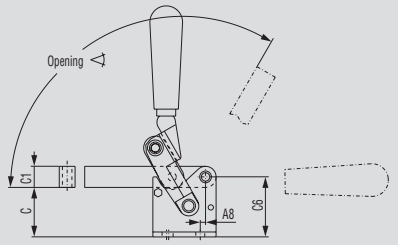
- Hardened, polished bushings
- Hardened, polished bolts
- Parts drop-forged
- Adjustable bar guide
- Oil-resistant, ergonomically shaped DE-STA-CO handle grip

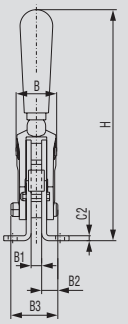
Models 533-L, 535-L

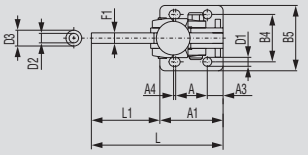
NEW

Model no.	Holding Capacity ▲ [lbs.]	Bar Opening ∢ +10°	[lbs.]	Standard equipment
533-L	1,500	120°	2.20	533108-M
535-L	2,200	120°	4.08	535108-M

See additional adjustment spindles beginning page 9.1.





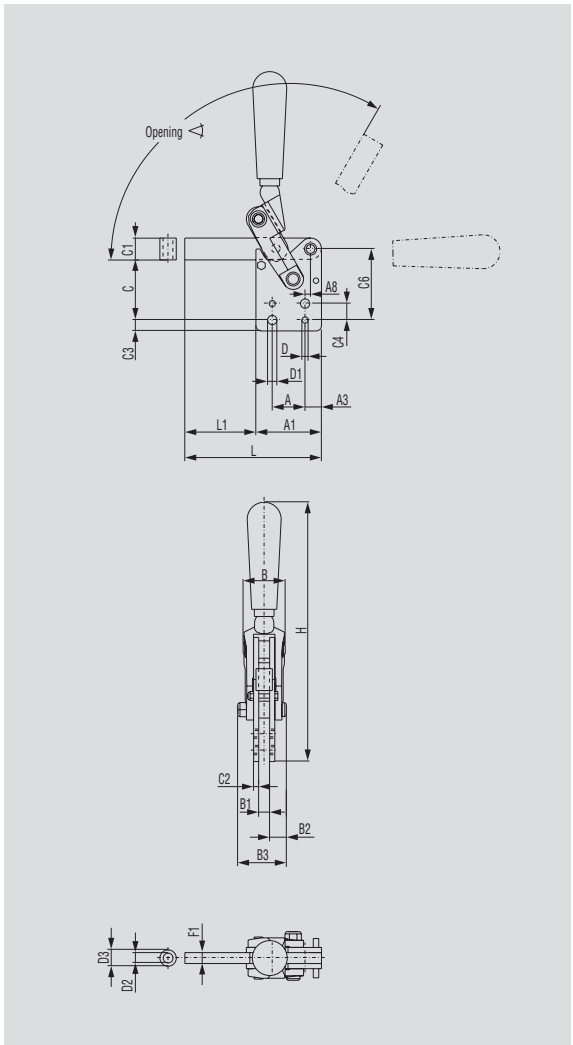


Model no.	A	A1	A3	A4	A8	B	B1	B2	B3
533-L	1.18	2.36	0.59	0.08	0.20	1.52	0.39	0.61	1.75
535-L	1.77	2.95	0.59	0.12	0.10	1.89	0.47	0.77	2.13

Model no.	B4	B5	C	C1	C2	C6	D1	D2	D3	F1	H	L	L1
533-L ▲	1.77	2.44	1.85	0.79	0.19	2.24	0.33	0.35	0.59	0.39	8.62	4.92	2.56
535-L ▲	2.05	2.87	2.64	0.98	0.19	3.13	0.41	0.43	0.79	0.47	10.37	6.30	3.35

▲ Available upon request

Models 533-LB, 535-LB, 536-LB



Model no.	Holding Capacity ▲ [lbs.]	Bar Opening +10°	[lbs.]	Standard equipment
533-LB	1,500	120°	2.20	533108-M
535-LB	2,200	120°	4.08	535108-M
536-LB	2.900	120°	7.72	536108-M

See additional adjustment spindles beginning page 9.1.

Model no.	A	A1	A3	A8	B	B1	B2	B3	C
533-LB	1.18	2.36	0.59	0.20	1.52	0.39	0.61	1.75	2.17
535-LB	1.77	2.95	0.59	0.10	1.89	0.47	0.77	2.18	2.95
536-LB	2.17	3.74	0.79	0.20	2.36	0.63	0.91	2.62	3.74

Model no.	C1	C2	C3	C4	C6	D	D1	D2	D3	F1	H	L	L1
533-LB ▲	0.79	0.19	0.39	0.59	2.56	0.22	0.33	0.35	0.59	0.39	9.33	4.92	2.56
535-LB ▲	0.98	0.19	0.59	0.79	3.44	0.30	0.41	0.43	0.79	0.47	11.28	6.30	3.35
536-LB ▲	1.18	0.25	0.59	0.98	4.33	0.38	0.49	0.51	0.87	0.63	13.15	8.07	4.33

▲ Available upon request

Heavy-duty vertical clamps

NEW

- **Heavy-duty clamping bar with slotted holes**
- Heavy-duty base for welding

Application areas

These new heavy-duty, hold-down clamps offer versatility in a harsh working environment. Slotted holes along the clamping bar allow for different workholding locations. The bar is made from high-strength SAE 1045 steel. The base (made from SAE 1020 steel) can be cut or welded to suit various fixture or tooling needs. A solid bar is available upon request.

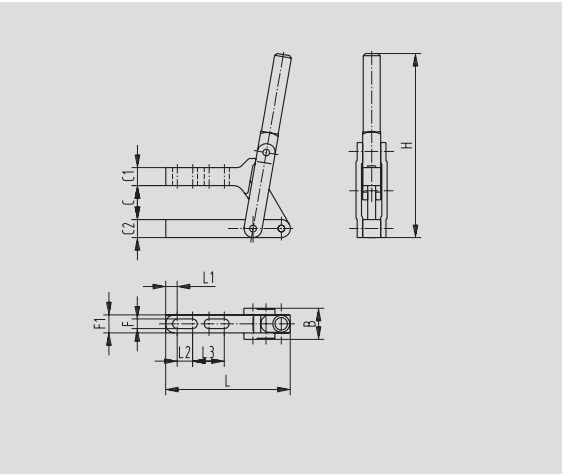
Product features

- Parts drop forged, machined
- Rivets made of stainless steel

Models GEW-15, GEW-20, GEW-30, GEW-50, GEW-60, GEW-70, GEW-90

Model no.	Holding Capacity ▲ [lbs.]	Bar Opening ∢ +10°	[lbs.]	Flanged Washers
GEW-15	335	70°	0.96	410P1315
GEW-20	610	70°	0.74	410P1314
GEW-30	945	70°	0.74	410P1314
GEW-50	960	70°	0.69	410P1312
GEW-60	1,085	70°	0.69	410P1312
GEW-70	960	70°	1.29	410P1312
GEW-90	3,780	70°	2.39	410P1316

See additional adjustment spindles beginning on page 9.1.



Model no.	B	C	C1	C2	F	F1	H	L	L1	L2	L3
GEW-15	0.83	0.59	0.50	0.50	0.26	0.50	4.14	2.79	0.32	0.18	0.63
GEW-20	0.94	0.79	0.55	0.55	0.28	0.55	5.63	3.71	0.37	0.35	0.87
GEW-30	1.08	1.18	0.63	0.63	0.33	0.63	6.40	4.33	0.40	0.53	1.10
GEW-50	1.34	1.97	0.75	0.75	0.43	0.75	8.21	5.91	0.53	0.75	1.50
GEW-60	1.34	2.36	0.75	0.75	0.43	0.75	8.18	6.30	0.53	0.75	1.50
GEW-70	1.34	2.77	0.75	0.75	0.43	0.75	9.73	6.64	0.53	0.39	1.02
GEW-90	1.59	3.56	1.00	1.00	0.48	1.00	11.61	7.87	0.56	0.37	1.06

Models GEW-25-R, GEW-37-R, GEW-40-R, GEW-25-RT, GEW-37-RT, GEW-40-RT

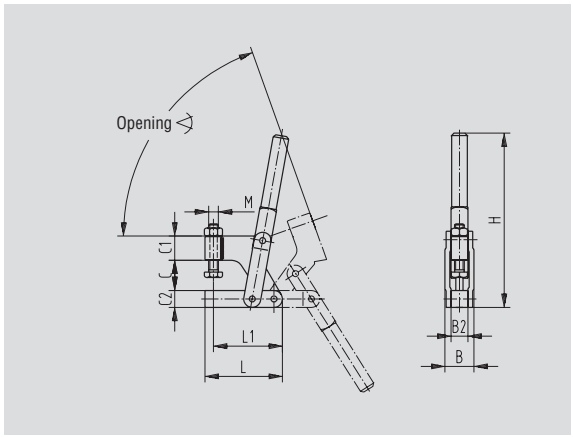
- Heavy-duty clamping bar with bolt retainer
- **Base heavy duty for welding (GEW-R models) or bolt mounting (GEW-RT)**

Application areas

These new heavy-duty, hold-down clamps offer versatility in a harsh working environment. Slotted holes along the clamping bar allow for different workholding locations. The bar is made from high-strength SAE 1045 steel. The base (made from SAE 1020 steel) can be cut or welded to suit various fixture or tooling needs. A solid bar is available upon request.

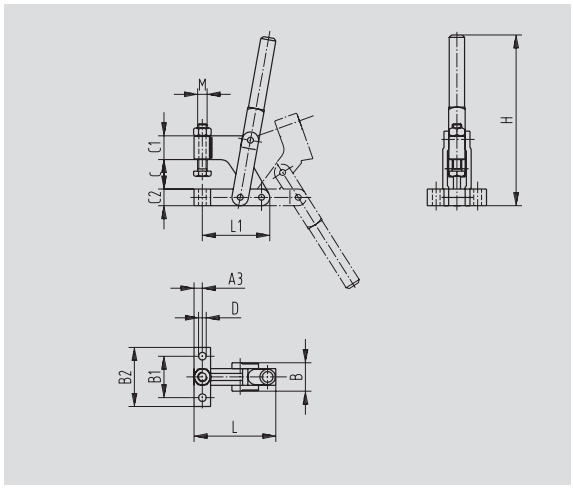
Product features

- Parts drop forged, machined
- Rivets made of stainless steel



Model no.	Holding Capacity ▲ [lbs.]	Bar Opening ◁ +10°	[lbs.]	Standard equipment
GEW-25-R	335	70°	0.8	441203-M
GEW-25-RT	500	70°	0.9	441203-M
GEW-37-R	500	70°	1.2	207203-M
GEW-37-RT	500	70°	1.5	207203-M
GEW-40-R	500	70°	2.9	210203-M
GEW-40-RT	500	70°	3.3	210203-M

See additional adjustment spindles beginning on page 9.1.



Model GEW 25-R

Model GEW 25-RT

Model no.	A3	B	B1	B2	C	C1	C2	øD	H	L	L1	M
GEW-25-R	–	0.94	–	0.55	0.98	0.79	0.55	–	5.63	2.52	2.24	M8
GEW-25-RT	0.28	0.94	1.38	1.97	0.98	0.79	0.55	0.26	5.63	2.52	2.24	M8
GEW-37-R	–	1.06	–	0.63	1.46	0.75	0.63	–	6.42	2.64	2.32	M8
GEW-37-RT	0.31	1.06	1.77	2.36	1.46	0.75	0.63	0.26	6.42	2.64	2.32	M8
GEW-40-R	–	1.32	–	0.75	1.57	1.18	0.75	–	8.27	4.57	4.25	M10
GEW-40-RT	0.37	1.32	1.97	2.76	1.57	1.18	0.75	0.26	8.27	4.57	4.25	M10

Vertical clamps in modular design

- **Weldable clamping bar**
- **Handle accessory can be welded in place**
- **Base plate**
- **Swivel base version or mounting plate accessory available**
- LSC version with locking spring for securing the open position

Application areas

This clamp can be modified to suit the requirements of your fixture. The clamp bar, handles and base plates are welded onto the basic clamp linkage. This series of models is especially robust and precise due to its manufacturing process. These highly flexible vertical handle clamps are therefore especially suitable for welding operations in the automobile manufacturing sector, for milling operations, for locking foam molds and containers, and for all applications in which precision and high forces are required.

Product features

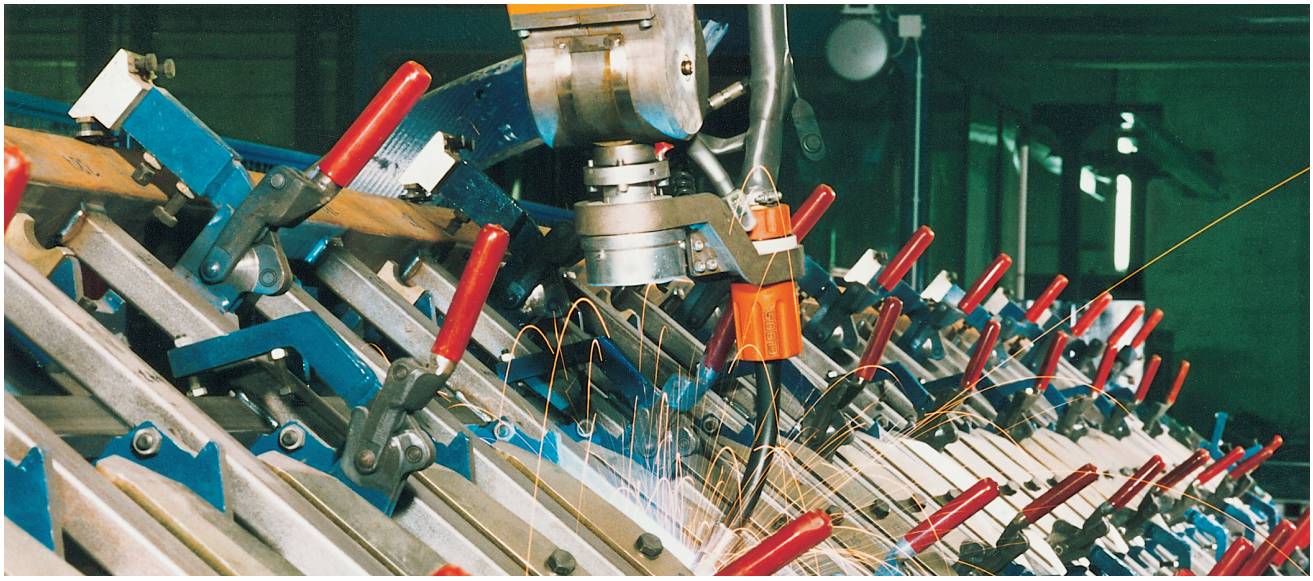
- Hardened, polished bushings
- Hardened, polished bolts
- Parts drop-forged
- Adjustable clamping bar opening angle on LSC versions

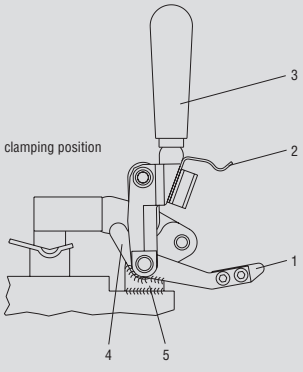
Model number code

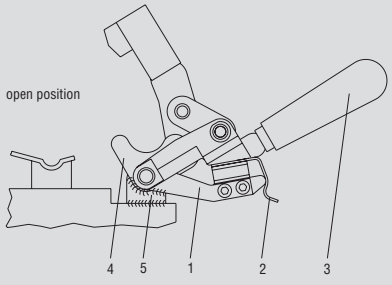
5 03- MB LSC

- Locking hold-open device
- Base option
  - B = swivel mounting base
  - MB = swivel mounting base
  - MLB = mounting plate
- Design/size
- Heavy-duty vertical clamp in modular design

Model 505-MLB in a robot-type welding fixture



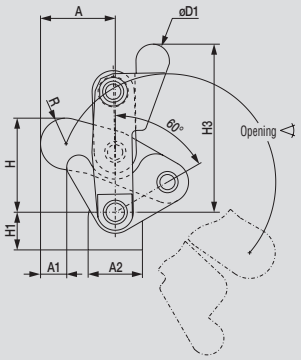


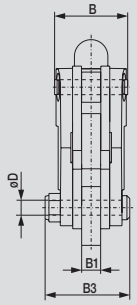


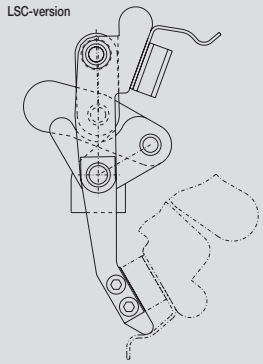
Patented hold-open device

1. Mount and close the clamp
2. Weld guide links ④ to the base ⑤
3. Weld the base ⑤ to the fixture
4. Lock the hold-open arm ① in the leaf spring ②
5. Set the clamp in the desired opening position
6. Maintain this position and weld the hold-open arm ① to the side of the clamp ④

Models 501-B, 503-MB, 503-MBLSC, 505-MB, 505-MBLSC, 506-MB, 506-MBLSC



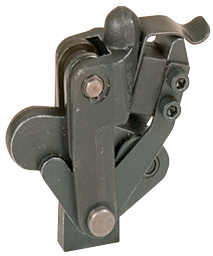




Model no.	Holding Capacity ⬆ [lbs.]	Bar Opening ◁ +10°	⚖ [lbs.]
501-B	560	200°	0.50
503-MB	1,500	200°	1.50
503-MBLSC	1,500	200°	1.50
505-MB	2,400	200°	3.00
505-MBLSC	2,400	200°	3.00
506-MB	5,000	200°	5.70
506-MBLSC	5,000	200°	5.70

Model 503-MB

Model 503-MBLSC



Model no.	A	A1	A2	B	B1	B3	øD	øD1	H	H1	H3	R			
501-B	28.50	14.50	19.00	28.00	6.40	28.00	4.70	12.00	28.00	20.00	56.00	9.50			
503-MB	39.50	13.00	28.50	38.50	10.00	45.00	7.90	18.00	51.00	20.00	88.50	13.50			
503-MBLSC	39.50	13.00	28.50	38.50	10.00	45.00	7.90	18.00	51.00	20.00	88.50	13.50			
505-MB	56.50	25.00	35.00	48.00	12.30	54.00	9.50	22.00	71.50	28.00	110.00	18.00			
505-MBLSC	56.50	25.00	35.00	48.00	12.30	54.00	9.50	22.00	71.50	28.00	110.00	18.00			
506-MB	72.00	32.50	51.00	60.00	16.00	67.00	12.70	28.00	87.50	33.00	135.00	21.00			
506-MBLSC	72.00	32.50	51.00	60.00	16.00	67.00	12.70	28.00	87.50	33.00	135.00	21.00			

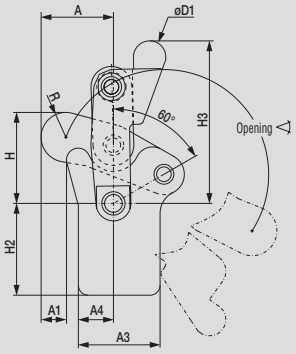
Note: Dimensions are shown in metric (mm).

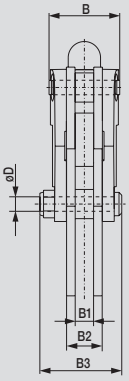
Models 501-LB, 503-MLB, 503-MLBLSC, 505-MLB, 505-MLBLSC, 506-MLB, 506-MLBLSC

Model no.	Holding Capacity [lbs.]	Bar Opening +10°	[lbs.]
501-LB	560	200°	0.50
503-MLB	1,500	200°	1.50
503-MLBLSC	1,500	200°	1.50
505-MLB	2,400	200°	3.00
505-MLBLSC	2,400	200°	3.00
506-MLB	5,000	200°	5.70
506-MLBLSC	5,000	200°	5.70

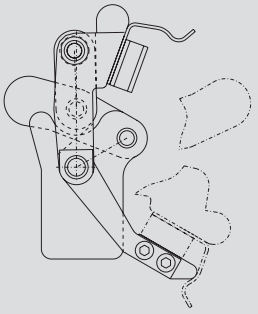
Model 503-MLB

Model 503-MLBLSC



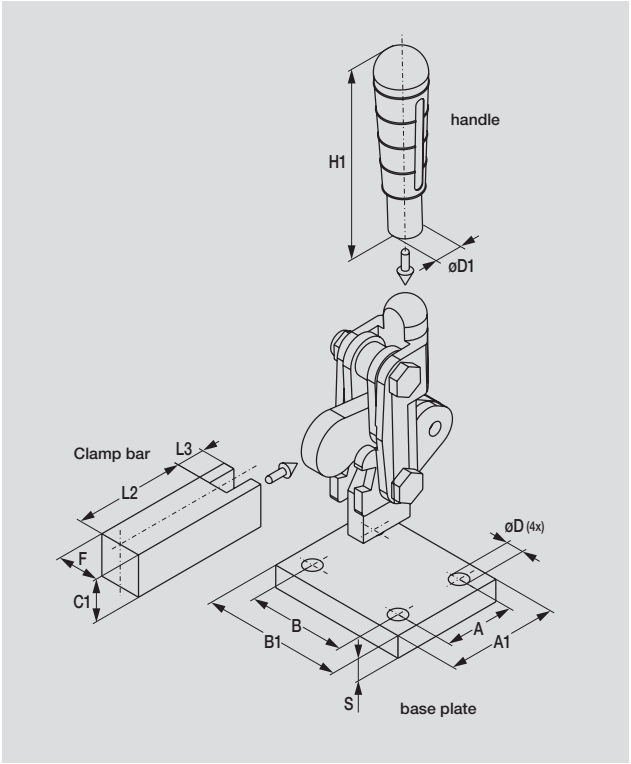


LSC-version



Model no.	A	A1	A3	A4	B	B1	B2	B3	øD	øD1	H	H2	H3	R
501-LB	28.50	15.00	27.00	13.50	28.00	6.40	13.00	28.00	4.70	12.00	28.00	33.50	56.00	9.50
503-MLB	39.50	14.00	44.50	19.00	38.50	10.00	19.50	45.00	7.90	18.00	51.00	50.00	88.50	13.50
503-MLBLSC	39.50	14.00	44.50	19.00	38.50	10.00	19.50	45.00	7.90	18.00	51.00	50.00	88.50	13.50
505-MLB	56.50	29.00	53.00	27.50	48.00	12.30	21.50	54.00	9.50	22.00	71.50	63.50	110.0	18.00
505-MLBLSC	56.50	29.00	53.00	27.50	48.00	12.30	21.50	54.00	9.50	22.00	71.50	63.50	110.0	18.00
506-MLB	72.00	35.50	65.50	37.00	60.00	16.00	28.50	67.00	12.70	28.00	87.50	76.00	135.5	21.00
506-MLBLSC	72.00	35.50	65.50	37.00	60.00	16.00	28.50	67.00	12.70	28.00	87.50	76.00	135.5	21.00

Note: Dimensions are shown in millimeters

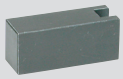
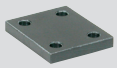


The modular design of this series of models allows you to set up the vertical clamp according to your specific requirements.

The clamping bar, the baseplate and the handle can be adapted to suit the fixture.

Important note

The forged parts must be heated up to 400° F (200° C) prior to the welding operation. For this reason, the handle and clamping arm should be welded together with the **disassembled** mating parts of the clamp. Ideal for welding in the cold state, welding additives must be used.

Completion parts (made of low carbon steel) Fitting the vertical clamps Heavy version See pages 2.25 and 2.26	 **Handle**		**Clamping bar** 				**Baseplate** 						**Model no.**
	øD1	~H1	C1	F	L2	L3	A	A1	B	B1	øD	S	
Series **501** (all models)	□6x10	61	–	–	–	–	–	–	–	–	–	–	501503
	–	–	15	15	40	10	–	–	–	–	–	–	501501
Model **501-B**	–	–	–	–	–	–	25	40	35	50	6.3	8	503502
Series **503** (all models)	ø18	104.5	–	–	–	–	–	–	–	–	–	–	503503
	ø18	129.5	–	–	–	–	–	–	–	–	–	–	503503-L
	–	–	25	20	50	8	–	–	–	–	–	–	503501
Models **503-MB, 503-MBLSC**	–	–	–	–	–	–	25	40	35	50	6.3	8	503502
Series **505** (all models)	ø22	114	–	–	–	–	–	–	–	–	–	–	505503
	ø22	159	–	–	–	–	–	–	–	–	–	–	505503-L
	–	–	30	25	60	12	–	–	–	–	–	–	505501
Models **505-MB, 505-MBLSC**	–	–	–	–	–	–	40	60	30	50	8.1	8	505502
Series **506** (all models)	ø28	123	–	–	–	–	–	–	–	–	–	–	506503
	ø28	188	–	–	–	–	–	–	–	–	–	–	506503-L
	–	–	35	30	75	15	–	–	–	–	–	–	506501
Model **506-MB, 506-MBLSC**	–	–	–	–	–	–	50	70	45	65	8.1	8	506502

Note: Dimensions are shown in millimeters

Cam action clamps for variable workpiece thickness

- Ideal for variable workpiece thickness
- Heavy-duty clamping bar
- Flanged base

Application areas

The DE-STA-CO cam clamps have a high-to-low limit clamping range that automatically compensates for part thickness variation and therefore eliminates time-consuming readjustments. The cam action resists vibrational loosening. They are built to take abuse. The clamps are available in five sizes. Part variation thickness allowance is from 1/8" to 3/8".

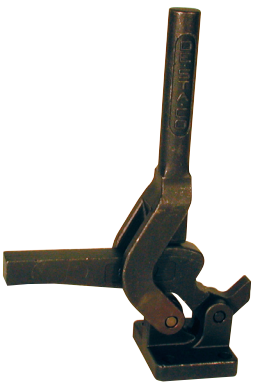
Product features

- Parts casted
- Hardened bushings
- Includes mounting holes

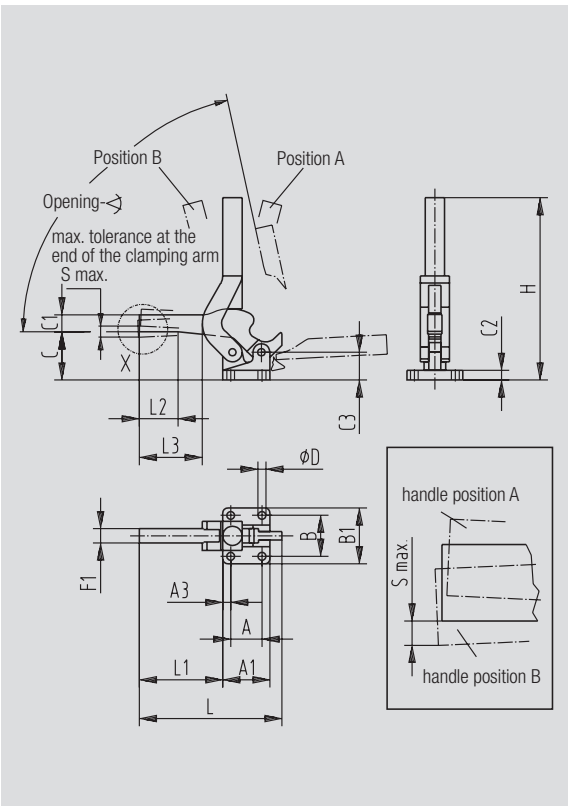
Models 7-101, 7-58, 7-59,7-60, 7-61

Model no.	Holding Capacity [lbs.]	Bar Opening +10°	[lbs.]
7-101	475	80°	1.00
7-58	600	95°	2.00
7-59	1,000	95°	3.00
7-60	1,600	80°	5.00
7-61	3,750	90°	15.00

Model 7-101



Model 7-60



Model no.	A	A1	A3	B	B1	C	C1	C2	C3	øD	F1	H	L	L1	L2	S Max.
7-101	0.75	1.25	0.25	1.25	1.75	1.44	0.50	0.31	1.00	0.22	0.49	5.00	4.62	3.12	–	0.13
7-58	1.00	1.69	0.34	1.62	2.25	1.87	0.56	0.38	1.12	0.28	0.50	7.00	6.99	2.55	–	0.13
7-59	1.38	2.06	0.39	1.88	2.50	2.19	0.63	0.44	1.25	0.34	0.63	8.50	6.00	3.50	1.24	0.19
7-60	1.62	2.44	0.44	2.12	2.88	2.50	0.88	0.50	1.44	0.41	0.75	9.50	7.40	4.38	1.97	0.25
7-61	2.00	3.00	0.50	3.50	4.50	2.86	1.25	0.62	1.68	0.53	1.13	13.93	9.76	5.93	–	0.38

- **U-shaped or solid clamping bar**

Application areas

Ideal for applications in the assembly industry in which workholding is performed with clamping forces of up to 500 lbs., including assembling, drilling, testing, positioning, milling and other processing operations.

Product features

- Torsion-protected, hardened bushings
- Rivets made of stainless steel
- Zinc plated
- Oil-resistant, ergonomically shaped DE-STA-CO handle grip

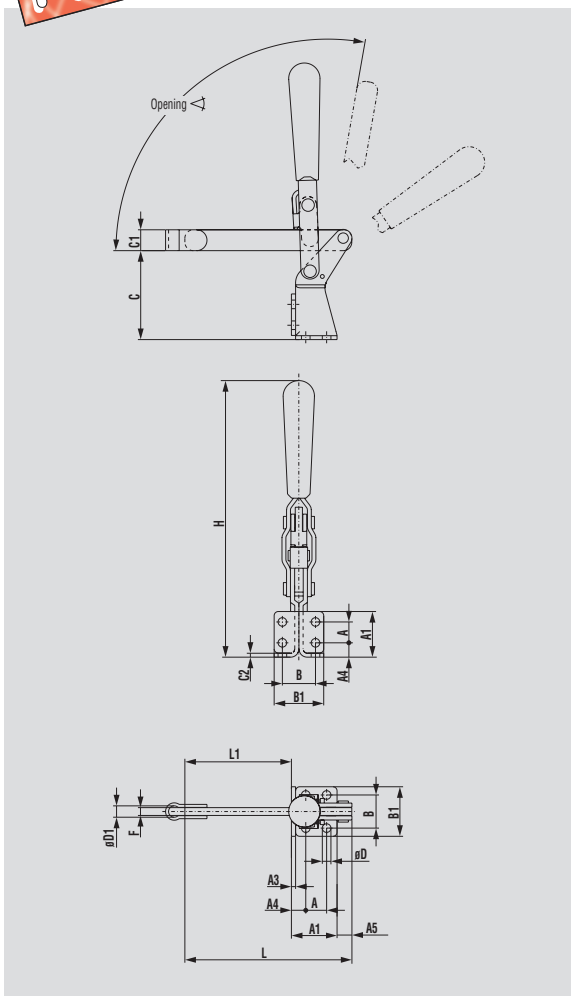
Accessories

Vertical handle clamps with a U-shaped clamping arm can be ordered in two varieties:

- Standard model number: The matching standard adjustment spindle is included
- Model number containing "-LS": The model is delivered with two flanged washers without an adjustment spindle.

NEW

Model 207-SF



Model no.	Holding Capacity ▲ [lbs.]	Bar Opening ◁ +10°	[lbs.]	Bolt Retainer
207-SF	500	90°	0.84	207105

See additional adjustment spindles beginning on page 9.1.

Model no.	A	A1	A3	A4	A5	B	B1	C	C1	C2	øD	øD1	F	H	L	L1	M		
207-SF ▲	0.63	1.38	0.12	0.43	0.45	1.00	1.50	2.68	0.63	0.12	0.26	0.33	0.24	8.15	5.04	3.21	M8		

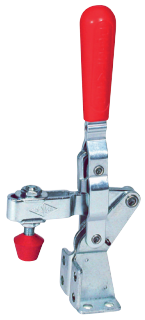
▲ Available upon request

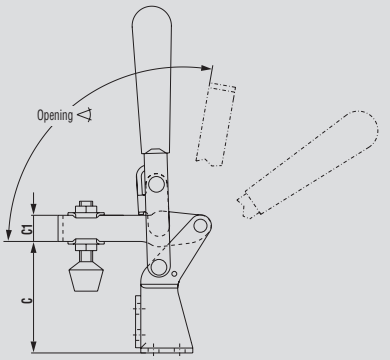
Models 207-UF

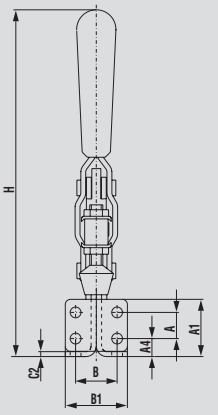
NEW

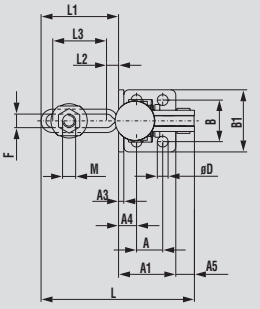
Model no.	Holding Capacity ⬆ [lbs.]	Bar Opening ∢ +10°	[lbs.]	Standard equipment	Flanged Washers
207-UF	375	90°	0.94	225208-M	507107
207-UF-LS				without spindle	507107

See additional adjustment spindles beginning on page 9.1.









Model no.	A	A1	A3	A4	A5	B	B1	C	C1
207-UF	0.63	1.38	0.12	0.43	0.45	1.00	1.50	2.68	0.63

Model no.	C2	øD	F	H	L	L1	L2	L3	M
207-UF ▲	0.12	0.26	0.33	8.15	3.70	1.87	0.30	1.30	M8

▲ Available upon request

Application areas

Ideal for all areas of the assembly industry in which workholding is performed with holding capacities of up to 375 lbs. For example, assembling, drilling, testing, positioning, milling and other processing operations.

Product features

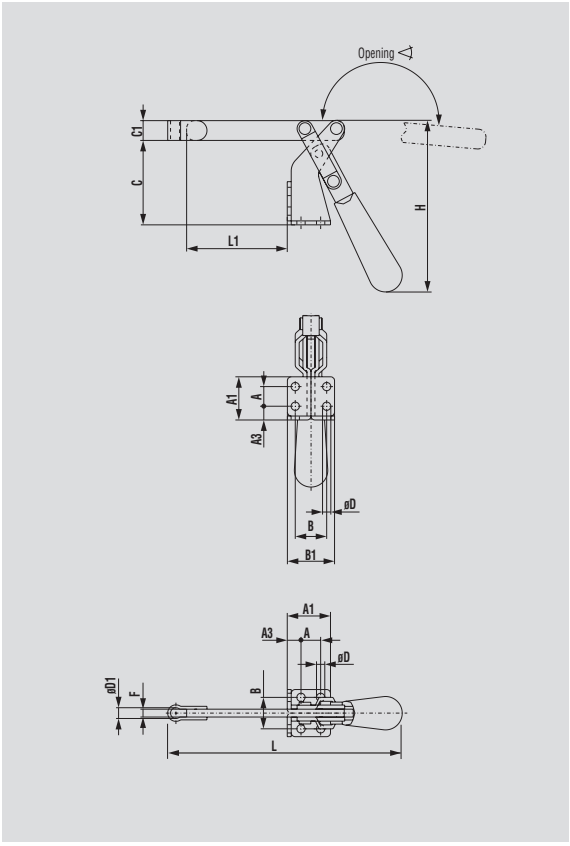
- Extremely large arm opening angle (185°)
- Handle position is identical in clamped position and open position
- Torsion-protected, hardened bushings
- Rivets made of stainless steel
- Zinc plated
- Oil-resistant, ergonomically shaped DE-STA-CO handle grip

Accessories

Vertical clamps with a U-shaped clamping bar can be ordered in two varieties:

- Standard model number: The standard adjustment spindle is included
- Model number containing "-LS": The model is delivered with two flange washers without an adjustment spindle

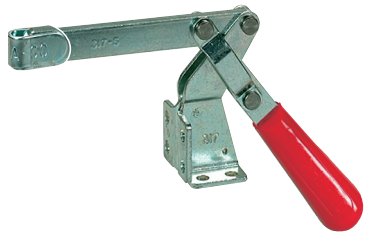
Model 317-S



Model no.	Holding Capacity [lbs.]	Bar Opening-angle +10°	[lbs.]	Bolt Retainer
317-S	375	185°	0.75	207105

ALSO AVAILABLE		
As Air Hydraulic	Model 817-S	Page 11.14
See accessories beginning on page 9.1.		

- **Solid clamping bar**
- **Dual position mounting base**



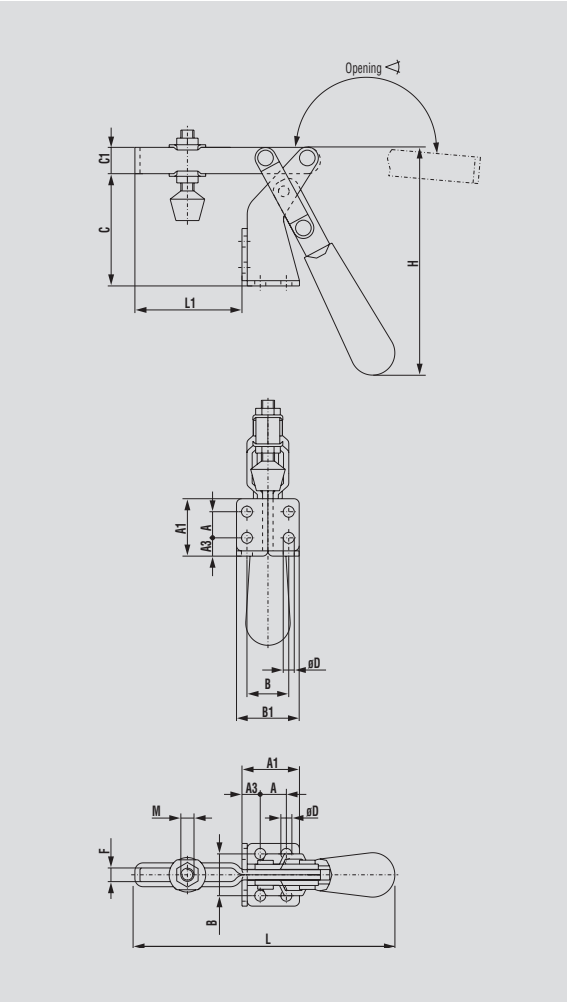
Model no.	A	A1	A3	B	B1	C	C1	øD	øD1	F	H	L	L1
317-S	0.63	1.38	0.44	1.00	1.50	2.69	0.63	0.27	0.33	0.25	5.54	6.57	3.20

Model 317-U

Model no.	Holding Capacity [lbs.]	Bar Opening +10°	[lbs.]	Standard equipment
317-U 317-U-LS	375	185°	0.75	507208-M without spindle

ALSO AVAILABLE		
As Air Hydraulic	Model 817-U	Page 11.15
See accessories beginning on page 9.1.		

- **U-shaped clamping bar**
- **Dual position mounting base**



Model no.	A	A1	A3	B	B1	C	C1	øD	F	H	L	L1	M
317-U	0.63	1.38	0.44	1.00	1.50	2.68	0.63	0.27	0.34	5.64	5.90	2.53	M8 or 5/16

- **Heavy-duty clamping bar**
- **With flanged base or front mount**

Application areas

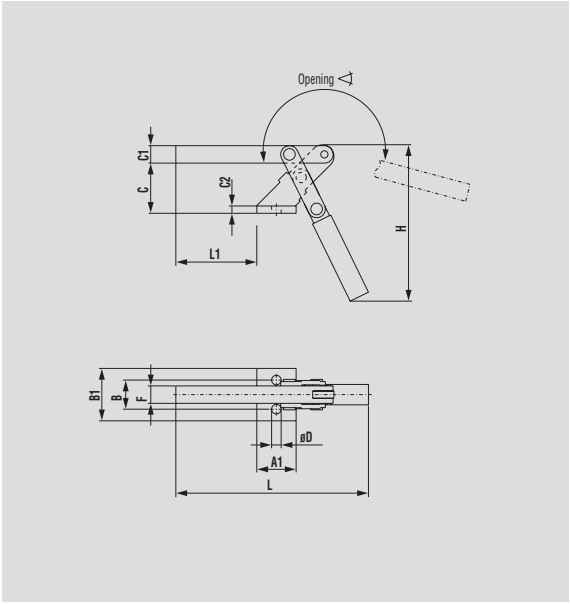
Ideal for all areas in which workholding is performed with holding capacities of up to 2,500 lbs. Due to design, these models are especially suitable for use in demanding work environments, including assembling, drilling, testing, positioning, milling and other processing operations.

The heavy-duty clamping bar can be shortened or lengthened to the desired length, and holes can be drilled (for spindle assembly).

Product features

- Extremely large opening angle (195°)
- Handle position is identical in the clamped position and open position
- Torsion-protected, hardened bushings
- Rivets made of stainless steel

Model 527



Model no.	Holding Capacity [lbs.]	Bar Opening- +10°	[lbs.]	Standard equipment
527	1,000	195°	2.50	None

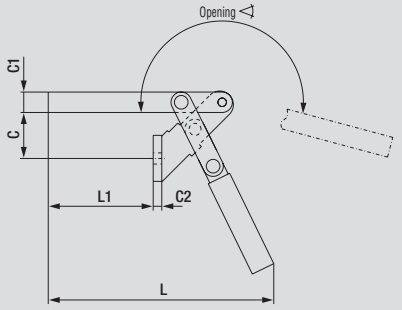
- **Solid clamping bar**
- **Flanged base**

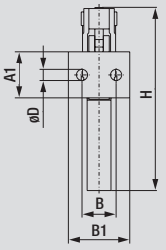
Model no.	A1	B	B1	C	C1	C2	øD	F	H	L	L1
527	1.77	1.25	2.25	2.20	0.75	0.21	0.41	0.75	7.08	8.63	3.27

Model 527-F

Model no.	Holding Capacity [lbs.]	Bar Opening- +10°	[lbs.]	Standard equipment
527-F	1,000	195°	2.50	None

- **Solid clamping bar**
- **Front mounting base**



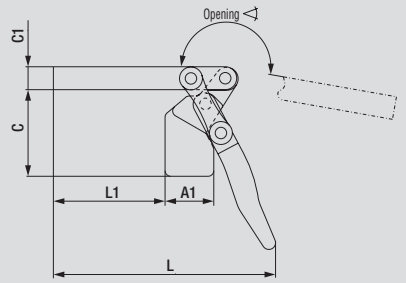


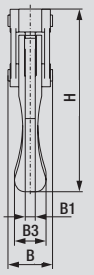
Model no.	A1	B	B1	C	C1	C2	øD	F	H	L	L1
527-F	1.77	1.25	2.25	1.92	0.75	0.21	0.41	0.75	7.34	8.65	3.81

Model 557

Model no.	Holding Capacity [lbs.]	Bar Opening- +10°	[lbs.]	Standard equipment
557	2,500	192°	5.00	None

- **Solid clamping bar**
- **Straight base**

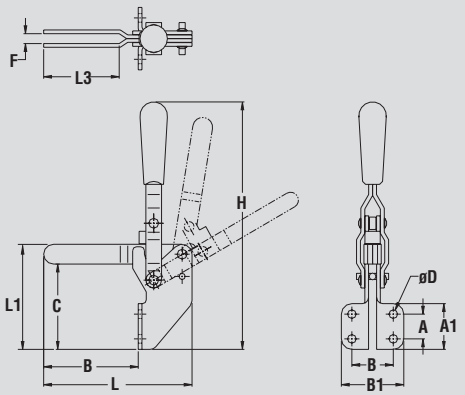




Model no.	A1	B	B1	B3	C	C1	F1	H	L	L1
557 ▲	2.13	1.93	0.44	1.38	3.75	1.00	1.00	8.13	9.31	4.81

▲ Available upon request

Model 91090, 91140



Model no.	Holding Capacity ▲ [lbs.]	Bar Opening ∢ +10°	[lbs.]	Standard Equipment
91090	385	100°	0.81	None
91140	1000	100°	3.10	None

See additional adjustment spindles beginning on page 9.1.

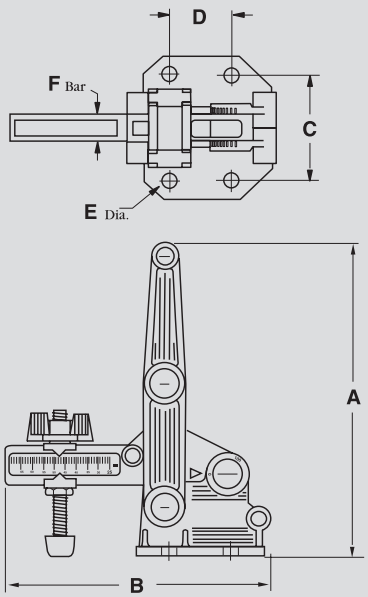
Model no.	A	A1	B	B1	C	øD	F	H	L	L1	L3
91090	0.80	1.32	1.29	2.09	2.68	0.28	0.33	7.68	4.72	3.09	2.40
91140	1.26	2.17	1.81	2.74	5.24	0.33	0.43	11.06	7.87	5.24	4.41

Model VH3

Information

Vertical handle toggle clamps for work holding. Toggle action locks the workpiece securely. The arm opens 100° for loading. Reinforced polymer spindle assembly with neoprene tip is included, and can be positioned on the arm using the convenient indicator.

- Lightweight, non-conductive, chemical resistant
- Locking toggle action
- Spindle assembly included
- Constructed of reinforced polymers combining high strength and light weight



Model no.	Holding Capacity ▲ [lbs.]	[lbs.]	Standard Equipment
VH3	200	0.25	Rubber-tipped composite spindle

See additional adjustment spindles beginning on page 9.1

Model no.	A	B	C	D	E	F
VH3	5.63	4.75	1.89	1.10	0.28	0.47

Notes

NEW

2000 Horizontal Series:
Models 2013, 2017, 2027 and 2037

page 3.4

NEW

2000 Horizontal
DE-STA-CO Toggle-Lock Plus™ Series:
Models 2013-R, 2017-R, 2027-R and 2037-R

page 3.6

Product group – horizontal clamps

Application areas

Application areas include clamping during the assembling, drilling, testing, gluing and locking of covers, and much more. The horizontal clamp is distinguished by the low profile of the clamping arm in the clamped position. Due to its minimum overall height, the horizontal clamp is especially suitable for installation in confined spaces.

Basic product features

- In the clamped position, the handle is horizontal (minimum overall height)
- Horizontal clamp opening angles range from 90° to 105°
- Horizontal clamps are offered with U-shaped and solid clamping bars
- Horizontal clamps have a straight or flanged base

Model 205-U in a drilling fixture

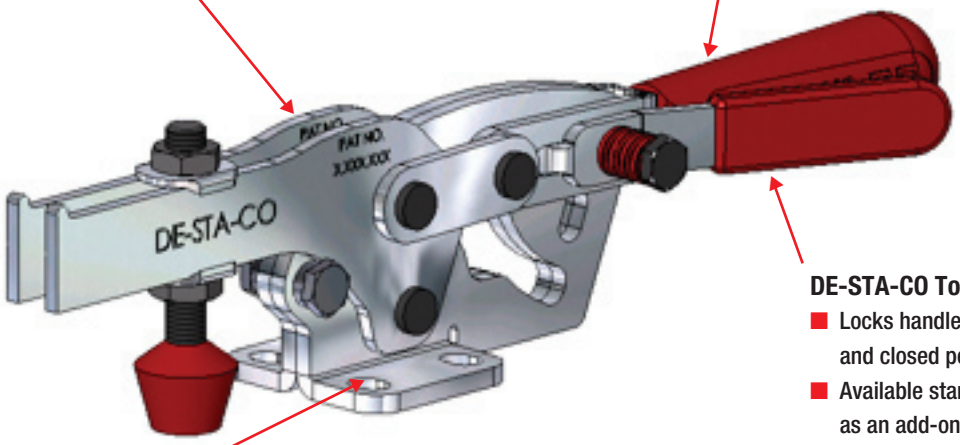
	Model no.	Holding Capacity max. [lbs.]	Category	Page
	2013-U 2017-U 2027-U 2037-U	295 560 840 1,680	NEW! Standard NEW! Standard NEW! Standard NEW! Standard	3.4
	2013-UB 2017-UB 2027-UB 2037-UB	295 560 840 1,680	NEW! Standard NEW! Standard NEW! Standard NEW! Standard	3.5
	2013-UR 2017-UR 2027-UR 2037-UR	295 560 840 1,680	NEW! DE-STA-CO Toggle-Lock Plus NEW! DE-STA-CO Toggle-Lock Plus NEW! DE-STA-CO Toggle-Lock Plus NEW! DE-STA-CO Toggle-Lock Plus	3.6
	2013-UBR 2017-UBR 2027-UBR 2037-UBR	295 560 840 1,680	NEW! DE-STA-CO Toggle-Lock Plus NEW! DE-STA-CO Toggle-Lock Plus NEW! DE-STA-CO Toggle-Lock Plus NEW! DE-STA-CO Toggle-Lock Plus	3.7
	205-S 205-SL 205-SR 215-S	60 60 60 200	Standard Standard Standard Standard	3.8
	205-SB 215-SB	60 200	Standard Standard	3.9
	205-U 205-UL 205-UR 215-U 225-U 235-U	60 60 60 200 500 750	Standard Standard Standard Standard Standard Standard	3.10
	205-UB 215-UB 225-UB 235-UB	60 200 500 750	Standard Standard Standard Standard	3.11

	Model no.	Holding Capacity max. [lbs.]	Category	Page
	225-UR 235-UR	500 750	Standard Standard	3.12
	213-U 217-U 227-U 237-U 245-U	150 200 500 750 1,000	Standard Standard Standard Standard Standard	3.13
	213-UB 217-UB 227-UB 237-UB	150 200 500 750	Standard Standard Standard Standard	3.14
	245-S	1,000	Standard	3.15
	2371-U	2,400	Heavy-duty	3.16
	305-U 307-U 309-U	150 350 750	Standard Standard Standard	3.17
	305-UR 307-UR 309-UR	150 350 750	Compact Compact Compact	3.18
	515 515-B	800 800	Standard Standard	3.19

2000-Series, horizontal clamps

Robust Design
- 60% more holding capacity than legacy product
- Low arm deflection under load (greater stifness)

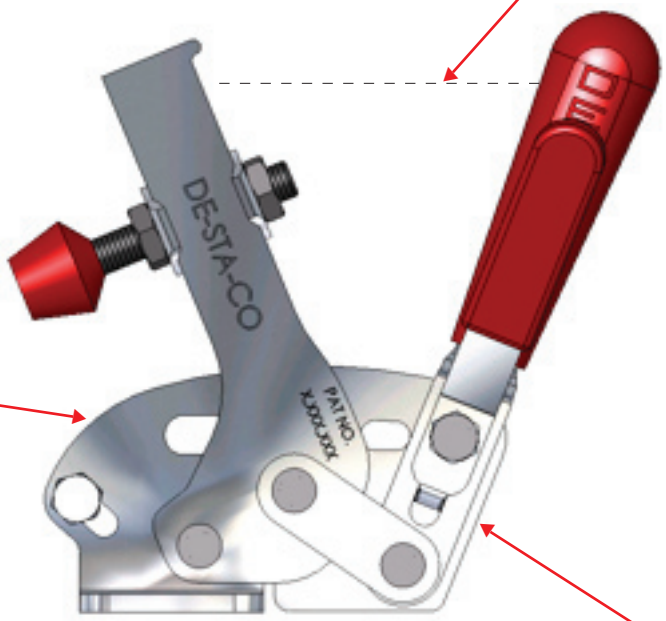
Long Handle
- Increased operator comfort



DE-STA-CO Toggle-Lock Plus™
- Locks handle in open and closed positions
- Available standard or as an add-on kit

Common Hole Pattern
- Interchangeable with legacy clamp models:
  - 213-U
  - 217-U
  - 227-U
  - 237-U

Large Hand Clearance
- Eliminates "knuckle busters"



Adjustable Pre-load
- Eliminates arm play for locating applications

Bushings at Key Pivot Points
- Provides long life and smooth operation

Low Pivot Point
- Provides perpendicular clamping force

Fixed Handle Pivot
- Eliminates sticking points
- Provides smooth action

NEW

Models 2013-U, 2017-U, 2027-U, 2037-U

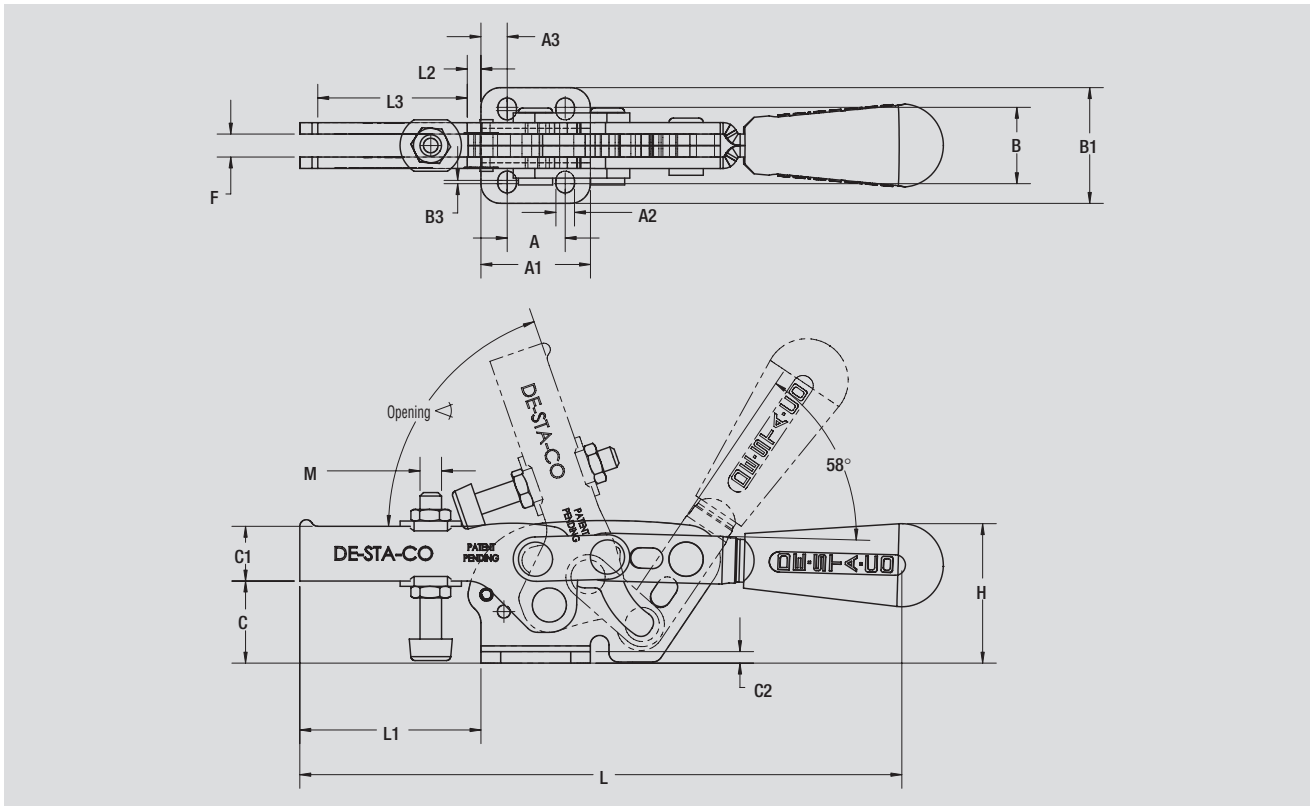
Available by 4Q 2006

Model no.	Holding Capacity ▲ [lbs.]	Bar Opening ∢ +10°	[lbs.]	Standard equipment	Flanged Washers
2013-U	295	71°	0.37	2013208-M	102111
2013-U-LS				without spindle	102111
2017-U	560	73°	0.97	215208-M	215105
2017-U-LS				without spindle	215105
2027-U	840	68°	1.34	2007208-M	507107
2027-U-LS				without spindle	507107
2037-U	1680	73°	2.95	240208-M	410P1312
2037-U-LS				without spindle	410P1312

ALSO AVAILABLE		
As DE-STA-CO Toggle-Lock Plus	Models 2013-UR, 2017-UR, 2027-UR, 2037-UR	Page 3.6

See accessories beginning on page 9.1.

■ Flanged base



Model no.	A	A1	A2	A3	B	B1	B3	C	C1	C2	F	H	L	L1	L2	L3	M
2013-U	0.53	1.00	0.17	0.24	0.70	1.06	0.03	0.75	0.50	0.11	0.21	1.27	5.88	1.65	0.41	0.83	M5 or 10-32
2017-U	1.03	1.68	0.27	0.32	1.21	1.86	0.11	0.98	0.75	0.12	0.24	1.95	8.62	2.53	0.55	1.48	M6 or 1/4-20
2027-U	1.03	1.56	0.27	0.40	1.21	1.81	0.11	1.32	0.75	0.16	0.33	2.20	9.88	2.86	0.81	1.44	M8 or 5/16-18
2037-U	1.63	2.43	0.34	0.40	1.69	2.50	0.08	1.62	1.00	0.16	0.42	2.75	13.35	4.40	0.90	2.72	M10 or 3/8-16

Models 2013-UB, 2017-UB, 2027-UB, 2037-UB

NEW

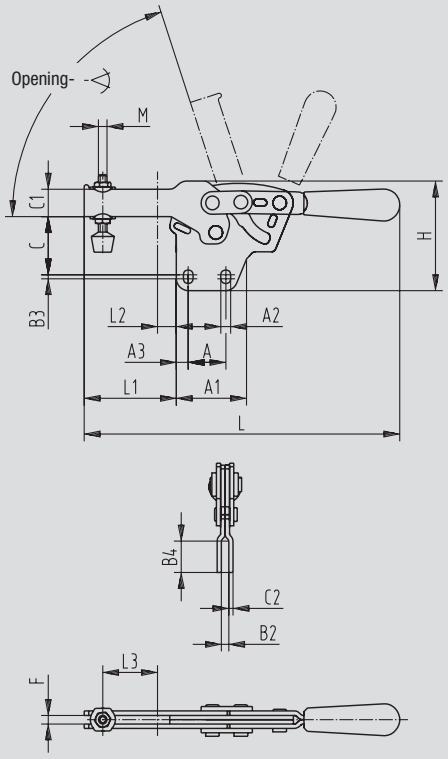
Model no.	Holding Capacity [lbs.]	Bar Opening +10°	[lbs.]	Standard equipment	Flanged Washers
2013-UB	295	70°	0.37	2013208-M	102111
2013-UB-LS				without spindle	102111
2017-UB	560	73°	0.97	215208-M	215105
2017-UB-LS				without spindle	215105
2027-UB	840	70°	1.34	2007208-M	507107
2027-UB-LS				without spindle	507107
2037-UB	1680	70°	2.95	240208-M	410P1312
2037-UB-LS				without spindle	410P1312

Available by 4Q 2006

ALSO AVAILABLE		
As DE-STA-CO Toggle-Lock Plus	Models 2013-UBR, 2017-UBR, 2027-UBR, 2037-UBR	Page 3.7

See accessories beginning on page 9.1 .

Straight base

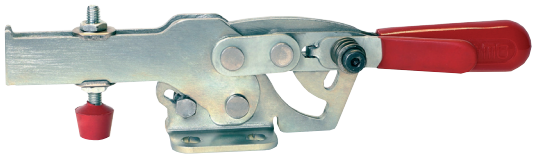


Model no.	A	A1	A2	A3	B2	B3	B4	C	C1	C2	F	H	L	L1	L2	L3	M
2013-UB	0.53	1.28	0.17	0.24	0.16	0.03	0.58	1.20	0.50	0.11	0.21	1.99	5.88	1.65	0.41	0.83	M5 or 10-32
2017-UB	1.03	1.92	0.27	0.32	0.20	0.11	0.86	1.60	0.75	0.12	0.24	3.00	8.62	2.53	0.55	1.48	M6 or 1/4-20
2027-UB	1.03	1.92	0.27	0.40	0.24	0.11	0.86	2.04	0.75	0.16	0.33	3.28	9.88	2.86	0.81	1.44	M8 or 5/16-18
2037-UB	1.63	2.64	0.34	0.40	0.32	0.08	1.13	2.56	1.00	0.16	0.42	4.17	13.35	4.40	0.90	2.72	M10 or 3/8-16

NEW

Models 2013-UR, 2017-UR, 2027-UR, 2037-UR

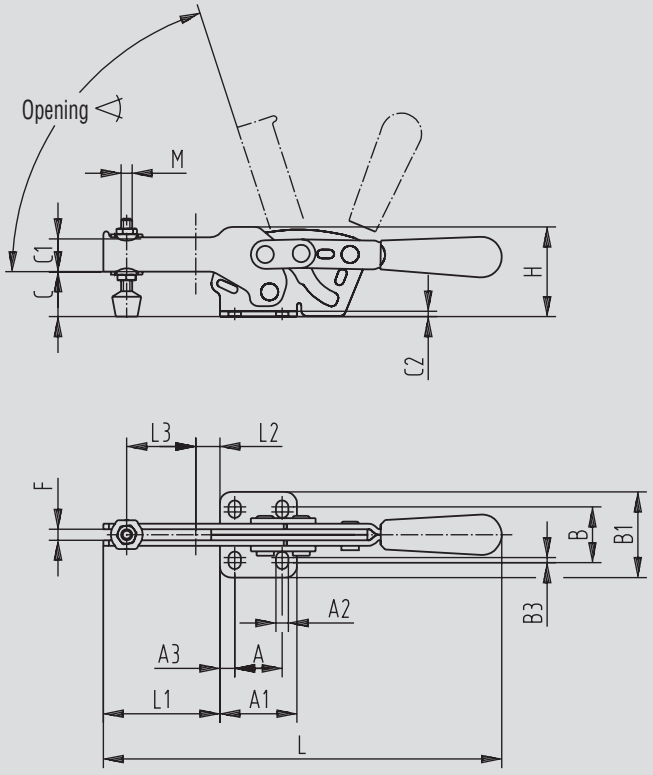
Available by 4Q 2006



Model no.	Holding Capacity [lbs.]	Bar Opening +10°	[lbs.]	Standard equipment	Flanged Washers
2013-UR	295	70°	0.37	2013208-M	102111
2013-UR-LS				without spindle	102111
2017-UR	560	73°	0.97	215208-M	215105
2017-UR-LS				without spindle	215105
2027-UR	840	70°	1.34	2007208-M	507107
2027-UR-LS				without spindle	507107
2037-UR	1680	70°	2.95	240208-M	410P1312
2037-UR-LS				without spindle	410P1312

See additional adjustment spindles beginning on page 9.1.

- **Flanged base**
- **DE-STA-CO Toggle-Lock Plus**



Model no.	A	A1	A2	A3	B	B1	B3	C	C1	C2	F	H	L	L1	L2	L3	M
2013-UR	0.53	1.00	0.17	0.24	0.70	1.06	0.03	0.75	0.50	0.11	0.21	1.27	5.88	1.65	0.41	0.83	M5 or 10-32
2017-UR	1.03	1.68	0.27	0.32	1.21	1.86	0.11	0.98	0.75	0.12	0.24	1.95	8.62	2.53	0.55	1.48	M6 or 1/4-20
2027-UR	1.03	1.56	0.27	0.40	1.21	1.81	0.11	1.32	0.75	0.16	0.33	2.20	9.88	2.86	0.81	1.44	M8 or 5/16-18
2037-UR	1.63	2.43	0.34	0.40	1.69	2.50	0.08	1.62	1.00	0.16	0.42	2.75	13.35	4.40	0.90	2.72	M10 or 3/8-16

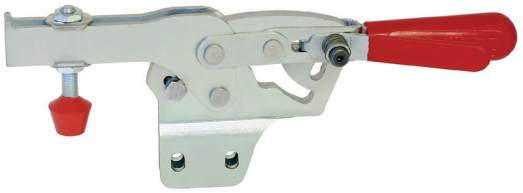
Models 2013-UBR, 2017-UBR, 2027-UBR, 2037-UBR

NEW

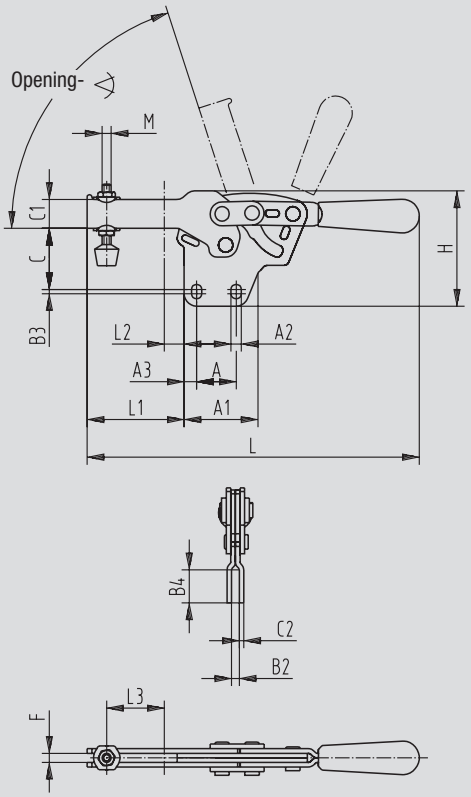
Model no.	Holding Capacity [lbs.]	Bar Opening +10°	[lbs.]	Standard equipment	Flanged Washers
2013-UBR	295	70°	0.37	2013208-M	102111
2013-UBR-LS				without spindle	102111
2017-UBR	560	73°	0.97	215208-M	215105
2017-UBR-LS				without spindle	215105
2027-UBR	840	70°	1.34	2007208-M	507107
2027-UBR-LS				without spindle	507107
2037-UBR	1680	70°	2.95	240208-M	410P1312
2037-UBR-LS				without spindle	410P1312

See additional adjustment spindles beginning on page 9.1.

Available by 4Q 2006



- **Straight base**
- **DE-STA-CO Toggle-Lock Plus**



Model no.	A	A1	A2	A3	B2	B3	B4	C	C1	C2	F	H	L	L1	L2	L3	M
2013-UBR	0.53	1.28	0.17	0.24	0.16	0.03	0.58	1.20	0.50	0.11	0.21	1.99	5.88	1.65	0.41	0.83	M5 or 10-32
2017-UBR	1.03	1.92	0.27	0.32	0.20	0.11	0.86	1.60	0.75	0.12	0.24	3.00	8.62	2.53	0.55	1.48	M6 or 1/4-20
2027-UBR	1.03	1.92	0.27	0.40	0.24	0.11	0.86	2.04	0.75	0.16	0.33	3.28	9.88	2.86	0.81	1.44	M8 or 5/16-18
2037-UBR	1.63	2.64	0.34	0.40	0.32	0.08	1.13	2.56	1.00	0.16	0.42	4.17	13.35	4.40	0.90	2.72	M10 or 3/8-16

- **U-shaped and solid clamping bars**
- **Flanged or straight base**

Application areas

Ideal for all areas in which clamping work is performed with holding capacities of up to 750 lbs.

Applications Include assembling, drilling, testing, gluing, and other processing operations. Suitable for use in welding fixtures, in gauge manufacture, as well as in the woodworking industry.

Product features

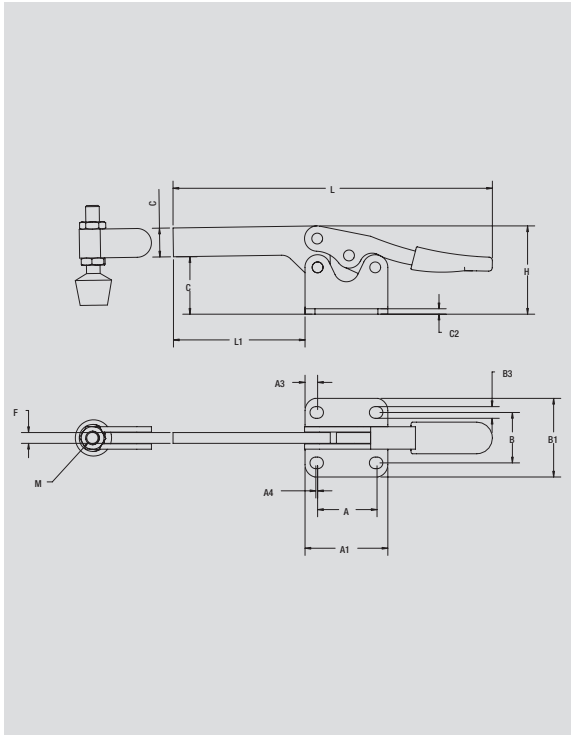
- Rivets made of stainless steel
- Zinc plated
- Oil-resistant, ergonomically shaped DE-STA-CO handle grip

Accessories

Horizontal clamps with a U-shaped clamping bar can be ordered in two varieties:

- Standard model number: The standard adjustment spindle is included.
- Model number containing “-LS”: The model is delivered with two flanged washers without an adjustment spindle.

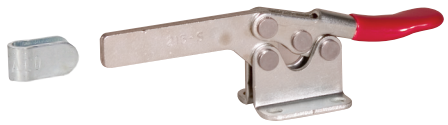
Models 205-S, 205-SL, 205-SR, 215-S



Model no.	Holding Capacity ▲ [lbs.]	Bar Opening ≺ +10°	[lbs.]	Standard equipment	Bolt Retainer
205-S	60	90°	0.06	205208-M	None
205-S-LS				without spindle	None
205-SL	60	90°	0.06	205208-M	None
205-SR	60	90°	0.06	205208-M	None
215-S	200	90°	0.34	202208-M	205105

ALSO AVAILABLE		
In Stainless Steel	Model 205-SSS	Page 8.6
See accessories beginning on age 9.1.		

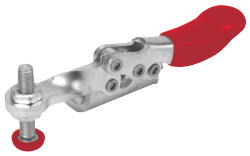
- **Solid or fixed spindle bar**
- **Flanged base**



Model 215-S

Model 205-S

Model 205-SL



Model 205-SR

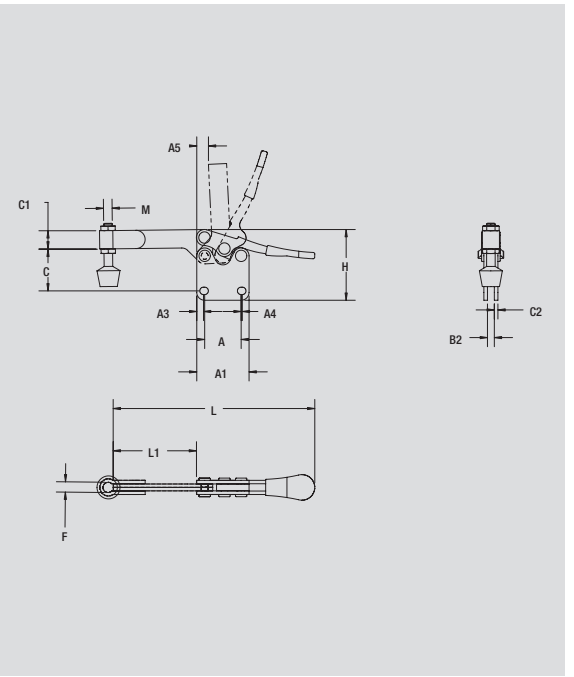
Model no.	A	A1	A3	A4	A5	B	B1	B3	C	C1	C2	F	H	L	L1	M	
205-S	0.44	0.94	0.16	0.63	0.30	0.62	0.93	0.17	0.37	0.12	0.06	0.17	0.67	2.78	0.88	M4 or #10	
205-SL	0.44	0.94	0.16	0.63	0.30	–	–	0.17	0.37	0.12	0.06	0.17	0.67	2.78	0.88	M4 or #10	
205-SR	0.44	0.94	0.16	0.63	0.30	–	–	0.17	0.37	0.12	0.06	0.17	0.67	2.78	0.88	M4 or #10	
215-S	1.00	1.44	0.19	1.06	0.43	0.88	1.37	0.20	1.03		0.10		1.53	5.50	2.31	M6 or 1/4	

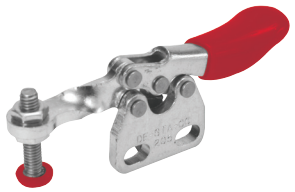
Models 205-SB, 215-SB

Model no.	Holding Capacity ▲ [lbs.]	Bar Opening +10°	[lbs.]	Standard equipment	Bolt Retainer
205-SB	60	90°	0.06	205208-M	None
205-SB-LS				without spindle	None
215-SB	200	90°	0.34	202208-M	205105

See additional adjustment spindles beginning on page 9.1.

- **Straight bases**
- **Solid or fixed spindle bars**





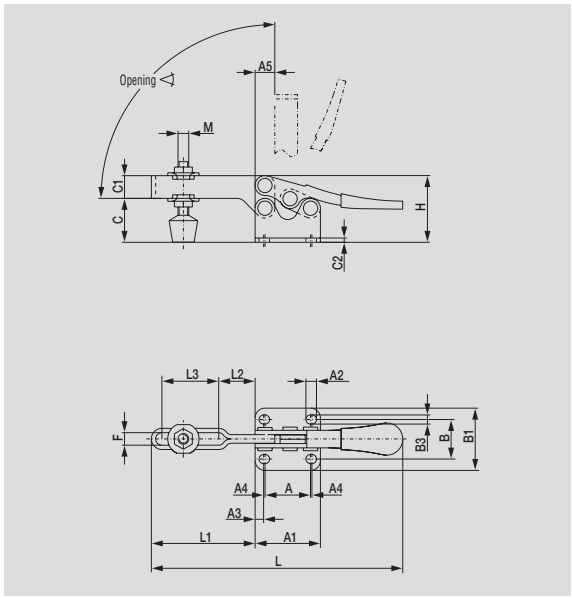
Model 205-SB

Model 215-SB

Model no.	A	A1	A3	A4	A5	B2	C	C1	C2	F	H	L	L1	M		
205-SB	0.44	0.94	0.16	0.63	0.30	–	0.37	0.12	0.06	0.17	0.67	2.78	0.88	M4 or #10		
215-SB ▲	1.00	1.44	0.19	1.06	0.43	0.19	1.28	0.50	0.10	0.28	1.78	5.50	2.31	M6 or #10		

▲ Available upon request

Models 205-U, 205-UL, 205-UR, 215-U, 225-U, 235-U

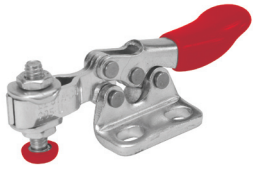


Model no.	Holding Capacity [lbs.]	Bar Opening +10°	[lbs.]	Standard equipment	Flanged Washers
205-U	60	90°	0.06	205208-M	105106
205-U-LS				without spindle	105106
205-UL	60	90°	0.06	205208-M	105106
205-UR	60	90°	0.06	205208-M	105106
215-U	200	90°	0.34	202208-M	215105
215-U-LS				without spindle	215105
225-U	500	90°	0.55	225208-M	507107
225-U-LS				without spindle	507107
235-U	750	90°	1.47	240208-M	235106
235-U-LS				without spindle	235106

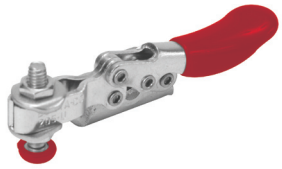
ALSO AVAILABLE		
In Stainless Steel	Model 205-USS	Page 8.6
	Model 215-USS	Page 8.6
	Model 225-USS	Page 8.6
	Model 235-USS	Page 8.6
As DE-STA-CO Toggle-Lock Plus	Model 225-UR	Page 3.12
	Model 235-UR	Page 3.12
See accessories beginning on page 9.1.		

- **U-shaped clamping bar**
- **Flanged base**

Model 215-U (Shown)



Model 205-UL



Model 205-UR

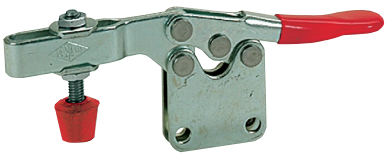
Model no.	A	A1	A2	A3	A4	A5	B	B1	B3	C	C1	C2	F	H	L	L1	L2	L3	M
205-U	0.44	0.94	–	0.16	0.63	0.22	0.62	0.93	0.17	0.31	0.26	0.06	0.20	0.67	2.65	0.74	0.26	0.37	M4 or #10
205-UL	0.44	0.94	–	0.16	0.63	0.22	–	–	0.17	0.31	0.26	0.06	0.20	0.67	2.65	0.74	0.26	0.37	M4 or #10
205-UR	0.44	0.94	–	0.16	0.63	0.22	–	–	0.17	0.31	0.26	0.06	0.20	0.67	2.65	0.74	0.26	0.37	M4 or #10
215-U	1.00	1.44	–	0.19	1.06	0.43	0.88	1.37	0.20	1.00	0.49	0.10	0.28	1.53	5.50	2.25	0.81	1.25	M6 or 1/4
225-U	1.00	1.50	0.26	0.25	–	0.49	0.88	1.38	0.30	1.32	0.49	0.12	0.31	1.84	6.70	2.72	1.08	1.39	M8 or 5/16
235-U	1.63	2.25	–	0.37	–	0.69	1.63	2.25	0.34	1.75	0.75	0.16	0.43	2.55	10.87	4.16	1.61	2.28	M10 or 3/8

Models 205-UB, 215-UB, 225-UB, 235-UB

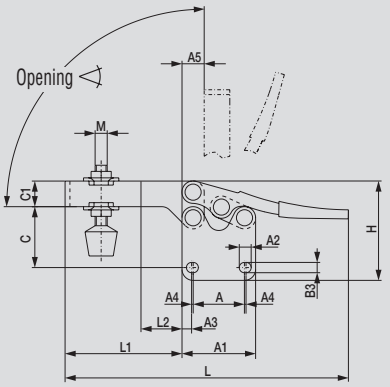
Model no.	Holding Capacity ⬆ [lbs.]	Bar Opening +10°	[lbs.]	Standard equipment	Flanged Washers
205-UB	60	90°	0.06	205208-M	105106
205-UB-LS				without spindle	105106
215-UB	200	90°	0.34	202208-M	215105
215-UB-LS				without spindle	215105
225-UB	500	90°	0.55	225208-M	507107
225-UB-LS				without spindle	507107
235-UB	750	90°	1.47	240208-M	235106
235-UB-LS				without spindle	235106

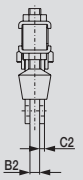
ALSO AVAILABLE		
In Stainless Steel	Model 225-UBSS	Page 8.9
See accessories beginning on page 9.1.		

- **U-shaped clamping bar**
- **Straight base**

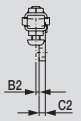


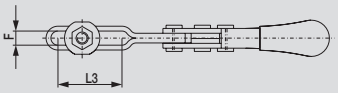
Model 215-UB (Shown)





Model 205-UB





Model no.	A	A1	A3	A4	A5	B2	B3	C	C1	C2	F	H	L	L1	L2	L3	M
205-UB	0.44	0.94	0.16	0.63	0.22	0.06	0.17	0.53	0.26	0.12	0.20	0.84	2.65	0.74	0.26	0.37	M4 or #10
215-UB	1.00	1.44	0.19	1.06	0.43	0.20	0.20	1.28	0.49	0.10	0.28	1.78	5.50	2.25	0.81	1.25	M6 or 1/4
225-UB	1.00	1.50	0.25	–	0.49		0.27	1.83	0.49	0.24	0.31	2.38	6.70	2.72	1.08	1.39	M8 or 5/16
235-UB	1.63	2.25	0.37	–	0.69	0.31	0.33	2.16	0.75	0.16	0.43	2.91	10.87	4.16	1.61	2.28	M10 or 3/8

- **Clamping arm U-shaped**
- **Flanged base**

Application areas

The additional latch holds the clamp in the closed position.

This clamp is preferred for more difficult clamping conditions, e.g. vibrating conditions, transporting of sensitive parts, and where the clamp bar is set at an angle to the base.

Product features

- Additional locking lever device for secure clamping
- Rivets made of stainless steel
- Zinc plated
- Oil-resistant, vinyl dipped handle grip

Accessories

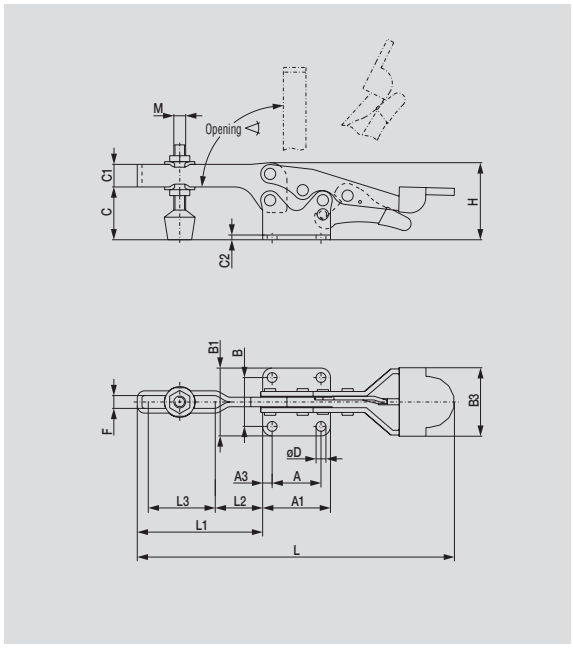
Horizontal clamps with a U-shaped clamping bar can be ordered in two varieties:

- Standard model number: The standard adjustment spindle is included.
- Model number containing "-LS": The model is delivered with two flanged washers without an adjustment spindle.

Safety instructions

To guarantee secure positive locking, the clamp must be adjusted to go into to the over-center position.

Models 225-UR, 235-UR



Model no.	Holding Capacity ⬆ [lbs.]	Bar Opening ◁ +10°	[lbs.]	Standard equipment	Flanged Washers
225-UR	500	90°	0.69	225208-M	507107
225-UR-LS				without spindle	507107
235-UR	750	90°	1.64	240208-M	235106
235-UR-LS				without spindle	235106

See additional adjustment spindles beginning on page 9.1.

- **U-shaped clamping bar**
- **Flanged base**
- **DE-STA-CO Toggle-Lock Plus**

Model no.	A	A1	A3	B	B1	B3	C	C1	C2	øD	F	H	L	L1	L2	L3	M			
225-UR	1.00	1.50	0.25	0.88	1.38	0.30	1.32	0.49	0.12	0.27	0.31	1.92	7.14	2.69	1.08	1.35	M8 or 5/16			
235-UR	1.63	2.25	0.37	1.63	2.25	0.34	1.75	0.75	0.16	0.33	0.43	2.55	10.87	4.16	1.61	2.28	M10 or 3/8			

Standard horizontal clamps

- **U-shaped and solid clamping bars**
- **Flanged or straight base**

Application areas

Ideal for applications in which clamping work is performed with holding capacities of up to 1,000 lbs.

Applications include assembling, drilling, testing, gluing, and other processing operations. These clamps are suitable for use in welding fixtures, in gauge manufacture, as well as in the woodworking industry.

Product features

- U-shaped clamping bar
- Greater hand clearance between the clamping bar and handle
- Rivets made of stainless steel
- Zinc plated
- Oil-resistant, ergonomically shaped DE-STA-CO handle grip

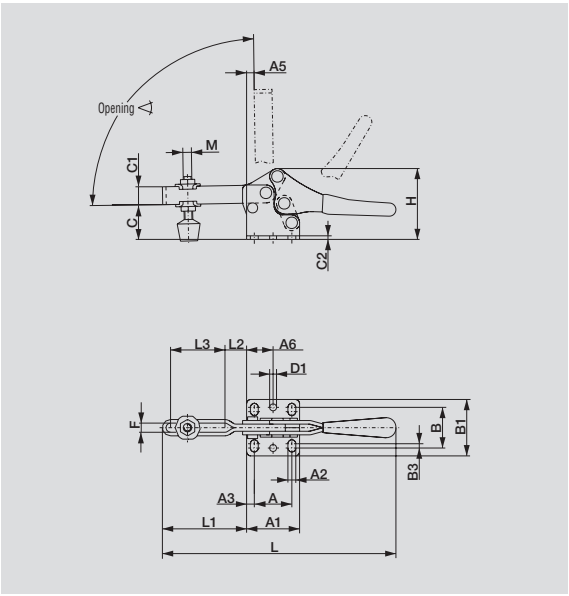
Accessories

Horizontal clamps with a U-shaped clamping bar can be ordered in two varieties:

- Standard model number: The standard adjustment spindle is included.
- Model number containing "-LS": The model is delivered with two flanged washers without an adjustment spindle.
- Adjusting screw for the base bar guide is not included.

Models 213-U, 217-U, 227-U, 237-U, 245-U

Model no.	Holding Capacity ▲ [lbs.]	Bar Opening ◁ +10°	[lbs.]	Standard equipment	Flanged Washers
213-U	150	90°	0 .17	213208-M	102111
213-U-LS				without spindle	102111
217-U	200	92°	0.40	202208-M	215105
217-U-LS				without spindle	215105
227-U	500	92°	0.68	225208-M	507107
227-U-LS				without spindle	507107
237-U	750	92°	1.60	240208-M	235106
237-U-LS				without spindle	235106
245-U	1,000	105°	2.90	220203	247109
245-U-LS				without spindle	247109



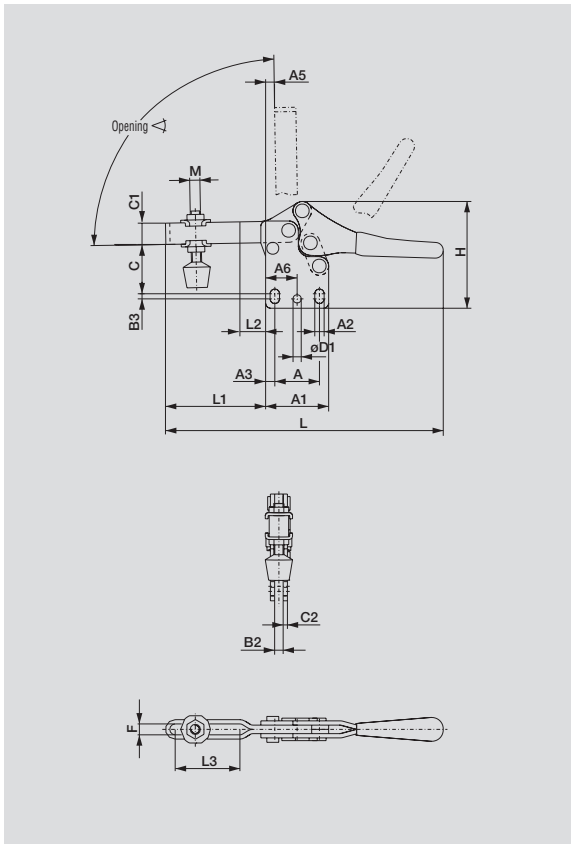
ALSO AVAILABLE		
In Stainless Steel	Model 213-USS	Page 8.8
	Model 217-USS	Page 8.8
	Model 227-USS	Page 8.8
	Model 237-USS	Page 8.8

See accessories beginning on page 9.1.

- **U-shaped clamping bar**
- **Flanged base**

Model no.	A	A1	A2	A3	A5	A6	B	B1	B3	C	C1	C2	⌀D	F	H	L	L1	L2	L3	M
213-U	0.53	1.00	0.17	0.24	0.12	–	0.70	1.06	0.06	0.72	0.37	0.08	–	0.22	1.39	4.12	1.42	0.39	0.85	M5 or #10
217-U	1.03	1.47	0.22	0.22	0.20	0.73	1.19	1.62	0.12	0.97	0.49	0.10	0.19	0.26	1.95	6.56	2.34	0.59	1.50	M6 or 1/4
227-U	1.03	1.56	0.27	0.28	0.02	0.79	1.22	1.70	0.10	1.30	0.57	0.12	0.19	0.33	2.43	7.56	2.68	0.79	1.52	M8 or 5/16
237-U	1.63	2.25	0.34	0.31	0.30	1.12	1.69	2.25	0.08	1.62	0.75	0.16	0.23	0.41	3.20	10.67	4.06	0.96	2.75	M10 or 3/8
245-U	1.63	2.63	0.34	0.51	–	–	1.62	2.62	–	2.25	1.00	0.18	–	0.53	4.25	12.33	4.93	1.36	3.14	M12 or 1/4

Models 213-UB, 217-UB, 227-UB, 237-UB



Model no.	Holding Capacity ▲ [lbs.]	Bar Opening ◁ +10°	[lbs.]	Standard equipment	Flanged Washers
213-UB	150	90°	0 .17	213208-M	102111
213-UB-LS				without spindle	102111
217-UB	200	92°	0.40	202208-M	215105
217-UB-LS				without spindle	215105
227-UB	500	92°	0.68	225208-M	507107
227-UB-LS				without spindle	507107
237-UB	750	92°	1.60	240208-M	235106
237-UB-LS				without spindle	235106

See additional adjustment spindles beginning on page 9.1.

- **U-shaped clamping bar**
- **Straight base**

Model no.	A	A1	A2	A3	A5	A6	B2	B3	C	C1	C2	øD1	F	H	L	L1	L2	L3	M
213-UB ▲	0.53	1.00	0.17	0.24	0.12	–	0.16	0.04	1.14	0.37	0.08	–	0.22	1.73	4.12	1.42	0.39	0.85	M5 or #10
217-UB ▲	1.03	1.47	0.22	0.22	0.20	0.73	0.20	0.12	1.34	0.49	0.10	0.19	0.26	2.46	6.56	2.34	0.59	1.50	M6 or 1/4
227-UB ▲	1.03	1.56	0.27	0.28	0.02	0.79	0.24	0.10	1.61	0.57	0.12	0.19	0.33	2.97	7.56	2.68	0.79	1.52	M8 or 5/16
237-UB ▲	1.63	2.25	0.34	0.31	0.30	1.12	0.31	0.08	2.17	0.75	0.16	0.23	0.41	3.90	10.67	4.06	0.96	2.75	M10 or 3/8

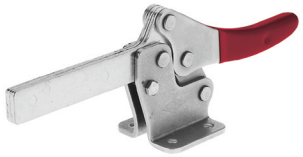
▲ Available upon request

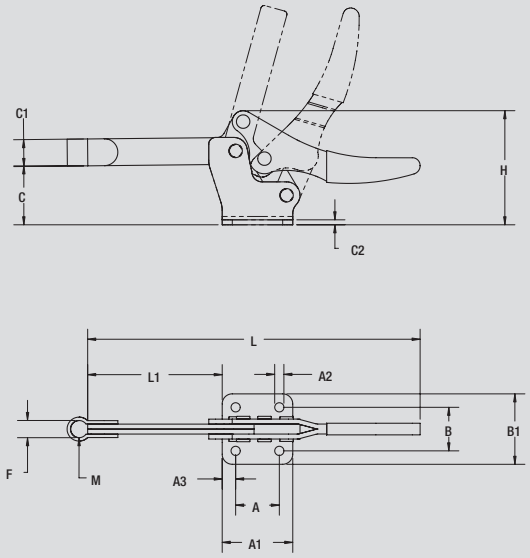
Model 245-S

Model no.	Holding Capacity ▲ [lbs.]	Bar Opening +10°	[lbs.]	Bolt Retainer
245-S	1,000	105°	2.99	250121

See additional adjustment spindles beginning on page 9.1.

- **Solid bar**
- **Flanged base**





Model no.	A	A1	A2	A3	B	B1	B3	C	C1	C2	H	L	L1	M		
245-S ▲	1.63	2.63	0.34	0.51	1.63	2.63	–	2.31	–	0.18	4.35	12.38	5.00	M12 or 1/2		

▲ Available upon request

- **Open clamping bar**
- **Flanged base**

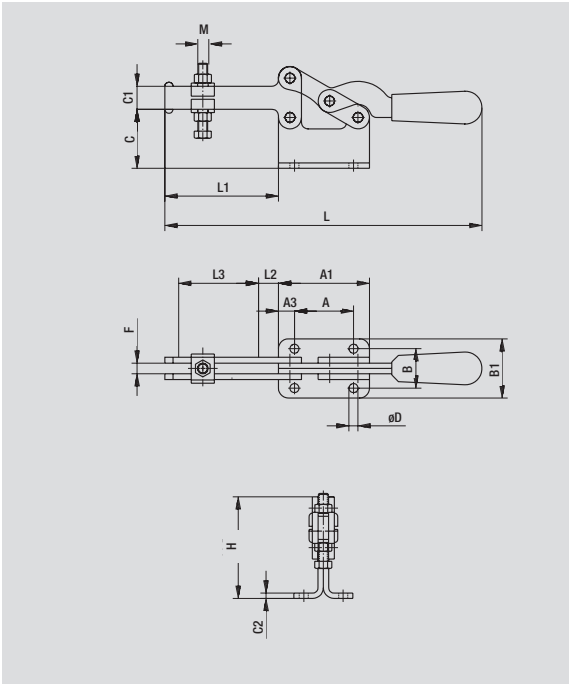
Application areas

DE-STA-CO's newest hold-down action clamp, Model 2371-U is similar in size and operation to Model 245, but offers 1,400 lbs. more holding capacity. This heavy-duty, open "U" bar clamp comes equipped with ergonomic handles and is furnished with a hex head spindle. High holding capacity and high flexibility make this clamp unique, and it is especially suitable in welding fixtures and all heavy duty applications.

Product features

- Zinc plated
- Rivets made of stainless steel
- Oil-resistant, ergonomically shaped DE-STA-CO handle grip

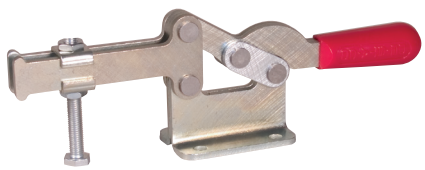
Model 2371-U



Model no.	Holding Capacity ⬆ [lbs.]	Bar Opening ∢ +10°	[lbs.]	Standard equipment	Flanged Washers
2371-U	2,400	90°	3.00	240203-M	2371005
2371-U-LS				without spindle	2371005

See additional adjustment spindles beginning on page 9.1.

- **Open clamping bar**
- **Flanged base**



Model no.	A	A1	A3	B	B1	C	C1	C2	øD	F	H	L	L1	L2	L3	M
2371-U	2.25	3.47	0.59	1.50	2.25	2.25	0.87	0.20	0.34	0.41	3.88	12.14	4.33	0.75	3.28	3/8

Compact clamps

- **Clamping arm U-shaped**
- **Flanged base**

Application areas

This clamp range is distinguished by its very compact design. It is especially suitable for use in very confined space.

Application examples include all areas in which clamping work is performed with holding capacities of up to 750 lbs., including gluing, soldering, clamping of materials, assembling, drilling, testing, positioning and other processing operations.

Product features

- Rivets made of stainless steel
- Zinc plated
- Oil-resistant, vinyl dipped handle grip

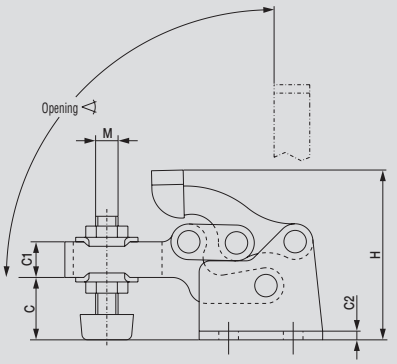
Accessories

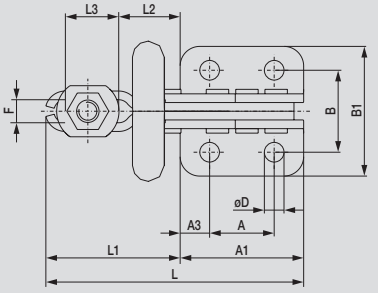
Horizontal clamps with a U-shaped clamping bar can be ordered in two varieties:

- Standard model number: The standard adjustment spindle is included.
- Model number containing "-LS": The model is delivered with two flange washers without an adjustment spindle.

Models 305-U, 307-U, 309-U

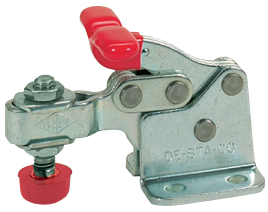
Model no.	Holding Capacity [lbs.]	Bar Opening +10°	[lbs.]	Standard equipment	Flanged Washers
305-U	150	92°	0.13	305208-M	102111
305-U-LS				without spindle	102111
307-U	350	92°	0.54	307208-M	507107
307-U-LS				without spindle	507107
309-U	750	92°	1.30	309208	235106
309-U-LS				without spindle	235106





ALSO AVAILABLE		
In Stainless Steel	Model 305-USS	Page 8.9
	Model 307-USS	Page 8.9
	Model 309-USS	Page 8.9
As DE-STA-CO Toggle-Lock Plus	Model 305-UR	Page 3.18
	Model 307-UR	Page 3.18
	Model 309-UR	Page 3.18
See accessories beginning on page 9.1.		

- **U-shaped clamping bar**
- **Flanged base**



Model no.	A	A1	A3	B	B1	C	C1	C2	øD	F	H	L	L1	L2	L3	M
305-U	0.53	1.03	0.26	0.63	1.00	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.53	0.50	M5 or #10
307-U	0.91	1.72	0.41	1.16	1.80	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.80	M8 or 5/16
309-U	1.38	2.52	0.57	1.50	2.47	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.30	1.24	1.06	3/8-16

Compact clamps with DE-STA-CO Toggle-Lock Plus

- **Clamping arm U-shaped**
- **Flanged base**

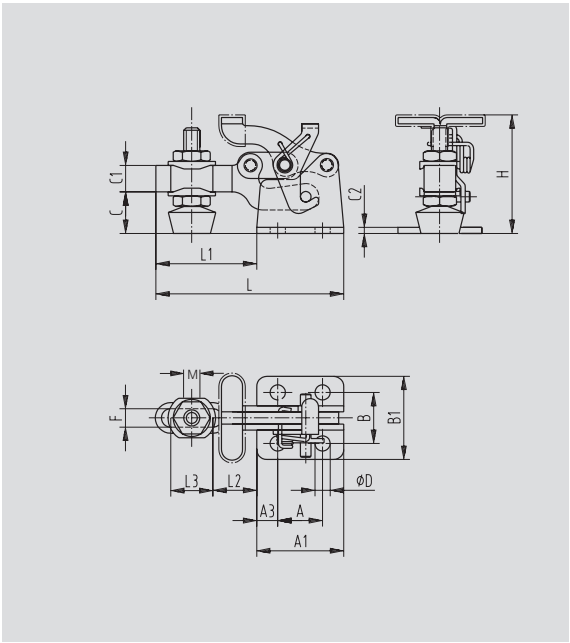
Application areas

DE-STA-CO introduces our newest family of DE-STA-CO Toggle-Lock Plus clamps, featuring a compact locking release lever, which locks in the clamped position only. All models provided with red vinyl handle grip and flanged washers. Models 305-UR, 307-UR and 309-UR are supplied with neoprene-tipped spindle assemblies.

Product features

- Rivets made of stainless steel
- Zinc plated
- Oil-resistant, vinyl dipped handle grip

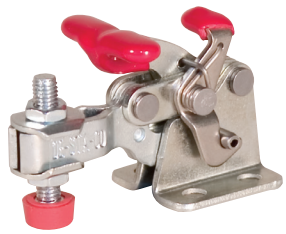
Models 305-UR, 307-UR, 309-UR



Model no.	Holding Capacity ↑ [lbs.]	Bar Opening ∢ +10°	[lbs.]	Standard equipment	Flanged Washers
305-UR	150	92°	0.13	305208-M	102111
305-U-LS				without spindle	102111
307-UR	350	92°	0.54	307208-M	507107
307-U-LS				without spindle	507107
309-UR	750	92°	1.30	309208	235106
309-U-LS				without spindle	235106

See additional adjustment spindles beginning on page 9.1.

- **U-shaped clamping bar**
- **Flanged base**
- **DE-STA-CO Toggle-Lock Plus**



Model no.	A	A1	A3	B	B1	C	C1	C2	øD	F	H	L	L1	L2	L3	M
305-UR	0.53	1.03	0.26	0.63	1.00	0.50	0.31	0.08	0.18	0.22	1.44	2.25	1.22	0.53	0.50	M5 or #10
307-UR	0.91	1.72	0.41	1.16	1.80	0.88	0.49	0.12	0.28	0.31	2.44	3.61	1.89	0.87	0.75	M8 or 5/16
309-UR	1.38	2.52	0.57	1.50	2.47	1.31	0.75	0.12	0.33	0.41	3.59	5.19	2.66	1.24	1.06	3/8-16

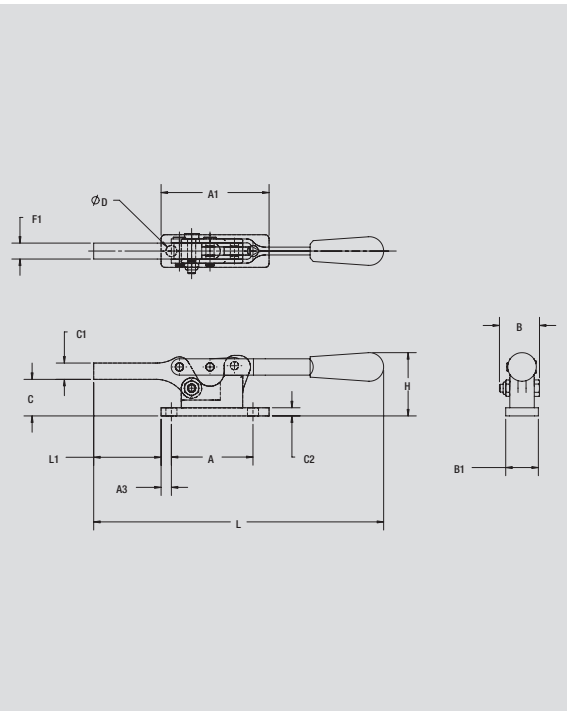
Models 515, 515-B

Model no.	Holding Capacity ⬆ [lbs.]	Bar Opening +10°	[lbs.]	Standard equipment
515	800	86°	1.07	None
515-B	800	86°	1.75	None

- **Solid bar**
- **Block mounting base**

Model 515

Model 515-B



Model no.	A	A1	A3	B	B1	C	C1	C2	øD	F1	H	L	L1
515	–	1.88	–	1.23	0.75	0.87	0.50	–	–	0.49	1.69	8.88	2.69
515-B	2.50	3.31	0.31	1.23	1.00	1.12	0.50	0.25	0.34	0.49	1.94	8.88	2.06

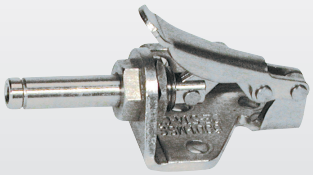
Notes

Notes

NEW

Models 6001-M and 6001-MSS:

Model 6001 is a heavier duty version of Model 601 and has 50% greater holding capacity. It has a more flexible mounting base to enable side-mounting the clamp.



page 4.3

NEW

Models 95030, 95040, 95050, 95060: Low profile plunger clamps

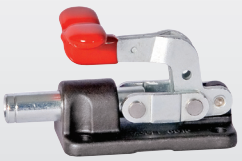
These new low-profile plunger clamps can be used when over-head clearance is a problem. The large holding capacities for these clamps are packaged in a small compact design.

page 4.20

NEW

Models 6015-M and 6015-MR: Compact and robust

Model 6015-M is the smallest of the straight-line, machined-cast base clamps. Its compact size allows it to be used in confined areas and on small fixtures. Handles are red vinyl dipped for greater operator comfort.



page 4.8, 4.9

NEW

Models 685-S, 685-L: Square plunger clamps

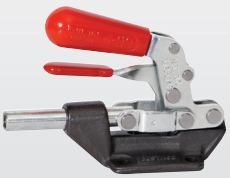
Models 685-S and 685-L feature high strength steel construction and broached bodies. Model 685-S offers shorter plunger travel than Model 685-L. Clamps can be mounted in any desired position.

page 4.21

NEW

Model 603-MR: With additional safety lock

The patented design locks the release lever into the forged steel base to prevent accidental opening. The 603-MR is well adapted for use in confined areas because of its small package size and low height.



page 4.11

Product group - straight-line action clamps

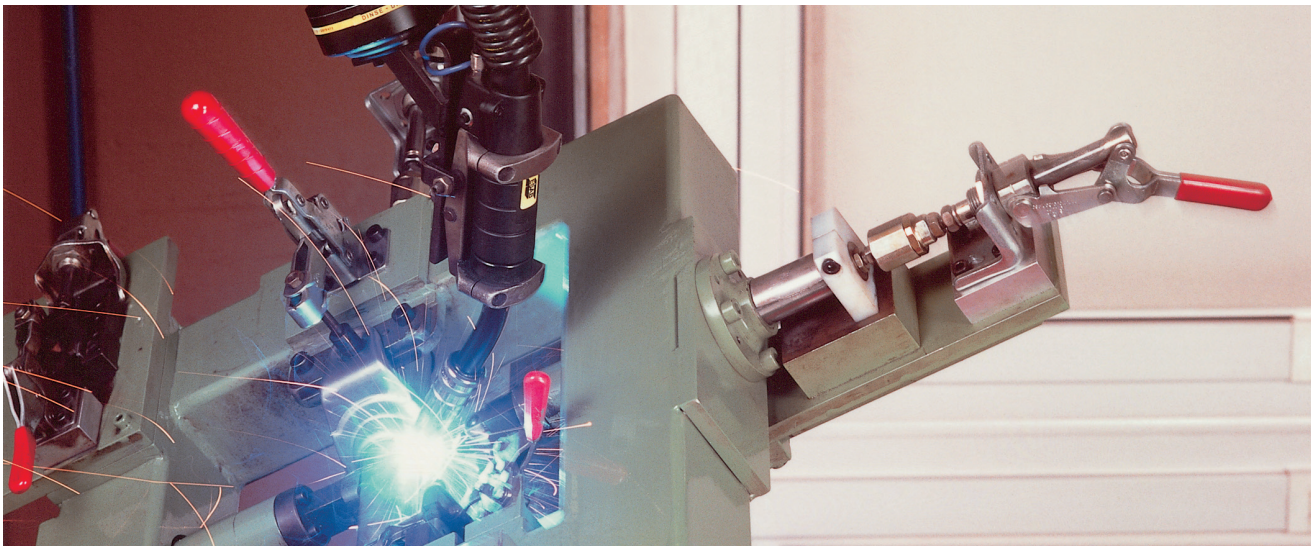
Application areas

Ideal for clamping during soldering, gluing, locking, assembling, drilling, testing, positioning and much more. The straight-line action clamp range are distinguished by their compact design many versions lock in both the extended and retracted positions. They can withstand relatively high stresses.

The essential product features

- The handle is easy to operate and moves the plunger of the clamp in an out along its axis
- Most versions lock in the extended and retracted positions
- Clamps can be mounted through drilled holes in the fixture, or using the flanged or straight mounting base

Model 604-MM in a robot-type welding fixture



	Model no.	Holding Capacity max. [lbs.]	Category	Page
	6001-M	150	Standard	4.3
	601 601-M 601-O	100 100 100	Standard Standard Standard	4.4
	602 602-MM 604 604-MM 624 624-MM	200 200 300 300 700 700	Threaded-body Threaded-body Threaded-body Threaded-body Threaded-body Threaded-body	4.5
	6004 6004-M	450 450	Threaded-body Threaded-body	4.6

	Model no.	Holding Capacity max. [lbs.]	Category	Page
	6015-M	580	Standard	4.8
	6015-MR	560	Standard	4.9
	603 603-M 608	600 600 850	Standard Standard Standard	4.10
	605 605-M	300 300	Standard Standard	4.10

	Model no.	Holding Capacity max. [lbs.]	Category	Page
	603-R 603-MR	600 600	Standard Standard	4.11
	606 606-M	450 450	Standard Standard	4.12
	607 607-M 607-SQ 607-SQM	800 800 800 800	Standard Standard Standard	4.13
	609 609-B	300 300	Standard Standard	4.14
	610 610-M 618	800 800 800	Standard Standard Standard	4.15
	615	300	Standard	4.15
	614-M	1,200	Standard	4.16
	617	2,000	Standard	4.17

	Model no.	Holding Capacity max. [lbs.]	Category	Page
	620 620-M 628	600 600 600	Standard Standard Standard	4.17
	630 630-M 640 640-M	2,500 2,500 2,500 2,500	Standard Standard Standard	4.18
	630-R 630-MR	2,500 2,500	Standard Standard	4.18
	650 650-M	16,000 16,000	Standard Standard	4.19
	95030 95040 95050 95060	550 1,100 1,650 3,965	Standard Standard Standard Standard	4.20
	685-L 685-S	3,500 3,500	Heavy-duty Heavy-duty	4.21
	670-1MB 670-1MBPLS 675-1MB 675-1MBPLS 690-1MB 690-1MBPLS 695-1MB 695-1MBPLS	2,400 2,400 2,400 2,400 5,000 5,000 5,000 5,000	Heavy-duty Heavy-duty Heavy-duty Heavy-duty Heavy-duty Heavy-duty Heavy-duty Heavy-duty	4.23
	SL3	150	Heavy-duty	4.24

Standard straight-line action clamps

NEW

Application areas

Model 6001-M is a heavier duty version of Model 601 and has 50% greater holding capacity. It is manufactured from heavy gauge material and has a more flexible mounting base to enable side-mounting the clamp.

Product features

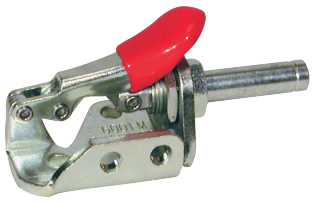
- Plunger with internal thread
- Rivets made of stainless steel
- Zinc plated and passivated
- Oil-resistant, vinyl dipped handle grip

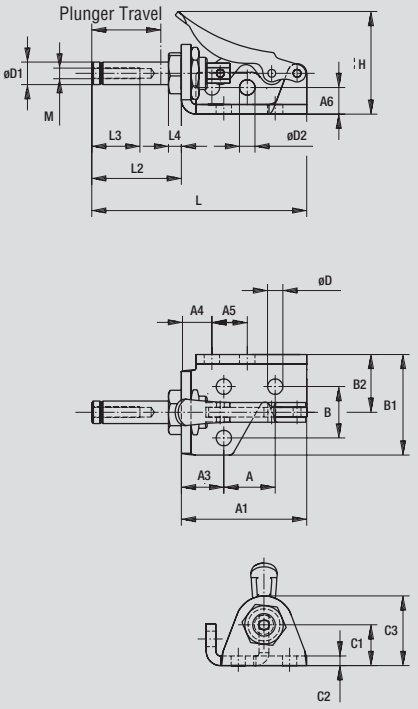
Model 6001-M

Model no.	Holding Capacity ◀▶ [lbs.]	Plunger Travel	[lbs.]	Recommendation (not supplied)	Plunger Thread (M)
6001-M	150	0.63	0.12	205208-M	M4

ALSO AVAILABLE		
In Stainless Steel	Model 6001-MSS	Page 8.11
See accessories beginning on page 9.1.		

- **Model locks in both the extended and retracted positions.**





Model no.	A	A1	A3	A4	A5	A6	B	B1	B2	C1	C2	C3	øD	øD1	øD2	H	L	L2	L3	L4
6001-M	0.63	1.54	0.52	0.37	0.43	0.33	0.63	1.23	0.71	0.50	0.12	0.85	0.19	0.28	0.19	1.30	2.63	1.10	0.59	0.16

Application areas

Ideal for all applications in which work is performed with holding capacities of up to 100 lbs., including gluing, soldering, assembling, drilling, testing, positioning and other processing operations.

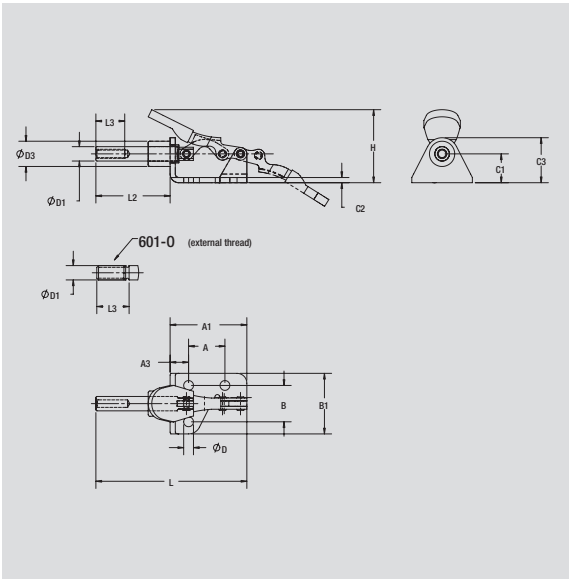
Product features

- Flanged mounting base
- Plunger with internal thread
- Rivets made of stainless steel
- Zinc plated
- Oil-resistant, vinyl dipped handle grip

Accessories

- Straight-line action clamps are normally delivered without adjustment spindles. Recommendations are provided.
- Whenever required, the spindle can be purchased as an accessory part.

Models 601, 601-M, 601-0

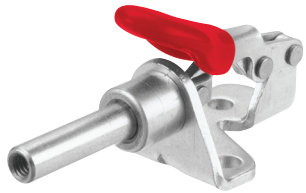


Model no.	Holding Capacity ◀▶ [lbs.]	Plunger Travel	[lbs.]	Recommendation (not supplied)	Plunger Thread (M)
601	100	0.63	0.09	105203 (supplied)	8-32
601-M	100	0.63	0.09	205208-M	M4
601-0	100	0.63	0.13	–	1/4-20

ALSO AVAILABLE		
As Air/Hydraulic	Model 816	Page 11.18
In Stainless Steel	Models 601-OSS, 601-SS,	Page 8.10
See accessories beginning on page 9.1.		

- **Models lock in both the extended and retracted positions.**

Model 601-0



Model 601

Model no.	A	A1	A3	B	B1	C1	C2	C3	øD	øD1	øD3	H	L	L2	L3				
601	0.63	1.33	0.32	0.63	1.05	0.50	0.09	0.78	0.17	0.25	0.44	1.27	2.62	1.29	0.50				
601-M	0.63	1.33	0.32	0.63	1.05	0.50	0.09	0.78	0.17	0.25	0.44	1.27	2.62	1.29	0.50				
601-0	0.63	1.33	0.32	0.63	1.05	0.50	0.09	0.78	0.17	0.25	–	1.27	2.86	1.53	0.56				

Threaded-body straight-line action clamps

Application areas

Ideal for all applications in which work is performed with holding capacities of up to 700 lbs., including gluing, soldering, assembling, drilling, testing, positioning, also locking of containers and other processing operations.

This series is distinguished by its compact design. The single hole threaded mount permits rotation in any direction, allowing complete flexibility in the fixture.

Product features

- Threaded body for direct installation in mounting plates and fixtures
- Plunger with internal thread
- Rivets made of stainless steel
- Zinc plated
- Oil-resistant, ergonomically shaped DE-STA-CO handle grip

Accessories

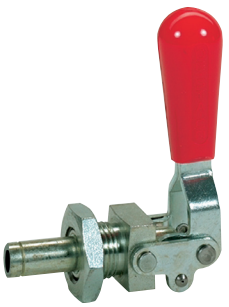
- This series is delivered with a mounting jam nut as standard. Adjustment spindles can be ordered as an accessory part.
- You will find the matching mounting plate in the table on of this page. Please specify the corresponding model number with your order.

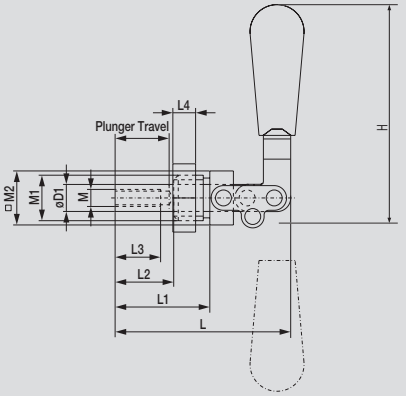
Models 602, 602-MM, 604, 604-MM, 624, 624-MM

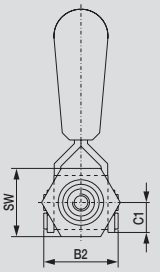
Model no.	Holding Capacity ◀ ▶ [lbs.]	Plunger Travel	[lbs.]	Recommendation (not supplied)	Plunger Thread (M)	Mounting Plate Accessories	Mounting Nut Standard Equipment
602	200	0.75	0.25	205203	1/4-20	–	602105
602-MM	200	0.75	0.25	205203-M	M6	602106-M	602105-M
604	300	1.50	0.44	207203	5/16-18	604106	606104
604-MM	300	1.50	0.44	207203-M	M8	604106-M	606104-M
624	700	2.63	1.63	210203	3/8-16	624108	624105
624-MM	700	2.63	1.63	210203-M	M10	624106-M	624105-M

ALSO AVAILABLE		
In Stainless Steel	Models 602-SS, 604-SS	Page 8.12
	Model 624-SS	Page 8.12
See accessories beginning on page 9.1.		

- **Models lock in both the extended and retracted positions.**



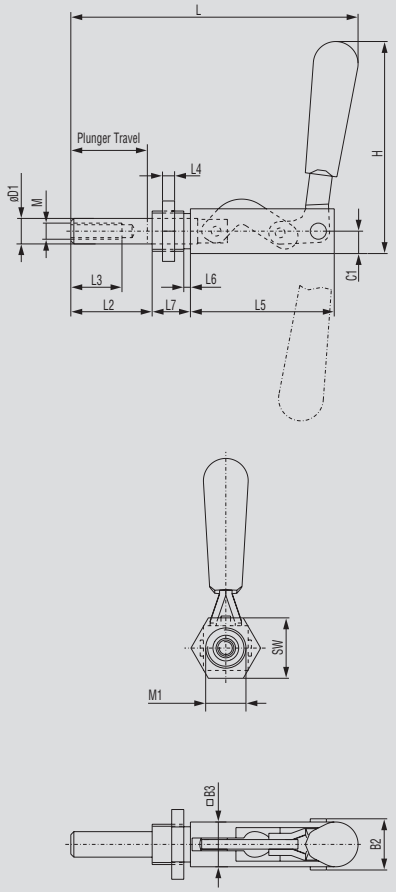




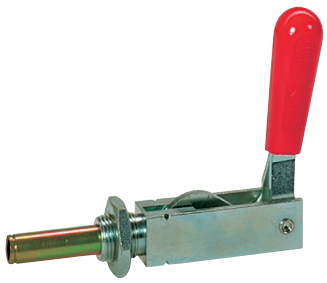
Model no.	B2	C1	øD1	H	L	L1	L2	L3	L4	M1	M2	SW
602	1.03	0.88	0.37	3.13	2.62	1.31	0.97	0.63	0.25	5/8-18	0.75	0.44
602-MM	1.03	0.88	0.37	3.13	2.62	1.31	0.97	0.63	0.25	M16x1.5	0.75	0.44
604	1.30	0.50	0.44	4.16	4.95	2.18	1.82	1.00	0.25	3/4-16	0.88	1.00
604-MM	1.30	0.50	0.44	4.16	4.95	2.18	1.82	1.00	0.25	M20x1.5	0.88	1.00
624	1.81	0.75	0.62	5.60	6.68	3.62	3.24	1.25	0.25	1-14	1.25	1.50
624-MM	1.81	0.75	0.62	5.60	6.68	3.62	3.24	1.25	0.25	M27x2	1.25	1.50

Model no.	Holding Capacity [lbs.]	Plunger Travel	[lbs.]	Recommendation (not supplied)	Plunger Thread (M)	Mounting Plate Accessories	Mounting Nut Standard Equipment
6004	450	1.50	0.81	207203	5/16-18	604106	606104
6004-MM	450	1.50	0.81	207203-M	M8	604106-M	606104-M

See additional adjustment spindles beginning on page 9.1.



- **Models locks in both the extended and retracted positions.**

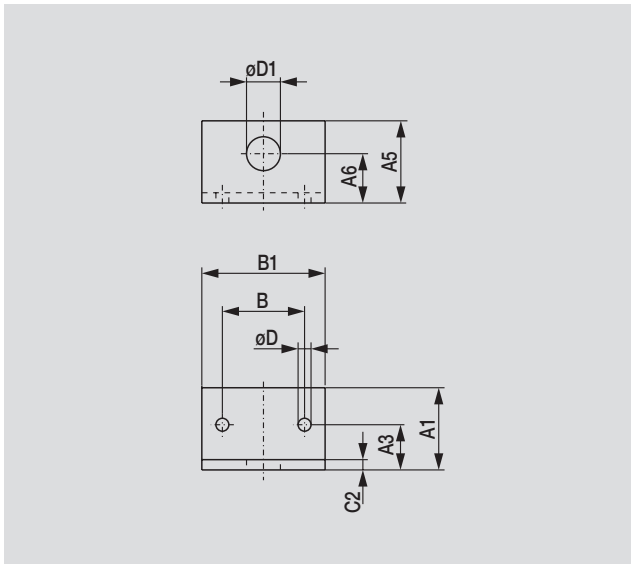


Model no.	B2	B3	C1	øD1	H	L	L2	L3	L4	L5	L6	L7	M1	SW
6004	1.00	0.88	0.44	0.50	4.18	5.78	1.59	1.00	0.25	2.81	0.13	0.75	0.75	1.00
6004-MM	1.00	0.88	0.44	0.50	4.18	5.78	1.59	1.00	0.25	2.81	0.13	0.75	0.75	1.00

Mounting plate for series

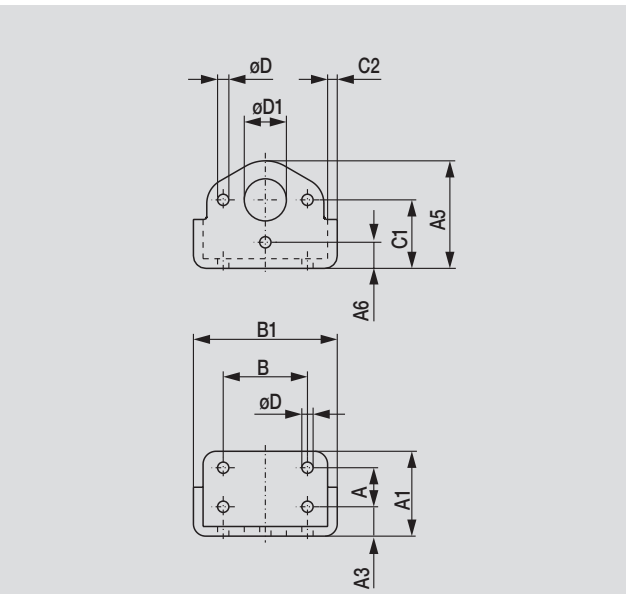
602, 604, 624, 6004

For model **602-MM**
Order no.: 602106-M



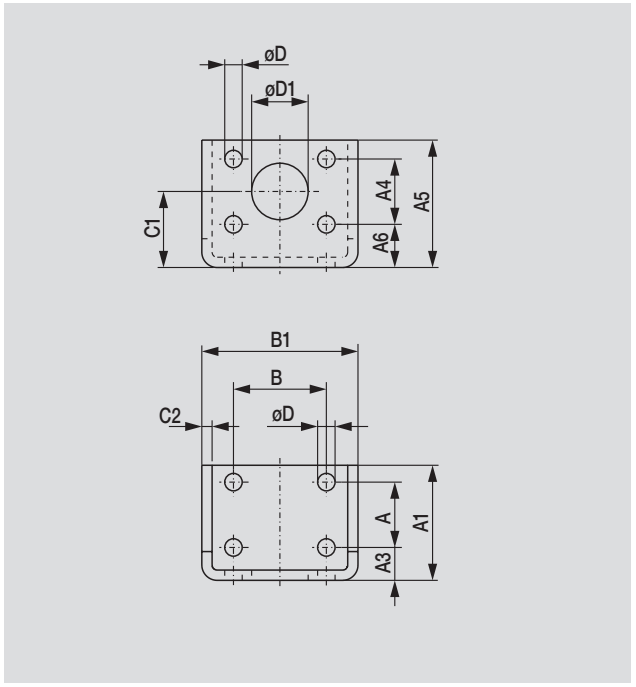
For model **604-MM, 6004-MM**
Order no.: 604106-M

For model **604**
Order no.: 604106



For model **624-MM**
Order no.: 624106-M

For model **624**
Order no.: 624108



Order no.	For Model no.	A	A1	A3	A4	A5	A6	B	B1	C1	C2	øD	øD1				
602106-M	602-MM	–	1.57	0.87	–	1.57	–	1.57	2.36	0.94	0.20	0.26	0.65				
604106	604	0.75	1.60	0.57	–	2.07	0.49	1.62	2.80	1.30	0.18	0.22	0.75				
604106-M	604-MM, 6004-MM	0.75	1.60	0.57	–	2.07	0.49	1.62	2.80	1.30	0.18	0.22	0.75				
624108	624	0.88	1.50	–	–	–	–	2.31	3.00	0.75	0.25	0.28	1-14				
624106-M	624-MM	1.26	2.20	0.63	1.26	2.44	0.83	1.77	3.00	1.46	0.20	0.33	1.08				

NEW

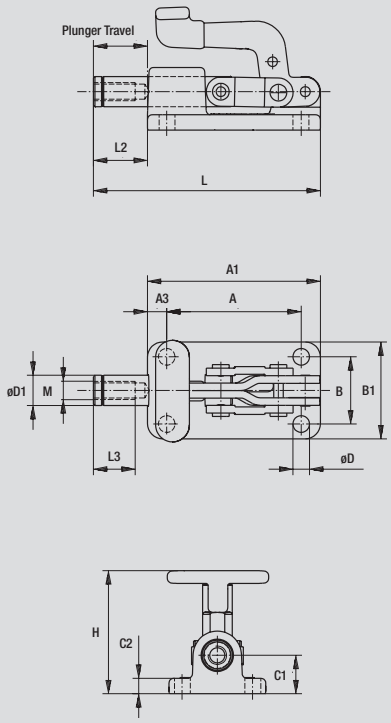
Application areas

Model 6015-M is the smallest of the straight-line, machined-cast base clamps. Its compact size allows it to be used in confined areas and on small fixtures. The plunger is threaded to accept any M6 clamping spindle. Handles are red vinyl dipped for greater operator comfort.

Product features

- Plunger with internal thread
- Rivets made of stainless steel
- Casted base, black-oxide finish
- Other parts zinc plated
- Oil-resistant, vinyl dipped handle grip

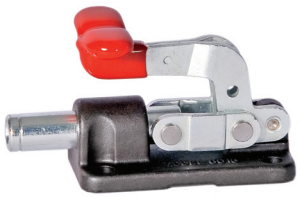
Model 6015-M



Model no.	Holding Capacity ◆▶ [lbs.]	Plunger Travel	⚖ [lbs.]	Recommendation (not supplied)	Plunger Thread (M)
6015-M	580	0.70	0.34	205203-M	M6

ALSO AVAILABLE		
As DE-STA-CO Toggle-Lock Plus	Model 6015-M-R	Page 4.9
As Stainless Steel	Model 6015-M-SS	Page 8.13
See accessories beginning on page 9.1.		

- **Model locks in both the extended and retracted positions.**



Model no.	A	A1	A3	B	B1	C1	C2	øD	øD1	H	L	L2	L3
6015-M	1.75	2.25	0.25	0.88	1.25	0.50	0.20	0.22	0.38	1.60	2.95	0.70	0.75

Standard straight-line action clamps

NEW

Application areas

Model 6015-M-R is another new addition to our line of DE-STA-CO Toggle-Lock Plus clamps. Its compact size allows use in confined areas and on small fixtures where safety is a concern.

Product features

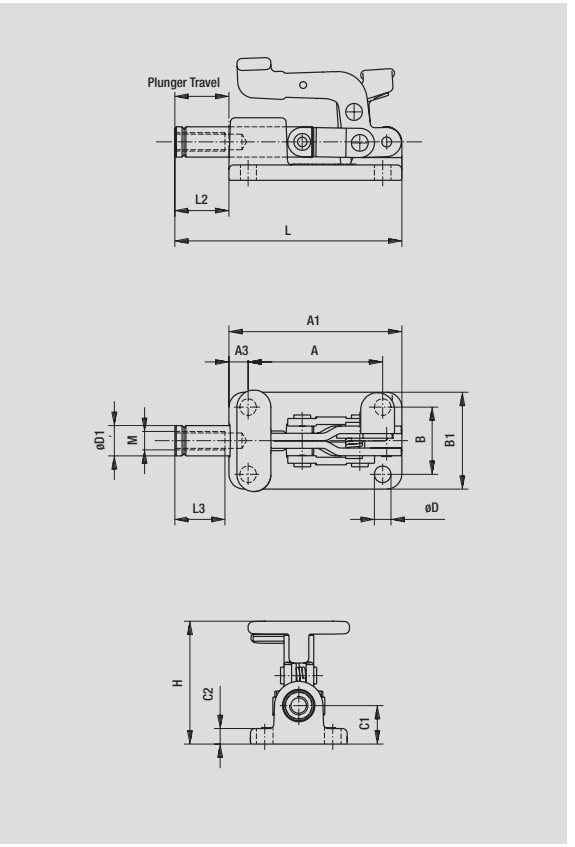
- Plunger with internal thread
- Rivets made of stainless steel
- Casted base, black-oxide finish
- Other parts zinc plated

Model 6015-MR

Model no.	Holding Capacity ◆◆ [lbs.]	Plunger Travel	[lbs.]	Recommendation (not supplied)	Plunger Thread (M)
6015-MR	560	0.70	0.34	205203-M	M6

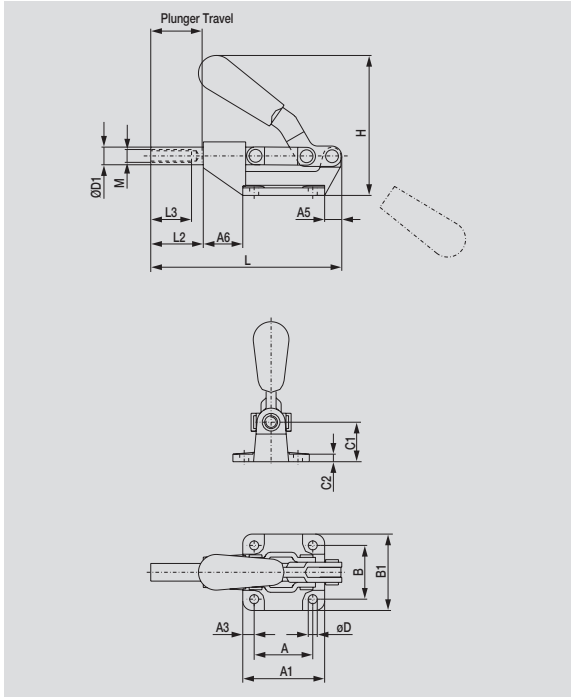
ALSO AVAILABLE		
As Stainless Steel	Model 6015-M-R-SS	Page 8.13
See accessories beginning on page 9.1.		

- **Model locks in both the extended and retracted positions, but the release lever only engages in the extended position.**



Model no.	A	A1	A3	B	B1	C1	C2	øD	øD1	H	L	L2	L3
6015-MR	1.75	2.25	0.25	0.88	1.25	0.50	0.20	0.22	0.38	1.60	2.95	0.70	0.75

Models 603, 603-M, 608

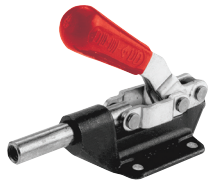


Model no.	Holding Capacity ◆◆ [lbs.]	Plunger Travel	[lbs.]	Recommendation (not supplied)	Plunger Thread (M)
603	600	1.25	0.83	207203	5/16-18
603-M	600	1.25	0.83	207203-M	M8
608	850	1.63	1.25	210203	3/8-16

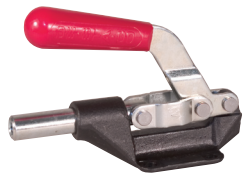
ALSO AVAILABLE		
As Air/Hydraulic	Model 803	Page 11.17
In DE-STA-CO Toggle-Lock Plus	Model 603-R	Page 4.11
In Stainless Steel	Model 603-SS	Page 8.12
See accessories beginning on page 9.1.		

■ **Models lock in both the extended and retracted positions.**

Model no.	A	A1	A3	A5	A6	B	B1	C1	C2	øD	øD1	H	L	L2	L3
603	1.44	2.00	0.28	0.58	0.94	1.31	1.88	0.97	0.19	0.27	0.44	3.43	4.73	1.22	1.00
603-M	1.44	2.01	0.28	0.62	0.88	1.31	1.89	0.96	0.18	0.26	0.47	3.43	4.80	1.30	1.00
608	1.63	2.25	0.31	0.75	1.40	1.63	2.25	1.25	0.19	0.33	0.62	4.12	6.00	1.60	1.25

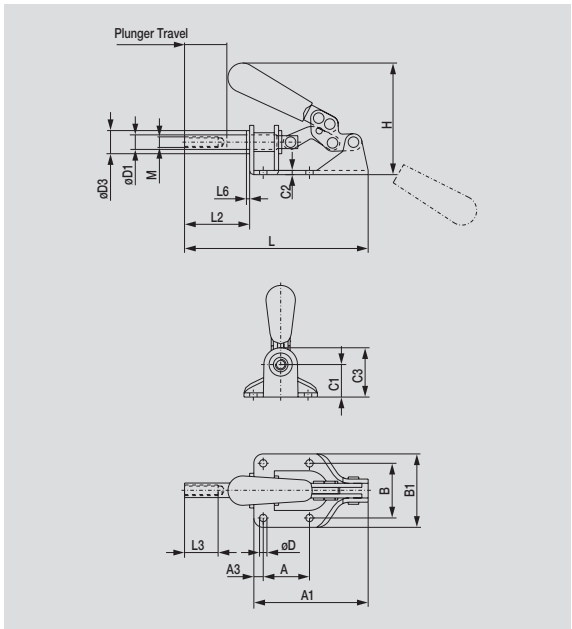


Model 603



Model 608

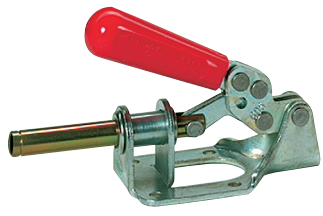
Models 605, 605-M



Model no.	Holding Capacity ◆◆ [lbs.]	Plunger Travel	[lbs.]	Recommendation (not supplied)	Plunger Thread (M)
605	300	1.25	0.69	207203	5/16-18
605-M	300	1.25	0.69	207203-M	M8

See additional adjustment spindles beginning on page 9.1.

■ **Model locks in both the extended and retracted positions.**



Model no.	A	A1	A3	B	B1	C1	C2	C3	øD	øD1	øD3	H	L	L2	L3	L6			
605	1.38	3.41	0.28	1.63	2.19	0.97	0.12	1.47	0.22	0.44	0.75	3.44	5.48	1.94	1.00	0.10			
605-M	1.38	3.41	0.28	1.63	2.19	0.97	0.13	1.47	0.22	0.44	0.69	3.44	5.47	1.94	1.00	0.09			

Standard straight-line action clamps

NEW

Application areas

Patented DE-STA-CO Toggle-Lock Plus design locks the release lever into the forged steel base to prevent accidental opening. The 603-R is well adapted for use in confined areas because of its small package size and low height. The ergonomic handle is slanted forward to provide an adequate grip and yet enhance the low silhouette. Clamp locks in both the extended and retracted positions while the release lever secures the clamp in the extended position only.

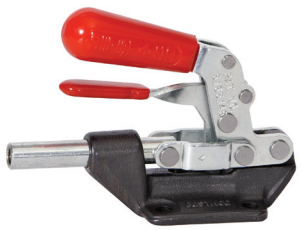
Product features

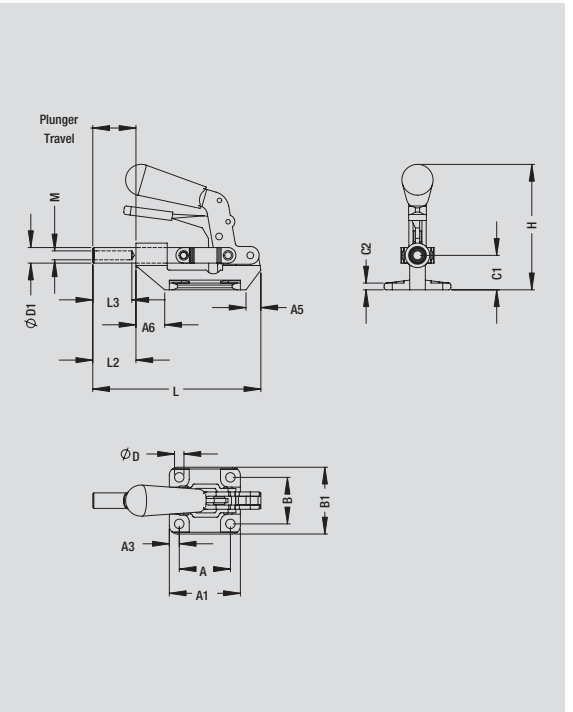
- Plunger with internal thread
- Rivets made of stainless steel
- Forged steel base, black-oxide finish
- Other parts zinc plated and passivated
- Oil-resistant, ergonomically shaped DE-STA-CO handle grip

Models 603-R, 603-MR

Model no.	Holding Capacity ◀▶ [lbs.]	Plunger Travel	[lbs.]	Recommendation (not supplied)	Plunger Thread (M)
603-R	600	1.25	0.83	207203	5/16-18
603-MR	600	1.25	0.83	207203-M	M8

See additional adjustment spindles beginning on page 9.1.





Model no.	A	A1	A3	A5	A6	B	B1	C1	C2	øD	øD1	H	L	L2	L3
603-R	1.44	2.00	0.28	0.58	0.94	1.31	1.88	0.97	0.19	0.27	0.44	3.43	4.73	1.22	1.00
603-MR	1.44	2.01	0.28	0.62	0.88	1.31	1.89	0.96	0.18	0.26	0.47	3.43	4.80	1.30	1.00

Application areas

Ideal for all applications in which work is performed with holding capacities of up to 450 lbs., including gluing, soldering, assembling, drilling, testing, positioning and other processing operations.

Due to the flexible design of the plunger and the variable method of rotating the handle position, complete flexibility in the fixture design is possible.

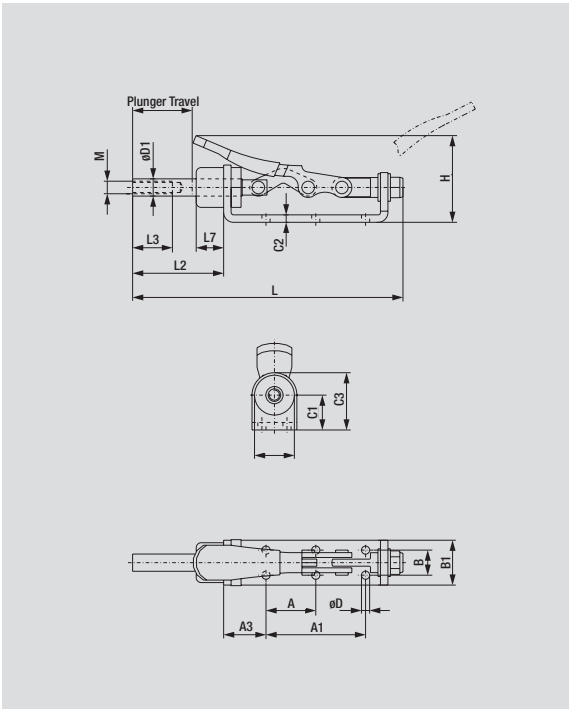
Product features

- Rivets made of stainless steel
- Zinc plated
- Oil-resistant, vinyl dipped handle grip

Accessories

- Straight-line action clamps are normally delivered without adjustment spindles. Recommendations are provided.
- Whenever required, the spindle can be purchased as an accessory part.

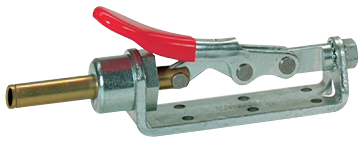
Models 606, 606-M



Model no.	Holding Capacity ◆◆ [lbs.]	Plunger Travel	[lbs.]	Recommendation (not supplied)	Plunger Thread (M)
606	450	1.57	0.81	207203	5/16-18
606-M	450	1.57	0.81	207203-M	M8

See additional adjustment spindles beginning on page 9.1.

- Handle and plunger can be rotated in radial direction for vertical or horizontal handle action.
- Models lock in only the extended position.



Model no.	A	A1	A3	B	B1	C1	C2	C3	øD	øD1	H	L	L2	L3	L7
606	1.25	2.50	1.07	0.63	1.13	0.88	0.19	1.45	0.20	0.44	2.47	6.72	2.26	1.00	0.69
606-M	1.25	2.50	1.07	0.63	1.13	0.88	0.19	1.45	0.20	0.44	2.47	6.72	2.26	1.00	0.69

Standard straight-line action clamps

Application areas

Ideal for all applications in which work is performed with holding capacities of up to 800 lbs., including assembling, drilling, testing, positioning and other processing operations.

Product features

- Low-profile plunger
- Round or square plunger with internal thread
- Forged steel base, black-oxide finish
- Rivets made of stainless steel
- Zinc plated linkage
- Oil-resistant, ergonomically shaped DE-STA-CO handle grip

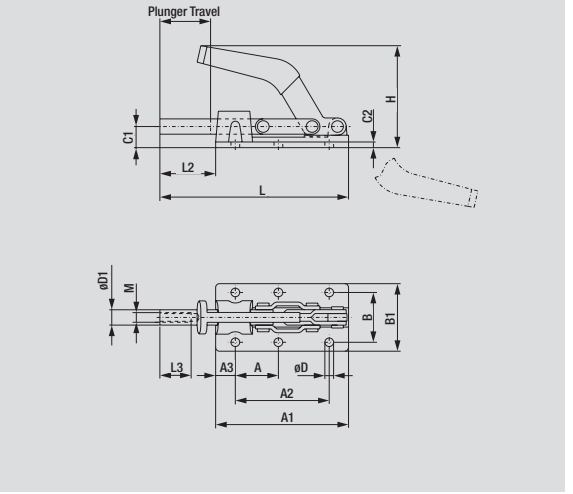
Accessories

- Straight-line action clamps are normally delivered without adjustment spindles. Recommendations are provided.
- Whenever required, the spindle can be purchased as an accessory part.

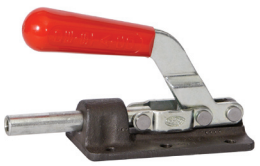
Models 607, 607-M, 607-SQ, 607-SQM

Model no.	Holding Capacity ◆◆ [lbs.]	Plunger Travel	[lbs.]	Recommendation (not supplied)	Plunger Thread (M)
607	800	1.63	1.63	207203	5/16-18
607-M	800	1.63	1.63	207203-M	M8
607-SQ	800	1.63	1.63	207203	5/16-18
607-SQM	800	1.63	1.63	207203-M	M8

See additional adjustment spindles beginning on page 9.1.



- **Models lock in both the extended and retracted positions.**



Model 607

Model 607-SQ

Feature

With square plunger for accurate locating

Model no.	A	A1	A2	A3	B	B1	C1	C2	øD	øD1	H	L	L2	L3
607	1.38	4.25	3.01	0.63	1.63	2.19	0.69	0.19	0.28	0.50	3.56	6.01	1.76	1.00
607-M	1.38	4.25	3.01	0.63	1.63	2.19	0.69	0.19	0.28	0.50	3.56	6.01	1.76	1.00
607-SQ	1.38	4.25	3.01	0.63	1.63	2.19	0.69	0.19	0.28	0.50	3.56	6.01	1.76	1.00
607-SQM	1.38	4.25	3.01	0.63	1.63	2.19	0.69	0.19	0.28	0.50	3.56	6.01	1.76	1.00

Application areas

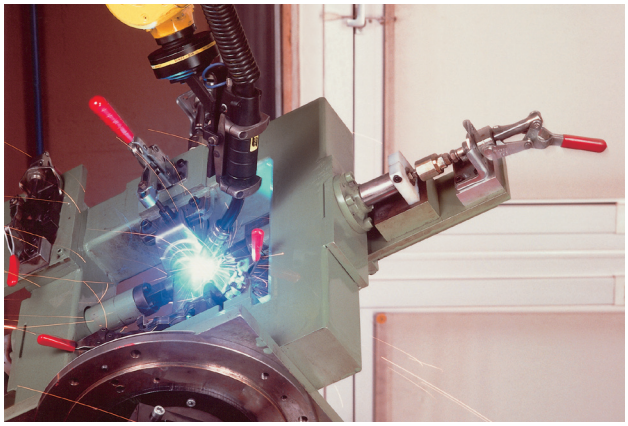
Ideal for all applications in which work is performed with holding capacities of up to 800 lbs., including assembling, drilling, testing, positioning and other processing operations.

Product features

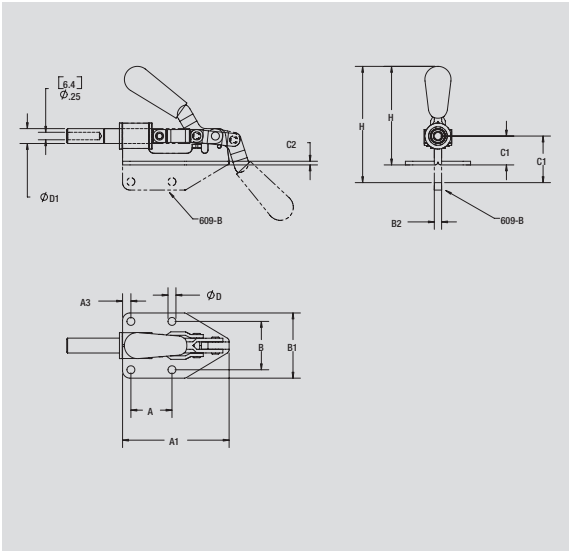
- Rivets made of stainless steel
- Zinc plated linkage
- Oil-resistant, ergonomically shaped DE-STA-CO handle grip
- Straight and flanged base

Accessories

- Straight-line action clamps are normally delivered without adjustment spindles. Recommendations are provided.
- Whenever required, the spindle can be purchased as an accessory part.



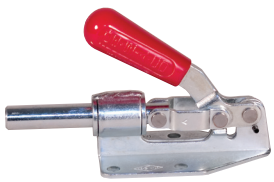
Models 609, 609-B



Model no.	Holding Capacity [lbs.]	Plunger Travel	[lbs.]	Recommendation (not supplied)	Plunger Thread (M)
609	300	1.25	0.88	207203	5/16-18
609-B	300	1.25	0.88	207203	5/16-18

See additional adjustment spindles beginning on page 9.1.

- **Models lock in both the extended and retracted positions.**



Model 609

Model 609-B

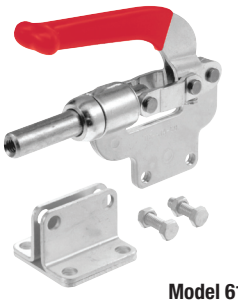
Model no.	A	A1	A3	B	B1	B2	C1	C2	øD	øD1	H
609	1.38	3.58	0.28	1.62	2.19	–	0.97	0.12	0.27	0.50	3.29
609-B	1.38	3.58	0.28	0.24	–	0.93	1.82	–	0.27	0.50	4.14

Models 610, 610-M, 618

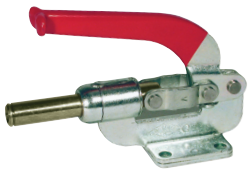
Model no.	Holding Capacity [lbs.]	Plunger Travel	[lbs.]	Recommendation (not supplied)	Plunger Thread (M)
610	800	1.63	1.69	210203	3/8-16
610-M	800	1.63	1.69	210203-M	M10
618	800	1.63	2.01	210203	3/8-16

See additional adjustment spindles beginning on page 9.1.

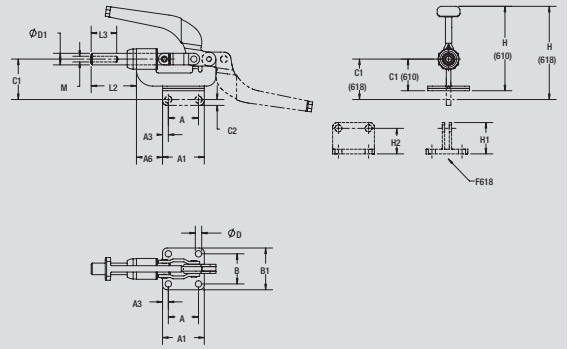
- **Models lock in both the extended and retracted positions.**



Model 618



Model 610



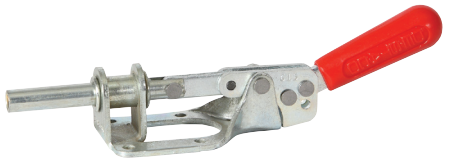
Model no.	A	A1	A3	A6	B	B1	C1	C2	øD	øD1	H	H1	H2	L	L2	L3			
610	1.62	2.25	0.31	1.41	1.62	2.25	1.70	0.25	0.34	0.62	4.55	–	–	6.72	2.44	1.25			
610-M	1.62	2.25	0.31	1.41	1.62	2.25	1.70	0.25	0.34	0.62	4.55	–	–	6.72	2.44	1.25			
618	1.63	2.25	0.31	1.41	–	0.21	2.17	0.25	0.37	0.62	4.85	1.56	1.25	6.72	2.44	1.25			

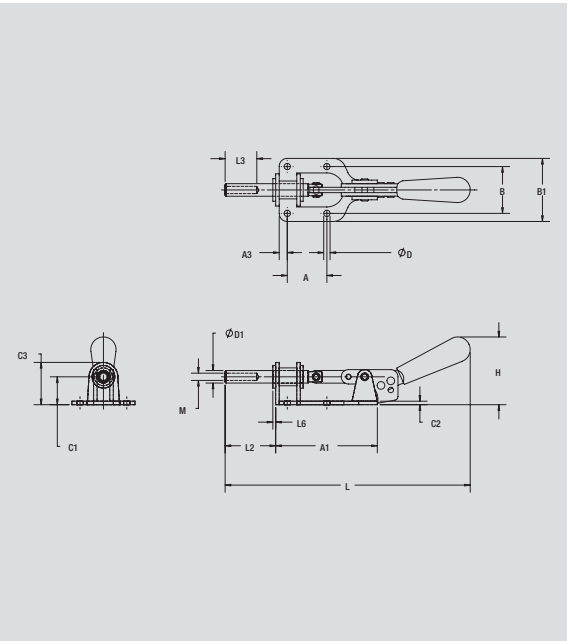
Model 615

Model no.	Holding Capacity [lbs.]	Plunger Travel	[lbs.]	Recommendation (not supplied)	Plunger Thread (M)
615	300	0.97	0.69	207203	5/16-18

See additional adjustment spindles beginning on page 9.1.

- **Model locks only in the extended position.**





Model no.	A	A1	A3	B	B1	C1	C2	C3	øD	øD1	H	L	L2	L3	L6				
615	1.63	3.53	0.28	1.63	2.19	0.97	0.12	1.47	0.22	0.44	2.35	8.51	1.75	1.00	0.16				

High precision, threaded-body straight-line action clamps

Application areas

Ideal for all applications in which highly precise clamping is required with holding capacities of up to 1,200 lbs., including assembling, drilling, testing, positioning, locking of containers and other processing operations.

This series is distinguished by its compact design. The single hole threaded mount permits rotation in any direction, allowing complete flexibility in the fixture.

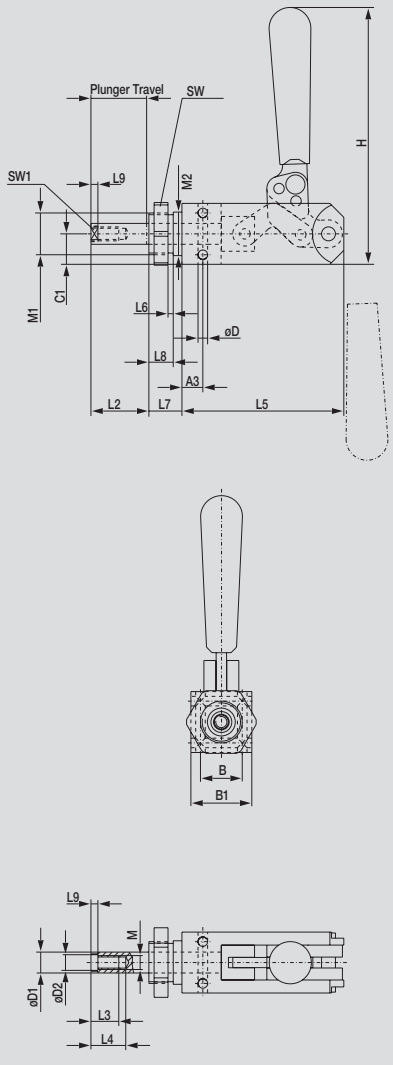
Product features

- Precision model
- Hardened and polished plunger
- Front-side external threads for direct installation in sheet-metal plates and fixtures
- Plunger with internal thread
- Oil-resistant, ergonomically shaped DE-STA-CO handle grip

Accessories

- Straight-line action clamps are normally delivered without adjustment spindles. Recommendations are provided.
- Whenever required, the spindle can be purchased as an accessory part.

Model 614-M



Model no.	Holding Capacity [lbs.]	Plunger Travel	[lbs.]	Recommendation (not supplied)	Plunger Thread (M)	Mounting Nut Standard Equipment
614-M	1,200	1.25	1.81	207203-M	M8	614-1-10

See additional adjustment spindles beginning on page 9.1.

- **Model locks in both the extended and retracted positions.**

Model no.	A3	B	B1	C1	øD	øD1	øD2	H	L2	L3	L4	L5	L6	L7	L8	L9	M1	M2	SW	SW1		
614-M ▲	0.87	0.94	1.38	0.69	0.22	0.47	0.35	5.81	1.32	0.63	0.79	3.66	0.12	0.75	0.55	0.16	M24 x 1.5	0.98	36	10		

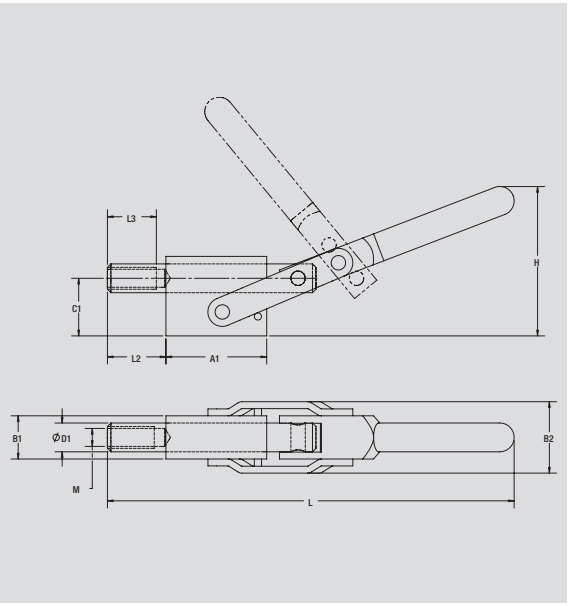
▲ Available upon request

Model 617

Model no.	Holding Capacity ◀▶ [lbs.]	Plunger Travel	[lbs.]	Recommendation (not supplied)	Plunger Thread (M)
617	2,000	1.00	0.88	461203	5/16-18

Additional adjustment spindles are listed from page 9.1 forward

■ **Model locks only in the extended positions.**



Model no.	A1	B1	C1	øD1	H	L	L3
617	1.75	0.75	1.00	0.50	2.59	7.06	0.85

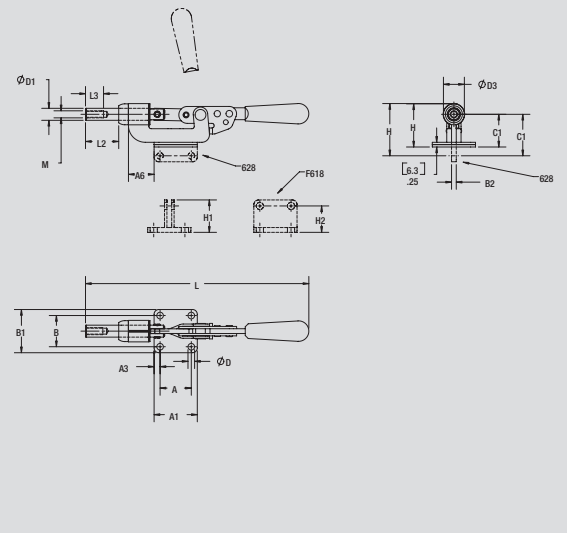
Models 620, 620-M, 628

Model no.	Holding Capacity ◀▶ [lbs.]	Plunger Travel	[lbs.]	Recommendation (not supplied)	Plunger Thread (M)
620	600	1.11	1.50	210203	3/8-16
620-M	600	1.11	1.50	210203-M	M10
628	600	1.11	2.05	210203	3/8-16

See additional adjustment spindles beginning on page 9.1.

■ **Models lock only in the extended position.**

Model 628



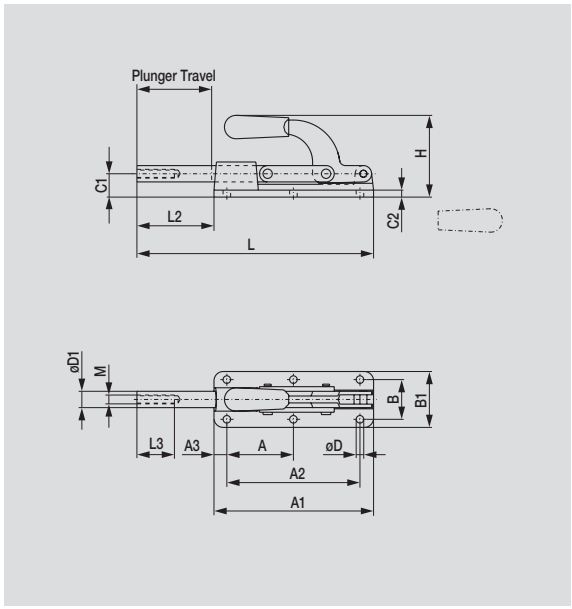
Model 620-M

Handle and plunger move in opposite directions.

Model no.	A	A1	A3	A6	B	B1	B2	C1	C2	øD	øD1	øD3	H	H1	H2	L	L2	L3
620	1.63	2.25	0.31	1.33	1.63	2.25	–	1.70	0.25	0.34	0.62	1.09	2.26	–	–	11.63	1.73	1.00
620-M	1.63	2.25	0.31	1.33	1.63	2.25	–	1.70	0.25	0.34	0.62	1.09	2.26	–	–	11.63	1.73	1.00
628 ▲	1.63	2.25	0.31	1.33	–	–	0.25	2.19	0.25	0.34	0.62	1.09	2.75	1.63	1.30	11.63	1.73	1.00

▲ Available upon request

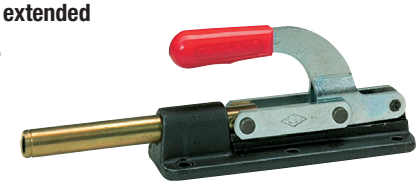
Models 630, 630-M, 640, 640-M



Model no.	Holding Capacity ◀▶ [lbs.]	Plunger Travel	[lbs.]	Recommendation (not supplied)	Plunger Thread (M)
630	2,500	2.00	1.90	210203	3/8-16
630-M	2,500	2.00	1.90	210203-M	M10
640	7,500	4.00	6.71	220203	1/2-13
640-M	7,500	4.00	6.71	220203-M	M12

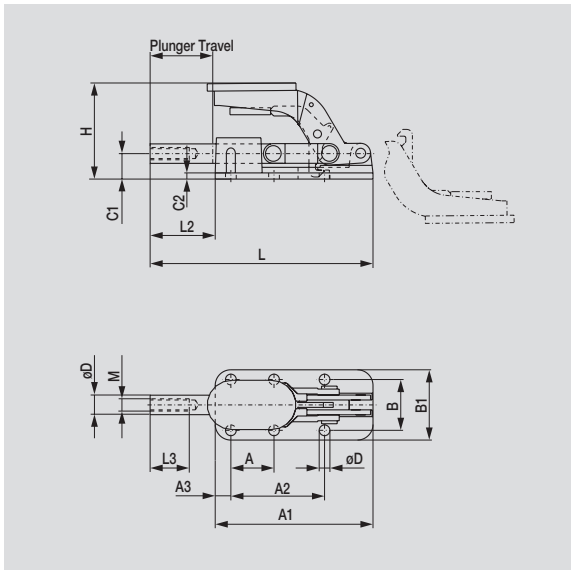
ALSO AVAILABLE		
As Air/Hydraulic	Model 830	Page 11.20
In DE-STA-CO Toggle-Lock Plus	Model 630-R	Page 4.18
See accessories beginning on page 9.1.		

- **Models lock in both the extended and retracted positions.**



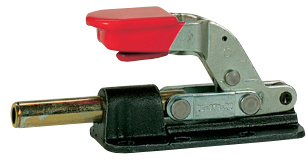
Model no.	A	A1	A2	A3	B	B1	C1	C2	øD	øD1	H	L	L2	L3					
630	1.38	5.03	3.00	0.50	1.63	2.25	0.81	0.18	0.34	0.62	3.09	7.00	1.97	1.25					
630-M	1.38	5.03	3.00	0.50	1.63	2.25	0.81	0.18	0.34	0.62	3.09	7.00	1.97	1.25					
640	3.56	8.53	7.12	0.69	2.13	3.00	1.25	0.38	0.41	0.87	4.39	12.66	4.13	2.00					
640-M	3.56	8.53	7.12	0.69	2.13	3.00	1.25	0.38	0.41	0.87	4.39	12.66	4.13	2.00					

Models 630-R, 630-MR



Model no.	Holding Capacity ◀▶ [lbs.]	Plunger Travel	[lbs.]	Recommendation (not supplied)	Plunger Thread (M)
630-R	2,500	2.00	1.90	210203	3/8-16
630-MR	2,500	2.00	1.90	210203-M	M10
See additional adjustment spindles beginning on page 9.1.					

- **DE-STA-CO Toggle-Lock Plus version of models 630, 630-M**
- **Plunger with internal thread**
- **Cast base, black-oxide finish**



Model no.	A	A1	A2	A3	B	B1	C1	C2	øD	øD1	H	L	L2	L3					
630-R	1.38	5.03	3.00	0.50	1.63	2.25	0.81	0.18	0.34	0.62	3.06	7.00	1.97	1.25					
630-MR	1.38	5.03	3.00	0.50	1.63	2.25	0.81	0.18	0.34	0.62	3.06	7.00	1.97	1.25					

Standard straight-line action clamps

Application areas
Ideal for all applications in which work is performed with holding capacities of up to 16,000 lbs., including assembling, drilling, testing, positioning and other processing operations.

Product features
- Flanged base
- Plunger with internal thread
- Forged base, black-oxide finish
- Rivets made of stainless steel
- Zinc plated

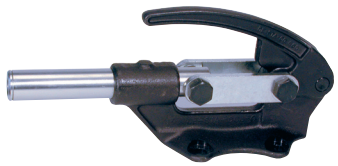
Accessories
- Straight-line action clamps are normally delivered without adjustment spindles. Recommendations are provided.
- Whenever required, the spindle can be purchased as an accessory part.

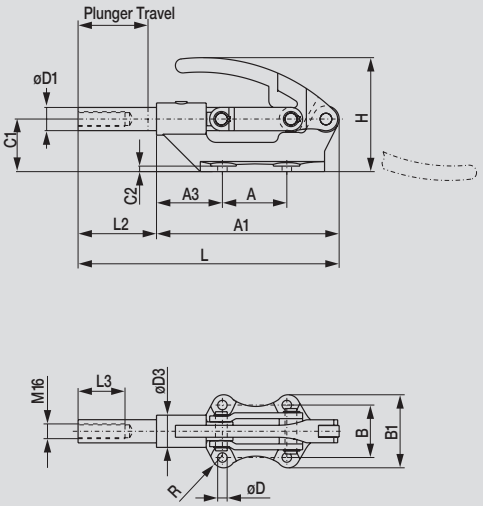
Models 650, 650-M

Model no.	Holding Capacity ◀▶ [lbs.]	Plunger Travel	[lbs.]	Recommendation (not supplied)	Plunger Thread (M)
650	16,000	3.00	5.59	250203	5/8-11
650-M	16,000	3.00	5.59	250203-M	M16

ALSO AVAILABLE		
As Air/Hydraulic	Model 850	Page 11.21
See accessories beginning on page 9.1.		

- **Models lock in both the extended and retracted positions.**





Model no.	A	A1	A3	B	B1	C1	C2	øD	øD1	øD3	H	L	L2	L3	R
650	2.75	7.81	2.88	2.25	3.25	2.25	0.25	0.41	0.99	1.38	4.87	11.16	3.35	2.00	0.45
650-M	2.75	7.81	2.88	2.25	3.25	2.25	0.25	0.41	0.99	1.38	4.87	11.16	3.35	2.00	0.45

Standard straight-line action clamps, low profile version

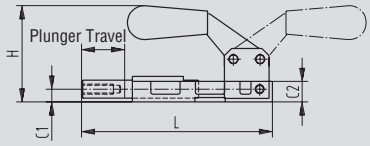
Application areas

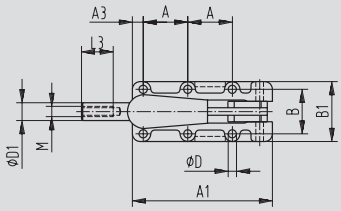
These new low-profile plunger clamps can be used where overhead clearance is a problem. The large holding capacities for these clamps are packaged in a small compact design. Equipped with an ergonomic handle grip for added operator comfort. Supplied with a metric plunger. Compact, low profile design allows for use in areas where overhead clearance is a problem. Handle is easily disassembled and reassembled in the reverse position allowing more flexibility.

Product features

- Handle with removable dowel pin
- Clamp base cast steel, black-oxide finish
- Other parts zinc plated and passivated
- Oil-resistant, ergonomically shaped DE-STA-CO handle grip

Models 95030, 95040, 95050, 95060



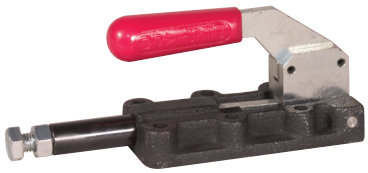


Model no.	Holding Capacity ⬌ [lbs.]	Plunger Travel	[lbs.]	Recommendation (not supplied)	Plunger Thread (M)
95030	550	0.98	0.80	205203-M	M6
95040	1,100	1.50	1.60	207203-M	M8
95050	1,650	1.97	2.10	220203-M	M12
95060	3,965	2.36	6.40	220203-M	M12

See additional adjustment spindles beginning on page 9.1.

- **Models lock in both the extended and retracted positions.**

Model 95030



Model 95050

Model no.	A	A1	A3	B	B1	C1	C2	øD	øD1	H	L	L3
95030	0.98	3.07	0.20	0.98	1.40	0.30	0.48	0.22	0.39	2.36	4.17	0.79
95040	1.38	4.35	0.34	1.38	2.00	0.39	0.72	0.26	0.55	2.97	5.87	0.98
95050	1.77	5.59	0.39	1.77	2.56	0.55	0.94	0.33	0.75	3.50	7.52	1.57
95060	2.17	6.73	0.43	2.17	3.00	0.63	1.08	0.41	0.87	4.08	9.17	1.57

Straight-line action clamps in heavy duty version

Application areas

The newest offering in DE-STA-CO's heavy-duty plunger clamp line, Models 685-S and 685-L feature high strength steel. Model 685-S offers shorter plunger travel than Model 685-L.

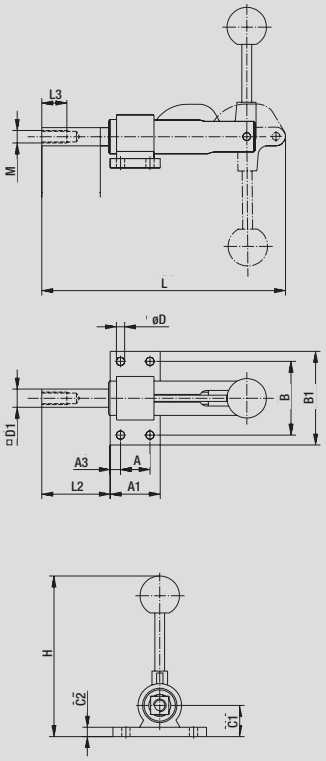
Can be mounted in any desired position by using pre-drilled mounting holes or welding in place. Designed for mid-range applications. Base is supplied loose and may be welded at desired angle. The square plunger has a threaded hole at the end for spindles or fixture details. The plunger locks in the extended position only for Model 685-S, but locks in both the extended and retracted position for Model 685-L. Metric Plunger available with M12 internal thread.

Product features

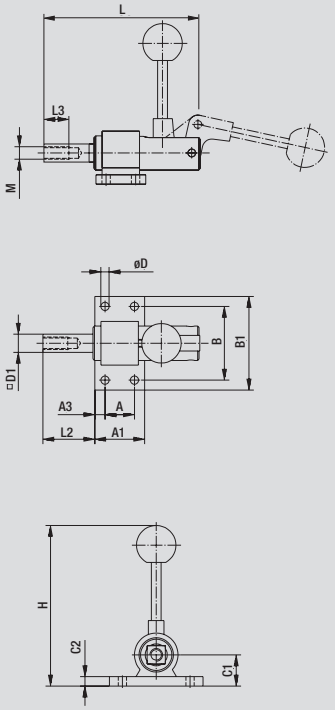
- Parts made of high strength steel
- Oil-resistant, ergonomically shaped handle ball

Models 685-L, 685-S

Model 685-L



Model 685-S

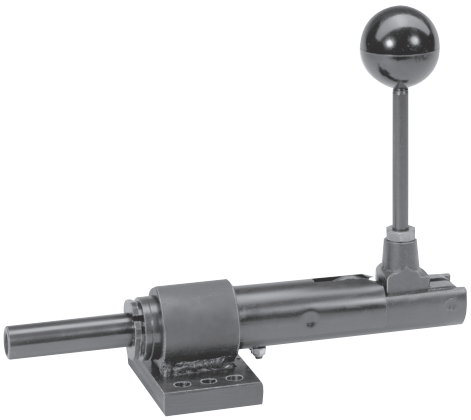


Model no.	Holding Capacity ◀▶ [lbs.]	Plunger Travel	[lbs.]	Recommendation (not supplied)	Plunger Thread (M)
685-L	3,500	2.34	3.70	220203-M	M12
685-S	3,500	1.77	3.70	220203-M	M12

See additional adjustment spindles beginning on page 9.1.

Model no.	A	A1	A3	B	B1	C1	C2	øD	□D1	H	L	L2	L3
685-L	1.18	2.00	0..41	2.95	3.75	1.25	0.38	0.33	0.75	6.40	8.58	2.50	1.24
685-S	1.18	2.00	0.41	2.95	3.75	1.25	0.38	0.33	0.75	6.40	6.25	2.50	1.24

Models 670, 675, 690, 695



56701
Model 670-1MB

The unique feature of these clamps is the collet-type bushing that can be adjusted to eliminate plunger end movement after long repeated use. The plunger also has a flat which prevents lateral movement and allows offset piloting and holding.

The plunger is drilled and tapped for threaded spindles or custom fixturing.

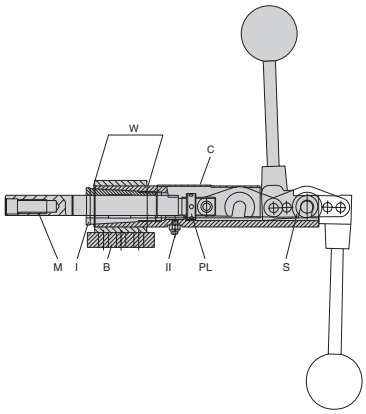
The adjustable pre-load nut (PL) can be used to lock the clamp against itself when not under pressure and therefore prevent opening when mounted vertically. The spring hold-open device (S) prevents the clamp from accidentally closing.

The mounting base (B) is supplied disassembled with the four models, to enable welding the base and the main assembly in any handle position.

Series 675 and 695 (shorter stroke) reach the over-center position only when clamping. Series 670 and 690 (longer stroke) lock in both the extended and retracted position.

- Precision clamps for high production
- For high accurate repeatability
- Adjustable, collet-type bushing minimizes plunger end movement
- Pre-load nut and spring hold open devices are optional

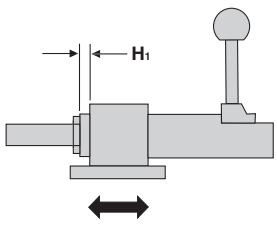
56751
Model 675-1MB



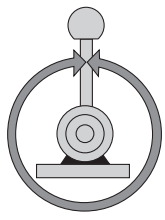
Symbols

B	Mounting Base
C	Cover Plate
M	Metric Version
PL	Pre-Load Lock
S	Spring Hold-open Device
W	Welding Range
I	Adjustable Plunger Bushing
II	Plunger Locating Screw

56901
Model 690-1MB
(Handle welded at 180˚
as special order)



Welding range H_1
axial
0-8 mm

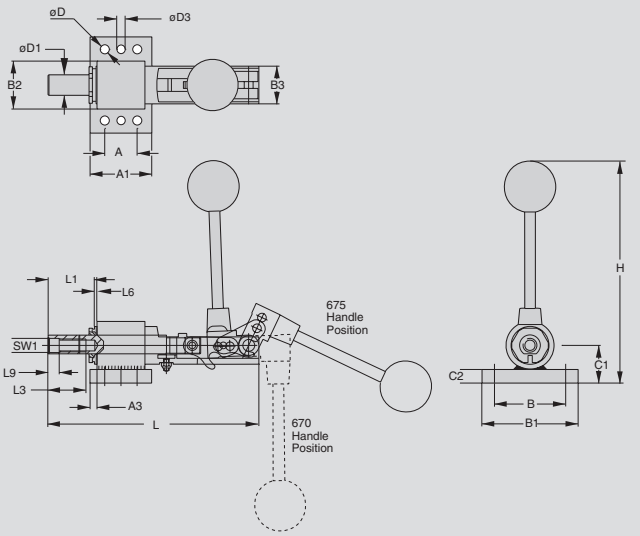


Welding range
radial
360˚

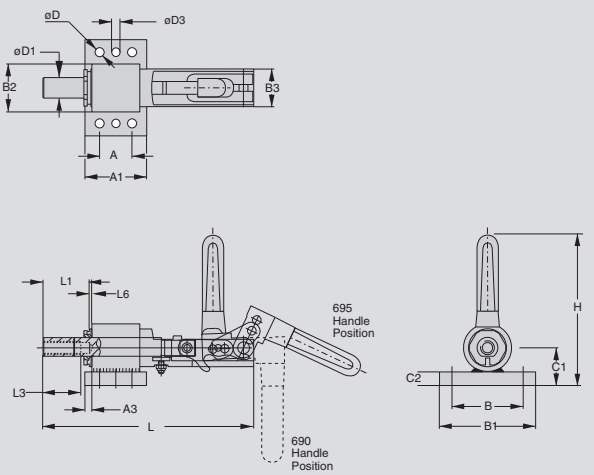
Before welding, adjust the main assembly on the mounting base in axial and radial directions.

Models 670, 675, 690, 695

Models 670, 675



Models 690, 695

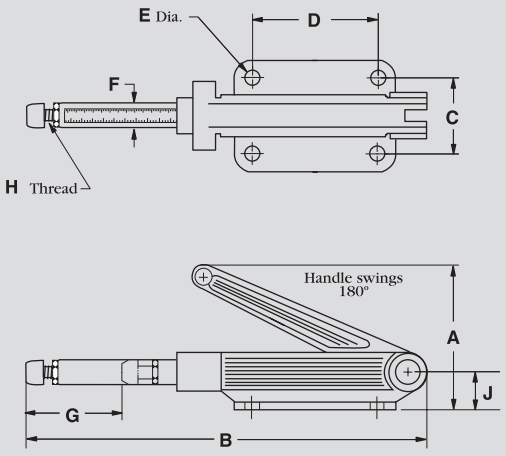


Model no.	Holding Capacity	Weight	Plunger Travel	Plunger Thread	Longe Stroke	Short Stroke	Mounting Base	Pre-load Lock	Hold-open Device	Plunger Collet Brushing	Plunger Locating Screw	Application	
												Push	Pull
670-1MB	2,400 lbs.	4 lbs.	57	M12 x 1.75	■		■			■	■	■	■
670-1MBPLS	2,400 lbs.	4.2 lbs.	57	M12 x 1.75	■		■	■	■	■	■	■	■
675-1MB	2,400 lbs.	3.8 lbs.	28	M12 x 1.75		■	■			■	■	■	
675-1MBPLS	2,400 lbs.	4 lbs.	28	M12 x 1.75		■	■	■	■	■	■	■	
690-1MB	5,000 lbs.	8 lbs.	76	M16 x 2	■		■			■	■	■	■
690-1MBPLS	5,000 lbs.	8.2 lbs.	76	M16 x 2	■		■	■	■	■	■	■	■
695-1MB	5,000 lbs.	7 lbs.	38	M16 x 2		■	■			■	■	■	
695-1MBPLS	5,000 lbs.	7.2 lbs.	38	M16 x 2		■	■	■	■	■	■	■	

Model no.	A	A1	A3	B	B1	B2	B3	C1	C2	øD	øD1	øD3	H	L	L1	L3	L6	L9	SW1
670-1MB	30	57	6.4	66	89	44.5	35	34.8	12.7	8.4	19	7.8	206	268	75.5	35	0-8	10.3	13H7
670-1MBPLS	30	57	6.4	66	89	44.5	35	34.8	12.7	8.4	19	7.8	206	268	75.5	35	0-8	10.3	13H7
675-1MB	30	57	6.4	66	89	44.5	35	34.8	12.7	8.4	19	7.8	206	195	44.4	35	0-8	10.3	13H7
675-1MBPLS	30	57	6.4	66	89	44.5	35	34.8	12.7	8.4	19	7.8	206	195	44.4	35	0-8	10.3	13H7
690-1MB	50	76.2	9.5	82	102	–	44.4	41.3	12.7	10.5	25	9.8	162	338	85.9	25	0-8	–	–
690-1MBPLS	50	76.2	9.5	82	102	–	44.4	41.3	12.7	10.5	25	9.8	162	338	85.9	25	0-8	–	–
695-1MB	50	76.2	9.5	82	102	–	44.4	41.3	12.7	10.5	25	9.8	162	240	47.8	25	0-8	–	–
695-1MBPLS	50	76.2	9.5	82	102	–	44.4	41.3	12.7	10.5	25	9.8	162	240	47.8	25	0-8	–	–

Straight-Line clamps for gluing and fixturing. Toggle action locks the plunger in the extended position only. Reinforced polymer spindle assembly with removable neoprene tip is included, or you can fit customized ends to the threaded plunger.

- Non-sparking
- Useful in medical and food processing industries
- Locking toggle action, push clamping
- Spindle assembly included
- Constructed of reinforced polymers combining high strength and lightweight features
- Electrically non-conductive
- Resistant to acids, gases, chemicals and elevated temperatures



Model no.	Holding Capacity [lbs.]	Plunger Travel	[lbs.]	Recommendation	Plunger Thread (M)
SL3	150	2.19	0.25	Supplied	1/4-20

See additional adjustment spindles beginning on page 9.1.

57002
Model SL3

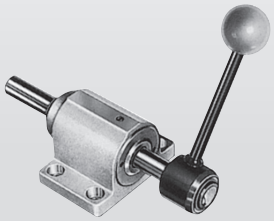
Model no.	A	B	C	D	E	F	G (travel)	H	J
SL3	2.88	8.00	1.50	2.50	0.28	0.50	2.19	1/4-20	0.75

Notes

FO Series

Type of Mounting:
- Foot mount

Type of Actuation
- Hand wheel or hand lever (one-handed operation)
- Locking lever and Plunger (two-handed operation)

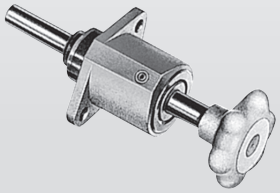


page 5.3

FL Series

Type of Mounting:
- Flange mount

Type of Actuation
- Locking lever or hand wheel (one-handed operation)
- Locking lever and Plunger (two-handed operation)

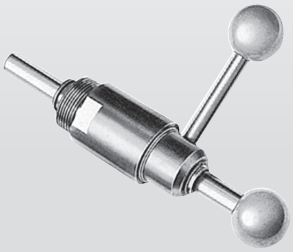


page 5.3

G Series

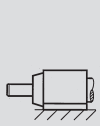
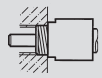
Type of Mounting:
- Through hole mount

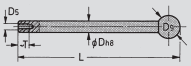
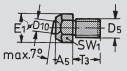
Type of Actuation
- Locking lever and Plunger (two-handed operation)
- Hand wheel or hand lever (one-handed operation)



page 5.3

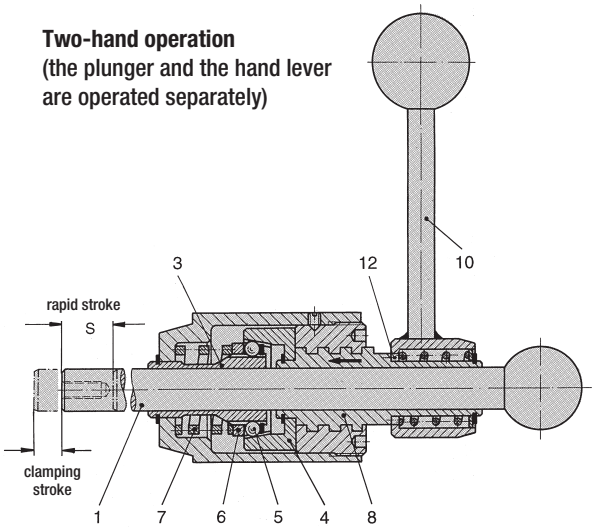
Variable stroke straight-line action clamps

		Part no.	Holding Capacity max. [lbs]	Page
Flanged base		FO-082/40	300	5.3
		FO-120/--	600	
		FO-121/45	600	
		FO-122/45	600	
		FO-160/--	2,000	
		FO-161/60	2,000	
		FO-162/60	2,000	
		FO-220/--	4,000	
		FO-221/80	4,000	
Front flange		FL-120/--	600	
		FL-121/45	600	
		FL-122/45	600	
		FL-160/--	2,000	
		FL-161/60	2,000	
		FL-162/60	2,000	
Threaded mount		G-082/40	300	
		G-120/--	600	
		G-121/45	600	
		G-122/45	600	

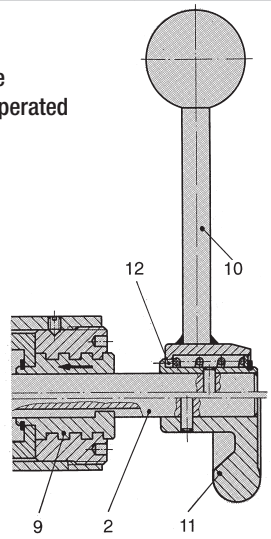
Accessories	Part no.		Page
Plunger	12/100		5.4
	12/200		
	12/300		
	16/100		
	16/200		
	16/300		
	16/400		
	16/500		
	22/100		
	22/200		
	22/300		
Swivel thrust pad	K508		5.5
	K612		
	K816		
	K1222		

	Part no.	Holding Capacity max. [lbs]	Page
	F-160	2000	5.7
	FRL-12		5.8
	FRL-16		
	FRL-20		
	FRF-12		
	FRF-16		
	FRF-20		

Two-hand operation
(the plunger and the hand lever are operated separately)



One-hand operation
(the plunger and handle lever/hand wheel are operated simultaneously)



DE-STA-CO's variable stroke straight-line clamps are used in applications where workpiece thicknesses and workpiece tolerances vary. These clamps are suitable for clamping between ribs and hollow spaces difficult to reach.

Compact design and different types of operation allow for application of the straight-line clamps in fixtures for mass production as well as for single part production.

Mounting types
- Foot base (FO Series)
- Flange mount (FL Series)
- Through hole mount (G Series)

Type of operation
- Two hand operation
  The hand lever (10) and the plunger (1) are separate. The hand lever is connected to the clamping mechanism. The plunger can be removed from the clamp
- One-hand operation
  The hand lever (10) or the hand wheel (11) and the plunger (2) are linked. The plunger is retained within the clamp.

Clamping operation
The plunger (1) or (2) which is guided within the clamp body contacts the workpiece. By rotating the hand lever (10) or the hand wheel (11) clock-wise the clamping stroke, S1 is engaged and the plunger is tightly gripped by the slotted clamping sleeve (3).

Operating principle
The hand lever´s (10) clock-wise rotation causes the threaded sleeve (8) and the conical sleeve (4) to which it is connected to move in the direction of the arrow shown in the drawing. The conical sleeve produces a force-locking connection between the slotted clamping sleeve (3) and the plunger by means of the ball bearings (5) located at the clamping sleeve´s perimeter.

Due to the force-locking connection, the plunger rotates and produces the clamping stroke S1. The plunger´s rotation may be compensated for by means of a swivel hold-down piece.

The clamping strokes S1 specified in this catalog were measured with no opposing forces present while measurements were taken. When clamping this product against a workpiece, the clamping stroke S1 is reduced by the force-locking connection between the plunger and the workpiece. The straight-action clamp is unlocked by turning the hand lever or the hand wheel counter-clockwise. This method is used for both the one-hand and the two-hand operation types. This counter-clockwise rotation makes the conical sleeve (4) and the threaded sleeve (8) or (9) move backward. The pressure spring (7) pushes back the relieved ball bearings (5) via the pressure ring (6).

The force-locking connection between the slotted clamping sleeve and the plunger can be moved freely again. Straight-line clamps which are two-hand operated can also be applied to PULL actions when the plunger is inserted in the clamp´s housing in the opposite direction. On the one hand operated clamp, the rotation inducing the clamping stroke S1 is directly transmitted from the plunger (2) or the hand wheel to the threaded sleeve (9) via a groovespring connection. The clamping and unclamping operations are executed in the same way as described before.

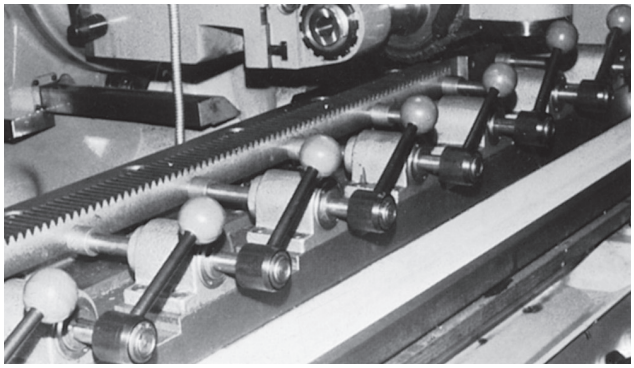
Handling
To change the position of the handle while in the clamped or the unclamped position, pull the hand lever off its spline (12) and set it in the desired position.

Important
- The holding forces specified in the catalog refer to the maximum load exerted on the clamp by counter-forces. For details concerning the clamping force FS exerted on the workpiece by the clamp and depending on the operation force FB (manual force), please see the chart on the next page.

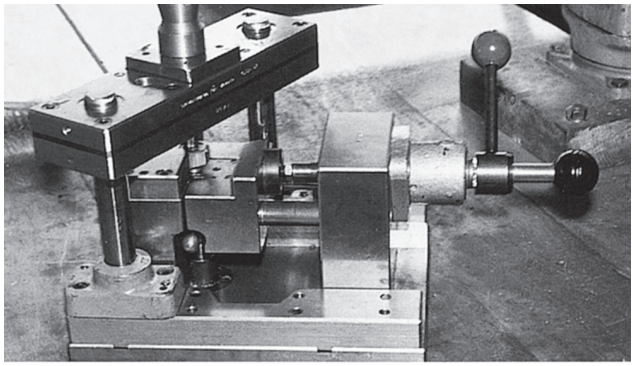
  The clamping force is proportional to the operation force. **The achieved clamping force must not exceed the maximum holding force.**

- As the straight-line clamps, with the exception of the F-160 model, are designed only for axial load, we recommend to use an additional radial support for the plunger in the event of side load.

Variable stroke straight-line action clamps

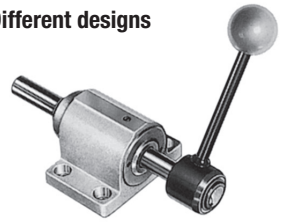


Model FO-161/60 on a milling machine

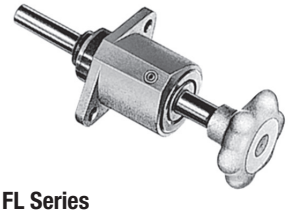


Model FL-160 with plunger 16/100 on a punching fixture

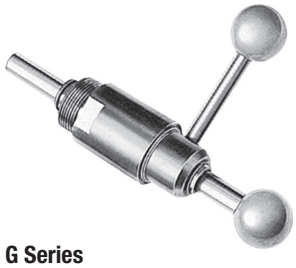
Different designs



FO Series
Mounting type: flange base foot mount
Operating method: one-hand or two-hand operation



FL Series
Mounting type: front flange mount
Operating method: one-hand or two-hand operation



G Series
Mounting type: through hole mount
Operating method: one-hand or two-hand operation

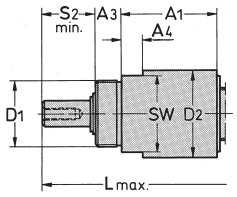
Product list and technical data

Mounting type	Operating method: Two-hand operation (Plunger and hand lever)	Operating method: One-hand operation (Hand lever)	Operating method: One-hand operation (Hand wheel)	Model-no. [1] Plunger order separately; see page 5.4	Max. holding capacity [lbs.]	Clamping force F_S with an operating force F_B: F_B [lbs.]	Clamping force F_S with an operating force F_B: F_S [lbs.]	Rapid stroke S [2] 400 and 500 mm strokes available on request [mm]	Max. clamping stroke S1 [mm]	Weight – [lbs.]
Fot mount			■	FO-082/40	300		100	40	2,5	0.72
	■			FO-120/--[1]	600		400	100, 200, 300	3	1.19
		■		FO-121/45	600		400	45	3	1.47
			■	FO-122/45	600		100	45	3	1.34
	■			FO-160/--[1]	2,000		500	100, 200, 300[2]	4	2.73
		■		FO-161/60	2,000		500	60	4	3.40
			■	FO-162/60	2,000		150	60	4	3.15
	■			FO-220/--[1] ▲	4,000		600	100, 200, 300	4	5.85
		■		FO-221/80 ▲	4,000		600	80	4	7.46
Flange mount	■			FL-120/--[1]	600	20	400	100, 200, 300	3	1.07
		■		FL-121/45	600		400	45	3	1.34
			■	FL-122/45 ▲	600		100	45	3	1.21
	■			FL-160/--[1]	2,000		500	100, 200, 300[2]	4	2.49
		■		FL-161/60	2,000		500	60	4	3.15
			■	FL-162/60 ▲	2,000		150	60	4	2.92
Through hole mount			■	G-082/40	300		100	40	2,5	0.66
	■			G-120/--[1]	600		400	100, 200, 300	3	1.01
		■		G-121/45	600		400	45	3	1.31
			■	G-122/45 ▲	600		100	45	3	1.18

▲ Available upon request

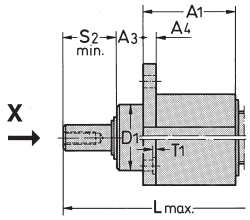
Two-hand operation (the plunger and the hand lever are operated separately)

Through hole mount

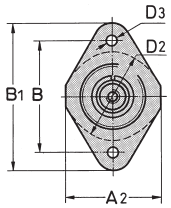


Part no. **G-120/--**

Flange mount

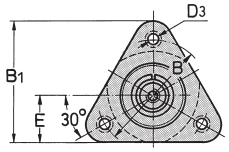


View “X”



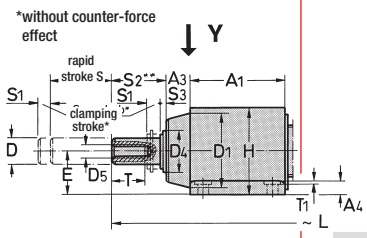
Part no. **FL-120/--**

View “X”

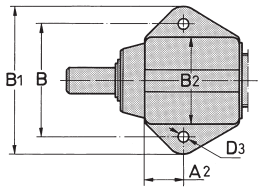


Part no. **FL-160/--**

Foot mount

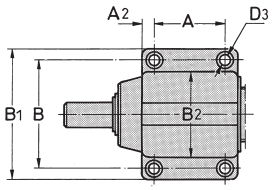


View “Y”

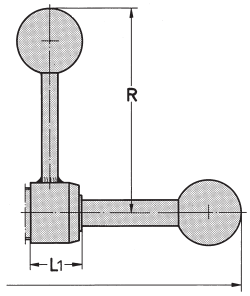


Part no. **FO-120/--**

View “Y”



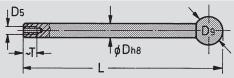
Part no. **FO-160/--**
FO-220/--



Important
The straight-line clamps are designed **only for axial load.** In case of side load, we recommend an additonal radial support of the plunger.

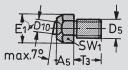
Accessories (order separately)

Plunger



Part no. Ø length	For rapid stroke S	Weight ~ [lbs.]	For clamps
12/100	100	0.30	FO-120
12/200	200	0.62	FL-120
12/300	300	0.82	G-120
16/100	100	0.88	FO-160
16/200	200	1.10	FL-160
16/300*	300	1.54	
22/100	100	2.20	
22/200	200	2.40	FO-220
22/300	300	3.06	

Swivel thrust pad



Part no.	Thread	Weight ~ [lbs.]
K-612	M6	0.02
K-816	M8	0.03
K-1222	M12	0.08

*400 and 500 mm strokes available on request

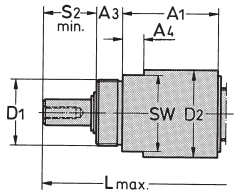
Mounting type	Part no. without plunger	Available rapid strokes S (order plunger separately)	A	A_1 ~	A_2 ~	A_3 ~	A_4	A_8	B	B_1 ~	B_2	D_{h8}	D_1	D_2	D_3	D_4
Foot mount	FO-120/--	100, 200, 300	–	44	19	12	6,3	8,5	52	68	40	12	35	–	6,5	20
	FO-160/--	100, 200, 300	40	62	11	12	12	10	70	90	52	16	46	–	9	25
	FO-220/--	100, 200, 300	50	75	13	20	15	12	90	115	69	22	60	–	11	36
Flange mount	FL-120/--	100, 200, 300	–	44	44	12	6	8,5	52	68	–	12	30 f7	40	6,5	20
	FL-160/--	100, 200, 300	–	60	–	14	14	10	68	73	–	16	40 f7	52	9	25
Through hole mount	G-120/--	100, 200, 300	–	44	–	12	10	8,5	–	–	–	12	M30x1,5	40	–	20

Mounting type	Part no. without plunger	D_5	D_9	D_{10}	E	E_1	H ~	~ L L with rapid strokes: 100	200	300	L_1	R	S_2	S_3	SW ~	SW_1	T	T_1	T_3
Foot mount	FO-120/--	M6	30	6	20	12,5	42	228	328	428	24	95	2,5	2,5	–	11	12	–	10
	FO-160/--	M8	35	8	30	14,8	58	280	380	480	33	130	3	3	–	13	15	1	14
	FO-220/--	M12	45	9,5	35	19,5	71	295	395	495	35	197	3	3	–	17	25	1	18
Flange mount	FL-120/--	M6	30	6	–	12,5	–	228	328	428	24	95	2,5	2,5	–	11	12	–	10
	FL-160/--	M8	35	8	28	14,8	–	280	380	480	33	130	3	3	–	13	15	1	14
Through hole mount	G-120/--	M6	30	6	–	12,5	–	228	328	428	24	95	2,5	2,5	35	11	12	–	12

Variable stroke straight-line action clamps

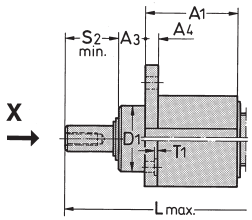
One-hand operation (the plunger and the hand wheel are operated simultaneously)

Through hole mount

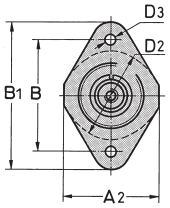


Part no. **G-082/40**
G-122/45

Flange mount

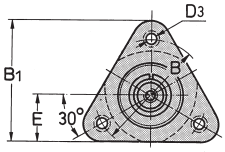


View “X”



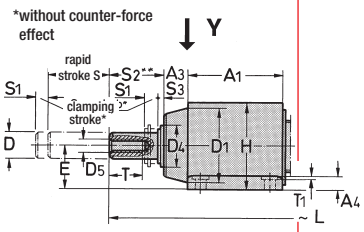
Part no. **FL-122/45**

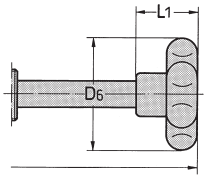
View “X”



Part no. **FL-162/60**

Foot mount





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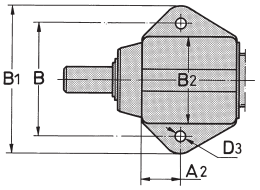
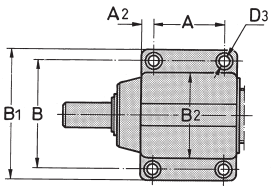


Part no. **FO-082/45**

View “Y”

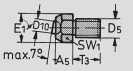


Part no. **FO-162/60**

Important
The straight-line clamps are designed **only for axial load.** In case of side load, we recommend an additonal radial support of the plunger.

Accessories (order separately)

Swivel thrust pad



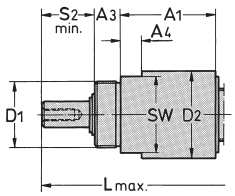
Part no.	Thread	Weight ~ [lbs.]
K-508	M5	0.01
K-612	M6	0.02
K-816	M8	0.03
K-1222	M12	0.08

Mounting type	Part no. with plunger	A	A_1 ~	A_2 ~	A_3 ~	A_4	A_5	B	B_1 ~	B_2	D_{h8}	D_1	D_2	D_3	D_4
Foot mount	FO-082/40	–	37	15,3	10	5	6	44	56	35	8	30	–	4,5	16
	FO-122/45	–	44	19	12	6,3	8,5	52	68	40	12	35	–	6,5	20
	FO-162/60	40	62	11	12	12	10	70	90	52	16	46	–	9	25
Flange mount	FL-122/45	–	44	44	12	6	8,5	52	68	–	12	30 f7	40	6,5	20
	FL-162/60	–	60	–	14	14	10	68	73	–	16	40 f7	52	9	25
Through hole mount	G-082/40	–	37	–	10	8	6	–	–	–	8	M24x1,5	35	–	16
	G-122/45	–	44	–	12	10	8,5	–	–	–	12	M30x1,5	40	–	20

Mounting type	Part no. with plunger	D_5	D_6 ~	D_{10} Ø	E	E_1	H ~	L ~	L_1	S_2	S_3 ~	SW	SW_1	T	T_1	T_3
Foot mount	FO-082/40	M5	40	5	18	9,2	36	128	26	9	2,5	–	8	8	–	8
	FO-122-45	M6	75	6	20	12,5	42	153	27	15	2,5	–	11	12	–	10
	FO-162/60	M8	75	8	30	14,8	58	196	35	18	3	–	13	15	1	14
Flange mount	FL-122/45	M6	52	6	–	12,5	–	153	27	15	2,5	–	11	12	–	10
	FL-162/60	M8	75	8	28	14,8	–	196	35	18	3	–	13	15	1	14
Through hole mount	G-082/40	M5	40	5	–	9,2	–	128	26	9	2,5	30	8	12	–	8
	G-122/45	M6	52	6	–	12,5	–	153	27	15	2,5	35	11	12	–	10

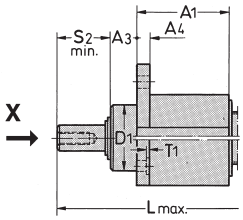
One-hand operation (the plunger and the hand lever are operated simultaneously)

Through hole mount

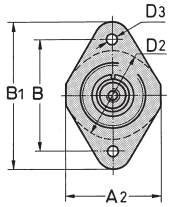


Part no. **G-121/45**

Flange mount

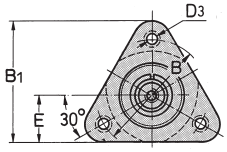


View “X”



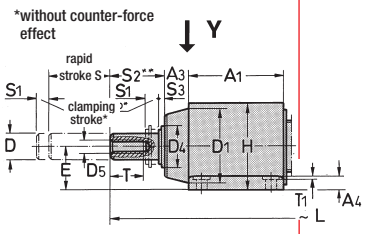
Part no. **FL-121/45**

View “X”

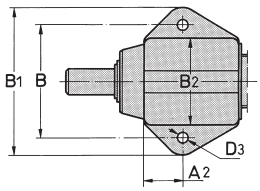


Part no. **FL-161/60**

Foot mount

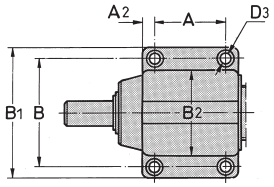


View “Y”

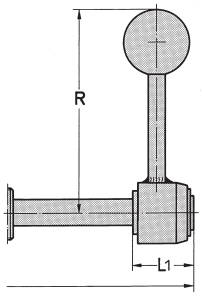


Part no. **FO-121/45**

View “Y”



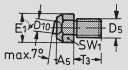
Part no. **FO-161/60**
FO-221/80



Important
The straight-line clamps are designed **only for axial load.** In case of side load, we recommend an additonal radial support of the plunger.

Accessories (order separately)

Swivel thrust pad

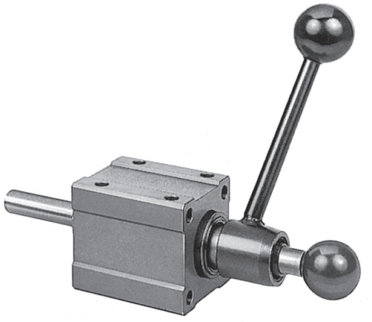


Part no.	thread	weight ~ [lbs.]
K-612	M6	0.02
K-816	M8	0.03
K-1222	M12	0.08

Mounting type	Part no. with plunger	A	A_1 ~	A_2	A_3 ~	A_4	A_5	B	B_1 ~	B_2	D_{h8}	D_1	D_2	D_3	D_4
Foot mount	FO-121/45	–	44	19	12	6,3	8,5	52	68	40	12	35	–	6,5	20
	FO-161/60	40	62	11	12	12	10	70	90	52	16	46	–	9	25
	FO-221/80	50	75	13	20	15	12	90	115	69	22	60	–	11	36
Flange mount	FL-121/45	–	44	44	12	6	8,5	52	68	–	12	30f7	40	6,5	20
	FL-161/60	–	60	–	14	14	10	68	73	–	16	40f7	52	9	25
Through hole mount	G-121/45	–	44	–	12	10	8,5	–	–	–	12	M30x1,5	40	–	20

Mounting type	Part no. with plunger	D_5	D_{10} Ø	E	E_1	H ~	L ~	L_1	R ~	S_2	S_3 ~	SW	SW_1	T	T_1	T_3
Foot mount	FO-121/45	M6	6	20	12,5	42	153	27	95	15	2,5	–	11	12	–	10
	FO-162/60	M8	8	30	14,8	58	196	35	130	18	3	–	13	15	1	14
	FO-221/80	M12	9,5	35	19,5	71	245	40	197	20	3	–	17	25	1	18
Flange mount	FL-121/45	M6	6	–	12,5	–	153	27	95	15	2,5	–	11	12	–	10
	FL-161/60	M8	8	28	14,8	–	196	35	130	18	3	–	13	15	1	14
Through hole mount	G-121/45	M6	6	–	12,5	–	153	27	95	15	2,5	35	11	12	–	10

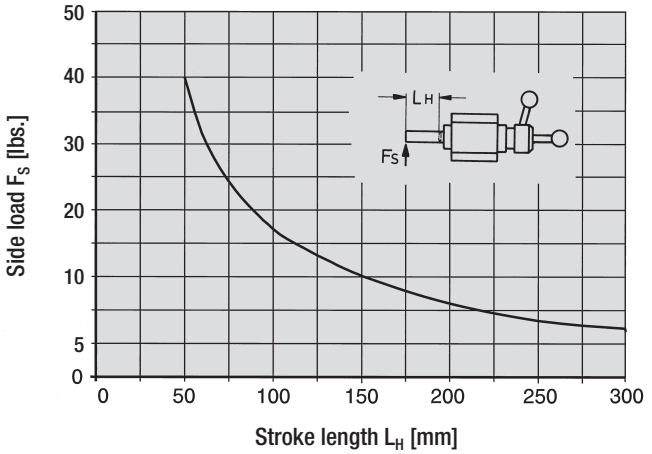
Variable stroke straight-line action clamps



Technical features

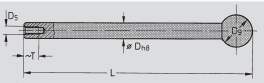
- High holding capacity of 2000 lbs.
- High side load capacity
- Plunger guide
- Wiper ring avoiding contamination of clamping mechanism
- Block style base provides for variable mounting
- Low weight due to the aluminium housing
- 50 mm horizontal and vertical hole pattern

Allowable side load F_S depending on the stroke length L_H



Accessories (order separately)

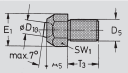
Plunger



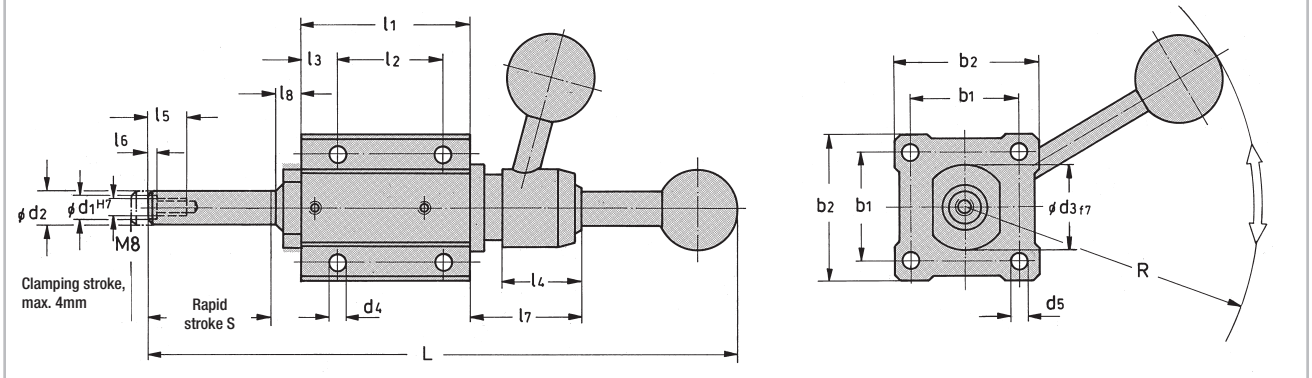
Part no.	For rapid strokes S	D_{h8}	D5	D9	L ~	T ~	Weight ~[lbs.]
16/100	100	16	M8	35	280	15	0.90
16/200	200	16	M8	35	380	15	1.10
16/300*	300	16	M8	35	480	15	1.54

*400 and 500 mm strokes available upon request

Swivel thrust pad



Part no.	A5	D5	D10	E1	T3	SW1	Weight ~[lbs.]
K-816	10	M8	8	14,8	14	13	0.08



Model no. without plunger	Max. holding capacity [lbs.]	Fs* [lbs.]	b1	b2	~ L For rapid strokes: 100	200	300	l1	l2	l3	l4	l5	l6	l7	l8	$d1^{H7}$	$d2_{h8}$	d3	d4	d5	R	Weight ~ [lbs.]
F-160/--	2000	100	50	68	280	380	480	80	50	18	35	20	2	50	12	10	16	40	8,3	8,5	165	3.30

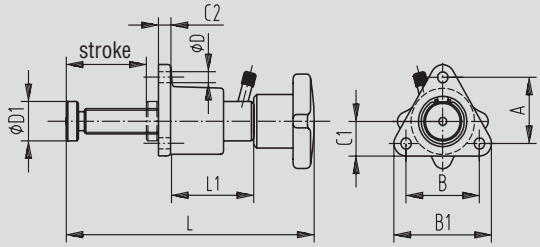
*Fs = exerting force at an operating force of 20 lbs.

Models FRF-12, FRF-16, FRF-20, FRL-12, FRL-16, FRL-20

Application areas

These new quick-acting Ram Lock clamps are ideal for bridging of different workpiece thicknesses and can be front or base mounted. Each version offers high holding forces and is available in three different maximum stroke lengths. The clamp's unique design allows "fine" clamping force adjustments once the locking lever is activated.

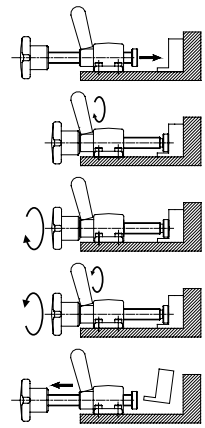
Model no.	Holding Capacity ◀▶ [lbs.]	Plunger Travel	[lbs.]
FRL-12	5,500	0-3 3/8	1.00
FRL-16	11,000	0-5 5/16	1.50
FRL-20	17,000	0-6 7/8	3.50
FRF-12	5,500	0-3 3/8	1.00
FRF-16	11,000	0-5 5/16	1.50
FRF-20	17,000	0-6 7/8	3.50

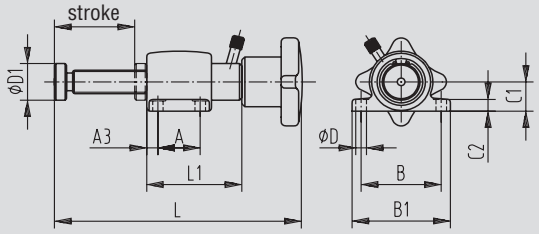


Series FRF

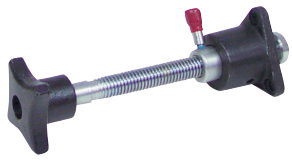
To operate:

1. Slide spindle bar forward to contact the workpiece.
2. Turn the locking lever clockwise to engage the locking mechanism.
3. Turn knob handle to "fine" adjust the clamping force.
4. After operation is finished, turn the locking lever counter-clockwise to disengage locking mechanism.





Series FRL



Series FRF

Series FRL

Model no.	A	A3	B	B1	C1	C2	øDmm	øD1	L	L1
FRL-12	0.79	0.24	1.77	2.17	0.63	0.24	5.5	0.75	6.46	1.69
FRL-16	1.57	0.23	2.09	2.56	0.79	0.31	7.0	0.98	9.25	2.24
FRL-20	1.27	0.35	2.68	3.35	0.98	0.35	8.5	1.26	11.42	2.83
FRF-12	1.50	–	1.50	1.97	0.67	0.24	5.5	0.75	6.46	1.67
FRF-16	1.91	–	1.91	2.54	0.87	0.31	7.0	0.98	9.25	2.24
FRF-20	2.24	–	2.24	2.99	1.02	0.35	8.5	1.26	11.42	2.83

Notes

NEW

Model 3011

page 6.4

NEW

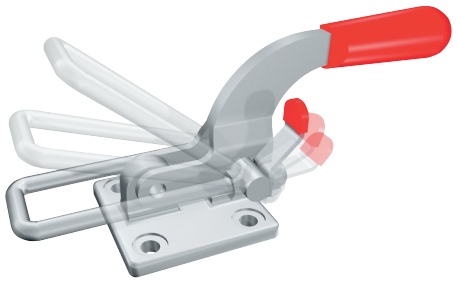
Parting Line Clamps:
Models 353-35, 353-65

page 6.18

Product group – pull action latch clamps

Application areas

Quick closure of covers and flaps on rotating or stationary containers, drums, boxes and molds. The latch clamp is distinguished by its compact design and with high holding capacity. The latch hooks can be adjusted on all models.



The essential product features

- **New:** convenient, patented one-hand operation made possible by means of a thumb control lever
- Compact design
- High holding capacities

Model 331 used to lock down the lid of a container

	Model no.	Holding Capacity max. [lbs.]	Category	Page
	301 311	375 1,200	Standard eyelet Standard eyelet	6.3
	3011	2,000		6.4

	Model no.	Holding Capacity max. [lbs.]	Category	Page
	323 331 341	360 700 2,000	Standard horizontal Standard horizontal Standard horizontal	6.5
	331-R 341-R	700 2,000	Standard horizontal Standard horizontal	6.7

Product group – pull action latch clamps

	Model no.	Holding Capacity max. [lbs.]	Category	Page
	375	4,000	Standard horizontal	6.8
	375-B	4,000	Standard horizontal	6.9
	375-R	4,000	DE-STA-CO Toggle Lock Plus	6.10
	375-BR	4,000	DE-STA-CO Toggle Lock Plus	6.11
	385	7,500	DE-STA-CO Toggle Lock Plus	6.12
	385-L	7,500		6.12
	385-R	7,500	DE-STA-CO Toggle Lock Plus	6.13
	326 336 346	8 12 25	Rubber latch Rubber latch Rubber latch	6.14

	Model no.	Holding Capacity max. [lbs.]	Category	Page
	324 334 344	500 1,000 2,000	Standard vertical Standard vertical Standard vertical	6.15
	374	4,000		6.17
	353-35 353-65	2,800 2,100		6.18
	330 351 371 381	200 375 750 1,000	Standard hook Standard hook Standard hook Standard hook	6.19
	351-B	375	Standard horizontal	6.21
	351-R 371-R	375 750	DE-STA-CO Toggle Lock Plus DE-STA-CO Toggle Lock Plus	6.22
	330000 351000 371000 381000			6.23

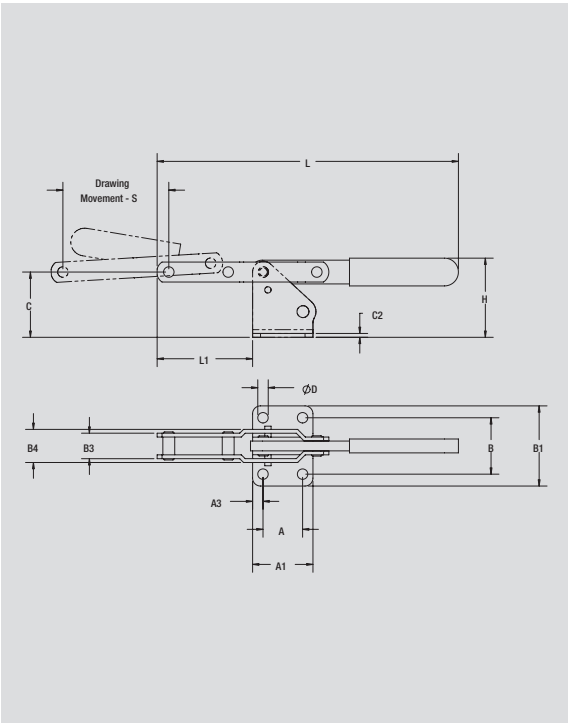
Pull action latch clamps – horizontal

These latch-type pull action clamps are equipped with red vinyl handle for comfortable operation. A fixed stop automatically limits handle travel at various clamping positions once the clamp is installed, removing the need to adjust a manual stop. Model 301 has 4" drawing movement and the larger Model 311 has 3 3/8".

Models 301, 311

Model no.	Holding Capacity [lbs.]	[lbs.]
301	375	.70
311	1,200	1.16

ALSO AVAILABLE		
In Stainless Steel	Model 301-SS	Page 8.20

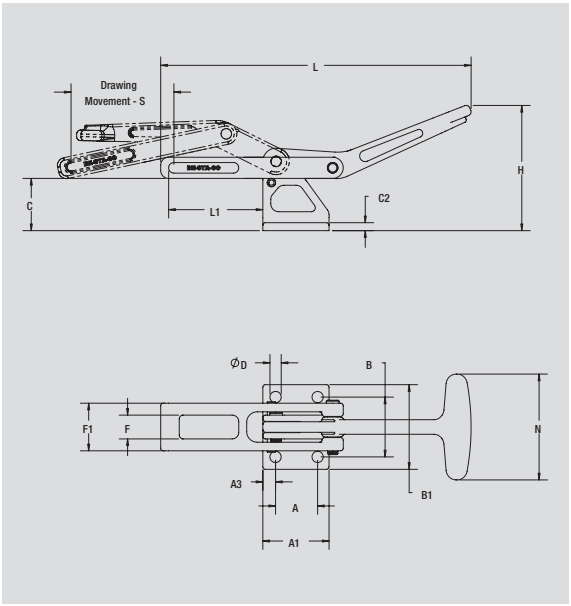


Model no.	A	A1	A3	B	B1	B3	B4	C	C2	ØD	H	L	L1	S
301	0.75	1.38	0.32	1.25	1.75	0.56	1.04	1.63	0.12	0.28	1.91	8.40	2.59	4.00
311	1.25	1.91	0.33	1.78	2.53	0.56	1.05	2.06	0.12	0.33	2.50	9.51	3.01	3.38

NEW

Information

DE-STA-CO clamp series 3011 is the newest addition to the rotational mold product offering. As a direct, drop-in replacement for the legacy 311 clamp, these cast, robust clamps will withstand the harsh environment of the rotational mold industry. A fixed stop automatically limits handle travel at various clamping positions after installation, removing the need to adjust a manual stop. The clamps are available in 4130 carbon steel or 316 stainless steel. Model 3011 is black oxided to help against corrosion. The ergonomic whale-tail handle provides better operator hand comfort.



Model no.	Holding Capacity [lbs.]	[lbs.]	Drawing Movement
3011	2,000	2.00	3.00

ALSO AVAILABLE		
In Stainless Steel	Model 3011-SS	Page 8.21

Model 3011

Model no.	A	A1	A3	B	B1	C	C2	øD	F	F1	H	L	L1	N	S			
3011	1.25	1.97	0.38	1.78	2.52	1.87	0.24	0.33	0.71	1.42	3.72	9.23	3.04	3.15	3.00			

Pull action latch clamps – horizontal

■ **With latch plate and U-shaped hook**

Application areas

Ideal for quick closing of covers and flaps on rotating or stationary containers, drums, boxes and molds. The models with optional release lever are preferred where vibration of containers, transportation of boxes and drums is required.

Safety instructions

To ensure a secure form of locking, the clamp must be adjusted into the corresponding over-center toggle position.

Product features

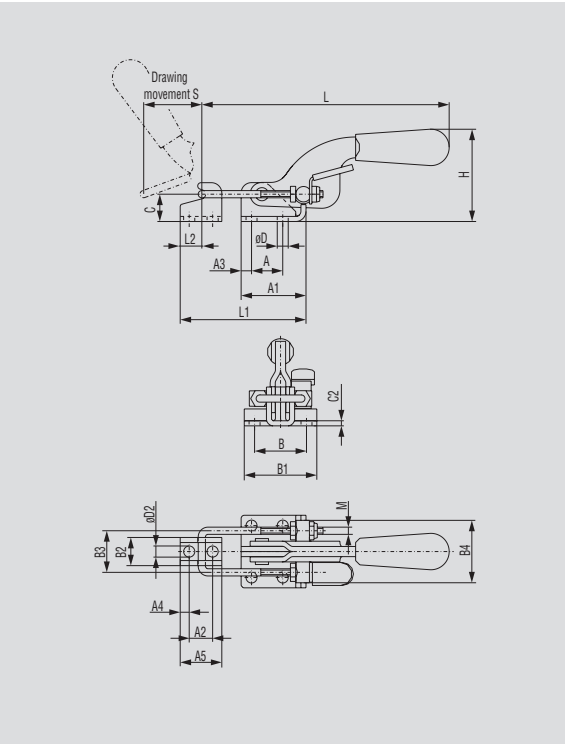
- Patented thumb control lever
- Rivets made of stainless steel
- Zinc plated
- Oil-resistant, ergonomically shaped DE-STA-CO handle grip

Accessories

- Clamps are supplied with U-shaped hooks and latch plate

Models 323, 331, 341

Model no.	Holding Capacity ➡ [lbs.]	[lbs.]	Adjustment Range
323	360	0.15	0-0.49
323-M-25			
323-M-50			
323-M-100			
331	700	0.56	0-0.59
331-M-25			
331-M-50			
331-M-100			
341	2,000	1.43	0-0.76
341-M-25			
341-M-50			
341-M-100			

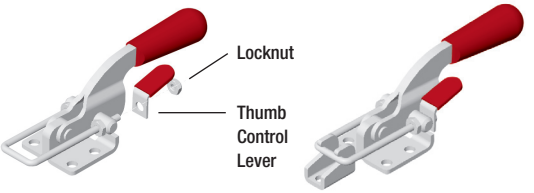


ALSO AVAILABLE		
As DE-STA-CO	Model 331-R	Page 6.7
Toggle Lock Plus	Model 341-R	Page 6.7
In Stainless Steel	Model 323-SS	Page 8.14
	Model 331-SS	Page 8.14
	Model 341-SS	Page 8.14

See accessories beginning on page 9.1.

Patented #6,561,556

For added convenience and functionality, every DE-STA-CO pull action clamp is now equipped with a thumb control lever as a standard feature.



Models 323, 331, 341 (cont'd)

Model no.	A	A1	A2	A3	A4	A5	B	B1	B2	B3	B4	C	C2	øD	øD2	H	L	L1 max	L2	M	S
323	0.63	1.02	0.39	0.20	0.24	0.79	0.75	1.10	0.52	0.75	1.06	0.47	0.08	0.17	0.17	1.19	3.91	2.25	0.35	M4	1.81
323-M-25▲	0.63	1.02	0.39	0.20	0.24	0.79	0.75	1.10	0.52	0.75	1.06	0.47	0.08	0.17	0.17	1.19	4.89	3.23	0.35	M4	1.81
323-M-50▲	0.63	1.02	0.39	0.20	0.24	0.79	0.75	1.10	0.52	0.75	1.06	0.47	0.08	0.17	0.17	1.19	5.88	4.22	0.35	M4	1.81
323-M-100▲	0.63	1.02	0.39	0.20	0.24	0.79	0.75	1.10	0.52	0.75	1.06	0.47	0.08	0.17	0.17	1.19	7.85	6.19	0.35	M4	1.81
331	0.75	1.56	0.56	0.26	0.22	1.00	1.25	1.74	0.68	1.00	1.50	0.66	0.12	0.27	0.27	1.97	6.06	3.05	0.50	M5	1.75
331-M-25▲	0.75	1.56	0.56	0.26	0.22	1.00	1.25	1.74	0.68	1.00	1.50	0.66	0.12	0.27	0.27	1.97	7.04	4.03	0.50	M5	1.75
331-M-50▲	0.75	1.56	0.56	0.26	0.22	1.00	1.25	1.74	0.68	1.00	1.50	0.66	0.12	0.27	0.27	1.97	8.03	5.02	0.50	M5	1.75
331-M-100▲	0.75	1.56	0.56	0.26	0.22	1.00	1.25	1.74	0.68	1.00	1.50	0.66	0.12	0.27	0.27	1.97	10.00	6.99	0.50	M5	1.75
341	1.63	2.38	0.75	0.38	0.38	1.50	1.50	2.12	1.19	1.75	2.32	0.94	0.16	0.33	0.33	2.89	8.20	4.59	0.75	M8	2.50
341-M-25▲	1.63	2.38	0.75	0.38	0.38	1.50	1.50	2.12	1.19	1.75	2.32	0.94	0.16	0.33	0.33	2.89	9.18	5.57	0.75	M8	2.50
341-M-50▲	1.63	2.38	0.75	0.38	0.38	1.50	1.50	2.12	1.19	1.75	2.32	0.94	0.16	0.33	0.33	2.89	10.17	6.56	0.75	M8	2.50
341-M-100▲	1.63	2.38	0.75	0.38	0.38	1.50	1.50	2.12	1.19	1.75	2.32	0.94	0.16	0.33	0.33	2.89	12.14	8.53	0.75	M8	2.50

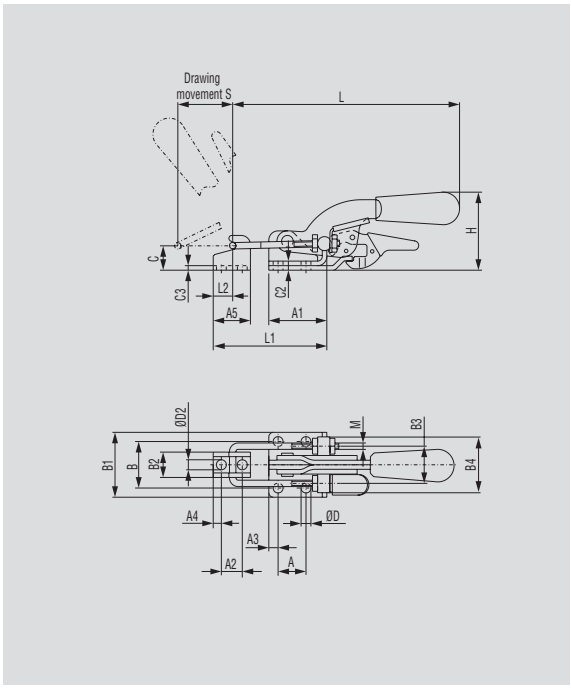
▲ Available upon request

Models 331-R, 341-R

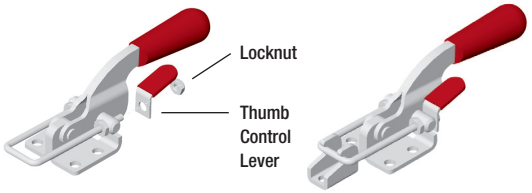
Model no.	Holding Capacity [lbs.]	[lbs.]	Adjustment Range
331-R	700	0.56	0-0.59
331-R-M-25			
331-R-M-50			
331-R-M-100			
341-R	2,000	1.43	0-0.76
341-R-M-25			
341-R-M-50			
341-R-M-100			

ALSO AVAILABLE		
In Stainless Steel	Model 331-RSS	Page 8.15
	Model 341-RSS	Page 8.15

■ **Supplied with DE-STA-CO Toggle Lock Plus™**

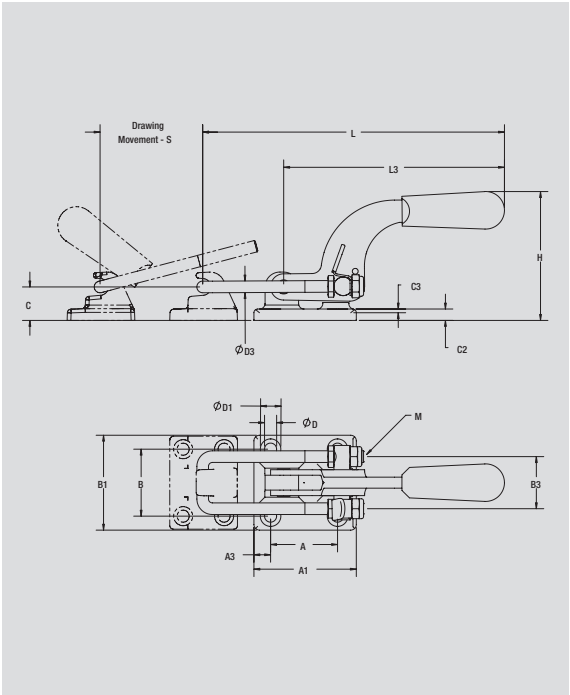


Patented #6,561,556
For added convenience and functionality, every DE-STA-CO pull action clamp is now equipped with a thumb control lever as a standard feature.



Model no.	A	A1	A2	A3	A4	A5	B	B1	B2	B3	B4	C	C2	C3	øD	øD2	H	L	L1 max	L2	M	S
331-R	0.75	1.56	0.56	0.26	0.22	1.00	1.25	1.74	0.68	1.00	1.50	0.66	0.24	0.12	0.27	0.27	2.08	6.06	3.05	0.50	M5	1.75
331-R-M-25▲	0.75	1.56	0.56	0.26	0.22	1.00	1.25	1.74	0.68	1.00	1.50	0.66	0.24	0.12	0.27	0.27	2.08	7.04	4.03	0.50	M5	1.75
331-R-M-50▲	0.75	1.56	0.56	0.26	0.22	1.00	1.25	1.74	0.68	1.00	1.50	0.66	0.24	0.12	0.27	0.27	2.08	8.03	5.02	0.50	M5	1.75
331-R-M-100▲	0.75	1.56	0.56	0.26	0.22	1.00	1.25	1.74	0.68	1.00	1.50	0.66	0.24	0.12	0.27	0.27	2.08	10.00	6.99	0.50	M5	1.75
341-R	1.63	2.38	0.75	0.38	0.38	1.50	1.50	2.12	1.19	1.75	2.32	0.94	0.16	0.16	0.33	0.33	2.89	8.20	4.59	0.75	M8	2.50
341-R-M-25▲	1.63	2.38	0.75	0.38	0.38	1.50	1.50	2.12	1.19	1.75	2.32	0.94	0.16	0.16	0.33	0.33	2.89	9.18	5.57	0.75	M8	2.50
341-R-M-50▲	1.63	2.38	0.75	0.38	0.38	1.50	1.50	2.12	1.19	1.75	2.32	0.94	0.16	0.16	0.33	0.33	2.89	10.17	6.56	0.75	M8	2.50
341-R-M-100▲	1.63	2.38	0.75	0.38	0.38	1.50	1.50	2.12	1.19	1.75	2.32	0.94	0.16	0.16	0.33	0.33	2.89	12.14	8.53	0.75	M8	2.50

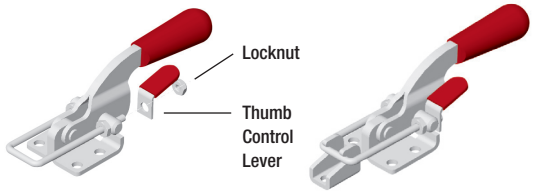
▲ Available upon request



Model no.	Holding Capacity [lbs.]	[lbs.]	Adjustment Range
375	4,000	2.75	0-0.69
375-M-25			
375-M-50			
375-M-100			

ALSO AVAILABLE		
As DE-STA-CO Toggle Lock Plus	Model 375-R	Page 6.10
See accessories beginning on page 9.1.		

Patented #6,561,556
For added convenience and functionality, every DE-STA-CO pull action clamp is now equipped with a thumb control lever as a standard feature.



Patented
Thumb Lever Control

Model 375
Shown with optional
latch plate (385102)

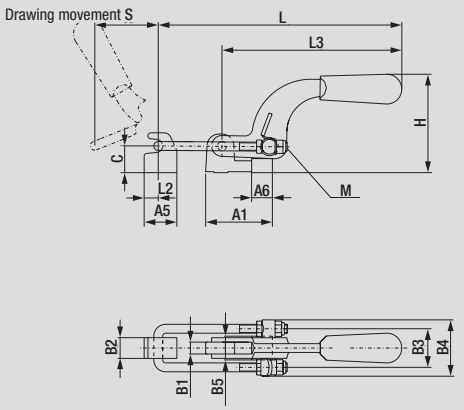
Model no.	A	A1	B	B1	B3	C	C2	C3	øD	øD1	øD3	H	L	L3	M	S			
375	2.25	3.44	2.25	3.19	1.75	1.13	0.38	0.13	0.41	0.69	0.39	4.26	10.17	7.45	M10	3.50			
375-M-25▲	2.25	3.44	2.25	3.19	1.75	1.13	0.38	0.13	0.41	0.69	0.39	4.26	11.15	7.45	M10	3.50			
375-M-50▲	2.25	3.44	2.25	3.19	1.75	1.13	0.38	0.13	0.41	0.69	0.39	4.26	12.14	7.45	M10	3.50			
375-M-100▲	2.25	3.44	2.25	3.19	1.75	1.13	0.38	0.13	0.41	0.69	0.39	4.26	14.11	7.45	M10	3.50			

▲ Available upon request

Model 375-B

Model no.	Holding Capacity [lbs.]	[lbs.]	Adjustment Range
375-B	4,000	2.75	0-0.69
375-B-M-25			
375-B-M-50			
375-B-M-100			

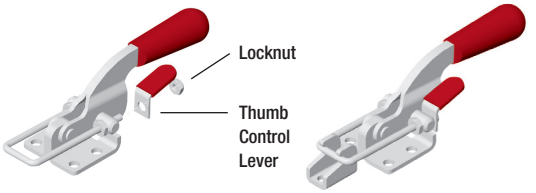
ALSO AVAILABLE		
As DE-STA-CO Toggle Lock Plus	Model 375-BR	Page 6.11
See accessories beginning on page 9.1.		



Patented Thumb Lever Control

Model 375-B
Shown with supplied
latch plate (375509)

Patented #6,561,556
For added convenience and functionality, every DE-STA-CO pull action clamp is now equipped with a thumb control lever as a standard feature.



Model no.	A1	A5	A6	B1	B2	B3	B4	B5	C	H	L	L3	M	S
375-B	2.80	1.38	0.87	0.49	0.88	1.75	2.50	1.00	1.13	4.18	10.20	7.48	M10	3.50
375-B-M-25 ▲	2.80	1.38	0.87	0.49	0.88	1.75	2.50	1.00	1.13	4.18	11.18	7.48	M10	3.50
375-B-M-50 ▲	2.80	1.38	0.87	0.49	0.88	1.75	2.50	1.00	1.13	4.18	12.17	7.48	M10	3.50
375-B-M-100 ▲	2.80	1.38	0.87	0.49	0.88	1.75	2.50	1.00	1.13	4.18	14.14	7.48	M10	3.50

▲ Available upon request

■ **With latch hook**

Application areas

Ideal for quick closing of covers and flaps on rotating or stationary containers, drums, boxes and molds. These clamps offer holding capacities of up to 7,500 lbs.

The models with release lever are recommended where vibration of containers, transportation of boxes and drums is present.

Safety instruction

Tto ensure a secure form of locking, the clamp must be adjusted into the corresponding over-center toggle position..

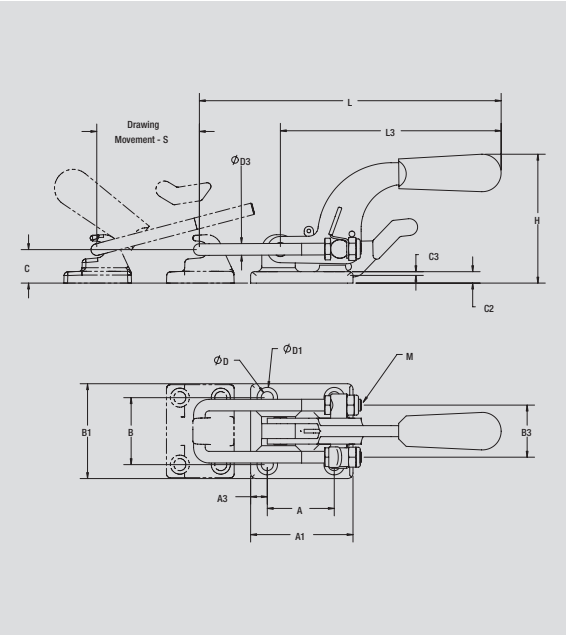
Product features

- Patented thumb control lever
- Casted base, black oxided
- Zinc plated
- Oil-resistant, ergonomically shaped DE-STA-CO handle grip

Accessories

- Clamps are supplied complete with latch hooks. Optional latch plate available (385102).

Model 375-R

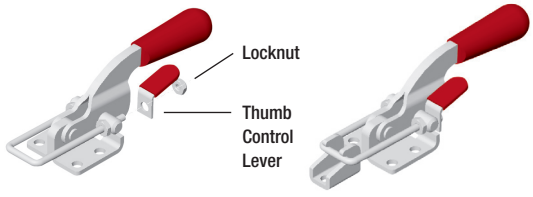


Model no.	Holding Capacity [lbs.]	[lbs.]	Adjustment Range
375-R	4,000	2.10	0-0.69
375-R-M-25			
375-R-M-50			
375-R-M-100			

Model 375-R
Shown with optional latch plate (385102)

Patented #6,561,556

For added convenience and functionality, every DE-STA-CO pull action clamp is now equipped with a thumb control lever as a standard feature.

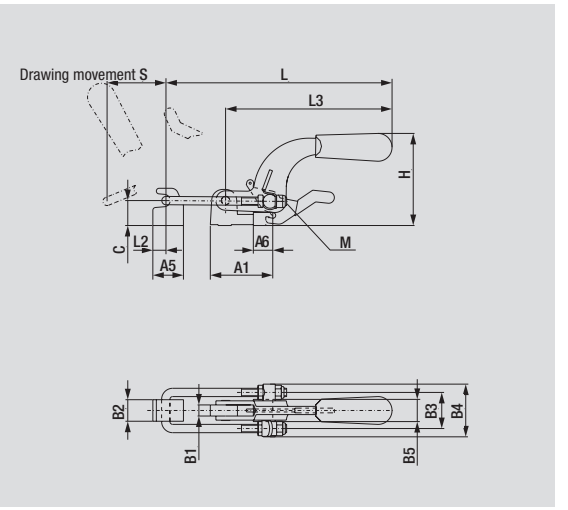


Model no.	A	A1	B	B1	B4	C	C2	C3	øD	øD1	øD3	H	L	L3	M	S
375-R	2.25	3.44	2.25	3.19	1.75	1.13	0.38	0.13	0.41	0.69	0.39	4.26	10.17	7.45	M10	3.50
375-R-M-25 ▲	2.25	3.44	2.25	3.19	1.75	1.13	0.38	0.13	0.41	0.69	0.39	4.26	11.15	7.45	M10	3.50
375-R-M-50 ▲	2.25	3.44	2.25	3.19	1.75	1.13	0.38	0.13	0.41	0.69	0.39	4.26	12.14	7.45	M10	3.50
375-R-M-100 ▲	2.25	3.44	2.25	3.19	1.75	1.13	0.38	0.13	0.41	0.69	0.39	4.26	14.11	7.45	M10	3.50

▲ Available upon request

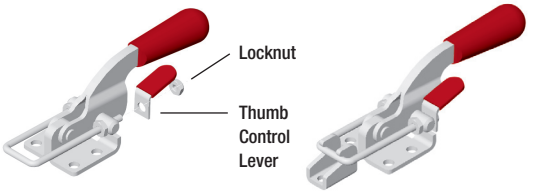
Model 375-BR

Model no.	Holding Capacity [lbs.]	[lbs.]	Adjustment Range
375-BR	4,000	2.75	0-0.69
375-BR-M-25			
375-BR-M-50			
375-BR-M-100			



Model 375-BR
Shown with supplied
latch plate (375509)

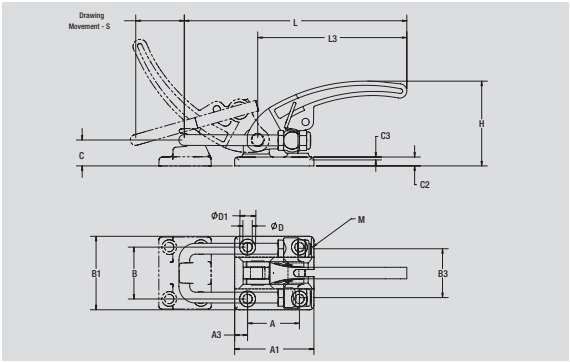
Patented #6,561,556
For added convenience and functionality, every DE-STA-CO pull action clamp is now equipped with a thumb control lever as a standard feature.



Model no.	A1	A5	A6	B1	B2	B3	B4	B5	C	H	L	L3	M	S				
375-BR	2.80	1.38	0.87	0.49	0.88	1.75	2.50	1.00	1.13	4.18	10.20	7.48	M10	3.50				
375-BR-M-25 ▲	2.80	1.38	0.87	0.49	0.88	1.75	2.50	1.00	1.13	4.18	11.18	7.48	M10	3.50				
375-BR-M-50 ▲	2.80	1.38	0.87	0.49	0.88	1.75	2.50	1.00	1.13	4.18	12.17	7.48	M10	3.50				
375-BR-M-100 ▲	2.80	1.38	0.87	0.49	0.88	1.75	2.50	1.00	1.13	4.18	14.14	7.48	M10	3.50				

▲ Available upon request

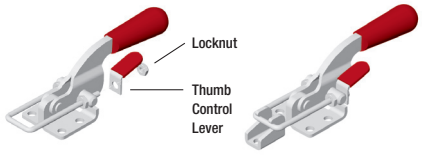
Model 385



Model no.	Holding Capacity [lbs.]	[lbs.]	Adjustment Range
385	7,500	3.62	0-1.07
385-M-25			
385-M-50			
385-M-100			

ALSO AVAILABLE		
As DE-STA-CO Toggle Lock Plus	Model 385-R	Page 6.13
As Stainless Steel	Model 385-V2A	Page 8.15
See accessories beginning on page 9.1.		

Patented #6,561,556
For added convenience and functionality, every DE-STA-CO pull action clamp is now equipped with a thumb control lever as a standard feature.



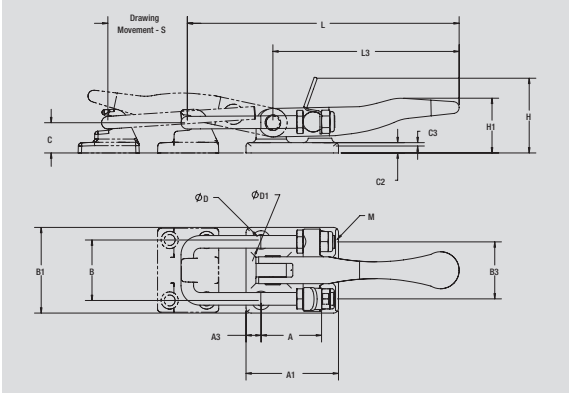
Patented Thumb Lever Control

Model 385
Shown with optional
latch plate (385102)

Model no.	A	A1	A3	B	B1	B3	C	C2	C3	øD	øD1	H	L	L3	M	S		
385	2.25	3.44	0.56	2.25	3.19	2.12	1.13	0.38	0.13	0.41	0.69	3.75	10.13	6.44	M12	2.19		
385-M-25 ▲	2.25	3.44	0.56	2.25	3.19	2.12	1.13	0.38	0.13	0.41	0.69	3.75	11.11	6.44	M12	2.19		
385-M-50 ▲	2.25	3.44	0.56	2.25	3.19	2.12	1.13	0.38	0.13	0.41	0.69	3.75	12.10	6.44	M12	2.19		
385-M-100 ▲	2.25	3.44	0.56	2.25	3.19	2.12	1.13	0.38	0.13	0.41	0.69	3.75	14.07	6.44	M12	2.19		

▲ Available upon request

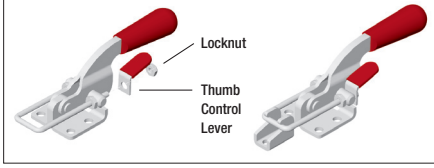
Model 385-L



Model no.	Holding Capacity [lbs.]	[lbs.]	Adjustment Range
385-L	7,500	3.62	0-1.07
385-L-M-25			
385-L-M-50			
385-L-M-100			

Versions in stainless steel beginning on page 8.1.

Patented #6,561,556
For added convenience and functionality, every DE-STA-CO pull action clamp is now equipped with a thumb control lever as a standard feature.



Patented Thumb Lever Control

Model 385-L
Shown with optional
latch plate (385102)

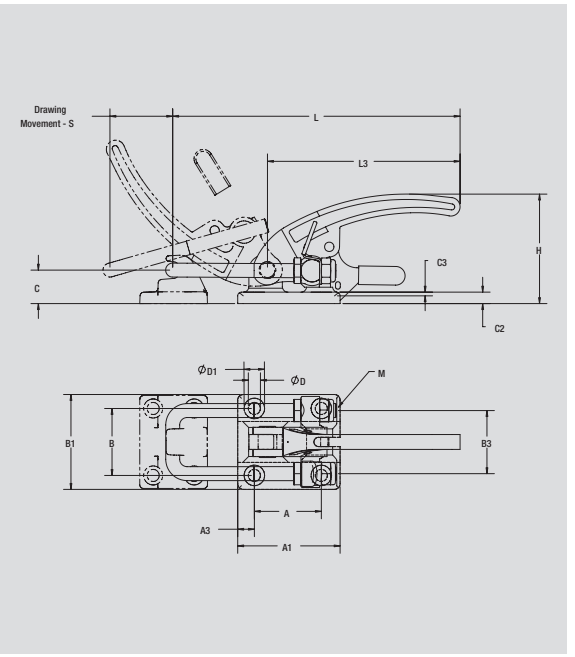
Model no.	A	A1	A3	B	B1	B3	C	C2	C3	øD	øD1	H	H1	L	L3	M	S	
385-L	2.25	3.44	0.56	2.25	3.19	2.12	1.13	0.38	0.13	0.41	0.69	2.75	1.84	10.13	6.95	M12	2.19	
385-L-M-25▲	2.25	3.44	0.56	2.25	3.19	2.12	1.13	0.38	0.13	0.41	0.69	2.75	1.84	11.11	6.95	M12	2.19	
385-L-M-50▲	2.25	3.44	0.56	2.25	3.19	2.12	1.13	0.38	0.13	0.41	0.69	2.75	1.84	12.10	6.95	M12	2.19	
385-L-M-100▲	2.25	3.44	0.56	2.25	3.19	2.12	1.13	0.38	0.13	0.41	0.69	2.75	1.84	14.07	6.95	M12	2.19	

▲ Available upon request

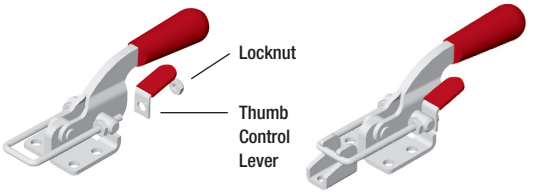
Model 385-R

Model no.	Holding Capacity ➡ [lbs.]	[lbs.]	Adjustment Range
385-R	7,500	3.39	0-1.07
385-R-M-25			
385-R-M-50			
385-R-M-100			

Model 385-R
Shown with optional
latch plate (385102)



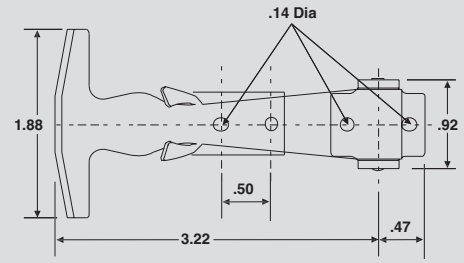
Patented #6,561,556
For added convenience and functionality, every DE-STA-CO pull action clamp is now equipped with a thumb control lever as a standard feature.

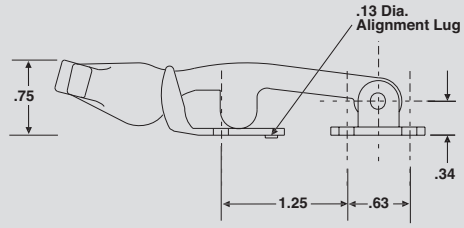


Model no.	A	A1	A3	B	B1	B3	C	C2	C3	øD	øD1	H	L	L3	M	S
385-R	2.25	3.44	0.56	2.25	3.19	2.12	1.13	0.38	0.13	0.41	0.69	2.75	10.13	6.95	M12	2.19
385-R-M-25 ▲	2.25	3.44	0.56	2.25	3.19	2.12	1.13	0.38	0.13	0.41	0.69	2.75	11.11	6.95	M12	2.19
385-R-M-50 ▲	2.25	3.44	0.56	2.25	3.19	2.12	1.13	0.38	0.13	0.41	0.69	2.75	12.10	6.95	M12	2.19
385-R-M-100 ▲	2.25	3.44	0.56	2.25	3.19	2.12	1.13	0.38	0.13	0.41	0.69	2.75	14.07	6.95	M12	2.19

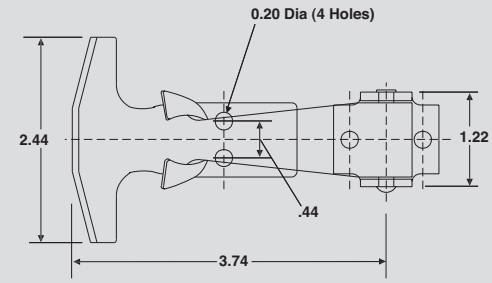
▲ Available upon request

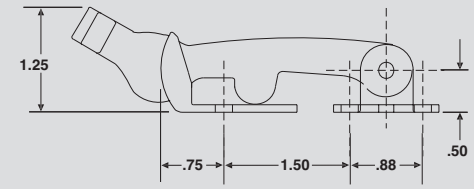
Model 326



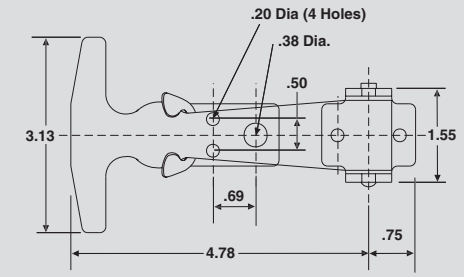


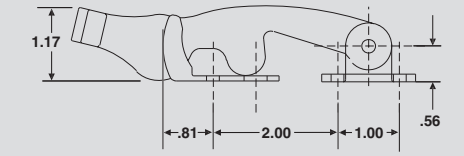
Model 336





Model 346





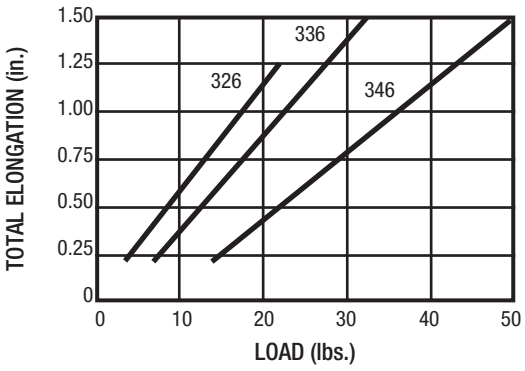
Information

DE-STA-CO "T" handle rubber latches provide vibration and sound dampening and compensation for severe misalignment. The latch handle is made of an ozone resistant synthetic rubber and the base and keeper are formed of passivated stainless steel. Operation is easy: simply pull on handle and stretch to slide bulb of rubber handle into the keeper.

- Automatically compensates for misalignment
- Dampens vibration
- Dampens sound
- Easy to operate
- Ozone resistant synthetic rubber (EPDM)
- Durometer 70 ± 5
- Stainless steel (passivated) components (302-304SS)
- Three models
- Low cost
- Max. temperature rating 250° F (121° C)

53260
Model 326

LOAD DEFLECTION CHART



Model no.	EDP no.	Holding Capacity	Weight
326	53260	8 lbs.	0.07 lbs.
336	53360	12 lbs.	0.16 lbs.
346	53460	25 lbs.	0.36 lbs.

Pull action latch clamps – vertical

■ **With latch plate and U-shaped hook**

Application areas

Ideal for quick clamping for the closure of covers and flaps on rotating or stationary containers, drums, boxes and molds. Holding capacities of up to 2,000 lbs.

Product features

- Patented thumb control lever
- Rivets made of stainless steel
- Zinc plated
- Oil-resistant, ergonomically shaped DE-STA-CO handle grip

Accessories

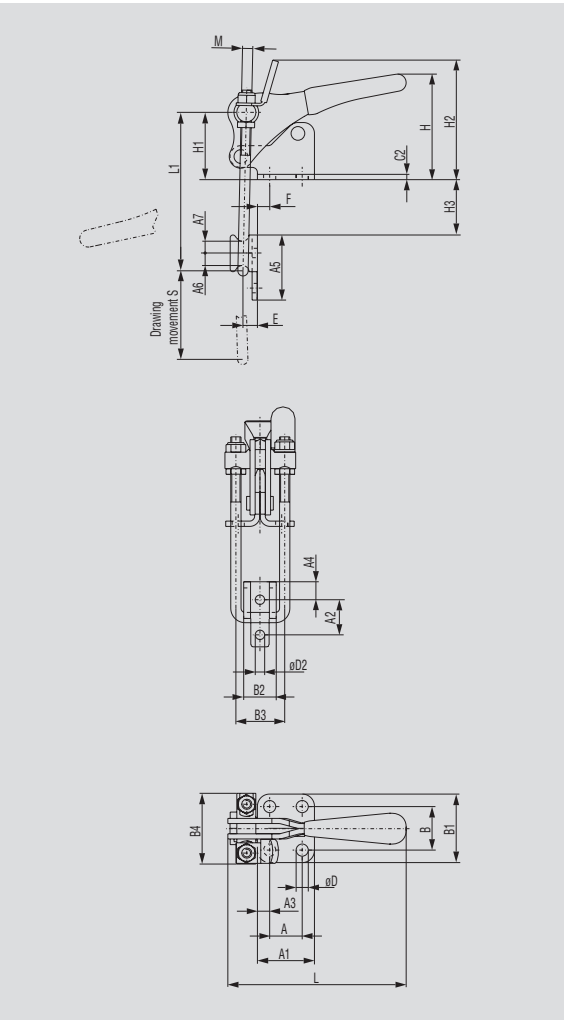
- Clamps are supplied with U-shaped hooks and latch plates. (except Model 374)

Models 324, 334, 344

Model no.	Holding Capacity ➡ [lbs.]	[lbs.]	Adjustment Range
324	500	0.25	0-0.50
324-M-25			
324-M-50			
324-M-100			
334	1,000	0.60	0-0.80
334-M-25			
334-M-50			
334-M-100			
344	2,000	1.50	0-1.26
344-M-25			
344-M-50			
344-M-100			

ALSO AVAILABLE		
In Stainless Steel	Models 324-SS. 334-SS	Page 8.16
	Model 344-SS ▲	Page 8.16
Accessories	Page 9.1	

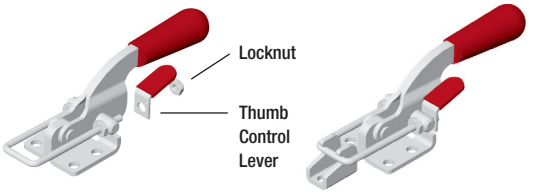
▲ Available upon request, as are a number of other modifications



Patented Thumb Lever Control

Patented #6,561,556

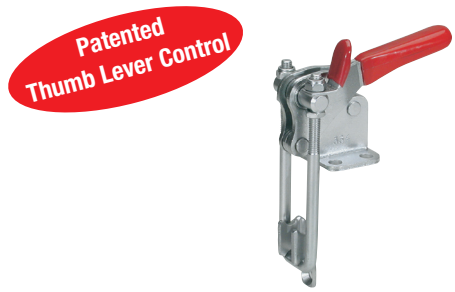
For added convenience and functionality, every DE-STA-CO pull action clamp is now equipped with a thumb control lever as a standard feature.



Models 324, 334, 344 – cont'd

Model no.	A	A1	A2	A3	A4	A5	A6	A7	B	B1
324	0.50	1.00	0.56	0.25	0.28	1.00	0.19	0.19	0.88	1.38
324-M-25	0.50	1.00	0.56	0.25	0.28	1.00	0.19	0.19	0.88	1.38
324-M-50	0.50	1.00	0.56	0.25	0.28	1.00	0.19	0.19	0.88	1.38
324-M-100	0.50	1.00	0.56	0.25	0.28	1.00	0.19	0.19	0.88	1.38
334	0.75	1.31	0.81	0.28	0.41	1.50	0.28	0.28	1.00	1.56
334-M-25	0.75	1.31	0.81	0.28	0.41	1.50	0.28	0.28	1.00	1.56
334-M-50	0.75	1.31	0.81	0.28	0.41	1.50	0.28	0.28	1.00	1.56
334-M-100	0.75	1.31	0.81	0.28	0.41	1.50	0.28	0.28	1.00	1.56
344	1.25	1.94	1.06	0.35	0.69	2.13	0.36	0.39	1.44	2.12
344-M-25	1.25	1.94	1.06	0.35	0.69	2.13	0.36	0.39	1.44	2.12
344-M-50	1.25	1.94	1.06	0.35	0.69	2.13	0.36	0.39	1.44	2.12
344-M-100	1.25	1.94	1.06	0.35	0.69	2.13	0.36	0.39	1.44	2.12

Model no.	Max. Mechanical Advantage (M.A.)	Force Applied to Handle at D
324	31:1	0.250
334	31:1	0.250
344	45:1	0.250



Model no.	B2	B3	B4	C2	øD	øD2	H	H2	L	L1 max	M	S	E	F	H3 max	H1
324	0.53	0.81	1.19	0.09	0.20	0.17	1.89	1.98	3.50	2.56	M4	1.53	0.19	0.22	0.91	1.10
324-M-25▲	0.53	0.81	1.19	0.09	0.20	0.17	1.89	1.98	3.50	3.54	M4	1.53	0.19	0.22	1.89	1.10
324-M-50▲	0.53	0.81	1.19	0.09	0.20	0.17	1.89	1.98	3.50	4.53	M4	1.53	0.19	0.22	2.88	1.10
324-M-100▲	0.53	0.81	1.19	0.09	0.20	0.17	1.89	1.98	3.50	6.50	M4	1.53	0.19	0.22	4.85	1.10
334	0.68	1.13	1.63	0.12	0.28	0.22	2.39	2.69	4.10	3.70	M6	2.00	0.35	0.19	1.35	1.55
334-M-25▲	0.68	1.13	1.63	0.12	0.28	0.22	2.39	2.69	4.10	4.68	M6	2.00	0.35	0.19	2.33	1.55
334-M-50▲	0.68	1.13	1.63	0.12	0.28	0.22	2.39	2.69	4.10	5.67	M6	2.00	0.35	0.19	3.32	1.55
334-M-100▲	0.68	1.13	1.63	0.12	0.28	0.22	2.39	2.69	4.10	7.64	M6	2.00	0.35	0.19	5.29	1.55
344	1.19	1.75	2.38	0.16	0.34	0.34	3.42	3.10	5.78	5.00	M8	2.50	0.50	0.30	1.93	1.86
344-M-25▲	1.19	1.75	2.38	0.16	0.34	0.34	3.42	3.10	5.78	5.98	M8	2.50	0.50	0.30	1.93	1.86
344-M-50▲	1.19	1.75	2.38	0.16	0.34	0.34	3.42	3.10	5.78	6.97	M8	2.50	0.50	0.30	1.93	1.86
344-M-100▲	1.19	1.75	2.38	0.16	0.34	0.34	3.42	3.10	5.78	8.94	M8	2.50	0.50	0.30	1.93	1.86

▲ Available upon request

Pull action latch clamps – vertical

- **With U-shaped hook (latch plate sold separately)**

Application areas

Ideal for quick closing of covers and flaps on rotating or stationary containers, drums, boxes and molds. These clamps offer a holding capacity of 4,000 lbs.

Product features

- Patented thumb control lever
- Base and latch plate cast, black oxided
- Zinc plated
- Partially oil-resistant, ergonomically shaped DE-STA-CO handle grip

Accessories

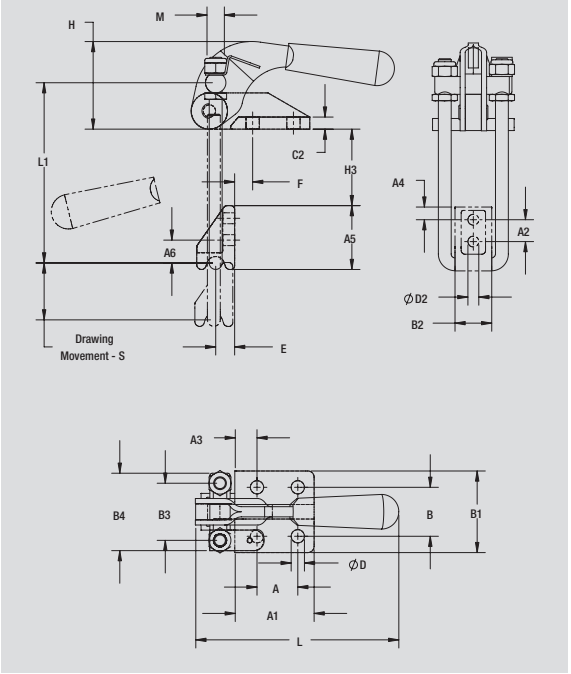
- Latch clamps of this series are delivered complete with U-shaped hooks (latch plates sold separately).

Model 374

Model no.	Holding Capacity [lbs.]	[lbs.]	Adjustment Range
374	4,000	2.10	0-2.03
374-M-25			
374-M-50			
374-M-100			

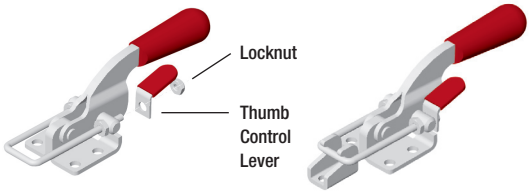
Patented Thumb Lever Control

Shown with optional latch plate (374104)



Patented #6,561,556

For added convenience and functionality, every DE-STA-CO pull action clamp is now equipped with a thumb control lever as a standard feature.



Model no.	A	A1	A2	A3	A4	A5	A6	B	B1	B2	B3	B4	C2	ØD	ØD2	H	L	L1 max	M	S	E	F	H3max	H1
374	1.25	2.41	0.67	0.66	0.39	1.96	0.50	1.50	2.50	1.13	1.75	2.36	0.37	0.41	0.33	2.68	6.23	5.52	M10	1.75	0.58	0.55	2.34	1.42
374-M-25▲	1.25	2.41	0.67	0.66	0.39	1.96	0.50	1.50	2.50	1.13	1.75	2.36	0.37	0.41	0.33	2.68	6.23	6.50	M10	1.75	0.58	0.55	3.32	1.42
374-M-50▲	1.25	2.41	0.67	0.66	0.39	1.96	0.50	1.50	2.50	1.13	1.75	2.36	0.37	0.41	0.33	2.68	6.23	7.49	M10	1.75	0.58	0.55	4.31	1.42
374-M-100▲	1.25	2.41	0.67	0.66	0.39	1.96	0.50	1.50	2.50	1.13	1.75	2.36	0.37	0.41	0.33	2.68	6.23	9.46	M10	1.75	0.58	0.55	6.28	1.42

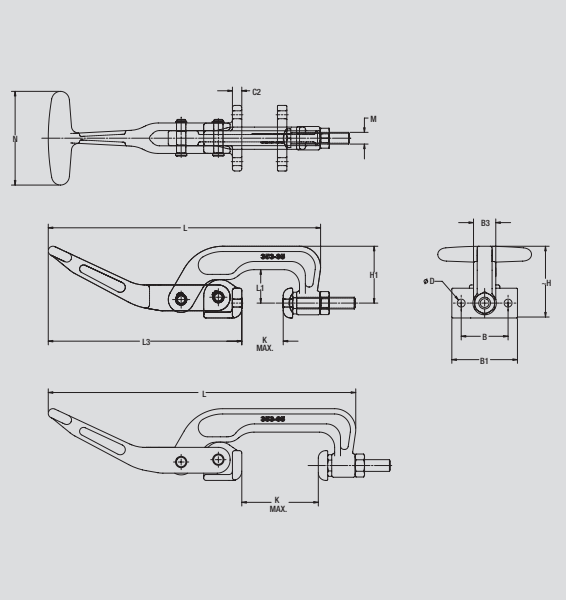
▲ Available upon request

Models 353-35, 353-65

NEW

Information

These robust, heavy-duty cast clamps are designed to withstand the harshest environments of the rotational mold industry. They are ideal for clamping directly on the parting lines of CNC machined molds and are available in carbon or stainless steel. The clamps utilize two stainless steel pivot pins to help eliminate pivot point binding. The curved radius on the mounting flange and keeper plate allows the clamp to fit snugly along the radius of the parting line. The ergonomic handle provides greater operator comfort by reducing the stress on the operator's hands. Models 353-35 and 353-65 are black oxided to help reduce corrosion. The clamps are supplied with a tapered M10X1.5 hex head bolt assembly and keeper plate.



Model no.	Holding Capacity [lbs.]	[lbs.]	Max. Mechanical Adjustment (M.A.)
353-35	2,800	2.10	23:1
353-65	2,100	2.30	27:1

ALSO AVAILABLE		
In Stainless Steel	Model 359-35, 359-65	Page 8.22
See accessories beginning on page 9.1.		

Keeper plate
(353004)

Tapered bolt assembly
(353908)

Model no.	B	B1	B3	C2	øD	~H	H1	K	L	L1	L3	M	N
353-35	1.57	2.20	0.75	0.31	0.27	2.38	1.91	1.39	9.15	1.12	6.50	M10	3.15
353-65	1.57	2.20	0.75	0.31	0.27	2.38	1.91	2.57	10.33	1.12	6.50	M10	3.15

Pull action latch clamps – horizontal

■ **With hook**

Application areas

Ideal for quick closing of covers and flaps on rotating or stationary containers, drums, boxes and molds. These clamps offer holding capacities of up to 1,000 lbs.

The models with additional release lever are recommended where vibration of containers, transportation of boxes and drums is present.

Safety instruction

To ensure a secure form of locking, the clamp must be adjusted into the corresponding over-center toggle position.

Product features

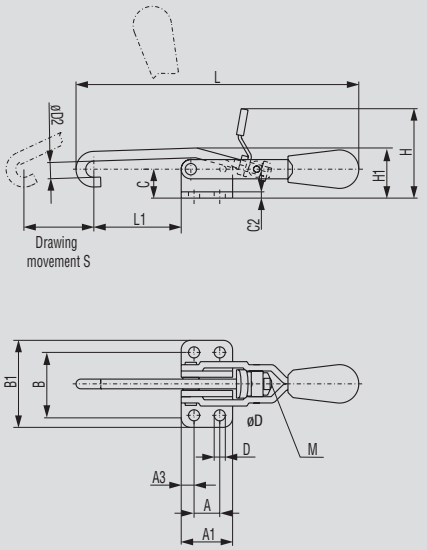
- Patented thumb control lever
- Rivets made of stainless steel
- Zinc plated
- Oil-resistant, ergonomically shaped DE-STA-CO handle grip

Accessories

- Latch clamps of this series are delivered without latch plates. Optional latch plates available on page 6.23.

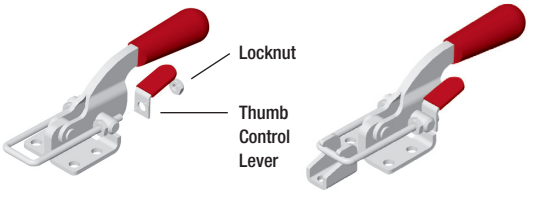
Models 330, 351, 371, 381

Model no.	Holding Capacity ➧ [lbs.]	[lbs.]	Adjustment Range
330	200	0.24	0-0.25
330-M-25			
330-M-50			
330-M-100			
351	375	0.61	0-0.43
351-M-25			
351-M-50			
351-M-100			
371	750	1.53	0-0.81
371-M-25			
371-M-50			
371-M-100			
381	1,000	2.56	0-0.93
381-M-25			
381-M-50			
381-M-100			



Patented #6,561,556

For added convenience and functionality, every DE-STA-CO pull action clamp is now equipped with a thumb control lever as a standard feature.



Models 330, 351, 371, 381 – cont'd

ALSO AVAILABLE		
As DE-STA-CO Toggle Lock Plus	Models 351-R, 371-R	Page 6.22
In Stainless Steel	Model 330-SS, 351-SS	Page 8.17
	Model 351-BSS	Page 8.17
	Models 371-SS, 381-SS ▲	Page 8.17
See accessories beginning on page 9.1.		
▲ Available upon request, as are a number of other modifications		

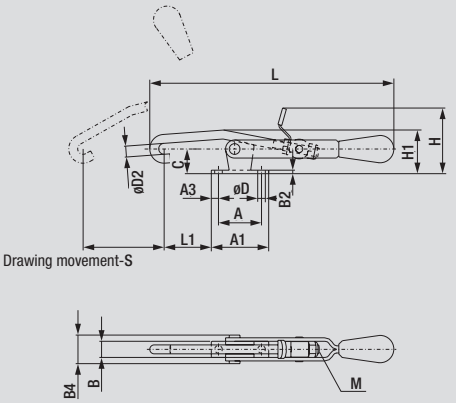
Model no.	A	A1	A3	B	B1	C	C2	øD	øD2	H	H1	L	L1 max	M	S
330	0.50	1.00	0.25	1.22	1.69	0.56	0.12	0.22	0.32	1.43	0.89	6.04	1.76	M5	2.31
330-M-25 ▲	0.50	1.00	0.25	1.22	1.69	0.56	0.12	0.22	0.32	1.43	0.89	7.02	2.74	M5	2.31
330-M-50 ▲	0.50	1.00	0.25	1.22	1.69	0.56	0.12	0.22	0.32	1.43	0.89	8.01	3.73	M5	2.31
330-M-100 ▲	0.50	1.00	0.25	1.22	1.69	0.56	0.12	0.22	0.32	1.43	0.89	9.98	5.70	M5	2.31
351	0.75	1.50	0.50	1.37	1.93	0.75	0.12	0.22	0.38	1.85	1.35	8.86	2.18	M8	4.00
351-M-25 ▲	0.75	1.50	0.50	1.37	1.93	0.75	0.12	0.22	0.38	1.85	1.35	9.04	3.16	M8	4.00
351-M-50 ▲	0.75	1.50	0.50	1.37	1.93	0.75	0.12	0.22	0.38	1.85	1.35	10.83	4.15	M8	4.00
351-M-100 ▲	0.75	1.50	0.50	1.37	1.93	0.75	0.12	0.22	0.38	1.85	1.35	12.80	6.12	M8	4.00
371	1.25	1.94	0.34	1.94	2.63	1.42	0.16	0.34	0.50	2.38	2.25	11.86	2.81	M10	5.38
371-M-25 ▲	1.25	1.94	0.34	1.94	2.63	1.42	0.16	0.34	0.50	2.38	2.25	12.84	3.79	M10	5.38
371-M-50 ▲	1.25	1.94	0.34	1.94	2.63	1.42	0.16	0.34	0.50	2.38	2.25	13.83	4.78	M10	5.38
371-M-100 ▲	1.25	1.94	0.34	1.94	2.63	1.42	0.16	0.34	0.50	2.38	2.25	16.78	6.75	M10	5.38
381	1.13	2.13	0.50	2.37	3.38	1.81	0.19	0.41	0.62	2.90	2.71	13.45	3.13	M12	6.13
381-M-25 ▲	1.13	2.13	0.50	2.37	3.38	1.81	0.19	0.41	0.62	2.90	2.71	14.43	4.11	M12	6.13
381-M-50 ▲	1.13	2.13	0.50	2.37	3.38	1.81	0.19	0.41	0.62	2.90	2.71	15.41	5.10	M12	6.13
381-M-100 ▲	1.13	2.13	0.50	2.37	3.38	1.81	0.19	0.41	0.62	2.90	2.71	17.39	7.07	M12	6.13

▲ Available upon request

Model 351-B

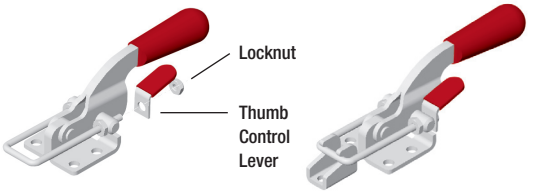
Model no.	Holding Capacity [lbs.]	[lbs.]	Adjustment Range
351-B	375	0.61	0-0.43
351-B-M-25			
351-B-M-50			
351-B-M-100			

Patented Thumb Lever Control



Drawing movement-S

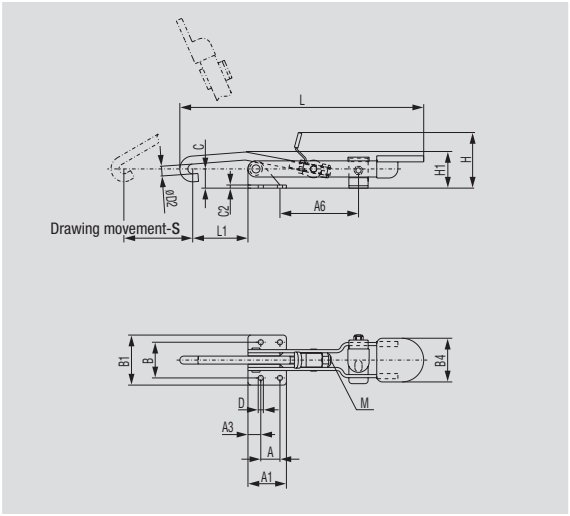
Patented #6,561,556
For added convenience and functionality, every DE-STA-CO pull action clamp is now equipped with a thumb control lever as a standard feature.



Model no.	A	A1	A3	B	B4	C	C2	øD	øD2	H	H1	L	L1 max	M	S
351-B	1.50	2.00	0.25	0.56	0.95	0.86	0.12	0.27	0.38	1.96	1.46	8.86	1.67	M8	4.00
351-B-M-25 ▲	1.50	2.00	0.25	0.56	0.95	0.86	0.12	0.27	0.38	1.96	1.46	9.84	2.65	M8	4.00
351-B-M-50 ▲	1.50	2.00	0.25	0.56	0.95	0.86	0.12	0.27	0.38	1.96	1.46	10.83	3.64	M8	4.00
351-B-M-100 ▲	1.50	2.00	0.25	0.56	0.95	0.86	0.12	0.27	0.38	1.96	1.46	12.80	5.61	M8	4.00

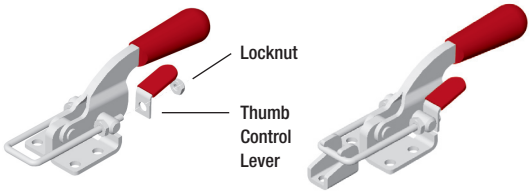
▲ Available upon request

Models 351-R, 371-R



Model no.	Holding Capacity [lbs.]	[lbs.]	Adjustment Range
351-R	375	0.61	0-0.43
351-R-M-25			
351-R-M-50			
351-R-M-100			
371-R	750	1.53	0-0.81
371-R-M-25			
371-R-M-50			
371-R-M-100			

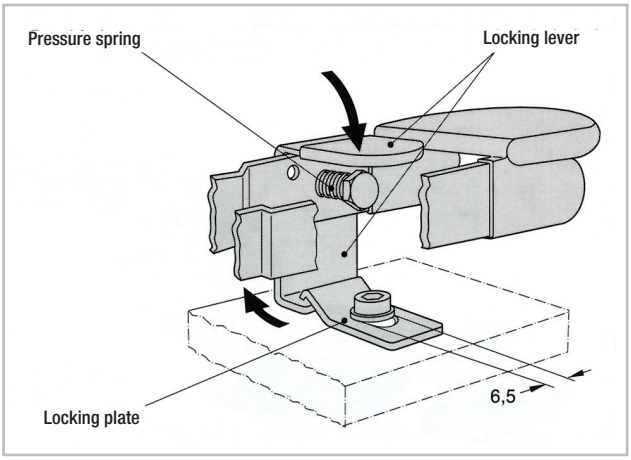
Patented #6,561,556
For added convenience and functionality, every DE-STA-CO pull action clamp is now equipped with a thumb control lever as a standard feature.



Model no.	A	A1	A3	B	B1	B4	C	C2	øD	øD2	H	H1	L	L1max	M	S
351-R	0.75	1.50	0.50	1.37	1.93	1.71	0.75	0.12	0.22	0.38	1.85	1.42	9.10	2.18	M8	4.00
351-R-M-25 ▲	0.75	1.50	0.50	1.37	1.93	1.71	0.75	0.12	0.22	0.38	1.85	1.35	10.08	3.16	M8	4.00
351-R-M-50 ▲	0.75	1.50	0.50	1.37	1.93	1.71	0.75	0.12	0.22	0.38	1.85	1.35	11.07	4.15	M8	4.00
351-R-M-100 ▲	0.75	1.50	0.50	1.37	1.93	1.71	0.75	0.12	0.22	0.38	1.85	1.35	13.04	6.12	M8	4.00
371-R	1.25	1.94	0.34	1.94	2.63	2.36	1.42	0.16	0.34	0.50	2.38	2.25	12.88	2.83	M10	5.38
371-R-M-25 ▲	1.25	1.94	0.34	1.94	2.63	2.36	1.42	0.16	0.34	0.50	2.38	2.25	13.86	3.81	M10	5.38
371-R-M-50 ▲	1.25	1.94	0.34	1.94	2.63	2.36	1.42	0.16	0.34	0.50	2.38	2.25	14.85	4.80	M10	5.38
371-R-M-100 ▲	1.25	1.94	0.34	1.94	2.63	2.36	1.42	0.16	0.34	0.50	2.38	2.25	16.82	6.77	M10	5.38

▲ Available upon request

Latch clamps 351-R, and 371-R



Information concerning the assembly and function of the clamps locking mechanism

The locking plate which is supplied with the unit must be fastened with a screw (M6 or 1/2-20) as shown in this illustration. The screw head should be flat.

Function

When closing the latch clamp, the locking lever engages automatically. Actuate the locking lever to open the clamp.

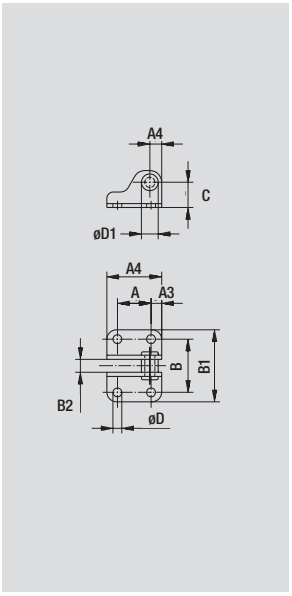
Latch plates for models 330, 351, 371, 381

NEW

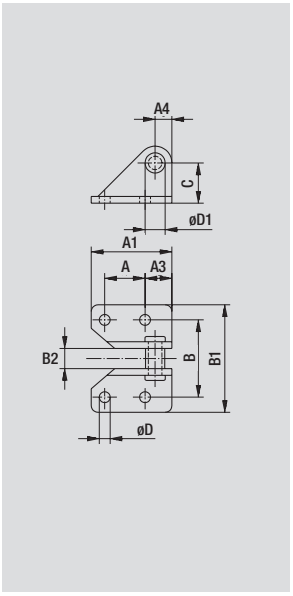
Information

DE-STA-CO has developed J-hook latch plates to help reduce engineering time when installing DE-STA-CO J-hook style clamps. The J-hook latch plate guarantees that the latch point is below the center line of the clamp assembly's two pivot points. This allows for the proper toggle lock action.

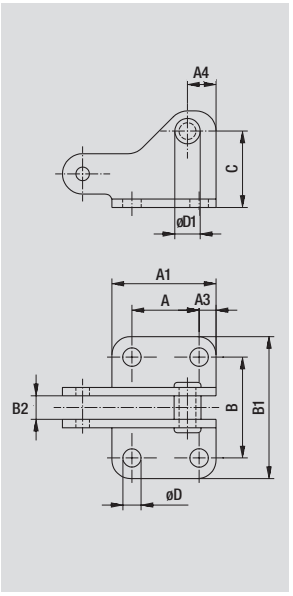
Models 330000, 351000, 371000, 381000



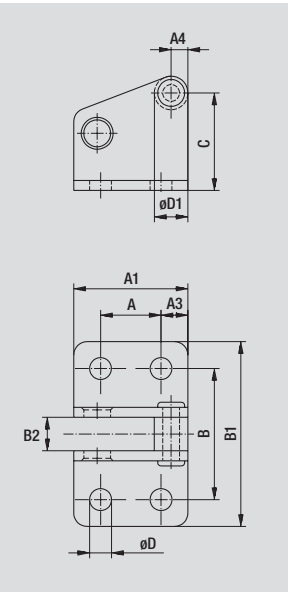
Model 330000



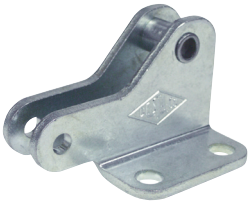
Model 351000



Model 371000



Model 381000



ALSO AVAILABLE		
In Stainless Steel	Model 330900 ▲	Page 8.18
	Model 351900 ▲	Page 8.18
	Model 371900 ▲	Page 8.18
	Model 381900 ▲	Page 8.18

▲ Available upon request, as are a number of other modifications

Model no.	[lbs.]
330000	0.04
351000	0.14
371000	0.44
381000	0.66

Model no.	A	A1	A3	A4	B	B1	B2	C	øD	øD1		
330000	0.63	1.02	0.20	0.22	1.00	1.34	0.25	0.47	0.22	0.31		
351000	0.75	1.50	0.47	0.31	1.44	2.00	0.38	0.75	0.20	0.38		
371000	1.25	1.94	0.31	0.53	1.94	2.63	0.50	1.42	0.34	0.47		
381000	1.13	2.13	0.50	0.31	2.50	3.51	0.63	1.81	0.41	0.63		

Notes

Notes

NEW

Models 425, 435, 445, 470:
For rugged clamping applications

These new high strength squeeze action clamp are ideal for rugged clamping applications. Clamp strength comes from the high strength steel that is used. The two-way trigger release, which is standard, allows for fast and easy opening of the clamp.

page 7.6

NEW

STA-GRIP series: Plier action clamps

STA-Grip expands the world of set-up and cycle time reduction opportunities with Plier Clamp capabilities. STA-Grip is like a third hand – designed and engineered for easy, single-hand operation. In addition to these standard models, modifications are available upon request.

page 7.15

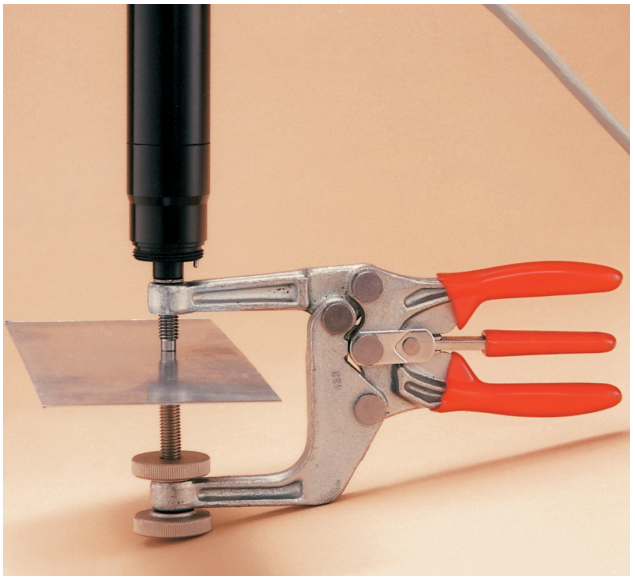
Product group – squeeze action plier clamps

Application areas

In all sectors of industry and manufacturing. Due to the wide range of models, DE-STA-CO plier clamps are used wherever permanent, stationary clamping of workpieces is not possible. DE-STA-CO plier clamps are used in all industries. Opening with the patented quick release lever makes it very easy to operate these plier clamps.

The essential product features

- Made of drop-forged steel
- Zinc plated
- In some cases with patented quick release lever
- Oil-resistant, DE-STA-CO vinyl dipped handle grip



Model 453 modified for use in materials testing

	Model no.	Holding Capacity max. [lbs.]	Category	Page
	325	800		7.3
	345 345-G	800 800		7.4
	424 441	200 350	Standard Standard	7.5
	424-2 441-2	200 350	Standard Standard	7.5
	425	500	**NEW!** Quick Release	7.6

	Model no.	Holding Capacity max. [lbs.]	Category	Page
	431 431-2	100 100		7.6
	435	500	**NEW!** Quick Release	7.7
	443 443-2	500 500		7.7
	445	2,000	**NEW!** Quick Release	7.8
	453	1,000	Quick release	7.8

	Model no.	Holding Capacity max. [lbs.]	Category	Page
	462 482 491	700 1,200 850	Quick release Quick release Quick release	7.9
	462-2	700		7.9
	463	700	Quick release	7.10
	468	700		7.10
	470	2,000	**NEW!** Quick Release	7.11
	474	700		7.11
	480 480-FB	1,200 1,200	Modular	7.12
	484	1,200	Quick release	7.12

	Model no.	Holding Capacity max. [lbs.]	Category	Page
	486	1,000	Quick release	7.13

STA-Grip Plier Action Clamps

	Model no.	Holding Capacity max. [lbs.]	Category	Page
	21006 21007	562 562	STA-GRIP STA-GRIP	7.16
	21013	562	STA-GRIP	7.16
	21014	562	STA-GRIP	7.17
	21030 21083	675	STA-GRIP	7.17
	21130		STA-GRIP	7.18
	21132	225	STA-GRIP	7.18

*Depends on the clamping arm length

Squeeze action plier clamps

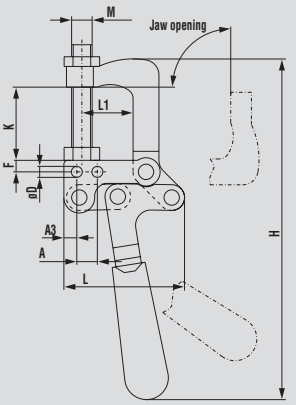
Application areas
Designed with dual mounting flexibility. The models listed below can be permantly mounted or used as portable clamps. For example, these models are suitable for the locking of containers, flaps, etc.

Product features
- Rivets made of stainless steel
- Clamp jaw is drop forged for added strength
- Oil-resistant, ergonomically shaped DE-STA-CO handle grip

Model 325

Model no.	Holding Capacity ⬆ [lbs.]	Jaw Opens +10°	[lbs.]	Standard equipment
325	800	90°	1.18	220203-M

Versions in stainless steel on page 8.1

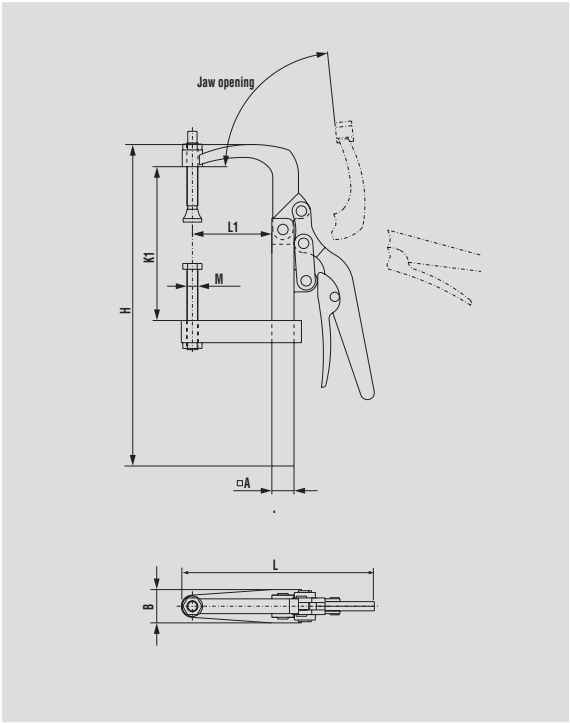


Feature
Using the existing mounting holes, this model can also be permantly mounted.

Model no.	A	A3	B	øD	F	H	K	L	L1	M
325	0.50	0.31	1.06	0.27	0.28	8.11	1.78	2.94	1.25	M12

Application areas

Designed for welding or bolting to a fixture at any point along the mounting bar. Model 345-G includes the optimal sliding jaw. Can also be used as a portable clamp.



Model no.	Holding Capacity ▲ [lbs.]	Jaw Opens ∢ +10°	[lbs.]	Standard equipment
345	800	86°	2.52	468206-M
345-G	800	86°	3.08	468206-M & 210203-M

See additional adjustment spindles beginning on page 9.1.

Model 345

Model 345-G

Model no.	A	B	K1 min	K1 max	L	L1	M
345	0.75	0.69	–	9.12	6.56	2.69	M10
345-G ▲	0.75	0.69	4.13	9.25	6.56	2.69	M10

▲ Available upon request

Product group – squeeze action plier clamps

Application areas

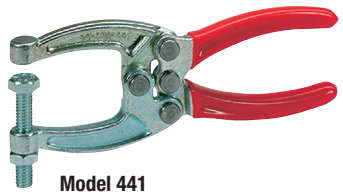
These high strength squeeze action clamps are ideal for all rugged clamping applications. Clamp strength comes from the high-strength steel that is used.

Models 424, 441

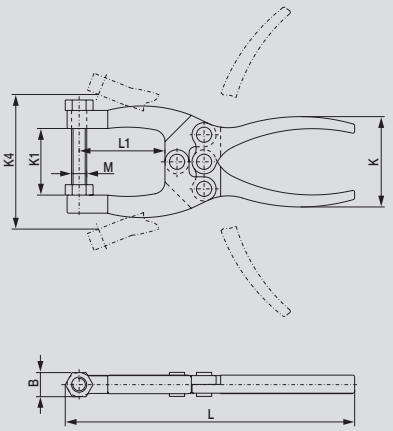
Model no.	Holding Capacity [lbs.]	[lbs.]	Standard equipment
424	200	0.31	424208-M (neoprene tipped)
441	350	0.63	441203-M (hex head)

See additional adjustment spindles beginning on page 9.1.

Model 424



Model 441



Model no.	B	K	K1	K4	L	L1	M
424	0.66	1.91	1.00	2.06	4.63	1.08	M6
441	0.50	1.97	1.25	2.86	6.06	1.77	M8

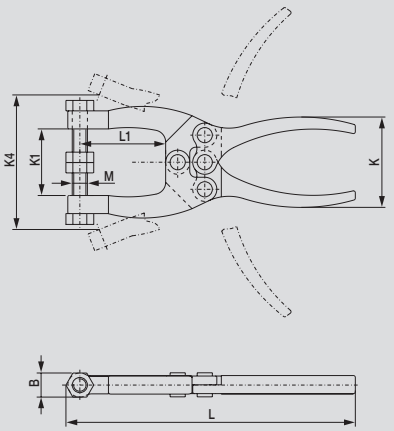
Models 424-2, 441-2

Model no.	Holding Capacity [lbs.]	[lbs.]	Standard equipment
424-2	200	0.31	2x 431208-M (neoprene tipped)
441-2	350	0.63	2x 461203-M (hex head)

See additional adjustment spindles beginning on page 9.1.

Model 424-2

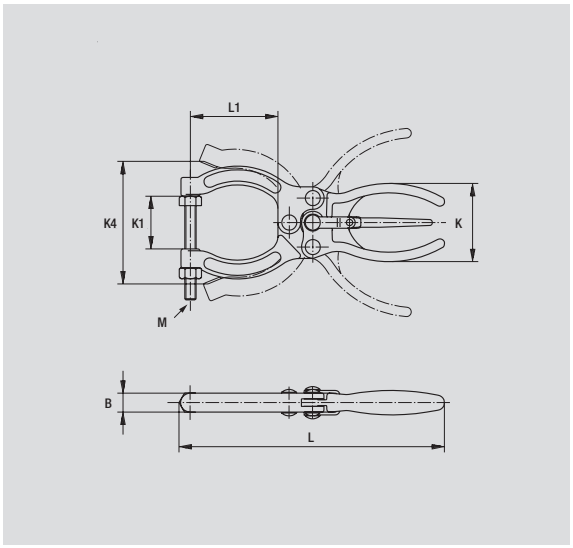
Model 441-2



Model no.	B	K	K1	K4	L	L1	M
424-2	0.66	1.91	1.00	2.06	4.63	1.08	M6
441-2	0.50	1.97	1.25	2.86	6.06	1.77	M8

NEW

Model 425



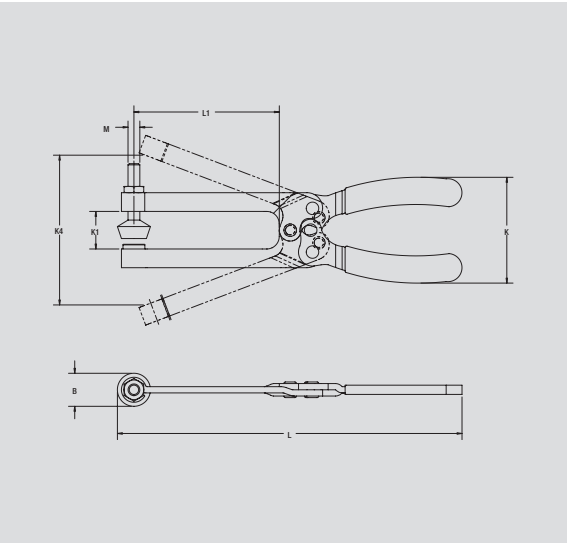
Model no.	Holding Capacity [lbs.]	[lbs.]	Standard equipment
425	500	0.40	205203-M (hex head)

See additional adjustment spindles beginning on page 9.1.

- **Two-way trigger release allows for fast and easy opening of clamp**

Model no.	B	K	K1	K4	L	L1	M
425	0.39	1.73	1.10	2.56	5.54	1.83	M6

Models 431, 431-2



Model no.	Holding Capacity [lbs.]	[lbs.]	Standard equipment
431	100	0.30	424208-M (neoprene tipped)
431-2	100	0.30	2x 431208-M (neoprene tipped)

See additional adjustment spindles beginning on page 9.1.

Model 431

Model 431-2

Model no.	B	K	K1	K4	L	L1	M
431	0.66	2.12	0.75	3.06	6.90	2.93	M6
431-2 ▲	0.66	2.12	0.75	3.06	6.90	2.93	M6

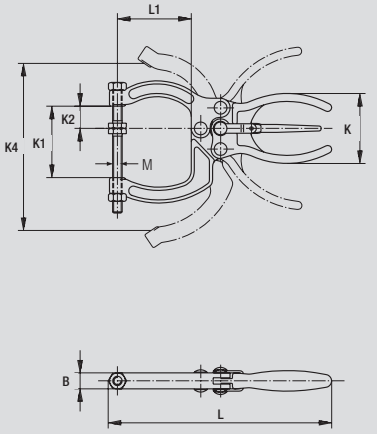
▲ Available upon request

Model 435

NEW

Model no.	Holding Capacity [lbs.]	[lbs.]	Standard equipment
435	500	0.50	2x 205203-M

See additional adjustment spindles beginning on page 9.1.



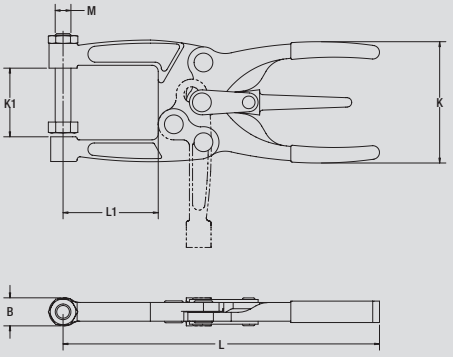
■ **Similar to Model 425 but with wider jaw opening**

Model no.	B	K	K1	K2	K4	L	L1	M
435	0.39	1.72	1.75	0.55	3.23	5.52	1.83	M6

Models 443, 443-2

Model no.	Holding Capacity [lbs.]	Jaw Opens +10°	[lbs.]	Standard equipment
443	500	64°	0.75	441203-M (hex head)
443-2	500	64°	0.75	2x 461203-M (hex head)

See additional adjustment spindles beginning page 9.1.



Model 443

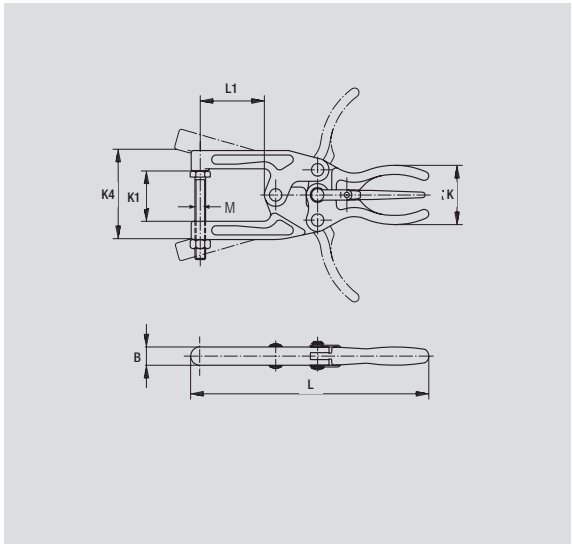
Model 443-2

Model no.	B	K	K1	L	L1	M
443 ▲	0.56	2.47	1.39	6.70	1.88	M8
443-2 ▲	0.56	2.47	1.39	6.70	1.88	M8

▲ Available upon request

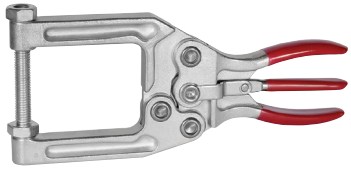
NEW

Model 445



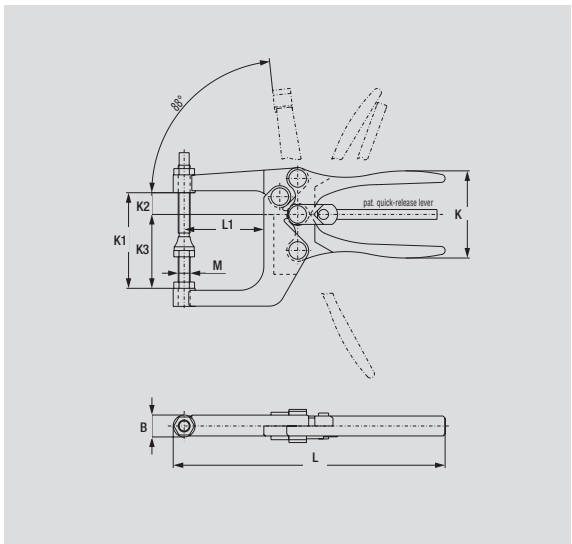
Model no.	Holding Capacity [lbs.]	[lbs.]	Standard equipment
445	2,000	1.60	210203-M (hex head)

See additional adjustment spindles beginning on page 9.1.



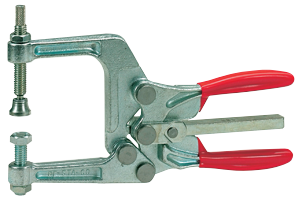
Model no.	B	K	K1	K4	L	L1	M
445	0.63	2.00	2.09	4.41	8.27	2.76	M10

Model 453



Model no.	Holding Capacity [lbs.]	Jaw Opens +10°	[lbs.]	Standard equipment
453	1,000	88°	1.87	468206-M (swivel foot) 491203-M (hex head)

See additional adjustment spindles beginning on page 9.1.



Model no.	B	K	K1	K2	K3	L	L1	M
453	0.69	2.77	3.00	0.71	2.28	8.60	2.50	M10

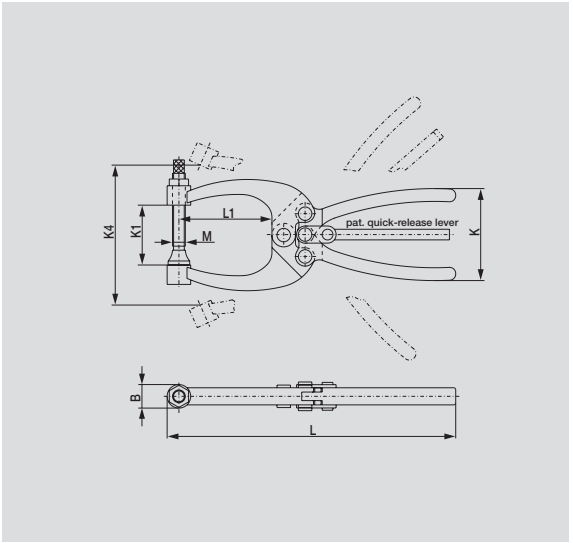
Models 462, 482, 491

Model no.	Holding Capacity [lbs.]	[lbs.]	Standard equipment
462	700	1.13	468206-M (swivel foot)
482	1,200	1.75	468206-M (swivel foot)
491	850	1.75	491203-M (hex head)

See additional adjustment spindles beginning on page 9.1.

Model 462/482

Model 491

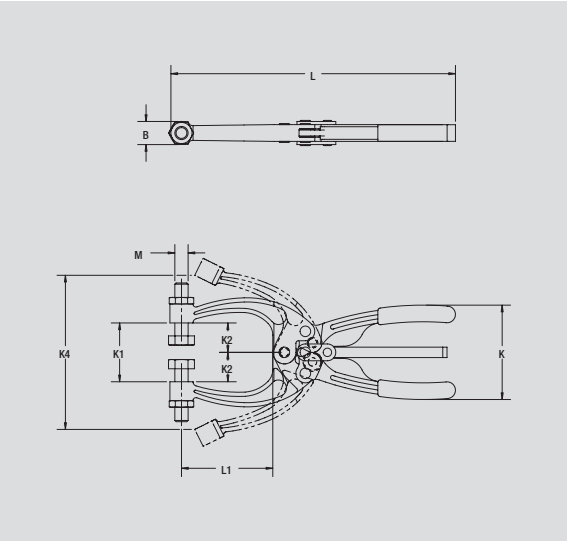


Model no.	B	K	K1	K4	L	L1	M
462	0.69	2.81	1.75	4.10	8.50	2.72	M10
482	0.69	2.80	1.70	4.06	9.19	2.56	M10
491	0.69	2.87	1.00	4.18	9.10	3.50	M10

Model 462-2

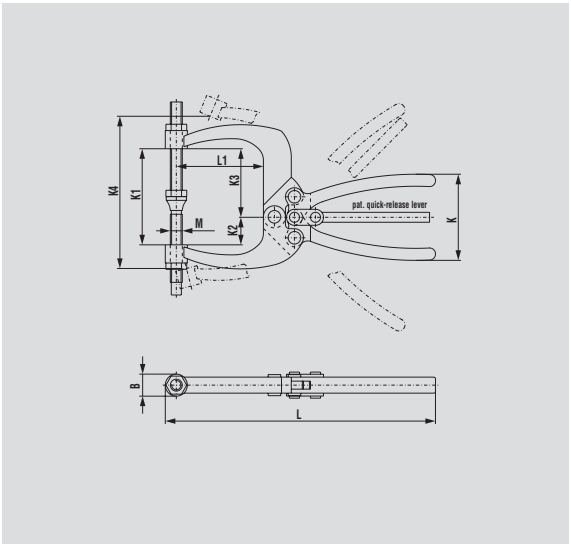
Model no.	Holding Capacity [lbs.]	[lbs.]	Standard equipment
462-2	700	1.13	2x 491203-M (hex head)

See additional adjustment spindles beginning on page 9.1.



Model no.	B	K	K1	K2	K4	L	L1	M
462-2	0.69	2.81	1.75	0.88	4.10	8.50	2.72	M10

Model 463

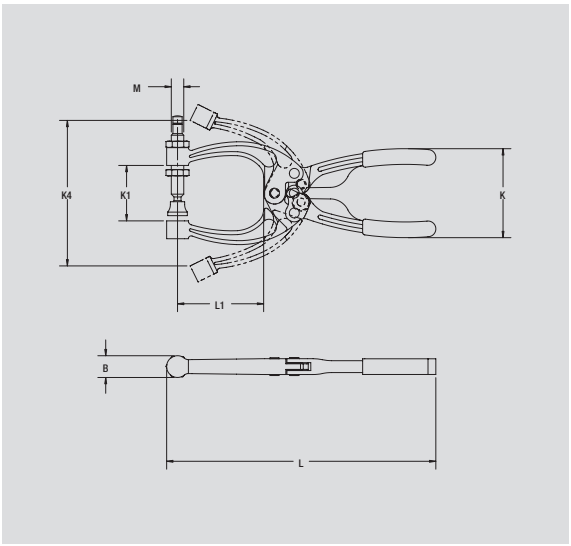


Model no.	Holding Capacity [lbs.]	[lbs.]	Standard equipment
463	700	1.19	468206-M 210203-M

See additional adjustment spindles beginning on page 9.1.

Model no.	B	K	K1	K2	K3	K4	L	L1	M
463	0.69	2.81	3.00	0.88	2.13	4.75	8.50	2.72	M10

Model 468



Model no.	Holding Capacity [lbs.]	[lbs.]	Standard equipment
468	700	1.00	468206-M (swivel foot)

See additional adjustment spindles beginning on page 9.1.

■ **Same as Model 462 except without trigger release**

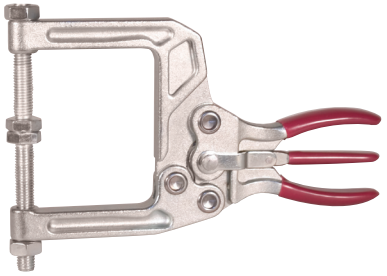
Model no.	B	K	K1	K4	L	L1	M
468	0.69	2.66	1.75	4.10	8.47	2.75	M10

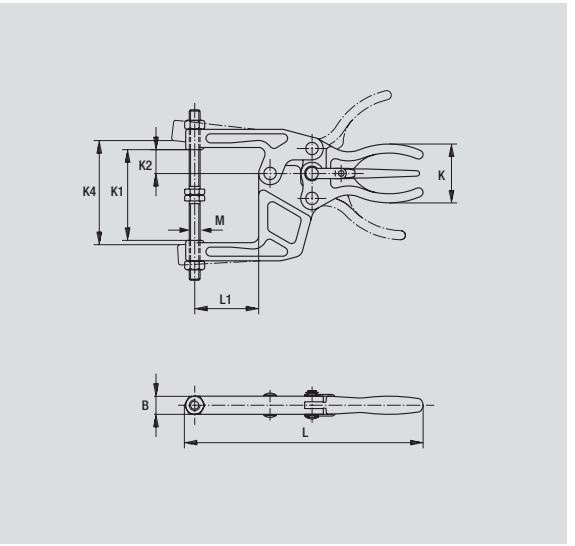
Model 470

NEW

Model no.	Holding Capacity [lbs.]	[lbs.]	Standard equipment
470	2,000	1.90	2x 210203-M (hex head)

See additional adjustment spindles beginning on page 9.1.





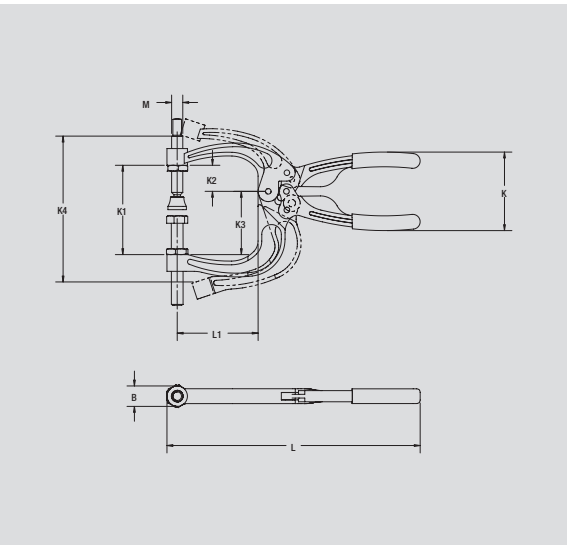
Model no.	B	K	K1	K2	K4	L	L1	M
470	0.63	2.00	3.35	0.91	5.63	8.27	2.76	M10

Model 474

Model no.	Holding Capacity [lbs.]	[lbs.]	Standard equipment
474	700	1.00	468206-M (swivel foot) 210203-M (hex head)

See additional adjustment spindles beginning on page 9.1.

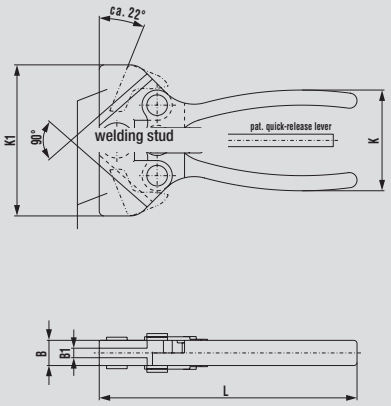
■ **Same as Model 463 except without trigger release**



Model no.	B	K	K1	K2	K3	K4	L	L1	M
474 ▲	0.69	2.81	3.00	0.86	2.13	4.75	8.50	2.72	M10

▲ Available upon request

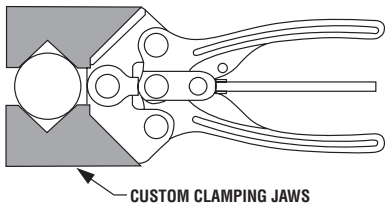
Models 480, 480-FB

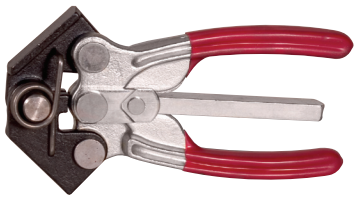


Model no.	Holding Capacity [lbs.]	[lbs.]
480	1,200 with 2.56 Jaw Extension	1.31
480-FB (with spring-assist opening device)	1,200 with 2.56 Jaw Extension	1.31

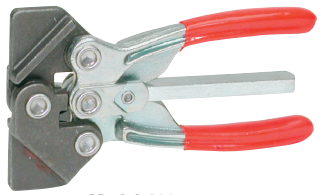
See additional adjustment spindles beginning on page 9.1.

Typical Application





Model 480-FB

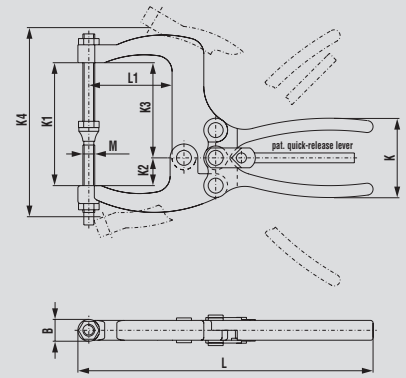


Model 480

Model no.	B	B1	K	K1	L
480 ▲	0.63	0.23	2.61	3.75	6.19
480-FB ▲	0.63	0.23	2.61	3.75	6.19

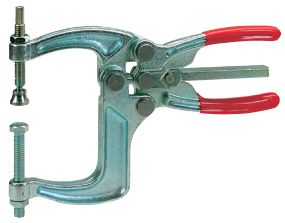
▲ Available upon request

Model 484



Model no.	Holding Capacity [lbs.]	[lbs.]	Standard equipment
484	1,200	2.00	468206-M (swivel foot) 210203-M (hex head)

See additional adjustment spindles beginning on page 9.1.

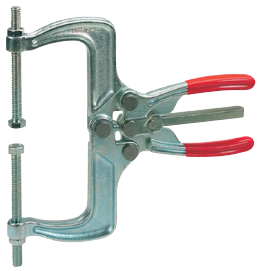


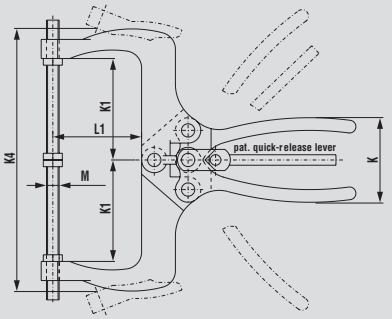
Model no.	B	K	K1	K2	K3	K4	L	L1	M
484	0.69	2.69	3.83	0.87	2.95	6.00	9.06	2.56	M10

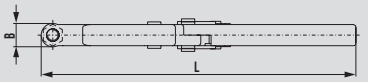
Model 486

Model no.	Holding Capacity [lbs.]	[lbs.]	Standard equipment
486	1,000	2.31	2x 240203-M (hex head)

See additional adjustment spindles beginning on page 9.1.







Model no.	B	K	K1	K4	L	L1	M
486	0.69	2.88	3.00	8.00	9.22	2.56	M10

STA-GRIP plier action clamps

NEW

Introduction

DE-STA-CO, the world's leading manufacturer of manual toggle clamps, introduces an exciting new line of products. STA-Grip expands the world of set-up and cycle time reduction opportunities with Plier Clamp capabilities. STA-Grip is like a third hand – designed and engineered for easy, single-hand operation.
DE-STA-CO brings a total of six carbon steel models of plier clamps to our customers, plus an easy-to-use height adapter. In addition to these standard models, modifications are available upon request.

Application areas

STA-Grip clamps are ideal for a variety of workholding challenges – from the most delicate woodworking operation to the harshest welding environment.

Operations

- Drilling
- Gluing
- Milling
- Welding
- Assembly
- … and much more

Product features

- 6 models
- 1 height adapter
- Holding forces from 225 – 675 lbs.
- Moveable pressure pads that conform automatically to the shape of the workpiece
- Cushioned pressure pad accessories
- Modifications are available upon request

Models 21013 and 21007 in a welding application

Model 21030 in a drilling machine

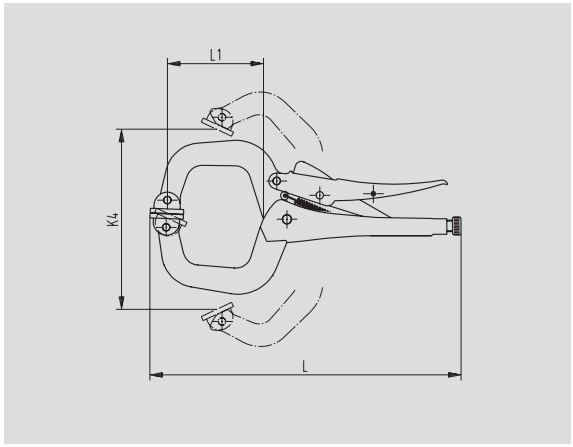
Model 21132 in a fixture for sheet metal working

NEW

Models 21006, 21007

Plier clamp wide range

- Wide arms that reach over or around most obstructions
- Swivel pressure pads for all shapes of workpiece



Model no.	Holding Capacity [lbs.]	[lbs.]	Material	Jaw Type
21006	562	1.45	Zinc plated steel	Chisel point
21007	562	1.60	Zinc plated steel	Swivel pad

Model 21083

Model 21006

Model 21007

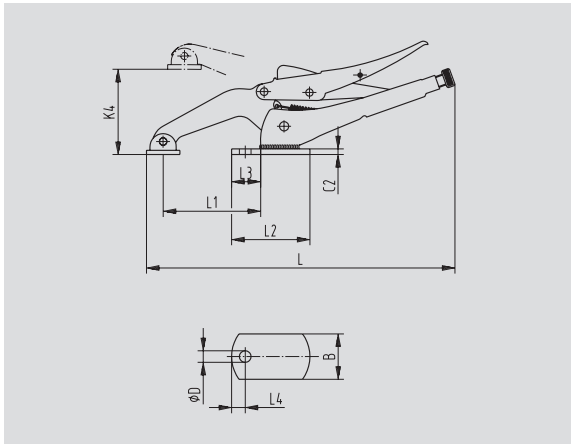
Model no.	K4	L	L1											
21006	3.15	10.24	3.15											
21007	3.15	11.02	3.15											

NEW

Model 21013

T-slot clamp for work benches

- T-slot clamp for easy mounting on the work bench with a screw and T-nut
- Easy clamping of variable workpiece heights
- Compact design for applications with tight space



Model no.	Holding Capacity [lbs.]	[lbs.]	Material	Jaw Type
21013	562	1.41	Zinc plated steel	Swivel pad

Model 21083

Model no.	B	C2	K4	L	L1	L2	L3	L4	øD					
21013	1.57	0.20	2.95	11.02	2.36	2.72	1.02	0.47	0.41					

Model 21014

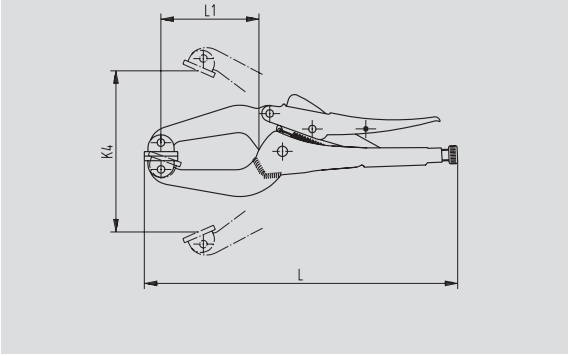
NEW

Compact plier clamp

- Slim and compact design for easy reach into tight corners or small work areas
- Moveable pressure pads for all shapes of workpieces

Model no.	Holding Capacity ↕ [lbs.]	[lbs.]	Material	Jaw Type
21014	562	1.41	Zinc plated steel	Swivel pad

Model 21083



Model no.	K4	L	L1
21014	3.15	11.02	3.35

Model 21030

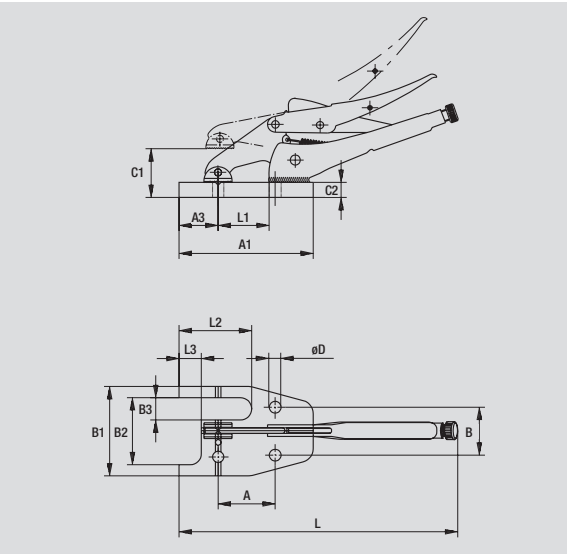
NEW

Plier action clamp with V-groove

- Especially designed for use in drill presses
- Cylindrical objects can be held securely in the V-groove
- Sheet metal components can be clamped in such a way that the workpiece is supported on both sides of the slot

Model no.	Holding Capacity ↑ [lbs.]	[lbs.]	Material	Jaw Type
21030	675	2.50	Zinc plated steel	Swivel pad

Model 21083



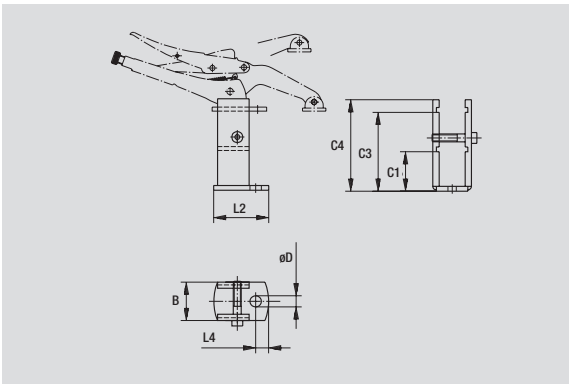
Model no.	A	A1	A3	B	B1	B2	B3	C1	C2	øD	L	L1	L2	L3
21030 ▲	2.01	4.72	1.38	1.69	3.15	2.36	0.79	1.26	0.55	0.41	10.20	1.77	2.56	0.79

▲ Available upon request

Model 21130

Height adapter

- Accessory for models 21013 and 21132
- For extra clamping height
- Quick and easy mounting



Model no.	[lbs.]	Material
21130	1.52	Zinc plated steel

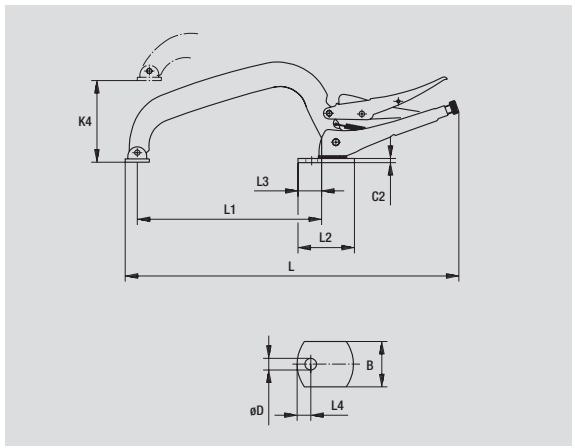
Model no.	B	C1	C3	C4	øD	L2	L4
21130 ▲	1.97	2.00	4.00	4.30	0.41	2.76	0.47

▲ Available upon request

Model 21132

T-slot clamp – extended reach

- T-slot clamp for easy mounting on the work bench with a screw and T-nut
- Extended reach



Model no.	Holding Capacity ⬆ [lbs.]	[lbs.]	Material
21132	225	2.03	Zinc plated steel

Model no.	B	C2	K4	L	L1	L2	L3	L4	øD
21132 ▲	1.57	0.25	4.75	16.10	7.68	2.76	1.02	0.47	0.41

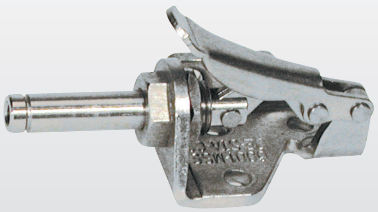
▲ Available upon request

Notes

NEW

Model 6001-MSS: 50% higher holding capacity

Very compact plunger clamp with the flexibility of side mounting. Ideal for use in the electronics industry, precision mechanics, food industry and much more.

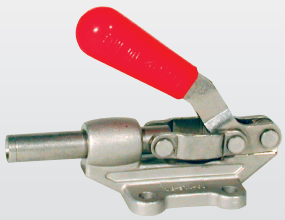


page 8.10

NEW

Models 603-MSS, 603-SS in stainless steel

The popular 603 plunger clamp is now available in stainless steel. This plunger clamp can now be used in applications where the normal zinc plated version might corrode.

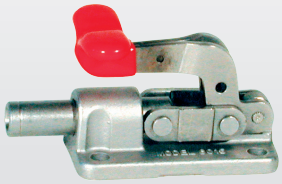


page 8.12

NEW

Model 6015-MSS: Compact clamp in stainless steel

Model 6015-MSS is the smallest of the straight-line, machined-cast base clamps. Its compact size allows it to be used in confined areas and on small fixtures. Handles are red vinyl dipped for greater operator comfort.



page 8.13

NEW

Model 3011-SS

page 8.21

NEW

Models 359-35, 359-65

page 8.22

Product group – stainless steel clamps

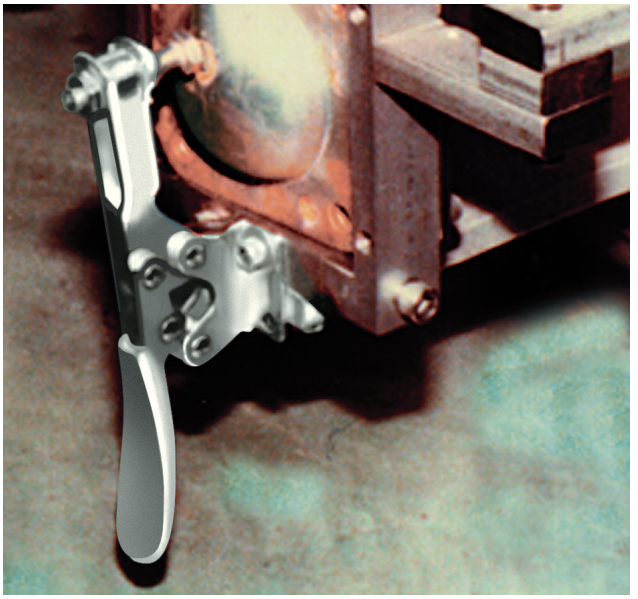
Application areas

DE-STA-CO toggle clamps made of stainless steel are resistant to corrosion and chemicals. These clamps are recommended for use in the chemical and food industries.

The essential product features

- Corrosion-resistant and heat-resistant steel
- Smooth surfaces without burrs
- Rivets made of stainless steel

Model 225-USS during service use in the chemical industry



	Model no.	Holding Capacity max. [lbs.]	Category	Page
	201-USS 202-USS 207-USS 210-USS	125 250 450 750	Vertical Vertical Vertical Vertical	8.3
	202-BSS	250	Vertical	8.4
	202-SS	250	Vertical	8.4
	202-UBSS	250	Vertical	8.5
	205-SSS 205-USS 215-USS 225-USS 235-USS	75 75 250 600 850	Horizontal Horizontal Horizontal Horizontal Horizontal	8.6

	Model no.	Holding Capacity max. [lbs.]	Category	Page
	206-SS 206-HSS	100 100	Horizontal Horizontal	8.7
	213-USS 217-USS 227-USS 237-USS	150 250 600 850	Horizontal Horizontal Horizontal Horizontal	8.8
	225-UBSS	600	Horizontal	8.9
	305-USS 307-USS 309-USS	200 350 750	Compact Compact Compact	8.9
	601-SS 601-OSS	100 100	Straight-line Straight-line	8.10

	Model no.	Holding Capacity max. [lbs.]	Category	Page
	6001-MSS	150	Straight-line	8.11
	603-SS 603-MSS	840 840	Straight-line Straight-line	8.12
	602-SS 604-SS 604-MMSS 624-SS	200 400 400 700	Straight-line	8.12
	6015-MSS	630	Straight-line	8.13
	6015-MRSS	630	Straight-line	8.13
	323-SS 331-SS 341-SS	360 700 2,000	Latch Latch Latch	8.14
	331-RSS 341-RSS	700 2,000	Latch Latch	8.15
	385-V2A	7,500	Latch	8.15

	Model no.	Holding Capacity max. [lbs.]	Category	Page
	324-SS 334-SS 344-SS	500 1,000 2,000	Latch Latch Latch	8.16
	330-SS 351-SS 371-SS 381-SS	200 450 750 1,000	Latch Latch Latch Latch	8.17
	351-BSS	375	Latch	8.17
	330900 351900 371900 381900		Latch Latch Latch Latch	8.18
	325-SS	800	Squeeze	8.19
	301-SS	450	Latch	8.20
	3011-SS	2,000	Latch	8.21
	359-35 359-65	1,400 1,200	Parting Line Clamp	8.22

Stainless steel: vertical clamps

- **U-shaped clamping bar**
- **Flanged bases**

Application areas

DE-STA-CO toggle clamps made of stainless steel are resistant to corrosion and chemicals. These clamps are recommended for use in the chemical and food industries.

Product features

- Corrosion-resistant and heat-resistant steel
- Smooth surfaces without burrs
- Rivets made of stainless steel
- Oil-resistant, ergonomically shaped DE-STA-CO handle grip

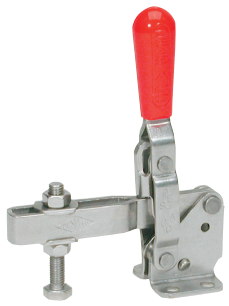
Accessories

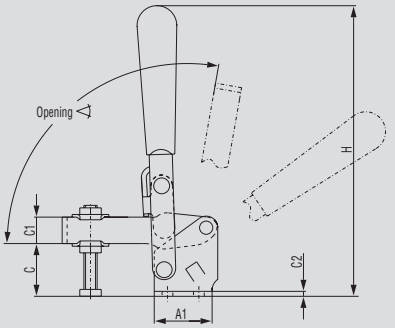
Vertical clamps in stainless steel versions are generally delivered with standard adjustment spindles made of stainless steel.

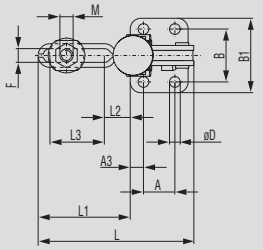
Models 201-USS, 202-USS, 207-USS, 210-USS

Model no.	Holding Capacity ▲ [lbs.]	Bar Opening ∢ +10°	[lbs.]	Standard equipment	Flanged Washers
201-USS	125	110°	0.15	201943	102911
202-USS	250	104°	0.35	202943	215905
207-USS	450	115°	0.70	509907-M	507907
210-USS	750	106°	1.29	527907-M	235906

See additional adjustment spindles beginning on page 9.1.

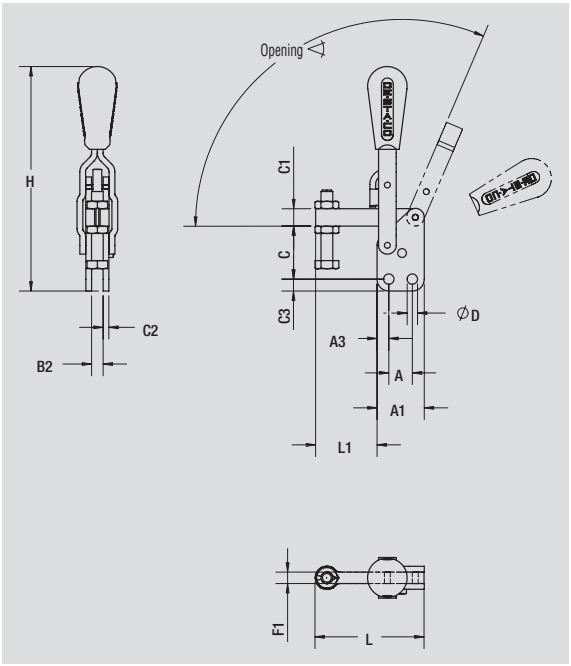






Model no.	A	A1	A3	B	B1	C	C1	C2	øD	F	H	L	L1	L2	L3	M
201-USS	0.63	1.00	.19	0.94	1.31	0.63	0.31	0.08	0.17	0.21	3.03	2.02	1.02	0.13	0.73	M5 or #10
202-USS	0.50	1.00	0.26	1.06	1.56	0.94	0.38	0.12	0.22	0.25	4.21	2.72	1.72	0.51	0.98	M6 or 1/4
207-USS	0.75	1.38	0.31	1.25	1.75	1.25	0.63	0.11	0.28	0.33	5.63	4.41	3.06	0.50	1.96	M8 or 5/16
210-USS	1.25	1.91	0.31	1.78	2.53	1.67	0.79	0.11	0.33	0.40	7.58	5.53	3.63	0.94	2.56	M10 or 3/8

Model 202-BSS



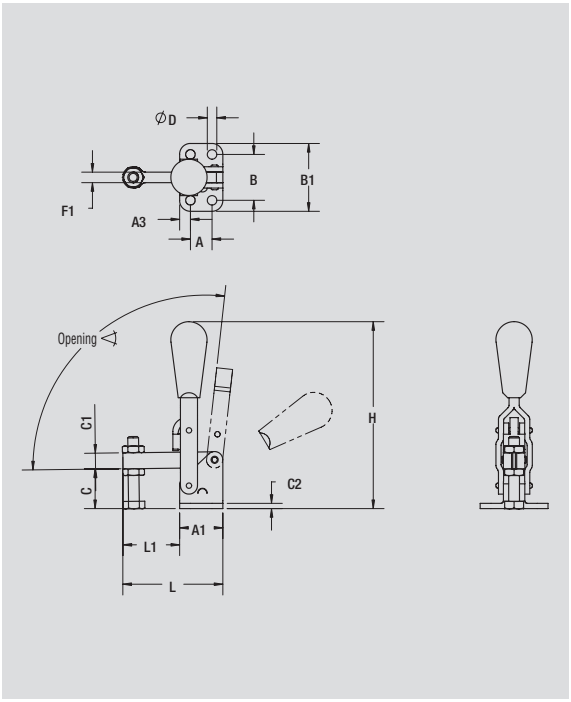
Model no.	Holding Capacity ▲ [lbs.]	Bar Opening +10°	[lbs.]	Standard equipment	Flanged Washers
202-BSS	250	104°	0.33	202943	215905

See additional adjustment spindles beginning on page 9.1.

Model no.	A	A1	A3	A6	B2	C	C1	C2	C3	øD	øD1	F1	H	L	L1			
202-BSS ▲	0.50	1.00	0.25		0.25	1.13	0.37	0.12		0.22	0.39	0.24	4.40	2.31	1.31			

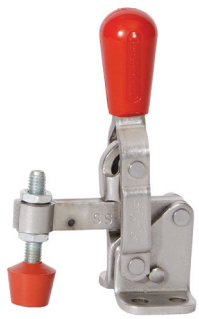
▲ Available upon request

Model 202-SS



Model no.	Holding Capacity ▲ [lbs.]	Bar Opening +10°	[lbs.]	Standard equipment	Flanged Washers
202-SS	250	104°	0.33	202943	215905

Additional adjustment spindles are listed from page 9.1 forward

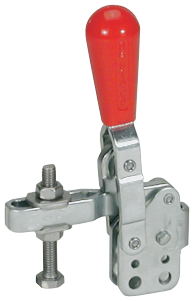


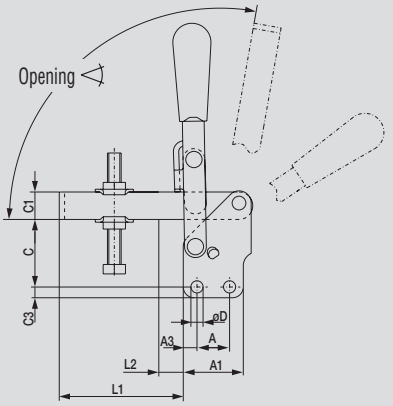
Model no.	A	A1	A3	B	B1	C	C1	C2	øD	F1	H	L	L1	L2				
202-SS	0.50	1.00	0.25	1.06	1.57	0.95	0.37	0.12	0.22	0.24	4.33	2.31	1.31	1.09				

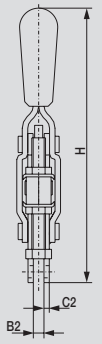
Model 202-UBSS

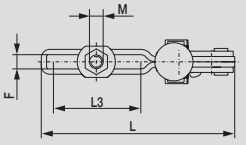
Model no.	Holding Capacity ▲ [lbs.]	Bar Opening +10°	[lbs.]	Standard equipment	Flanged Washers
202-UBSS	250	104°	0.35	202943	215905

See additional adjustment spindles beginning on page 9.1.









Model no.	A	A1	A3	B2	C	C1	C2	C3	øD	F	H	L	L1	L2	L3	M	
202-UBSS ▲	0.50	1.00	0.26	0.24	1.13	0.38	0.12	0.12	0.22	0.25	4.40	2.73	1.73	0.51	0.98	M6 or 1/4	

▲ Available upon request

- **U-shaped or fixed clamping bar**
- **Flanged bases**

Application areas

DE-STA-CO toggle clamps made of stainless steel are resistant to corrosion and chemicals. These clamps are recommended for use in the chemical and food industries.

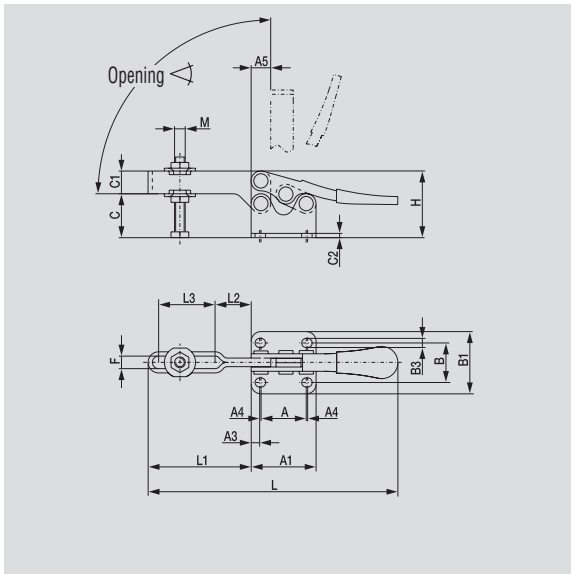
Product features

- Corrosion-resistant and heat-resistant steel
- Smooth surfaces without burrs
- Rivets made of stainless steel
- Oil-resistant, ergonomically shaped DE-STA-CO handle grip (except for models 205-SSS and 205-USS)

Accessories

Horizontal and compact clamps in stainless steel versions are generally delivered with standard adjustment spindles made of stainless steel.

Models 205-SSS, 205-USS, 215-USS, 225-USS, 235-USS



Model no.	Holding Capacity [lbs.]	Bar Opening +10°	[lbs.]	Standard equipment	Flanged Washers
205-SSS	75	90°	0.06	205943	105906
205-USS	75	90°	0.06	205943	105906
215-USS	250	90°	0.34	202943	215905
225-USS	600	90°	0.55	207943	507907
235-USS	850	90°	1.47	237943	235906

See additional adjustment spindles beginning on page 9.1.

Model 205-USS

Model 205-SSS

Model 215-USS

Model no.	A	A1	A3	A4	A5	B	B1	B3	C	C1	C2	F	H	L	L1	M	
205-SSS	0.44	0.94	0.16	0.63	0.30	0.62	0.93	0.17	0.37	0.12	0.06	0.17	0.67	2.78	0.88	M4 or 10-32	
205-USS	0.44	0.94	0.16	0.63	0.22	0.62	0.93	0.17	0.31	0.26	0.06	0.20	0.67	2.65	0.74	M4 or 10-32	
215-USS	1.00	1.44	0.19	1.06	0.43	0.88	1.37	0.20	1.00	0.49	0.10	0.28	1.53	5.50	2.25	M6 or 1/4	
225-USS	1.00	1.50	0.25	–	0.49	0.88	1.38	0.30	1.32	0.49	0.12	0.31	1.84	6.70	2.72	M8 or 5/16	
235-USS	1.63	2.25	0.37	–	0.69	1.63	2.25	0.34	1.75	0.75	0.16	0.43	2.55	10.87	4.16	M10 or 3/8	

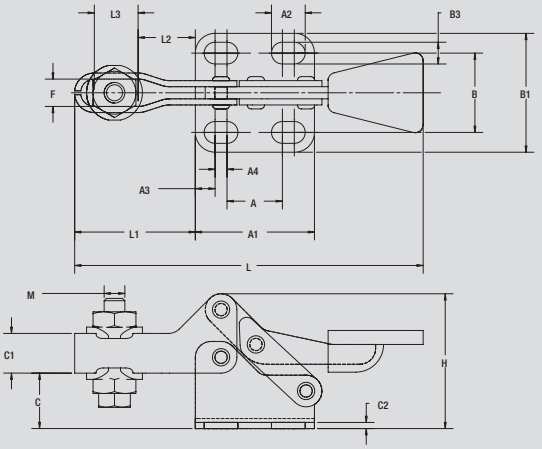
Models 206-SS, 206-HSS

NEW

Model no.	Holding Capacity ⬆ [lbs.]	Bar Opening +10°	[lbs.]	Standard equipment	Flanged Washers
206-SS	100	90°	0.07	205943	105906
206-HSS	100	90°	0.07	205943	105906

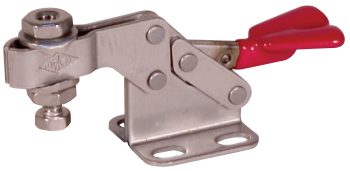
See additional adjustment spindles beginning on page 9.1.

Model 206-SS

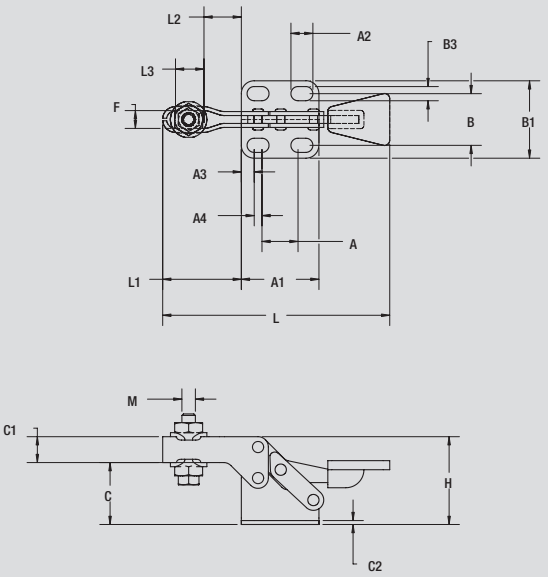


Model 206-SS

Model 206-HSS

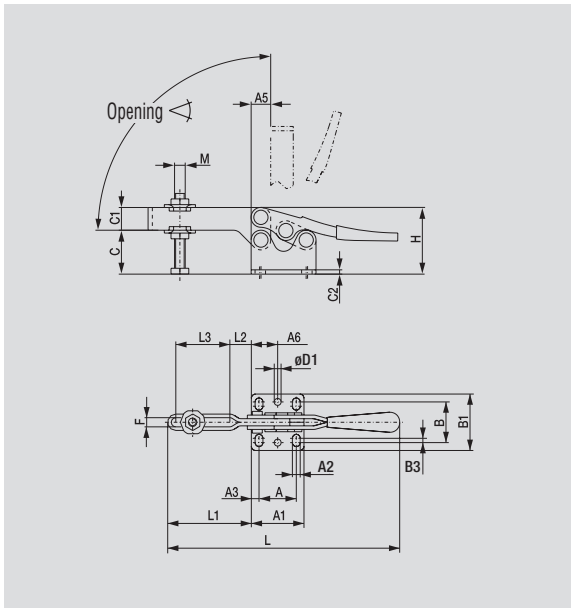


Model 206-HSS



Model no.	A	A1	A2	A3	A4	B	B1	B3	C	C1	C2	F	H	L	L1	L2	L3	M
206-SS	0.44	0.94	0.27	0.16	0.53	0.63	0.94	0.17	0.44	0.31	0.05	0.22	1.06	2.75	0.95	0.45	0.35	8-32
206-HSS	0.44	0.94	0.27	0.16	0.53	0.63	0.94	0.17	0.75	0.31	0.05	0.22	1.06	2.75	0.95	0.45	0.35	8-32

Models 213-USS, 217-USS, 227-USS, 237-USS



Model no.	Holding Capacity ▲ [lbs.]	Bar Opening ∢ +10°	[lbs.]	Standard equipment	Flanged Washers
213-USS	150	90°	0.17	201943	102911
217-USS	250	92°	0.40	202943	215905
227-USS	600	92°	0.68	207943	507907
237-USS	850	92°	1.60	237943	235906

See additional adjustment spindles beginning on page 9.1.

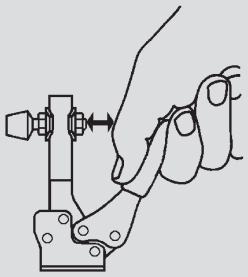
Model 217-USS – 237-USS

Model no.	A	A1	A2	A3	A5	A6	B	B1	B3	C	C1	C2	øD1	F	H	L	L1	L2	L3	M
213-USS	0.53	1.00	0.17	0.24	0.12	–	0.70	1.06	0.06	0.72	0.37	0.08	–	0.22	1.39	4.12	1.42	0.39	0.85	M5 or #8
217-USS	1.03	1.47	0.22	0.22	0.20	0.73	1.19	1.62	0.12	0.97	0.49	0.10	0.19	0.26	1.95	6.56	2.34	0.59	1.50	M6 or 1/4
227-USS	1.03	1.56	0.27	0.28	0.02	0.79	1.22	1.70	0.10	1.30	0.57	0.12	0.19	0.33	2.43	7.56	2.68	0.79	1.52	M8 or 5/16
237-USS ▲	1.63	2.25	0.34	0.31	0.30	1.12	1.69	2.25	0.08	1.62	0.75	0.16	0.23	0.41	3.20	10.67	4.06	0.96	2.75	M10 or 3/8

▲ Available upon request

Safety Distance

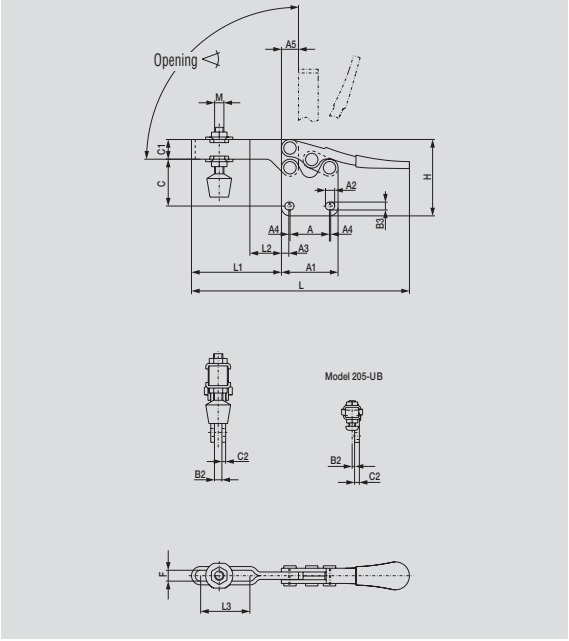
Exclusive handle design gives more hand clearance between bar and handle when clamp is in fully open position.



Model 225-UBSS

Model no.	Holding Capacity ▲ [lbs.]	Bar Opening +10°	[lbs.]	Standard equipment	Flanged Washers
225-UBSS	600	90°	0.55	207943	507907

See additional adjustment spindles beginning on page 9.1.



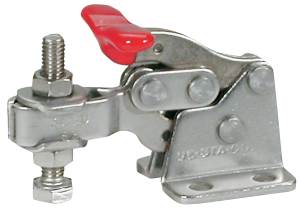
Model no.	A	A1	A3	A5	B3	C	C1	C2	F	H	L	L1	L2	L3	M		
225-UBSS ▲	1.00	1.50	0.25	0.49	0.27	1.83	0.49	0.24	0.31	2.38	6.70	2.72	1.08	1.39	M8 or 5/16		

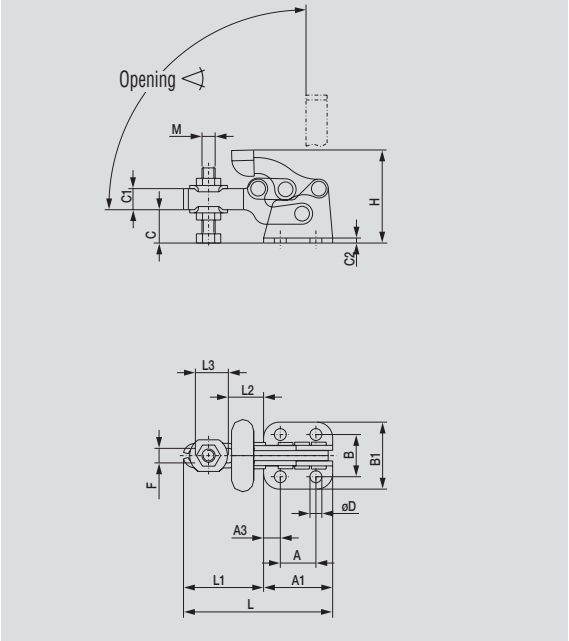
▲ Available upon request

Models 305-USS, 307-USS, 309-USS

Model no.	Holding Capacity ▲ [lbs.]	Bar Opening +10°	[lbs.]	Standard equipment	Flanged Washers
305-USS	200	92°	0.13	201943	102911
307-USS	350	92°	0.54	207943	507907
309-USS	750	92°	1.30	237943	235906

See additional adjustment spindles beginning on page 9.1.





Model no.	A	A1	A3	B	B1	C	C1	C2	øD	F	H	L	L1	L2	L3	M	
305-USS	0.53	1.03	0.26	0.63	1.00	0.50	0.31	0.08	0.18	0.22	1.38	2.22	1.19	0.53	0.50	M5 or #10	
307-USS	0.91	1.72	0.41	1.16	1.80	0.87	0.49	0.12	0.28	0.31	2.40	3.60	1.88	0.87	0.80	M8 or 5/16	
309-USS	1.38	2.52	0.57	1.50	2.47	1.30	0.75	0.12	0.33	0.41	3.55	5.18	2.66	1.24	1.06	M10 or 3/8	

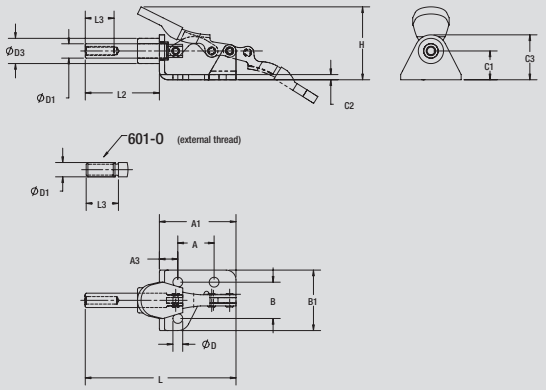
Application areas

DE-STA-CO toggle clamps made of stainless steel are resistant to corrosion and chemicals. These clamps are recommended for use in the chemical and food industries.

Product features

- Corrosion-resistant and heat-resistant steel
- Smooth surfaces without burrs
- Rivets made of stainless steel
- Oil-resistant, ergonomically shaped DE-STA-CO plastic handle grip (except for model 601-SS, 601-0SS and 6001-MSS)

Models 601-SS, 601-0SS



Model no.	Holding Capacity ◀ ▶ [lbs.]	Plunger Travel	[lbs.]	Standard equipment	Plunger Thread
601-SS	100	0.63	0.09	205943	8-32
601-0SS	100	0.63	0.13	None	1/4-20

Model 601-SS

Model 601-0SS

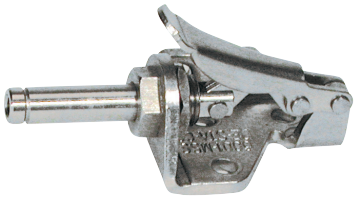
Model no.	A	A1	A3	B	B1	C1	C2	C3	øD	øD1	øD3	H	L	L2	L3				
601-SS	0.63	1.33	0.32	0.63	1.05	0.50	0.09	0.78	0.17	0.25	0.44	1.27	2.62	1.29	0.50				
601-0SS	0.63	1.33	0.32	0.63	1.05	0.50	0.09	0.78	0.17	0.25	–	1.27	2.86	1.53	0.56				

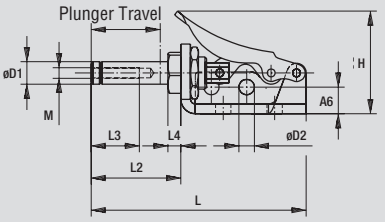
Model 6001-MSS

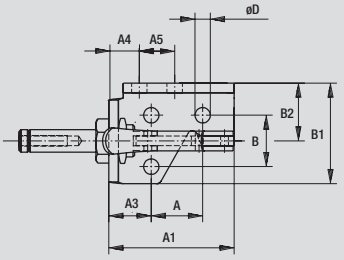
NEW

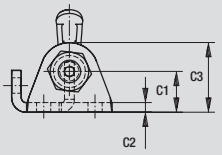
Model no.	Holding Capacity ◀ ▶ [lbs.]	Plunger Travel	[lbs.]	Standard equipment	Plunger Thread (M)
6001-MSS	150	0.63	0.12	–	M4

See additional adjustment spindles beginning on page 9.1.



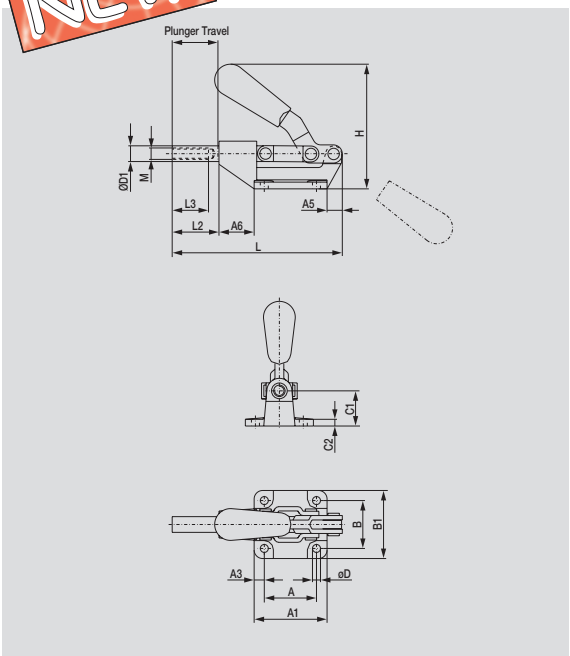






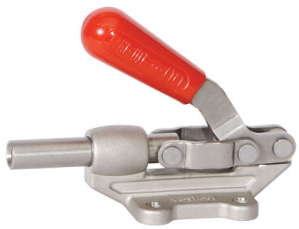
Model no.	A	A1	A3	A4	A5	A6	B	B1	B2	C1	C2	C3	øD	øD1	øD2	H	L	L2	L3	L4
6001-MSS	0.63	1.54	0.52	0.37	0.43	0.33	0.63	1.23	0.71	0.50	0.12	0.85	0.19	0.28	0.19	1.30	2.63	1.10	0.59	0.16

Models 603-SS, 603-MSS



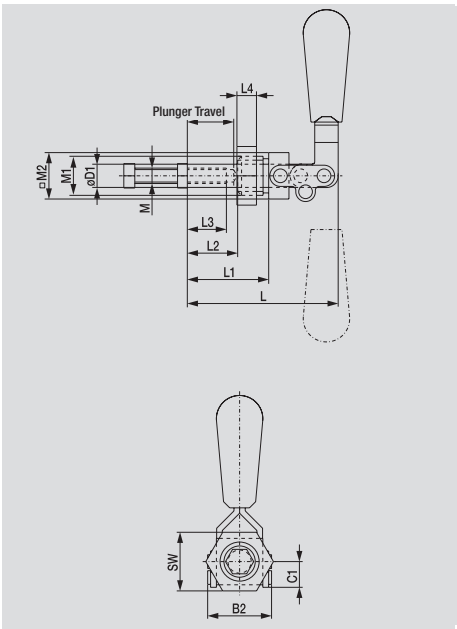
Model no.	Holding Capacity ◀ ▶ [lbs.]	Plunger Travel	[lbs.]	Standard equipment	Plunger Thread (M)
603-SS	840	1.25	0.83	–	5/16-18
603-MSS	840	1.25	0.83	509907-M	M8

See additional adjustment spindles beginning on page 9.1.



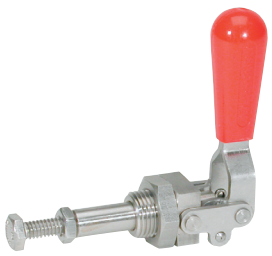
Model no.	A	A1	A3	A5	A6	B	B1	C1	C2	øD	øD1	H	L	L2	L3
603-SS	1.44	2.00	0.28	0.58	0.94	1.31	1.88	0.97	0.19	0.27	0.44	3.43	4.73	1.22	1.00
603-MSS	1.44	2.01	0.28	0.62	0.88	1.31	1.89	0.96	0.18	0.26	0.47	3.43	4.80	1.30	1.00

Models 602-SS, 604-SS, 604-MMSS, 624-SS



Model no.	Holding Capacity ◀ ▶ [lbs.]	Plunger Travel	[lbs.]	Standard equipment	Plunger Thread (M)	Hex Jam Nut (Standard Equipment)
602-SS	200	0.75	0.25	None	1/4-20	602905
604-SS	400	1.50	0.44	None	5/16-18	606904
604-MMSS	400	1.50	0.44	509907-M	M8	606904-M
624-SS	700	2.63	1.63	None	3/8-16	624905

See additional adjustment spindles beginning on page 9.1.



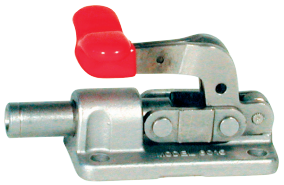
Model no.	B2	C1	øD1	H	L	L1	L2	L3	L4	M1	M2	SW
602-SS	1.03	0.88	0.37	3.13	2.62	1.31	0.97	0.63	0.25	5/8-18	0.75	0.44
604-SS	1.30	0.50	0.44	4.16	4.95	2.18	1.82	1.00	0.25	3/4-16	0.88	1.00
604-MMSS	1.30	0.50	0.44	4.16	4.95	2.18	1.82	1.00	0.25	M20x1.5	0.88	1.00
624-SS	1.81	0.75	0.62	5.60	6.68	3.62	3.24	1.25	0.25	1-14	1.25	1.50

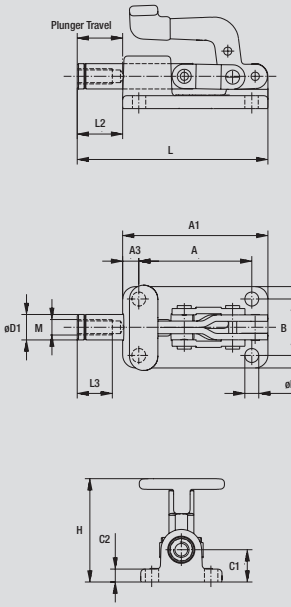
Model 6015-MSS

NEW

Model no.	Holding Capacity [lbs.]	Plunger Travel	[lbs.]	Standard equipment	Plunger Thread (M)
6015-MSS	630	0.70	0.34	–	M6

See additional adjustment spindles beginning on page 9.1.





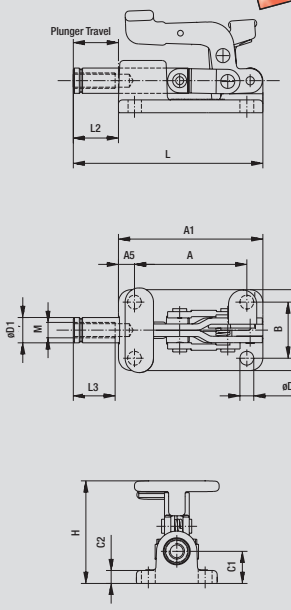
Model no.	A	A1	A3	B	B1	C1	C2	øD	øD1	H	L	L2	L3					
6015-MSS	1.75	2.25	0.25	0..88	1.25	0.50	0.20	0.22	0.38	1.60	2.95	0.70	0.75					

Model 6015-MRSS

NEW

Model no.	Holding Capacity [lbs.]	Plunger Travel	[lbs.]	Standard equipment	Plunger Thread (M)
6015-MRSS	630	0.70	0.34	–	M6

See additional adjustment spindles beginning on page 9.1.



Model no.	A	A1	A3	B	B1	C1	C2	øD	øD1	H	L	L2	L3					
6015-MRSS	1.75	2.25	0.25	0.88	1.25	0.50	0.20	0.22	0.38	1.60	2.95	0.70	0.75					

- **With latch hook**
- **Horizontal version**

Application areas

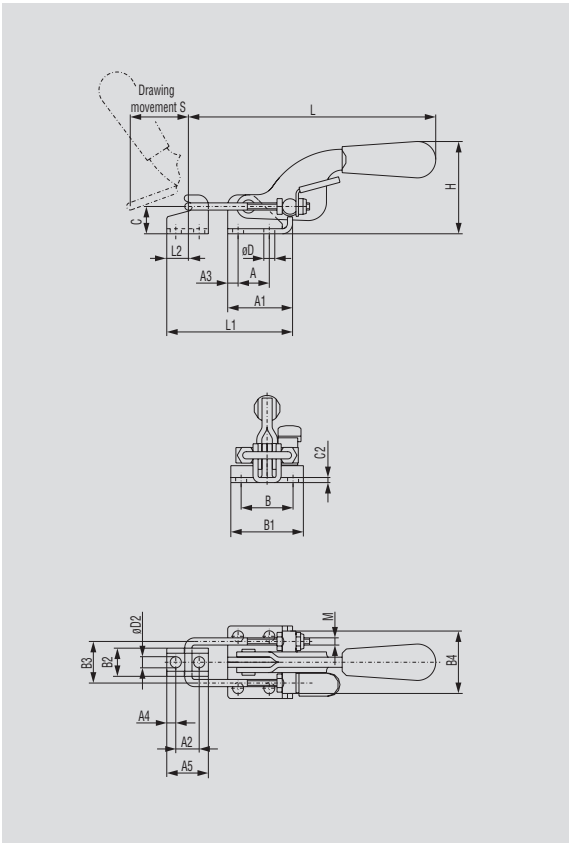
DE-STA-CO toggle clamps made of stainless steel are resistant to corrosion and chemicals. Thse clamps are recommended for use in the chemical and food industries.

In this series, DE-STA-CO Toggle-Lock Plus™ models with an additional locking release lever are also available. Secure locking can be achieved even under strong vibrating conditions.

Product features

- **New:** with patented thumb control lever
- Corrosion-resistant and heat-resistant steel
- Smooth surfaces without burrs
- Rivets made of stainless steel
- Oil-resistant, ergonomically shaped DE-STA-CO handle grip

Models 323-SS, 331-SS, 341-SS

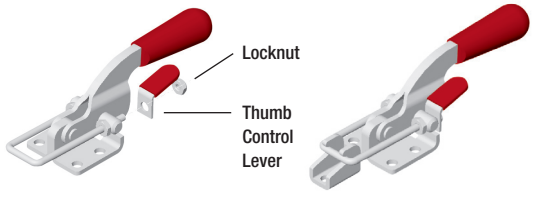


Model no.	Holding Capacity [lbs.]	[lbs.]	Adjustment Range	Drawing Movement
323-SS	360	0.15	0-0.49	1.18
331-SS	700	0.56	0-0.59	1.75
341-SS	2,000	1.43	0-0.76	3.00

ALSO AVAILABLE		
As DE-STA-CO Toggle-Lock Plus	Model 331-RSS Model 341-RSS	Page 8.15 Page 8.15
See accessories beginning on page 9.1.		

Patented #6,561,556

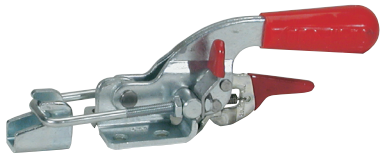
For added convenience and functionality, every DE-STA-CO pull action clamp is now equipped with a thumb control lever as a standard feature.

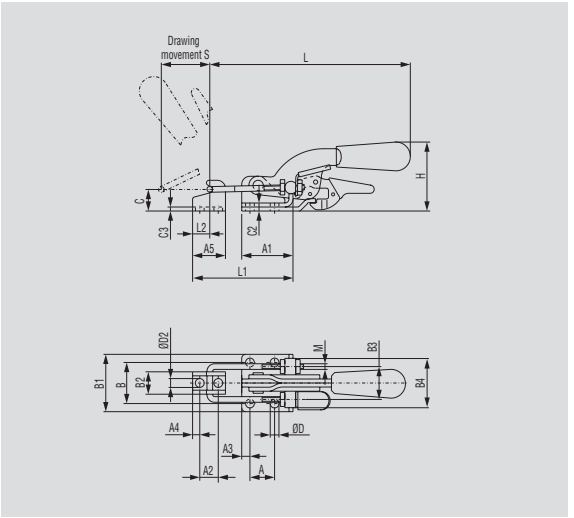


Model no.	A	A1	A2	A3	A4	A5	B	B1	B2	B3	B4	C	C2	øD	øD2	H	L	L1 max	L2	M	S
323-SS	0.63	1.02	0.39	0.20	0.24	0.79	0.75	1.10	0.52	0.75	1.06	0.47	0.08	0.17	0.17	1.19	3.91	2.25	0.35	M4	1.18
331-SS	0.75	1.56	0.56	0.26	0.22	1.00	1.25	1.74	0.68	1.00	1.50	0.66	0.12	0.27	0.27	1.97	6.06	3.05	0.50	M5	1.75
341-SS	1.63	2.38	0.75	0.38	0.38	1.50	1.50	2.12	1.19	1.75	2.32	0.94	0.16	0.33	0.33	2.89	8.20	4.59	0.75	M8	3.00

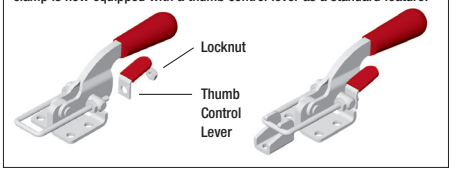
Models 331-RSS, 341-RSS

Model no.	Holding Capacity [lbs.]	[lbs.]	Adjustment Range	Drawing Movement
331-RSS	700	0.56	0-0.59	1.75
341-RSS	2,000	1.43	0-0.76	3.00





Patented #6,561,556
For added convenience and functionality, every DE-STA-CO pull action clamp is now equipped with a thumb control lever as a standard feature.



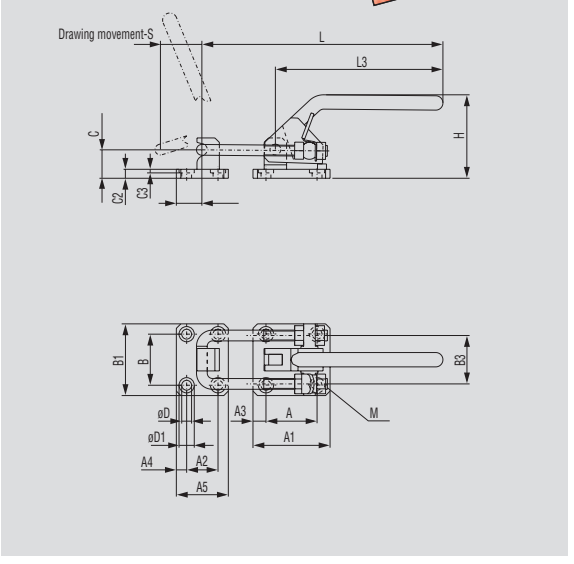
Model no.	A	A1	A2	A3	A4	A5	B	B1	B2
331-RSS	0.75	1.56	0.56	0.26	0.22	1.00	1.25	1.74	0.68
341-RSS	1.63	2.38	0.75	0.38	0.38	1.50	1.50	2.12	1.19

Model no.	B3	B4	C	C2	C3	øD	øD2	H	L	L1 max	L2	M	S
331-RSS	1.00	1.50	0.66	0.24	0.12	0.27	0.27	2.08	6.06	3.05	0.50	M5	1.75
341-RSS	1.75	2.32	0.94	0.16	0.16	0.33	0.33	2.89	8.20	4.59	0.75	M8	3.00

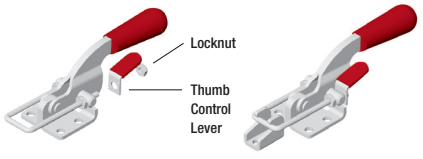
Model 385-V2A

NEW

Model no.	Holding Capacity [lbs.]	[lbs.]	Adjustment Range
385-V2A	7,500	3.62	0-1.07



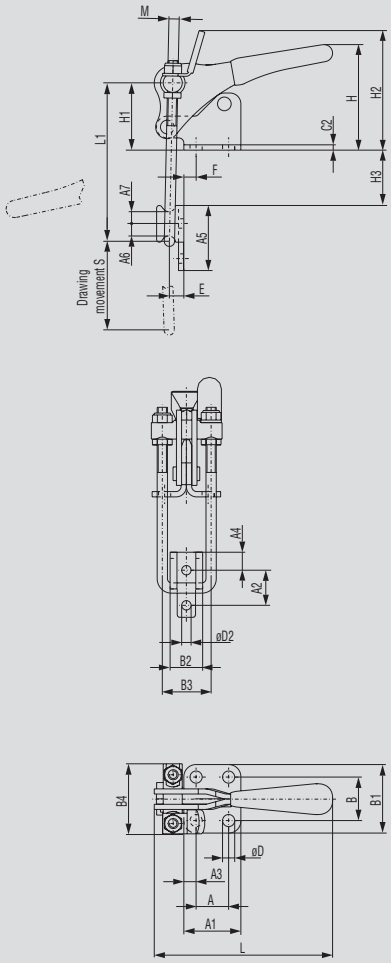
Patented #6,561,556
For added convenience and functionality, every DE-STA-CO pull action clamp is now equipped with a thumb control lever as a standard feature.



Model no.	A	A1	A2	A3	A4	A5	B	B1	B3	C	C2	C3	øD	øD1	H	L	L3	M	S
385-V2A ▲	2.24	3.39	1.38	0.57	0.45	2.28	2.24	3.15	2.13	1.24	0.39	0.16	0.43	0.67	3.66	10.59	7.336	M12	1.81

▲ Available upon request

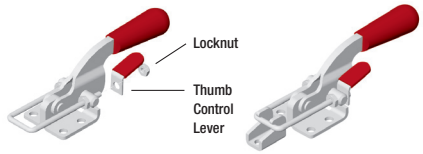
Models 324-SS, 334-SS, 344-SS



Model no.	Holding Capacity ⬆ [lbs.]	[lbs.]	Adjustment Range	Drawing Movement
324-SS	500	0.25	0-0.50	1.53
334-SS	1,000	0.60	0-0.80	2.00
344-SS	2,000	1.50	0-1.26	2.50

Patented Thumb Lever Control

Patented #6,561,556
For added convenience and functionality, every DE-STA-CO pull action clamp is now equipped with a thumb control lever as a standard feature.



Model no.	A	A1	A2	A3	A4	A5	A6	A7	B
324-SS	0.50	1.00	0.56	0.25	0.28	1.00	0.19	0.19	0.88
334-SS	0.75	1.31	0.81	0.28	0.41	1.50	0.28	0.28	1.00
344-SS	1.25	1.94	1.06	0.35	0.69	2.13	0.36	0.39	1.44

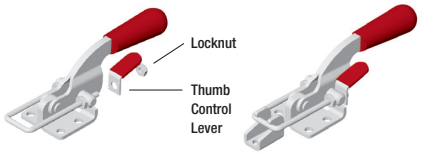
Model no.	B1	B2	B3	B4	C2	øD	øD2	H	H2	L	L1 max	M	S	E	F	H3 max	H1	
324-SS	1.38	0.53	0.81	1.19	0.09	0.20	0.17	1.89	1.98	3.50	2.56	M4	1.53	0.19	0.22	0.91	1.10	
334-SS	1.56	0.68	1.13	1.63	0.12	0.28	0.22	2.39	2.69	4.10	3.70	M6	2.00	0.35	0.19	1.35	1.55	
344-SS	2.12	1.19	1.75	2.38	0.16	0.34	0.34	3.42	3.10	5.78	5.00	M8	2.50	0.50	0.30	1.93	1.86	

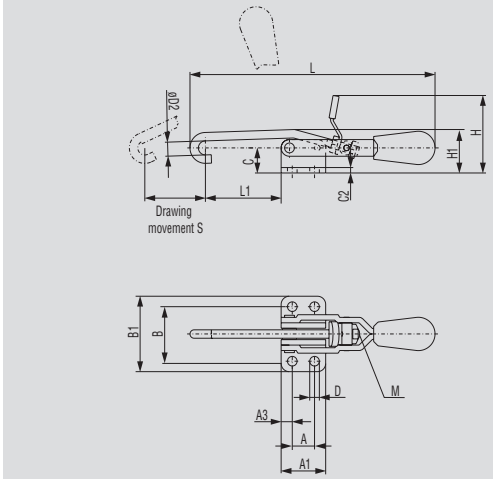
Models 330-SS, 351-SS, 371-SS, 381-SS

Model no.	Holding Capacity ◀ [lbs.]	[lbs.]	Adjustment Range	Drawing Movement
330-SS	200	0.24	0-0.25	2.31
351-SS	450	0.61	0-0.43	4.00
371-SS	750	1.53	0-0.81	5.38
381-SS	1,000	2.56	0-0.93	2.56

Patented Thumb Lever Control

Patented #6,561,556
For added convenience and functionality, every DE-STA-CO pull action clamp is now equipped with a thumb control lever as a standard feature.





Model no.	A	A1	A3	B	B1	C	C2	øD	øD2	H	H1	L	L1 max	M	S
330-SS	0.50	1.00	0.25	1.22	1.69	0.56	0.12	0.22	0.32	1.43	0.89	6.04	1.76	M5	2.31
351-SS	0.75	1.50	0.50	1.37	1.93	0.75	0.12	0.22	0.38	1.85	1.35	8.86	2.18	M8	4.00
371-SS	1.25	1.94	0.34	1.94	2.63	1.42	0.16	0.34	0.50	2.38	2.25	11.86	2.81	M10	5.38
381-SS ▲	1.13	2.13	0.50	2.37	3.38	1.81	0.19	0.41	0.62	2.90	2.71	13.45	3.13	M12	6.13

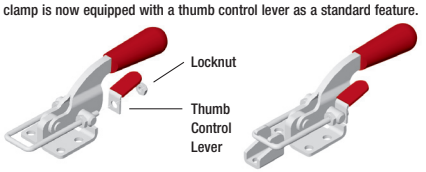
▲ Available upon request

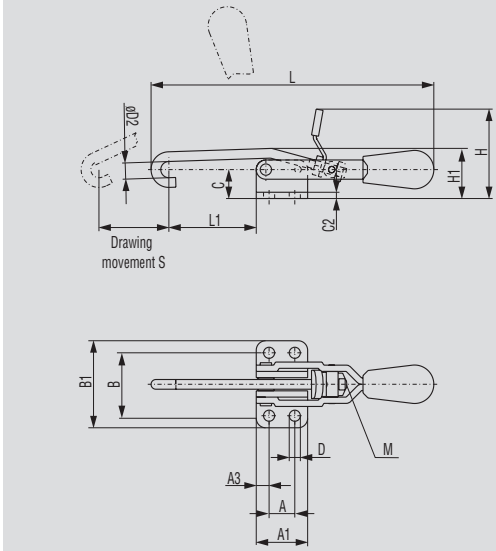
Model 351-BSS

Model no.	Holding Capacity ◀ [lbs.]	[lbs.]	Adjustment Range	Drawing Movement
351-BSS	375	0.61	0-0.43	4.00

Patented Thumb Lever Control

Patented #6,561,556
For added convenience and functionality, every DE-STA-CO pull action clamp is now equipped with a thumb control lever as a standard feature.





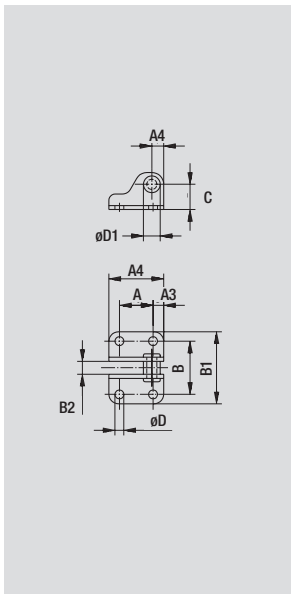
Model no.	A	A1	A3	B	B4	C	C2	øD	øD2	H	H1	L	L1 max	M	S
351-BSS	1.50	2.00	0.25	0.95	0.56	0.86	0.12	0.27	0.38	1.96	1.46	8.86	1.67	M8	4.00

Latch plates for Models 330-SS, 351-SS, 371-SS, 381-SS

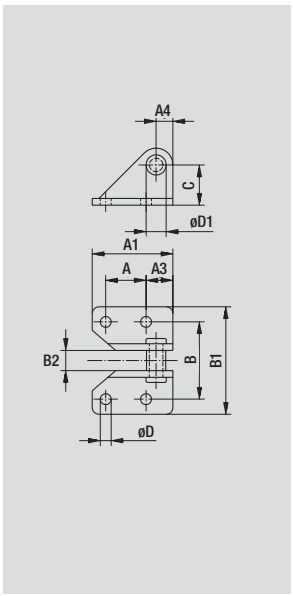
Information

DE-STA-CO has developed J-hook latch plates to help reduce engineering time when installing DE-STA-CO J-hook style clamps. The J-hook latch plate guarantees that the latch point is below the centerline of the clamp assembly's two pivot points. This allows for the proper toggle lock action.

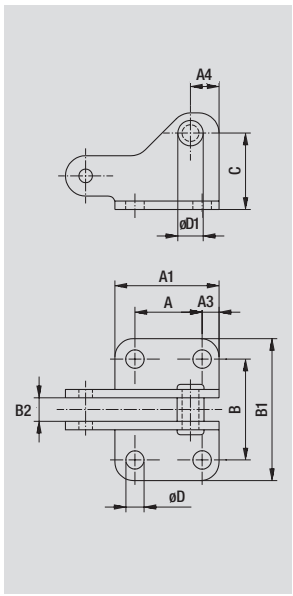
Models 330900, 351900, 371900, 381900



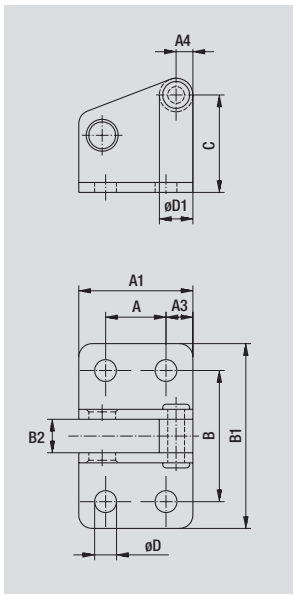
Model 330900



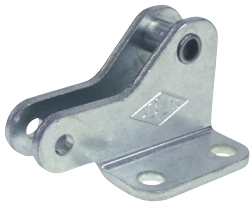
Model 351900



Model 371900



Model 381900



Model no.	[lbs.]
330900 ▲	0.04
351900 ▲	0.14
371900 ▲	0.44
381900 ▲	0.66

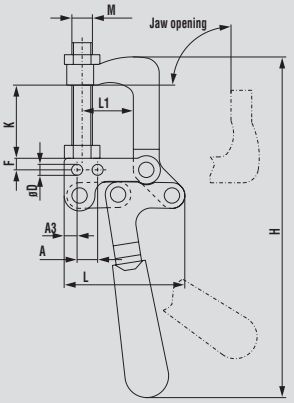
▲ Available upon request

Model no.	A	A1	A3	A4	B	B1	B2	C	øD	øD1				
330900	0.63	1.02	0.20	0.22	1.00	1.34	0.25	0.47	0.22	0.31				
351900	0.75	1.50	0.47	0.31	1.44	2.00	0.38	0.75	0.20	0.38				
371900	1.25	1.94	0.31	0.53	1.94	2.63	0.50	1.42	0.34	0.47				
381900	1.13	2.13	0.50	0.31	2.50	3.51	0.63	1.81	0.41	0.63				

Model 325-SS

Model no.	Holding Capacity ⬇ [lbs.]	Jaw Opens ∢ +10°	[lbs.]	Standard equipment
325-SS	800	90°	1.18	325943

See additional adjustment spindles beginning on page page 9.1.



Model no.	A	A3	B	øD	F	H	K	L	L1	M
325-SS	0.50	0.31	1.06	0.27	0.28	8.31	1.78	2.94	1.25	M12

U-shaped and hook style

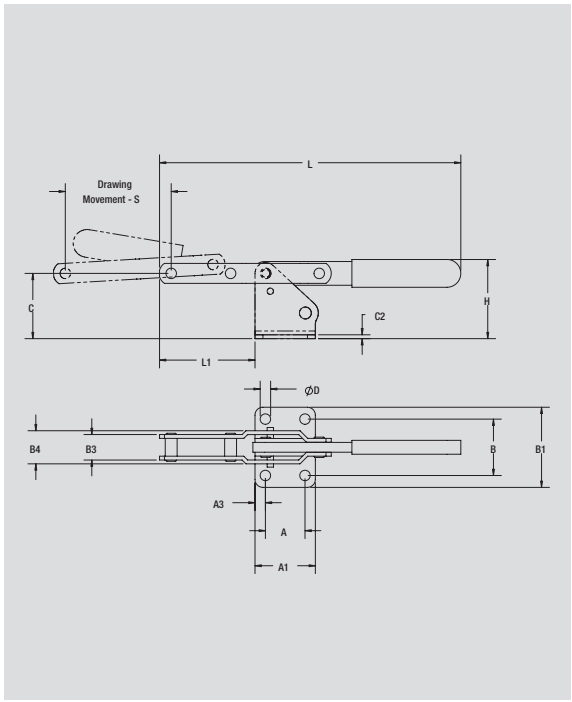
Application areas

DE-STA-CO toggle clamps made of stainless steel are resistant to corrosion and chemicals. These clamps are recommended for use in the chemical and food industries.

Product features

- Corrosion-resistant and heat-resistant steel
- Smooth surfaces without burrs
- Rivets made of stainless steel
- Oil-resistant, ergonomically shaped DE-STA-CO handle grip

Model 301-SS



Model no.	Holding Capacity [lbs.]	[lbs.]	Drawing Movement
301-SS	450	0.70	4.00

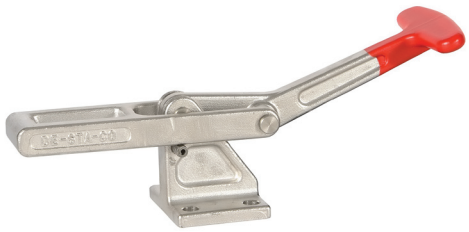
Model no.	A	A1	A3	B	B1	B3	B4	C	C2	ØD	H	L	L1	S				
301-SS	0.75	1.38	0.31	1.25	1.75	0.83	1.08	1.63	0.12	0.28	1.91	8.40	2.58	4.00				

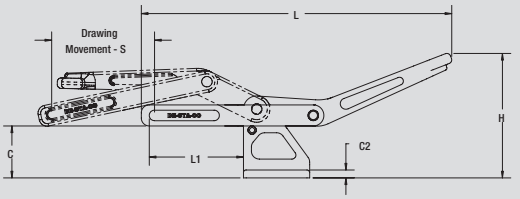
Model 3011-SS

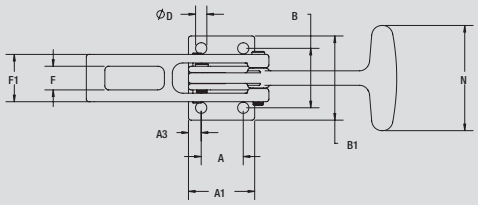
Information

DE-STA-CO clamp series 3011 is the newest addition to the rotational mold product offering. As a direct, drop-in replacement for the legacy 311 clamp, these cast, robust clamps will withstand the harsh environment of the rotational mold industry. A fixed stop automatically limits handle travel at various clamping positions after installation, removing the need to adjust a manual stop. The clamps are available in 4130 carbon steel or 316 stainless steel. The vinyl dipped ergonomic whale-tail handle provides better operator hand comfort.

Model no.	Holding Capacity [lbs.]	[lbs.]	Drawing Movement
3011-SS	2,000	2.00	3.00



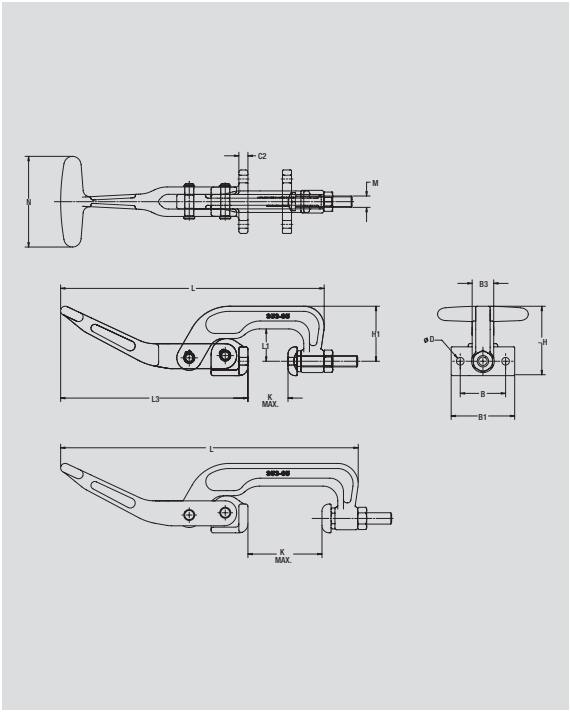




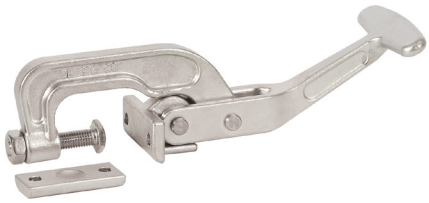
Model no.	A	A1	A3	B	B1	C	C2	øD	F	F1	H	L	L1	N	S			
3011-SS	1.25	1.97	0.38	1.78	2.52	1.87	0.24	0.33	0.71	1.42	3.72	9.23	3.04	3.15	3.00			

Information

These robust, heavy-duty cast clamps are designed to withstand the harshest environments of the rotational mold industry. They are ideal for clamping directly on the parting lines of CNC machined molds and are available in carbon or stainless steel. The clamps utilize two stainless steel pivot pins to help eliminate pivot point binding. The curved radius on the mounting flange and keeper plate allows the clamp to fit snugly along the radius of the parting line. The ergonomic handle provides greater operator comfort by reducing the stress on the operator's hands. The clamps are supplied with a tapered M10x1.5 hex head bolt assembly and keeper plate.



Model no.	Holding Capacity [lbs.]	[lbs.]	Max. Mechanical Adjustment (M.A.)
359-35	1,400	2.10	23:1
359-65	1,200	2.30	27:1

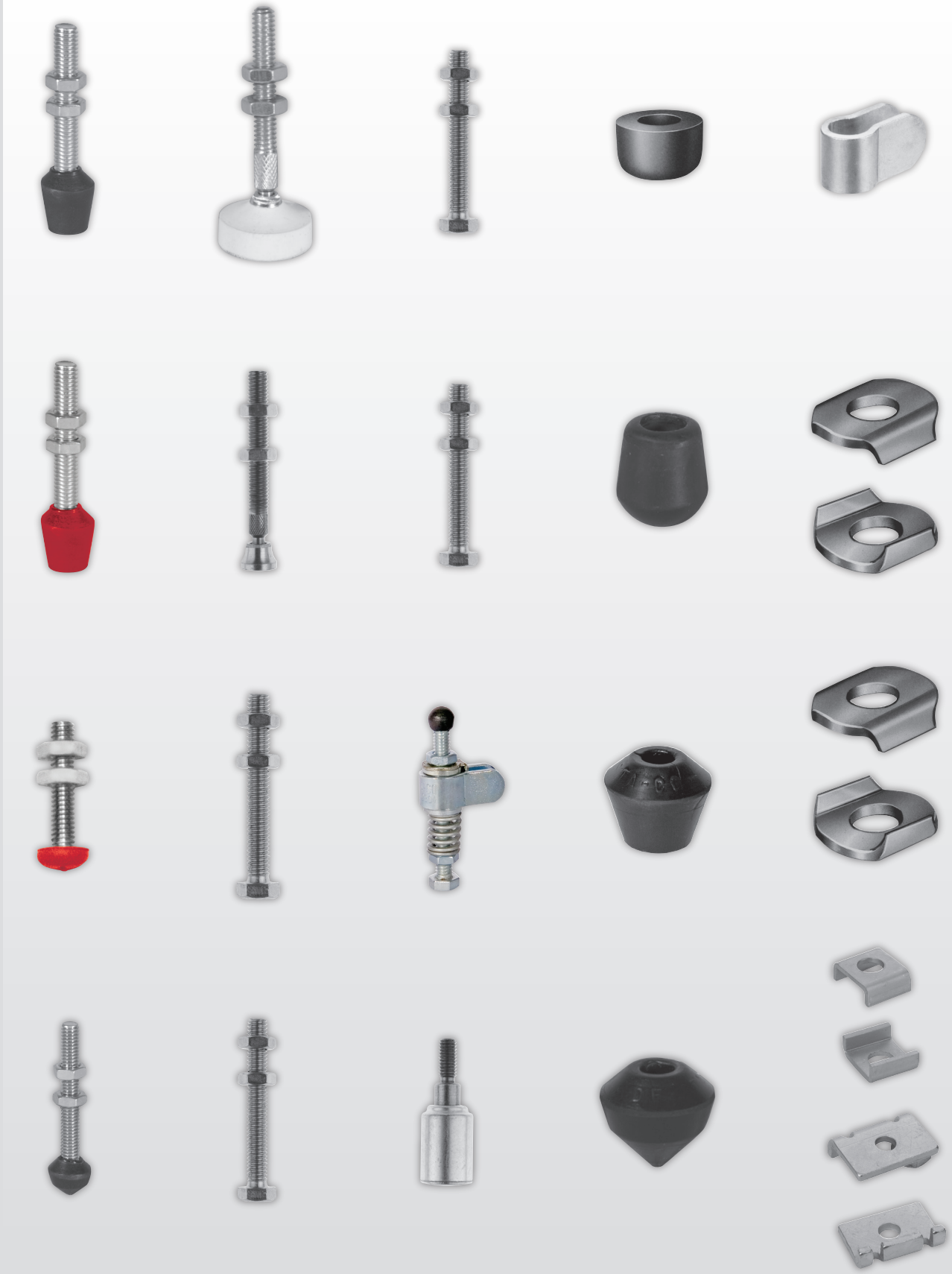


Keeper plate (353904)

Tapered bolt assembly (353908)

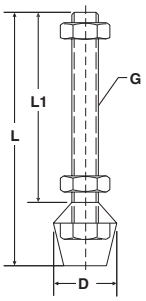
Model no.	B	B1	B3	C2	øD	~H	H1	K	L	L1	L3	M	N					
359-35	1.57	2.20	0.75	0.31	0.27	2.38	1.91	1.39	9.15	1.12	6.50	M10	3.15					
359-65	1.57	2.20	0.75	0.31	0.27	2.38	1.91	2.57	10.33	1.12	6.50	M10	3.15					

Notes



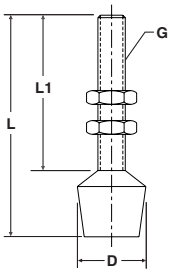
Accessories

Flat-tip Bonded Neoprene Cap*



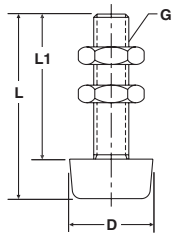
Part no.	EDP no.	L	L_1	D	Thread (G)
201208	59816	1.38	1.00	0.56	10-32
202208	59803	1.63	1.08	0.66	1/4-20
215208	59805	2.13	1.57	0.66	1/4-20
225208	59807	2.25	1.50	0.75	5/16-18
507208	59812	3.00	2.25	0.75	5/16-18
240208	59809	3.25	2.25	0.88	3/8-16
527208	59815	3.50	2.50	0.88	3/8-16
235208	59808	5.75	4.75	0.88	3/8-16
247208	59820	4.00	2.69	1.13	1/2-13
267208	59821	5.00	3.63	1.38	5/8-11
105208	59802	1.00	0.65	0.56	8-32
102208	59801	1.25	0.88	0.56	8-32
431208	59811	1.00	0.63	0.66	1/4-20
424208	59810	1.50	1.13	0.66	1/4-20

Flat-tip Bonded Neoprene Cap (METRIC)**



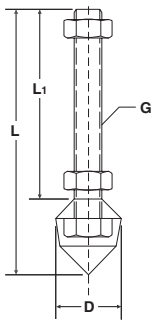
Part no.	EDP no.	L		L_1		D		Thread (G)	Wrench
202208-M	59825	44	1.73	30	1.18	16	0.63	M6 x 1.00	10 mm
215208-M	59827	54	2.13	40	1.57	16	0.63	M6 x 1.00	10 mm
225208-M	59828	53	2.09	35	1.38	21	0.83	M8 x 1.25	13 mm
235208-M	59829	120	4.72	95	3.74	26	1.02	M10 x 1.50	15 mm
240208-M	59830	79	3.11	55	2.17	26	1.02	M10 x 1.50	15 mm
247208-M	59835	97	3.82	68	2.68	30	1.18	M12 x 1.75	15 mm
507208-M	59831	83	3.27	65	2.56	21	0.83	M8 x 1.25	13 mm
NEW 424208-M*	59832	38.1	1.50	28.7	1.13	16.8	0.66	M6 x 1.00	10 mm
NEW 431208-M*	59833	25	1.00	16	0.63	22.3	0.88	M6 x 1.00	10 mm
2007208-M	59840	63	2.47	45	1.77	21	0.83	M8 x 1.25	13 mm

NEW



Part no.	EDP no.	L		L_1		D		Thread (G)	Wrench
NEW 201208-M	59824	32	1.26	29.2	1.15	8	0.31	M4 x 0.7	7 mm
NEW 205208-M	59836	22	0.87	19.2	0.76	8	0.31	M4 x 0.7	7 mm
NEW 213208-M	59837	34	1.34	29	1.14	10	0.39	M5 x 0.8	8 mm
NEW 305208-M	59838	29	1.14	24	0.94	10	0.39	M5 x 0.8	8 mm
NEW 307208-M	59839	43	1.69	34	1.34	19	0.75	M8 x 1.25	13 mm

Cone-tip Bonded Neoprene Cap*



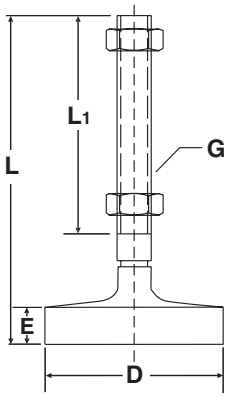
Part no.	EDP no.	L	L_1	D	Thread (G)
305208	59817	1.50	1.00	0.56	10-32
213208	59819	2.25	1.56	0.75	1/4-20
509208	59813	3.00	2.25	0.75	5/16-18
519208	59814	5.38	4.75	0.75	5/16-18
220208	59806	2.88	2.00	0.88	3/8-16
210208	59804	3.44	2.50	0.88	3/8-16

* These spindle assemblies are made from cold-drawn bar (Grade 2) and zinc plated. The spindle tip is bonded using oil resistant black neoprene with a durometer of 70-80 Shore A, to provide adequate compressibility and resiliency. The normal operating range for these assemblies is –40º F to 220º F.

** These spindle assemblies are made from cold-drawn bar (Grade 2 minimum) and zinc plated. The spindle tip is bonded using oil resistant red neoprene with a durometer of 80-85 Shore A. The normal operating range for these assemblies is –4º F to 212º F.

Note: Stainless steel bonded neoprene spindle assemblies are available upon request.

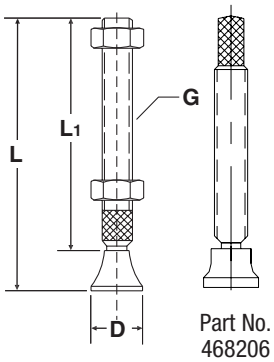
Large Diameter swivel padded spindle (white neoprene pad)



Part no.	EDP no.	L	L_1	D	E	Thread (G)	Swivel Angle
207209	59401	2.57	1.56	1.00	0.31	1/4-20	14°
507209	59402	2.98	1.94	1.50	0.31	5/16-18	14°
210209	59403	3.63	2.44	2.00	0.31	3/8-16	14°

Padded swivel foot is bonded using oil resistant white neoprene with a durometer of 70-80, to provide adequate compressibility and resiliency. Normal operating is - 40°F to 220°F.

Swivel Foot



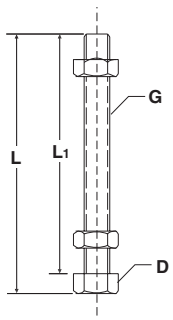
Part No.
468206

Part no.	EDP no.	L	L_1	D	Thread (G)	Swivel Angle
207206	59601	2.38	1.99	0.50	1/4-20	10°
507206	59605	2.75	1.94	0.56	5/16-18	14°
468206*	59604	3.06	1.92	0.63	3/8-16	13°
468206-AL*▲	59606	3.00	2.00	0.63	3/8-16	13°
210206	59602	3.38	2.44	0.63	3/8-16	13°
250206	59603	4.63	3.44	1.00	1/2-13	13°
NEW 468206-M	59607	3.00	2.00	0.63	M10	13°

* Knurl on end of thread

▲ Available upon request, as are a number of other modications

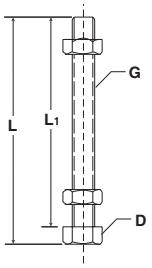
Hex-Head – fully threaded stainless steel



Part no.	EDP no.	L	L_1	D	Thread (G)
205943	59321	0.86	0.75	1/4	8-32
213943	59322	1.13	1.03	1/4	8-32
201943	59323	1.13	1.03	5/16	10-32
202943	59324	1.50	1.38	7/16	1/4-20
207943	59326	2.50	2.31	1/2	5/16-18
237943	59327	2.77	2.25	9/16	3/8-16
245943	59328	3.00	2.75	3/4	1/2-13

Accessories

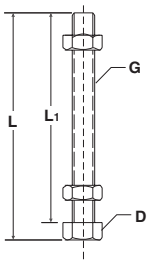
Hex-Head – fully threaded Aluminum



Part no.	EDP no.	L	L_1	D	Thread (G)
441203-AL ▲	59341	1.75	1.50	1/2	5/16-18
491203-AL ▲	59342	1.50	1.25	9/16	3/8-16
485203-AL ▲	59344	2.75	2.50	9/16	3/8-16
486203-AL ▲	59345	4.00	3.75	9/16	3/8-16

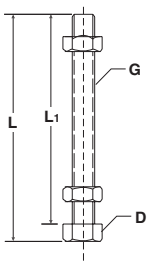
▲ Available upon request, as are a number of other modications

Hex-Head – fully threaded carbon steel



Part no.	EDP no.	L	L_1	D	Thread (G)
105203	59301	0.84	0.75	1/4	8/32 Nylon
305203	59313	1.09	1.00	5/16	10-32
202203	59303	3.13	3.00	7/16	1/4-20
205203	59302	1.88	1.69	7/16	1/4-20
461203	59314	1.00	0.84	1/2	5/16-18
441203	59312	1.94	1.75	1/2	5/16-18
207203	59304	2.75	2.50	1/2	5/16-18
491203	59315	1.50	1.25	9/16	3/8-16
210203	59305	3.00	2.75	9/16	3/8-16
240203	59307	4.25	4.00	9/16	3/8-16
527203	59316	5.25	5.00	9/16	3/8-16
325203	59317	2.84	2.50	3/4	1/2-13
220203	59306	3.31	3.00	3/4	1/2-13
250203	59308	4.38	4.00	15/16	5/8-11

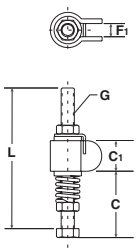
Hex-Head – fully threaded carbon steel (METRIC)



Part no.	EDP no.	L	L_1	D	Thread (G)
NEW 210203-M	59309	3.03	2.76	16 mm	M10
NEW 240203-M	59310	4.25	4.00	16 mm	M10
NEW 441203-M	59311	19.4	1.75	13 mm	M8
NEW 461203-M	59318	1.00	0.81	13 mm	M8
NEW 491203-M	59319	1.50	1.25	16 mm	M10
NEW 205203-M	59329	1.93	1.77	10 mm	M6
NEW 207203-M	59330	2.97	2.76	13 mm	M8

Pressure-matic bolt retainer assemblies

Part No. 902

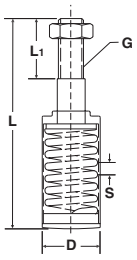


Part no.	EDP no.	L	Range C	C_1	F_1	Thread (G)	Max. Comp	Max. Pres.
902	59020	3.20	1.06-1.56	0.63	0.25	5/16-18	0.50"	72 lbs.
904	59040	4.25	1.38-3.00	0.88	0.38	3/8-16	0.25"	180 lbs.

For use with solid bar hold-down clamps. The compression spring allows the clamp to compensate for variations in material thickness. Clamp capacity is only as great as the maximum spring pressure.

Plunger-matic Assemblies

Part No. 905

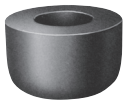


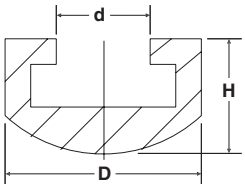
Part no.	EDP no.	L	L_1	D	S	Thread (G)	Max. Comp	Max. Pres.
905	59050	2.50	0.75	0.88	0.19	5/16-18	0.19"	135 lbs.
920	59200	3.63	1.13	0.88	0.38	3/8-16	0.38"	308 lbs.

For use with plunger/straight-line action clamps. The compression spring allows the clamp to compensate for variations in material thickness. Clamp capacity is only as great as the maximum spring pressure.

Neoprene Caps

Slip on the heads of hex-head spindles.
Durometer: 60-70.
Normal operating range: -40º F to 220º F.

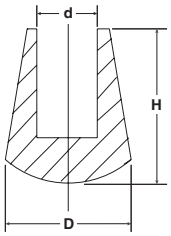




Part no.	EDP no.	D	d	H	For Spindle Diamater
215119	59102	0.63	0.25	0.44	1/4
225119	59103	0.75	0.31	0.50	5/16
235119	59105	0.88	0.38	0.53	3/8

Special Neoprene Caps

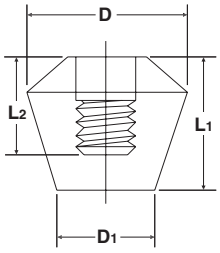
Slip on threaded spindle rod.



Part no.	EDP no.	D	d	H	For Spindle Diamater
424107	59106	0.44	0.22	0.44	7/32
235110	59104	0.72	0.34	0.88	11/32

Polyurethane Caps

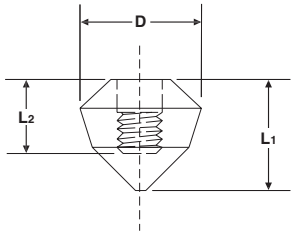
Flat-tip, internally threaded to screw onto spindle end. Durometer: 80.
Normal operating range: -90º F to 200º F.



Part no.	EDP no.	D	D_1	L_1	L_2	For Spindle Diamater
215219	59110	0.81	0.50	0.69	0.50	1/4
225219	59111	0.81	0.50	0.69	0.50	5/16
235219	59112	0.81	0.63	0.88	0.63	3/8

Polyurethane Caps

Cone-tip, internally threaded to screw onto spindle end.

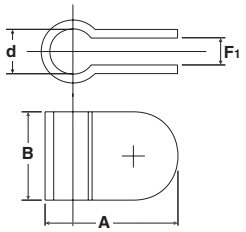


Part no.	EDP no.	D	L_1	L_2	Point Angle	For Spindle Diamater
215319	59113	0.81	0.75	0.50	90°	1/4
225319	59114	0.81	0.75	0.50	90°	5/16
235319	59115	0.81	0.94	0.63	90°	3/8

Accessories

Bolt Retainers –

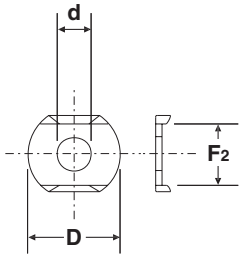
For clamps with "S" solid hold-down bars.



Part no.	EDP no.	A	B	F_1	d	For Spindle
207105	59850	1.25	0.63	0.25	0.33	5/16, M8
210114	59851	1.50	0.75	0.31	0.53	3/8, M10
247110	59852	1.63	0.88	0.38	0.56	1/2, M12
110122	59853	1.88	1.25	0.38	0.64	5/8, M16
250121	59854	1.88	1.00	0.38	0.64	1/2, M12
2002115-E	59856	0.97	0.50	0.23	0.26	1/4, M6
2007115-E	59857	1.26	0.75	0.23	0.34	5/16, M8
2010115-E	59858	1.58	1.13	0.32	0.41	3/8, M10

Flanged Washers –

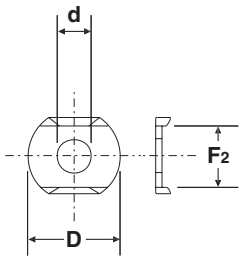
For "U" bar clamps – Carbon Steel.



Part no.	EDP no.	D	d	F_2	For Spindle
105106	59122	0.44	0.17	0.33	No. 8, M4
102111	59121	0.56	0.20	0.38	No. 10, M5
215105	59123	0.69	0.27	0.50	1/4, M6
507107	59125	0.88	0.33	0.60	5/16, M8
235106	59124	1.00	0.41	0.75	3/8, M10
247109	59126	1.25	0.53	0.91	1/2, M12
267102	59127	1.44	0.66	1.03	5/8, M16

Flanged Washers –

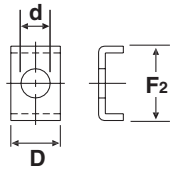
For "U" bar clamps – Stainless Steel.



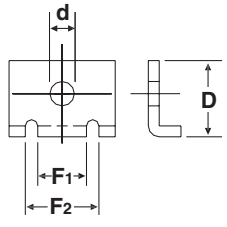
Part no.	EDP no.	D	d	F_2	For Spindle
105906	59131	0.44	0.17	0.33	No. 8, M4
102911	59132	0.56	0.20	0.38	No. 10, M5
215905	59133	0.69	0.27	0.50	1/4, M6
507907	59134	0.88	0.33	0.60	5/16, M8
235906	59135	1.00	0.41	0.75	3/8, M10
247909	59136	1.25	0.53	0.91	1/2, M12

Flanged Washers –

For special "U" bar clamps – Carbon Steel.



Part no.	EDP no.	D	d	F_2	For Spindle
410P1315	59137	0.67	0.26	0.51	1/4, M6
410P1314	59138	0.63	0.33	0.63	5/16, M8
410P1312	59139	0.87	0.41	0.98	3/8, M10
8101122	59143	1.00	0.41	1.07	3/8, M10
410P1316	59140	0.87	0.51	1.06	1/2, M12

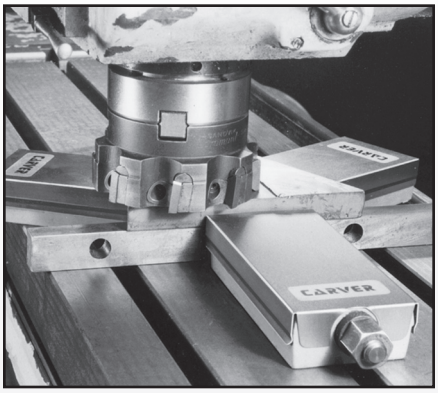


Part no.	EDP no.	D	d	F_1	F_2	For Spindle
8021122	59142	0.88	0.28	0.56	0.84	1/4, M6

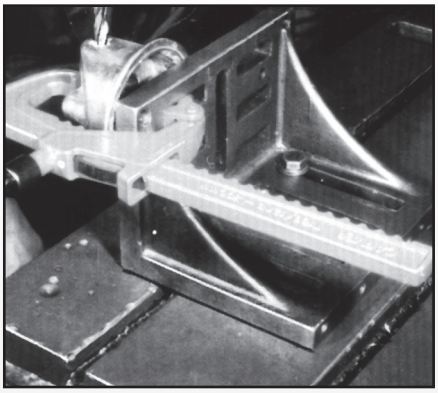
Notes

Notes

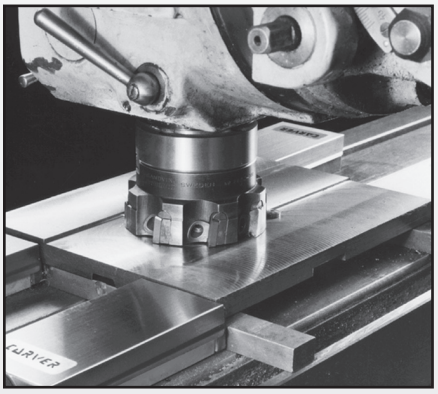
A single Carver Model T500-1 moving head, and two T500-2, fixed head Edge Grip clamps hold a part for milling.



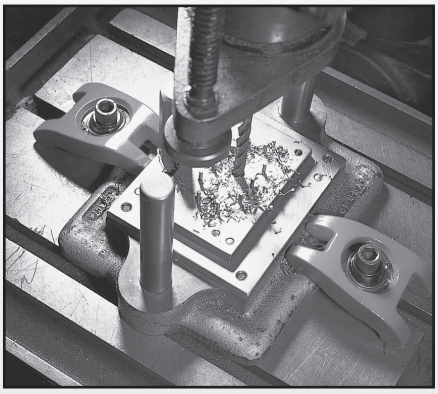
Carver Model T285-18 “C” style clamp used in a drilling operation.



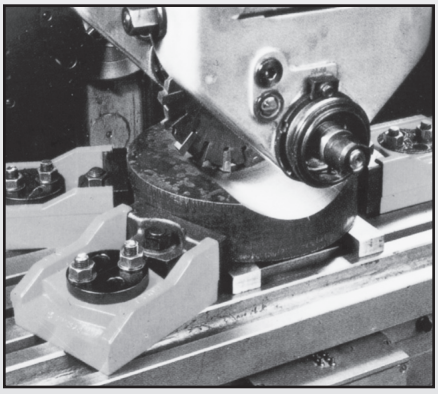
Two low-profile T500 Carver Edge Grip clamps apply both horizontal and vertical clamping force to secure parts for a milling operation. This double action is beyond the capabilities of machine vises.



Two Carver Model T614-0 clamps secure a part fixture during a drilling application.

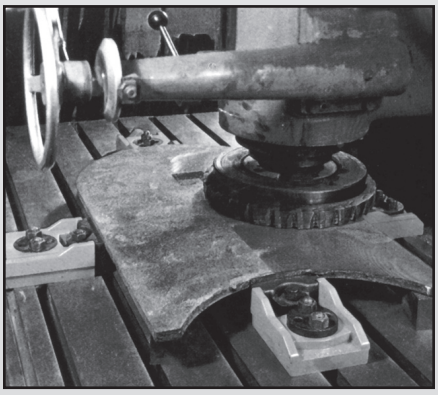


A circular part is held for a slot milling operation using Carver Model T550-2 heavy-duty Edge Grip clamps. The T550-2 clamps swivel a full 360° for infinite angular alignment.

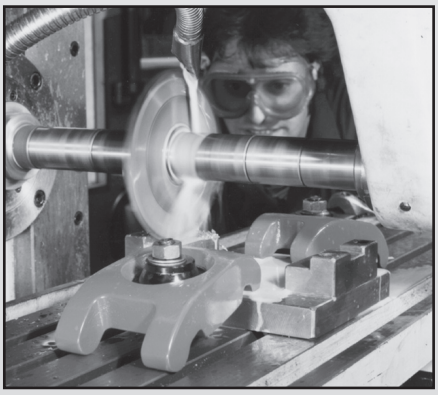


Two versatile Carver Bar Style clamps used in a welding application. The clamps are supplied with two reversible jaws for either clamping or spreading.

Carver heavy-duty Edge Grip Models T550-1 and T550-2 used in a milling application.

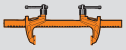
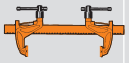


Two Carver Model T614-1 Buttress Style clamps provide exceptional stability to the workpiece in this milling process.

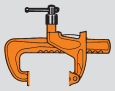
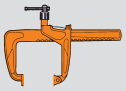
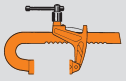
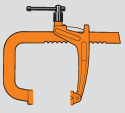
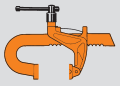


Product range

Bar-Style

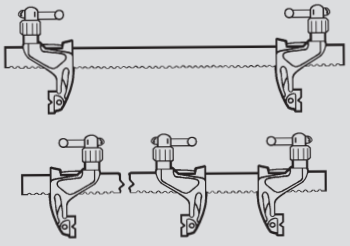
	Model no.	Holding Capacity max. [lbs.]	Page
	T186-24 T186-36 T186-60 T186-84 T186-96	2,500 2,500 2,500 2,500 2,500	10.3
	T321-24 T321-36 T321-60 T321-84 T321-96	1,500 1,500 1,500 1,500 1,500	10.3
	T290-36 T290-60 T290-84 T290-48	4,000 4,000 4,000 4,000	10.3
	T285-36 T285-60 T285-84 T285-48	2,000 2,000 2,000 2,000	10.3
	T257-84 T257-108	6,000 6,000	10.3

C-Style

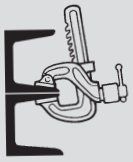
	Model no.	Holding Capacity max. [lbs.]	Page
	T186-6 T186-12 T186-20 T186-30	2,500	10.5
	T321-10	1,250	10.5
	T290-9 T290-18 T290-40	4,000	10.5
	T285-9 T285-18 T285-40	2,000	10.5
	T257-6 T257-12 T257-18 T257-24 T257-36 T257-54	6,000	10.5

Typical Applications

Bar Clamps

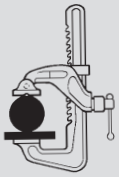


"C" Clamps



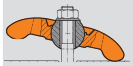
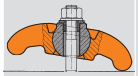
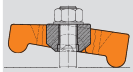
No obstruction from long screw.
Ideal for structural steel fabrication.

Unaffected by weld spatter.
Screw is shielded and out of work area.

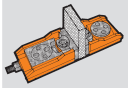
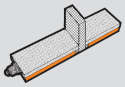


Holds rounds to flats.
Limited movement of moveable jaw pad and grooved face ensure positive grip on round objects.

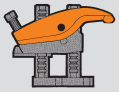
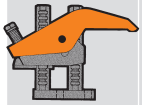
Buttress Style

	Model no.	Holding Capacity max. [lbs.]	Page
	T614-0	2,875	10.7
	T614-1	13,750	10.7
	T614-2	17,600	10.7

Edge Grip Style

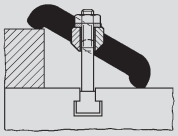
	Model no.	Holding Capacity max. [lbs.]	Page
	T500	1,980 Horizontal 1,980 Vertical	10.9
	T550	9,900 Horizontal 3,960 Vertical	10.9

T-Slot Style

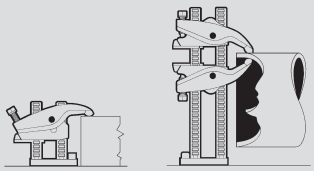
	Model no.	Holding Capacity max. [lbs.]	Page
	T400-4 T400-6 T400-8	5,000	10.11
	T600-4 T600-6 T600-8	3,500	10.11
	T402-6 T402-12 T402-18 T402-24	8,000	10.11
	T602-6 T602-12 T602-18 T602-24 T602-30	5,500	10.11

Typical Applications

Buttress Clamps

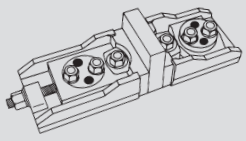


T-Slot Clamps

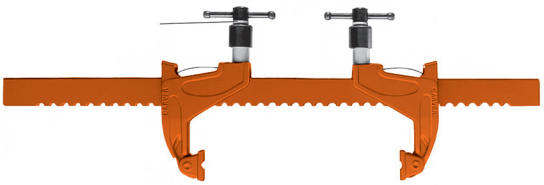


Ideal for use as manual die clamps. Eliminates the need for step blocks or riser blocks.

Edge Grip Clamps



Bar-Style

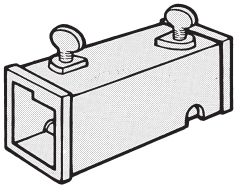


These rugged clamps, made from high-tensile, heat-treated steel, are designed for all types of applications requiring large holding capacities from 1,250 to 6,000 pounds. The clamps are highly versatile. For example, jaws can be reversed to provide spreading action, or several jaws can be used on a single bar both for fixturing and positive component location and clamping.

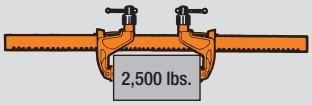
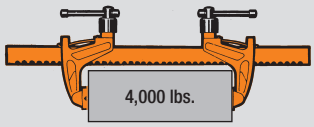
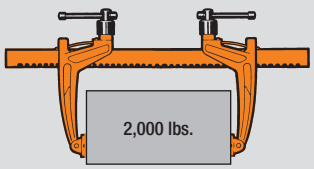
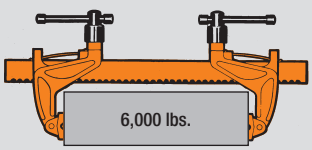
Available models include T321 Standard-Duty Deep Throat, T285 Medium-Duty Deep Throat, T186 Standard-Duty, T290 Medium-Duty and T257 Heavy-Duty. In addition, standard and medium-duty connectors are available to couple like bars together for increased clamping reaches.

Fits 2 bars

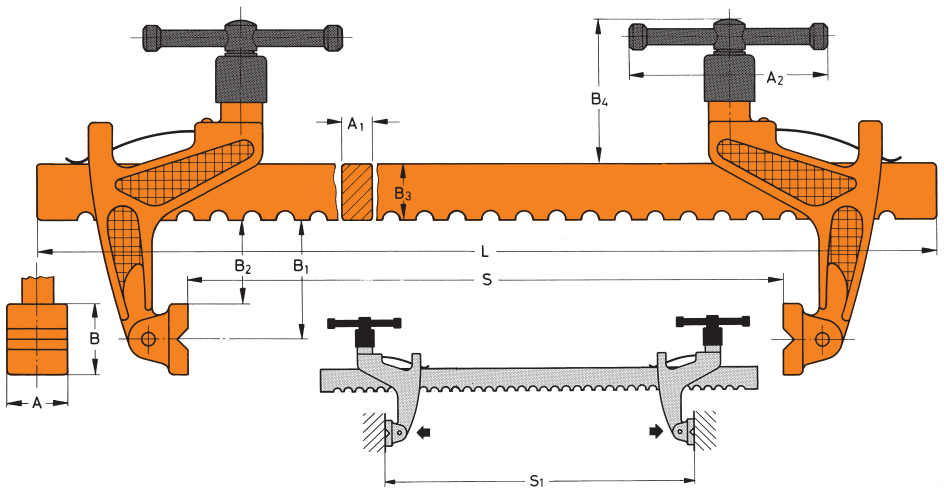
Model no.	For Bar Clamps Model no.	Weight [lbs.]
T186-13 ▲	T186-.. and T321-..	1.54
T290-13	T285-.. and T290-..	2.87



Connector

Holding Capacity [lbs.]	Throat Depth B_1	Width Opening S min.	Width Opening S max.	Width Opening S_1 min.	Width Opening S_1 max.	Model no.	Weight [lbs.]	Consisting of: 1 x ———	Consisting of: 2 x
 2,500 lbs.	2.38	8.50	24	2.95	26.77	T186-24	7.50	186-24-1	186-2
		8.50	36	2.95	38.98	T186-36	9.50	186-36-1	186-2
		8.50	60	2.95	–	T186-60 ▲	13.50	186-60-1	186-2
		8.50	84	2.95	–	T186-84 ▲	17.50	186-84-1	186-2
		8.50	96	2.95	–	T186-96 ▲	19.50	186-96-1	186-2
 1,250 lbs.	4.75	5.50	24	3.15	27.17	T321-24	7.00	186-24-1	321-2
		5.50	36	3.15	39.37	T321-36	9.00	186-36-1	321-2
		5.50	60	3.15	62.99	T321-60	13.00	186-60-1	321-2
		5.50	84	3.15	–	T321-84 ▲	17.00	186-84-1	321-2
		5.50	96	3.15	–	T321-96 ▲	19.00	186-96-1	321-2
 4,000 lbs.	3.50	10.00	36	4.72	39.57	T290-36	20.50	290-36-1	290-2
		10.00	48	4.72	–	T290-48	24.50	290-48-1	290-2
		10.00	60	4.72	63.78	T290-60	28.50	290-60-1	290-2
		10.00	84	4.72	87.40	T290-84 ▲	36.50	290-84-1	290-2
 2,000 lbs.	8.00	6.00	36	4.72	42.72	T285-36	24.50	290-36-1	285-2
		6.00	48	4.72	–	T285-48	28.50	290-48-1	285-2
		6.00	60	4.72	66.93	T285-60 ▲	32.50	290-60-1	285-2
		6.00	84	4.72	90.55	T285-84 ▲	40.50	290-84-1	285-2
 6,000 lbs.	4.50	12.00	84	5.90	86.61	T257-84 ▲	61.00	257-84-1	257-2
		12.00	108	5.90	–	T257-108	71.00	257-108-1	257-2

▲ Available upon request



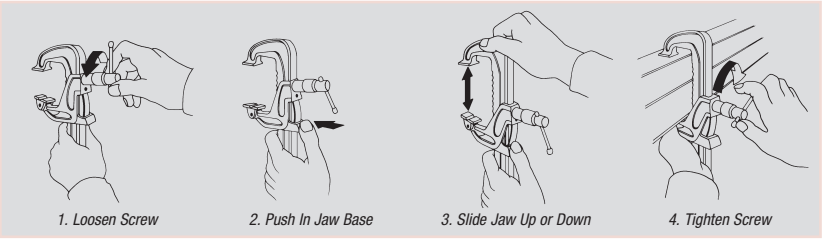
Model no.	A	A_1	A_2	B	B_2	B_3	B_4	L
T186-24	0.98	0.47	2.99	1.26	1.73	1.18	2.99	27.75
T186-36	0.98	0.47	2.99	1.26	1.73	1.18	2.99	39.75
T186-60	0.98	0.47	2.99	1.26	1.73	1.18	2.99	63.95
T186-84	0.98	0.47	2.99	1.26	1.73	1.18	2.99	87.75
T186-96	0.98	0.47	2.99	1.26	1.73	1.18	2.99	99.75
T321-24	0.98	0.47	2.99	1.26	4.09	1.18	2.99	27.75
T321-36	0.98	0.47	2.99	1.26	4.09	1.18	2.99	39.75
T321-60	0.98	0.47	2.99	1.26	4.09	1.18	2.99	63.95
T321-84	0.98	0.47	2.99	1.26	4.09	1.18	2.99	87.75
T321-96	0.98	0.47	2.99	1.26	4.09	1.18	2.99	99.75
T290-36	1.50	0.79	5.51	2.00	2.56	1.57	4.13	39.75
T290-48	1.50	0.79	5.51	2.00	2.56	1.57	4.13	51.50
T290-60	1.50	0.79	5.51	2.00	2.56	1.57	4.13	63.38
T290-84	1.50	0.79	5.51	2.00	2.56	1.57	4.13	87.50
T285-36	1.50	0.79	5.51	2.00	7.09	1.57	4.13	39.75
T285-48	1.50	0.79	5.51	2.00	7.09	1.57	4.13	51.50
T285-60	1.50	0.79	5.51	2.00	7.09	1.57	4.13	63.38
T285-84	1.50	0.79	5.51	2.00	7.09	1.57	4.13	87.50
T257-84	2.00	0.87	7.36	2.50	3.27	2.05	5.00	90.38
T257-108	2.00	0.87	7.36	2.50	3.27	2.05	5.00	114.38

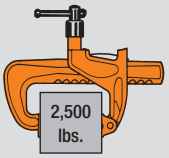
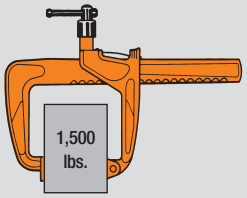
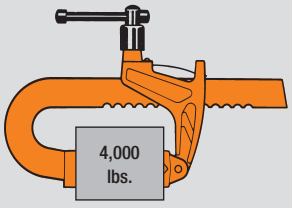
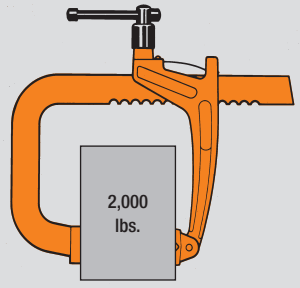
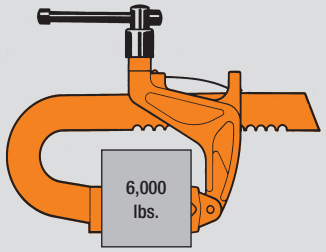
C-Style

Operation

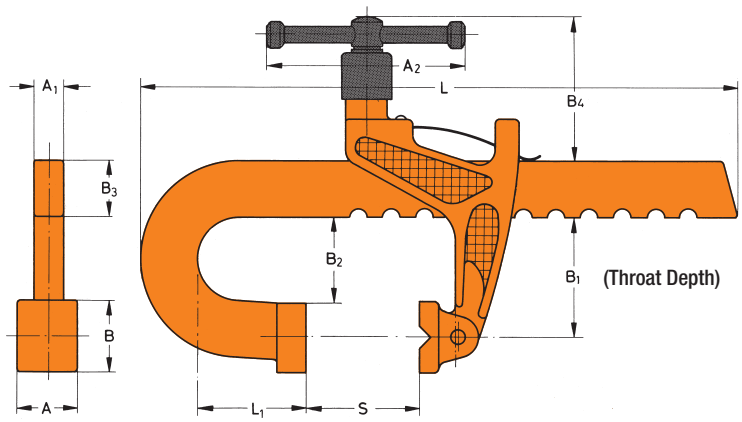
Operation is very simple. The operator slides the spring loaded moveable jaw toward the workpiece to the nearest notch where it locks into the detent. Hand tightening the screw advances the clamp jaw. The jaw advances the tilting pad directly into contact with the workpiece – there is no rotating to twist the work or the clamp out of position.

An unusual and very useful feature of these clamps is the ability to use the clamp for spreading or locating as well as squeezing.



Holding Capacity [lbs.]	Throat Depth B_1	Width Opening S	Model no.	Weight [lbs.]	Consisting of: 1 x	1 x
 2,500 lbs.	2.38	0-6	**T186-6**	2.75	186-6-1	186-2
		0-12	**T186-12**	3.75	186-12-1	186-2
		0-20	**T186-20** ▲	5.51	186-20-1	186-2
		0-30	**T186-30** ▲	7.05	186-30-1	186-2
 1,500 lbs.	4.75	0-10	**T321-10**	4.00	321-10-1	321-2
 4,000 lbs.	3.50	0-9	**T290-9**	10.00	290-9-1	290-2
		0-18	**T290-18**	13.50	290-18-1	290-2
		0-40	**T290-40** ▲	23.15	290-40-1	290-2
 2,000 lbs.	8.00	0-9	**T285-9**	12.00	285-9-1	285-2
		0-18	**T285-18**	13.50	285-18-1	285-2
		0-40	**T285-40** ▲	25.35	285-40-1	285-2
 6,000 lbs.	4.50	0-6	**T257-6**	20.00	257-6-1	257-2
		0-12	**T257-12**	22.50	257-12-1	257-2
		0-18	**T257-18**	25.00	257-18-1	257-2
		0-24	**T257-24**	27.50	257-24-1	257-2
		0-36	**T257-36**	32.50	257-36-1	257-2
		0-54	**T257-54**	41.00	257-54-1	257-2

▲ Available upon request



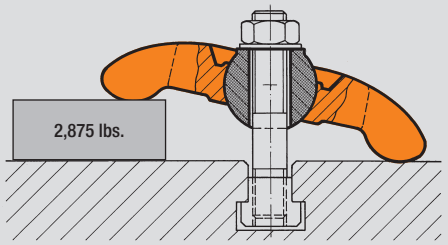
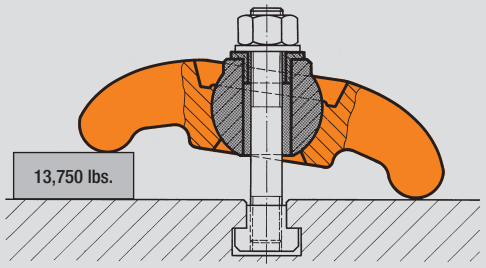
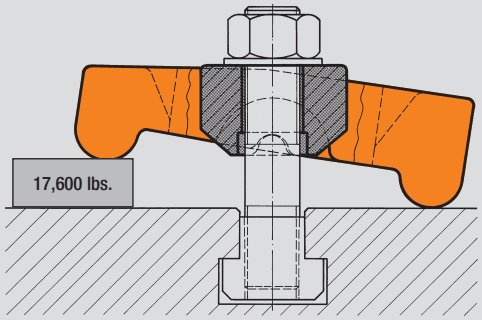
Model no.	A	A_1	A_2	B	B_2	B_3	B_4	L	L1
T186-6	0.98	0.51	3.00	1.25	1.69	1.30	3.00	9.63	0.88
T186-12	0.98	0.51	3.00	1.25	1.69	1.30	3.00	15.50	0.88
T186-20 ▲	0.98	0.47	3.00	1.38	1.69	1.18	3.00	27.36	3.15
T186-30 ▲	0.98	0.47	3.00	1.38	1.69	1.18	3.00	34.45	1.18
T321-10	0.98	0.51	3.00	1.25	4.02	1.32	3.00	14.25	1.00
T290-9	1.57	0.79	5.51	2.36	2.56	1.57	4.13	16.50	2.75
T290-18	1.57	0.79	5.51	2.36	2.56	1.57	4.13	25.50	2.75
T290-40 ▲	1.57	0.79	5.51	2.36	2.56	1.57	4.13	47.44	2.75
T285-9	1.57	0.79	5.51	2.36	7.09	1.57	4.13	16.50	2.75
T285-18	1.57	0.79	5.51	2.36	7.09	1.57	4.13	25.50	2.75
T285-40 ▲	1.57	0.79	5.51	2.36	7.09	1.57	4.13	47.44	2.75
T257-6	2.00	0.87	7.36	2.36	3.35	2.00	5.00	13.38	3.75
T257-12	2.00	0.87	7.36	2.36	3.35	2.00	5.00	21.50	3.75
T257-18	2.00	0.87	7.36	2.36	3.35	2.00	5.00	27.38	3.75
T257-24	2.00	0.87	7.36	2.36	3.35	2.00	5.00	33.50	3.75
T257-36	2.00	0.87	7.36	2.36	3.35	2.00	5.00	45.50	3.75
T257-54	2.00	0.87	7.36	2.36	3.35	2.00	5.00	63.50	3.75

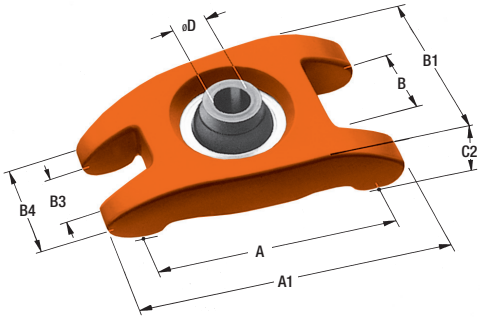
▲ Available upon request

Buttress Style

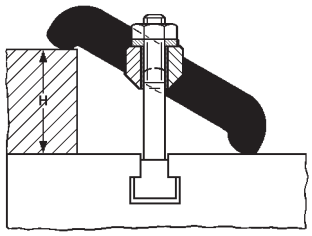
These workholding clamps are designed for use on thin or low-profile workpieces replacing ordinary strap clamps. They feature a self-aligning swiveling pivot which allows the tightening bolt to always remain vertical, preventing any side forces.

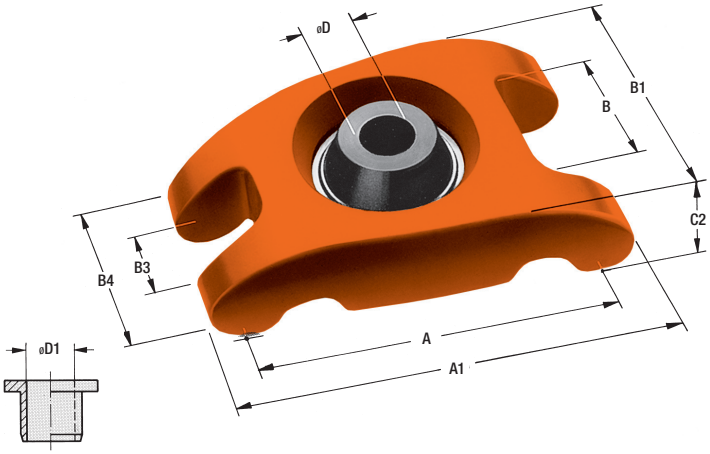
The two-point contact offered by Models T614-0 and T614-1 also provides greater stability to the workpiece. Ideally suited for manual die clamping. Eliminates the need for step blocks or riser blocks.

Holding Capacity [lbs.]	Working Height Range	For screw diameter	Model no.	Weight [lbs.]
	0-1.75"	1/2"	**T614-0**	1.5
	0-2.25"	5/8" and 3/4"	**T614-1**	5.8
	0-3.00"	1"	**T614-2**	9.5



Holding capacity 2,875 lbs.
Clamping height 1.75" max.
Model no. **T614-0**

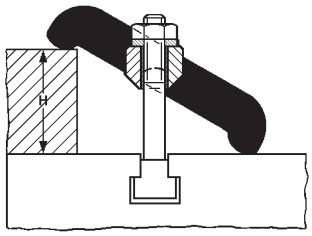


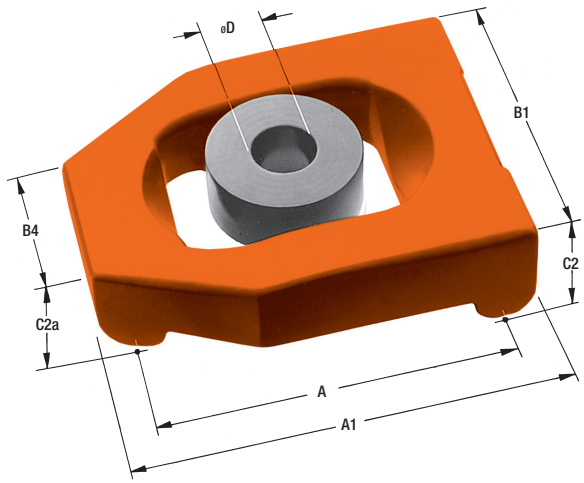


Holding capacity **13,750 lbs.**
Clamping height 2.25" max.
Model no. **T614-1**

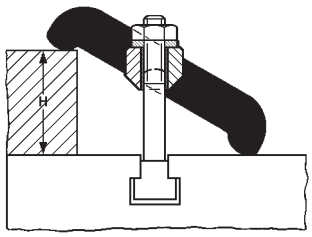
Delivery includes reducing bush with inner diameter 0.67".

Reducer bushing is standard equipment





Holding capacity **17,600 lbs.**
Clamping height 3.00" max.
Model no. **T614-2**



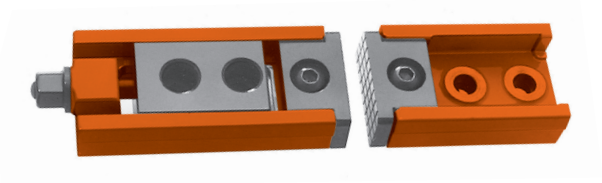
Model no.	A	A1	B	B1	B3	B4	C2	C2a	øD	øD1
T614-0	3.54	4.34	1.41	2.56	0.78	1.56	0.78	–	0.51	–
T614-1	5.28	6.31	2.38	3.94	1.13	2.69	1.81	–	0.83	0.67
T614-2	5.83	6.69	–	5.13	–	2.56	1.97	1.57	1.02	–

Edge Grip Style

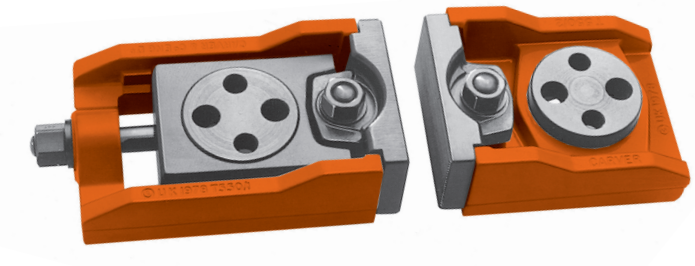
These low-profile clamps apply both horizontal and vertical clamping force against the workpiece to pull it down onto the work table as well as clamp it in position. They are designed to be used with T-Slot tables (or bolted to a plate) and allow maximum cutter access to the workpiece's surface. Edge Grip clamps are excellent for milling, planing, grinding and general surfacing operations which are beyond the capabilities of machine vises.

Because the Edge Grip clamp set consists of two separate pieces – both locked to the T-Slot table – any length part (within the dimensions of the table) can be clamped.

The heavy-duty model also gives the additional advantage of swiveling through a full 360° for infinite angular alignment and gives a choice of two mounting hole sizes.



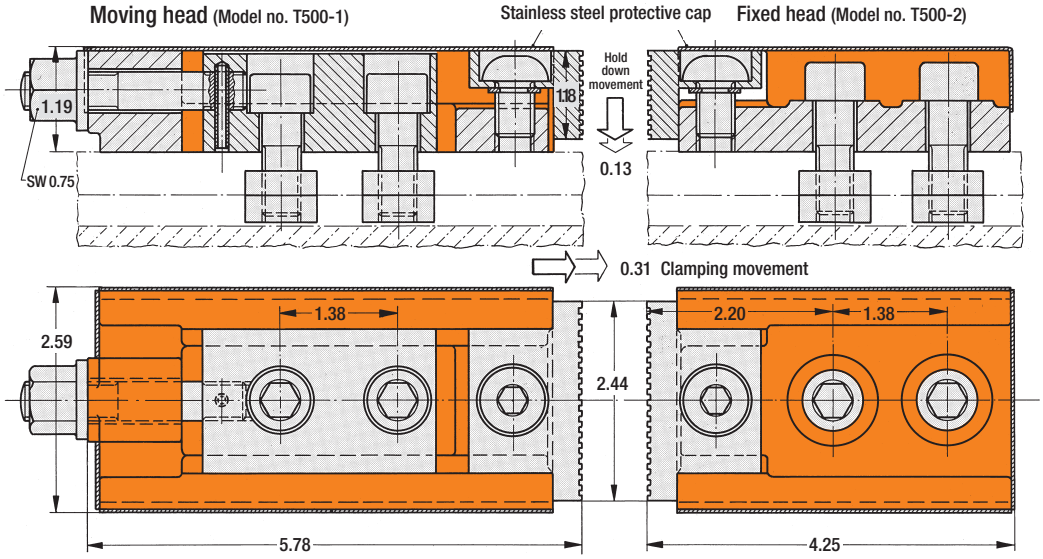
Model no. **T500** ▲



Model no. **T550** ▲

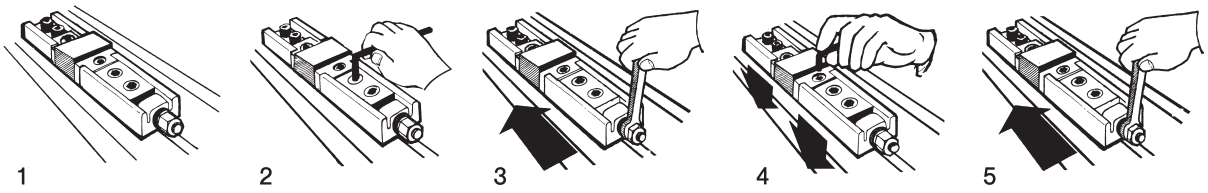
Clamping force		The total set consists	For screw diameter	Model no.	Weight [lbs.]
Horizontal	Vertical				
1,980 lbs.	1,980 lbs.	1 moving head with swarf cover (T500-1) (T500-2) 1 fixed head with swarf cover 4 T-slot nuts 14 (M12) 4 button head socket screws (M12 x 35) 2 hex keys	1/2"	T500	8.38
9,900 lbs.	3,960 lbs.	1 Moving head (T550-1) 1 Fixed head (T550-1)	5/8" and 3/4"	T550	52.91

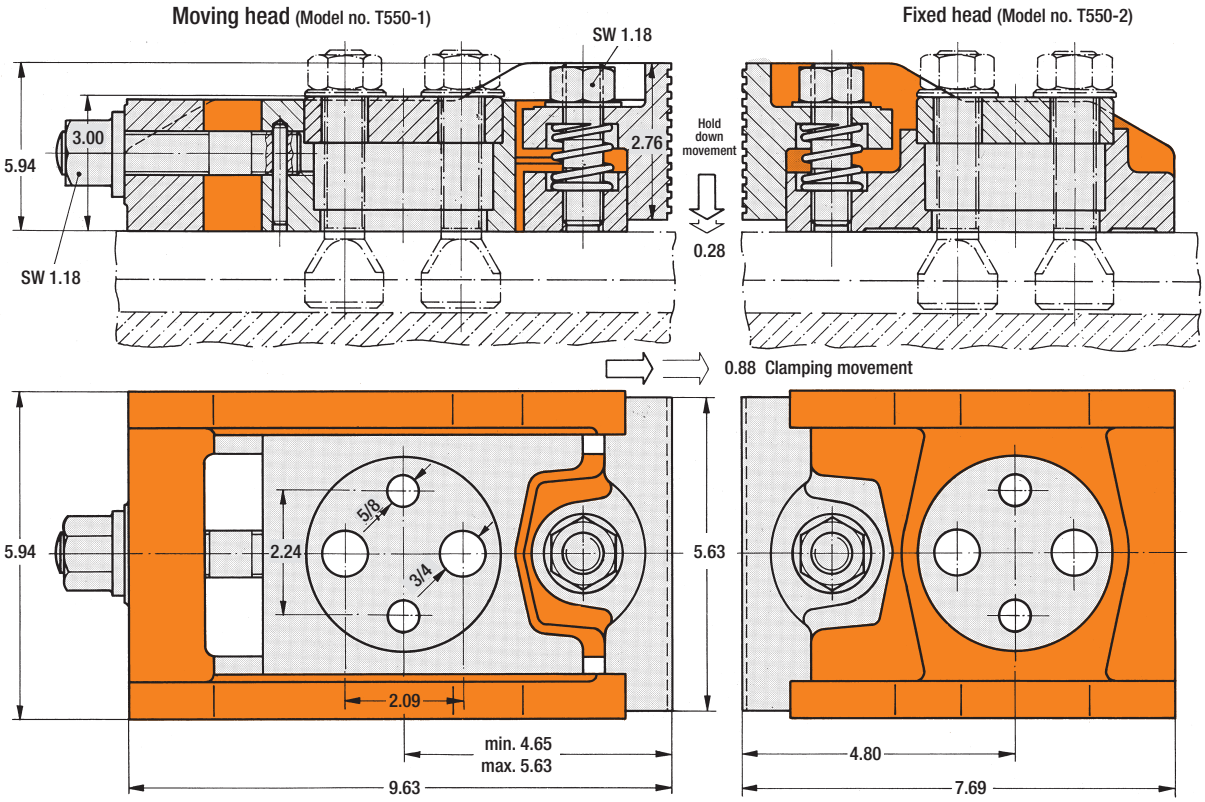
▲ Available upon request



Operating instruction

1. Place clamps against workpiece and tighten cap screws on fixed head
2. Tighten anchor cap screws on moving head
3. Apply pressure with rear-nut slightly
4. Tighten down jaw screws on fixed and moving heads
5. Apply pressure with rear-nut

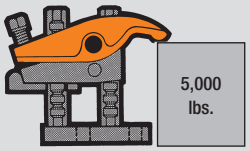
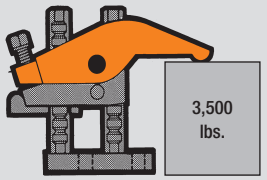
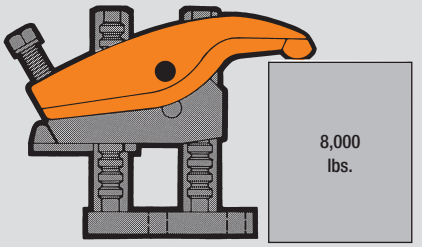
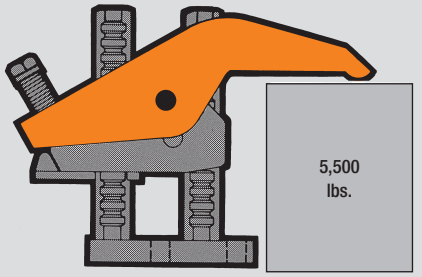




T-Slot Style

These patented clamps provide rapid height adjustment and positive holding. They are designed with a single-unit clamp head and base. The DE-STA-CO Carver T-Slot Clamp is one single assembly – there are no loose parts.

When setting up, the safety lock on the back is released and the clamp lifted on the base to the desired height. When the clamp screw is turned, 100% of the force is transmitted to the work-piece. Backing off the clamp adjusting screw and releasing the safety lock and lifting the clamp head makes for rapid job changeover.

Holding force [lbs.]	Throat Depth a	Throat Depth b	Working Height C min.	Working Height C max.	Model No.	Accessories standard equipment	Weight [lbs.]
 5,000 lbs.	0.55	1.30	1.00	4.00	T400-4		4.00
			1.00	6.00	T400-6		4.25
			2.50	8.00	T400-8		4.60
 3,500 lbs.	2.24	2.87	0.50	4.00	T600-4	2 T-slot nuts with matching 14 mm bolt	4.80
			0.50	6.00	T600-6		5.10
			2.00	8.00	T600-8		5.40
 8,000 lbs.	1.73	2.68	0	6.00	T402-6		14.00
			0	12.00	T402-12		17.70
			6.00	18.00	T402-18		19.40
			12.00	24.00	T402-24 ▲		20.00
 5,500 lbs.	3.90	4.84	0	6.00	T602-6	2 T-slot nuts with matching 18 mm bolt	16.00
			0	12.00	T602-12		19.80
			6.00	18.00	T602-18		21.60
			12.00	24.00	T602-24 ▲		24.30
			18.00	30.00	T602-30 ▲		28.00

▲ Available upon request

These patented clamps provide rapid height adjustment and positive holding. They are designed with a single-unit clamp head and base, providing up to 8,000 pounds of positive holding capacity for workpieces up to 60" high. The design applies 100% of the screw force directly onto the workpiece far more than any strap clamp arrangement. Additionally, there is no searching for the correct riser block height. The DE-STA-CO Carver T-Slot Clamp is one single assembly – there are no loose parts.

When setting up, the safety lock on the back is released and the clamp lifted on the base to the desired height. When the clamp screw is turned, 100% of the force is transmitted to the workpiece. Backing off the clamp adjusting screw and releasing the safety lock and lifting the clamp head makes for rapid job changeover.

Safety – No loose parts. Clamp and base are one unit. Higher clamping force holds parts more securely and safely.

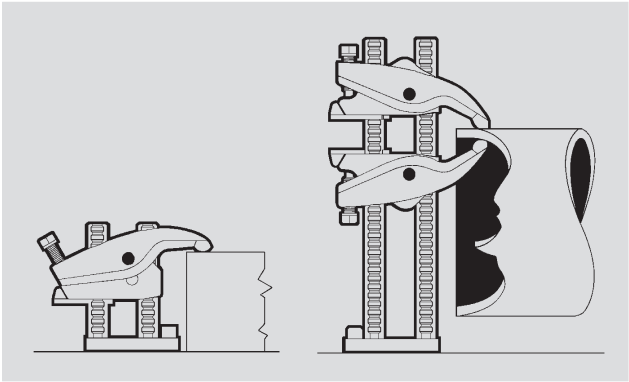
Speed – The clamp head adjusts much faster than an operator can select proper size spacers and bolts. Benefits include:

- Cuts set-up time by as much as 80%
- Reduces machine downtime
- Offers more rapid loading and unloading

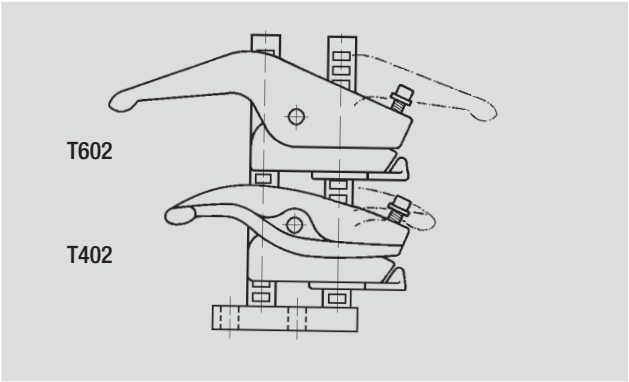
Economy – Tool tip technology and digital control have reduced machining time. Why lose these advantages on long set-up times? T-Slot clamps can reduce set-up time by as much as 80%. Benefit: Money saved.

Ease of Operation – Loosen adjusting screw and release safety catch to adjust height instantly.

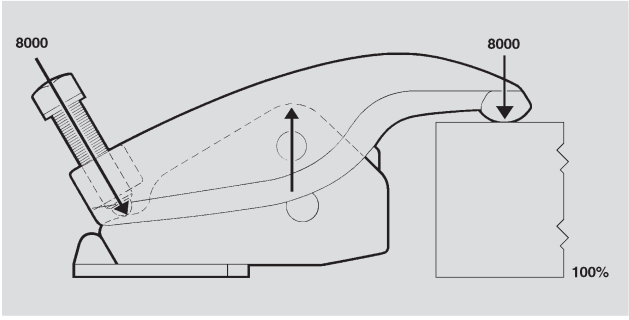
Versatility – Selection of bases gives clamping heights from 0" to 60". Two or more heads can be used on one base to position and hold down as well as support – ideal for fine height adjustment during set-up. Also eliminates riser blocks.

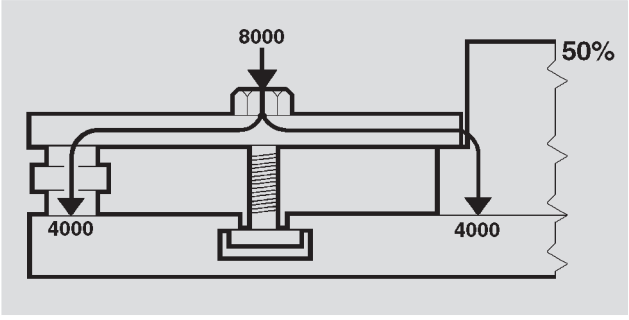


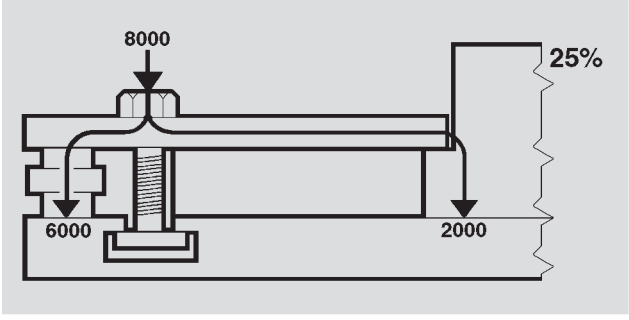
Ideal for use as manual die clamps. Eliminates the need for step blocks or riser blocks.

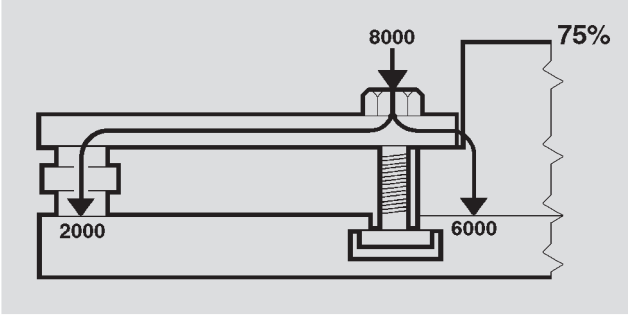


The T402 and T602 can be reversed on their bases to give added reach.

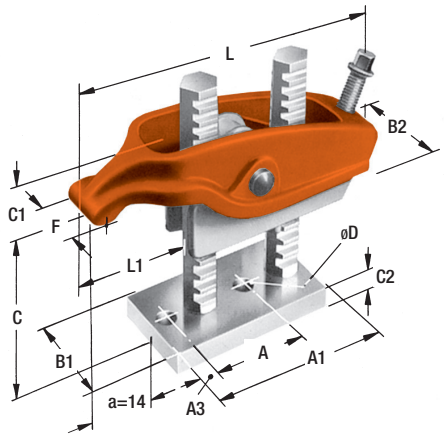




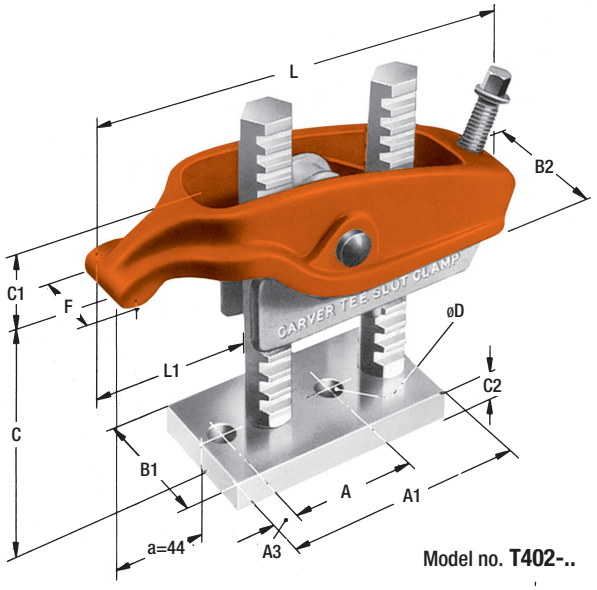




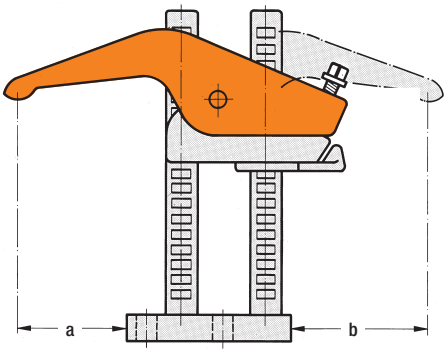
T-Slot Style



Model no. **T400-..**



Model no. **T402-..**

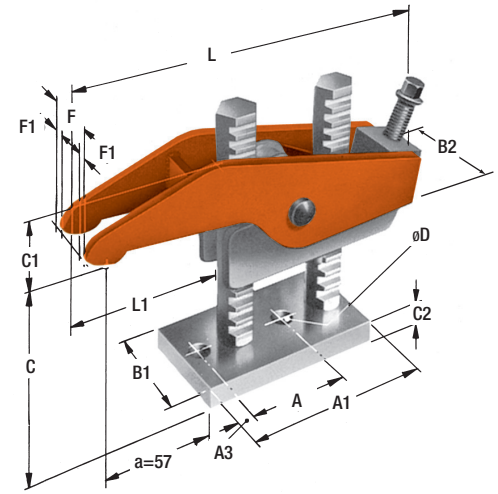


If the T402 is reversed on its base, the measurement of the throat depth will change.

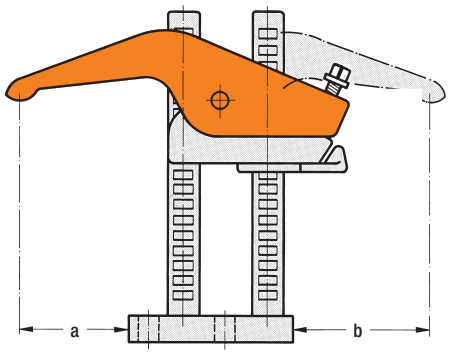
	T400-..	T402-..
a	0.55	1.73
b	1.30	2.68

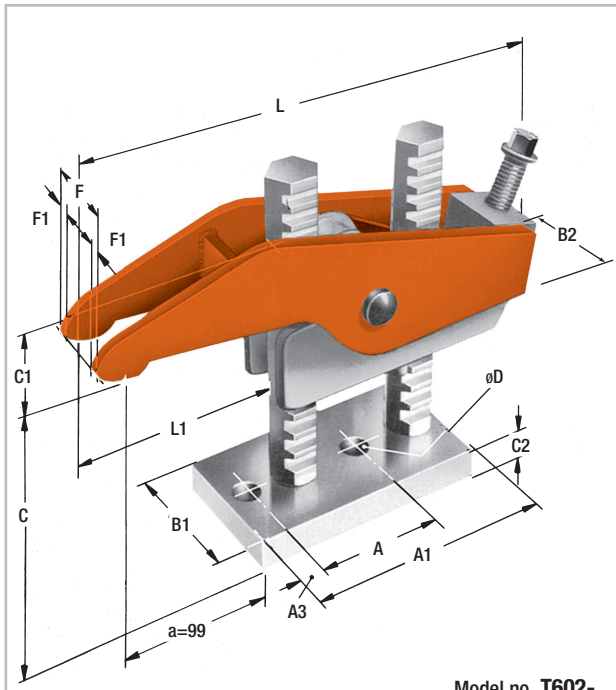
													Consisting of	
Model no.	A	A1	A3	B1	B2	C	C1	C2	øD	F	L	L1	1 x	1 x
T400-4	2.12	3.78	0.45	2.00	1.03	1-4	1.09	0.63	0.53	1.02	6.31	1.44	400-2	400-4-1
T400-6	2.12	3.78	0.45	2.00	1.03	1-6	1.09	0.63	0.53	1.02	6.31	1.44	400-2	400-6-1
T400-8	2.12	3.78	0.45	2.00	1.03	2.5-8	1.09	0.63	0.53	1.02	6.31	1.44	400-2	400-8-1
T402-6	2.81	5.50	0.61	3.00	3.11	0-6	1.69	0.75	0.66	1.50	9.63	2.56	402-2	402-6-1
T402-12	2.81	5.50	0.61	3.00	3.11	0-12	1.69	0.75	0.66	1.50	9.63	2.56	402-2	402-12-1
T402-18	2.81	5.50	0.61	3.00	3.11	6-18	1.69	0.75	0.66	1.50	9.63	2.56	402-2	402-18-1
T402-24 ▲	2.84	5.50	0.61	3.00	3.11	12-24	1.69	0.75	0.66	1.50	9.63	2.56	402-2	402-24-1

▲ Available upon request



Model no. **T600-..**





Model no. **T602-..**

If the T602 is reversed on its base, the measurement of the throat depth will change.

	T600-..	T602-..
a	2.24	3.90
b	2.87	4.84

														Consisting of	
Model no.	A	A1	A3	B1	B2	C	C1	C2	øD	F	F1	L	L1	1 x	1 x
T600-4	2.12	3.78	0.45	2.00	1.91	.5-4	1.50	0.63	0.53	1.97	0.41	7.88	2.94	600-2	600-4-1
T600-6	2.12	3.78	0.45	2.00	1.91	.5-6	1.50	0.63	0.53	1.97	0.41	7.88	2.94	600-2	600-6-1
T600-8	2.12	3.78	0.45	2.00	1.91	2-8	1.50	0.63	0.53	1.97	0.41	7.88	2.94	600-2	600-8-1
T602-6	2.81	5.50	0.61	3.00	3.53	0-6	2.75	0.75	0.66	2.68	0.51	12.13	4.50	602-2	602-6-1
T602-12	2.81	5.50	0.61	3.00	3.53	0-12	2.75	0.75	0.66	2.68	0.51	12.13	4.50	602-2	602-12-1
T602-18	2.81	5.50	0.61	3.00	3.53	6-18	2.75	0.75	0.66	2.68	0.51	12.13	4.50	602-2	602-18-1
T602-24 ▲	2.81	5.50	0.61	3.00	3.53	12-24	2.75	0.75	0.66	2.68	0.51	12.13	4.50	602-2	602-24-1
T602-30 ▲	2.81	5.50	0.61	3.00	3.53	18-30	2.75	0.75	0.66	2.68	0.51	12.13	4.50	602-2	602-30-1

▲ Available upon request

Notes

NEW

Model 8031

Model 8031 is DE-STA-CO's newest clamp in a line of fully enclosed pneumatic clamps. Model 8031 is the fully enclosed version of the pneumatic clamp 803. With its patented design, this clamp can be used in the harshest environments. Cylinder is sensor ready, and the clamp can be hard piped.

page 11.19

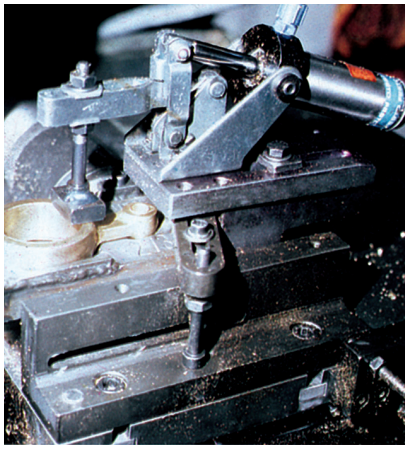
Product group – standard pneumatic clamps

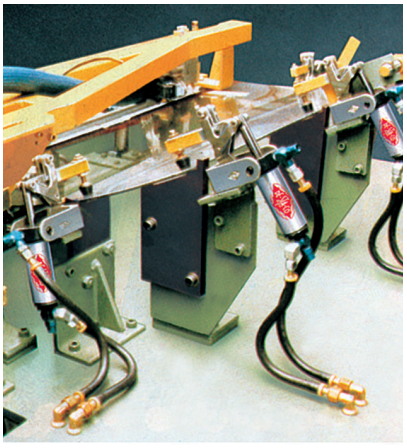
	Model no.	Holding Capacity max. [lbs.]		Exerting Force [PSI]		Page
		Inner	Outer	Inner	Outer	
	802-U 807-U 810-U 812-U 847-U	200 375 600 100 1,000	110 275 290 55 480	200 350 600 135 750	160 150 400 960 450	11.7
	807-S 810-S 847-S	500 750 1,000	260 500 650	500 700 1,000	150 400 450	11.8
	8007-2F 8007-2FA	800 800	400 400	600 600	400 400	11.9
	8021 8071 8101	390 450 700	–	175 302 500	100 194 275	11.10
	846	750	–	750	500	11.11
	849	2,000		1,200	1,000	11.12

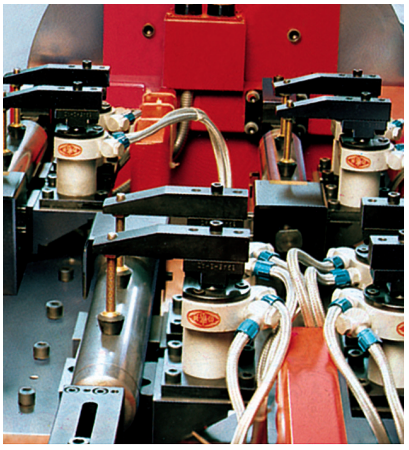
	Model no.	Holding Capacity max. [lbs.]		Exerting Force [PSI]		Page
		Inner	Outer	Inner	Outer	
	858	4,000	2,000	1,600	900	11.13
	817-S 827-S	450 700	200	400 500	200 300	11.14
	817-U 827-U	375 600	200	320 500	200 300	11.15
	868	4,000		1,600	900	11.16
	803 803-M	600 600		600 600		11.17
	816 816-M	200 200		190 190		11.18

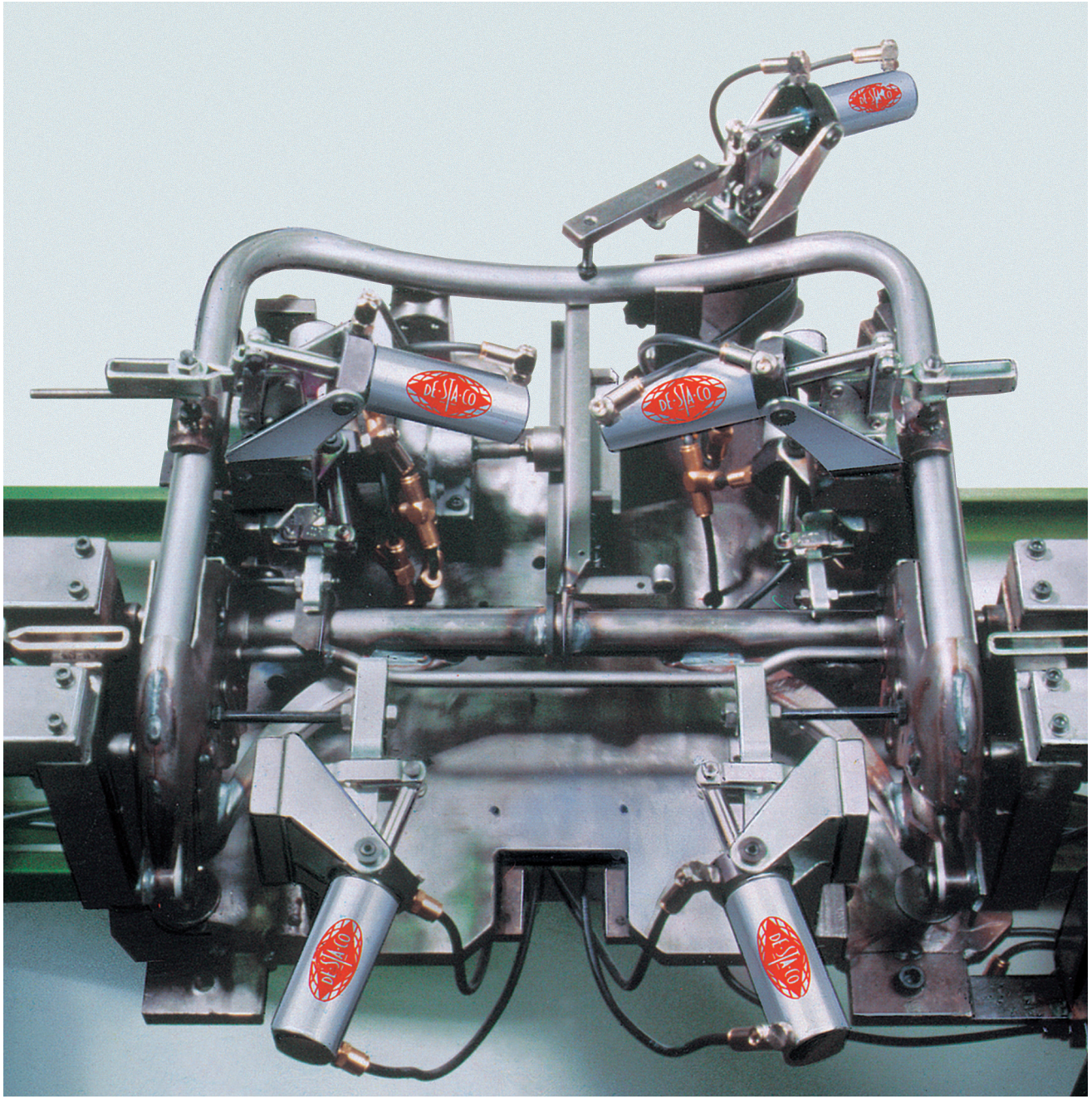
	Model no.	Holding Capacity max. [lbs.]	Exerting Force [PSI]	Page
	8031	2,000	600	11.19
	830 830-M	2,500 2,500	800 800	11.20
	850 850-M	16,000 16,000	2,050 2,050	11.21
	800 1200	850-1500 750-1600	70-150 70-150	11.23
	801			11.24
	870 871	2,000 2,000	170/350 170/350	11.25

Product group – standard pneumatic clamps









High safety standard

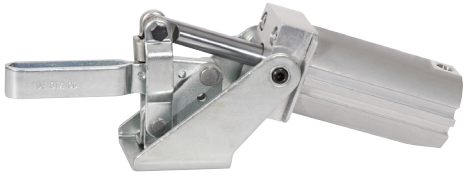
The DE-STA-CO pneumatic toggle action power clamps lock in the over-center position when clamped. If used correctly, these clamps remain closed even if exposed to vibrations, changing loads and air-pressure failure.

The main product features

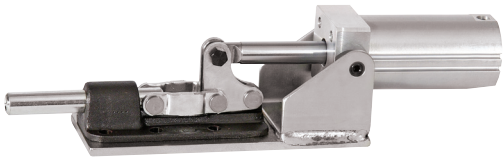
- Ideal for the production environment
- Large opening angles
- High exerting forces and holding capacities
- Compact design
- Low air consumption

End position sensing

Sensors available for detecting the open/close position of the cylinder, making the clamp useful in automated production applications.

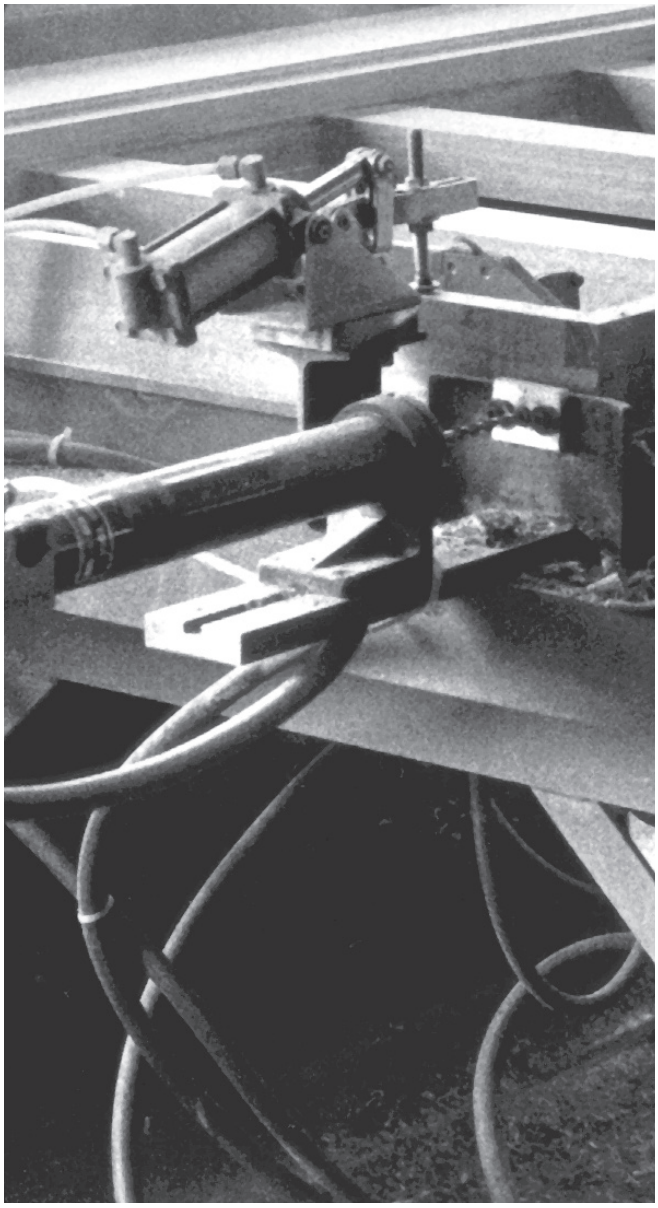


Model 807-U



Model 830

Model 868



Pneumatic clamps for single and mass production

General

In additioin to the extensive range of manual clamping devices, DE-STA-CO also offers pneumatically operated power clamps.

Reduction of non-productive time

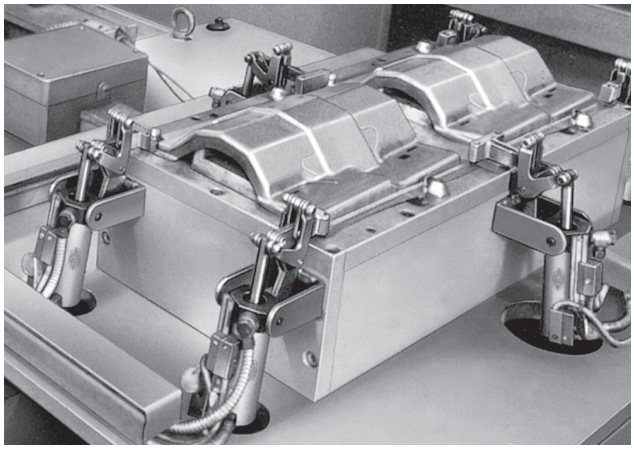
Reduction of non-productive time is of increasing importance in modern manufacturing processes, even at a small and medium production scale. Even a manually operated toggle clamp helps reduce considerably the non-productive time of clamping and releasing parts. This effect is multiplied by the amount of clamping stations. If several or even all clamping stations can be opened and closed simultaneously from a central point by “pressing a button,” the non production time for clamping becomes almost negligible. A control valve allows simultaneous operation of as many DE-STA-CO power clamps as required.

Constant and high exerting forces

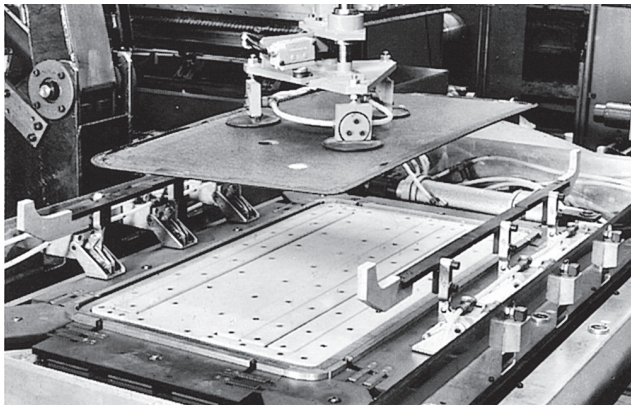
Constant air pressure produces constant exerting forces. In many applications repeatable exerting forces are necessary to obtain constant quality of the parts to be manufactured. Only power clamps guarantee necessary repeatability of the exerting forces as well as the possibility of regulating the exerting forces by modifying the air supply without jeopardizing the clamp´s holding capacity. High exerting forces are achieved without overexerting the operator – he simply actuates a control valve – hence no risk of fatigue or lack of consistency.

Quality and durability

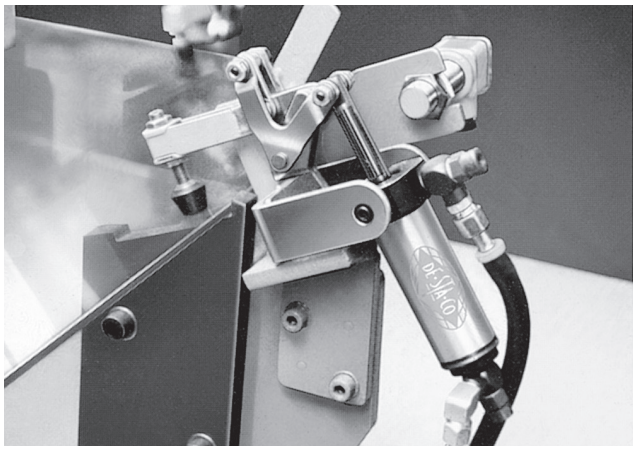
DE-STA-CO stands for high quality clamps all over the world. Including power clamps. This applies both to the clamps‘ mechanical parts and to the pneumatic cylinders we use. Our cylinders are specially designed for our clamps, have chrome finished piston rods and are specially lubricated. Depending on the model, the clamps are equipped with stainless steel rivets, hardened and ground pivot pins, and maintenance-free high-performance bushings. This guarantees long service life and high cycle times.



Model 817-U is equipped with an end position sensing system on a pneumatic clamping fixture.



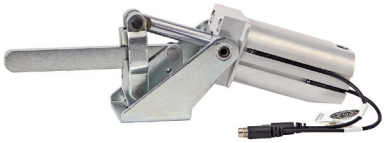
Models 807-U on a drilling fixture



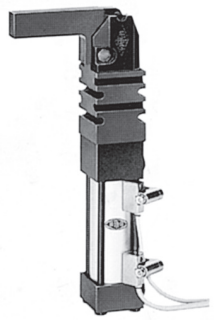
Model 817-U on a pneumatic clamping fixture

End position sensing of the pneumatic clamps for automated production

Different options



Model 807-S **with**
2 integral groove mounted sensors
(order separately)



Model 871 with
2 tie-rod mounted sensors
(order separately)

Remote control and end position sensing

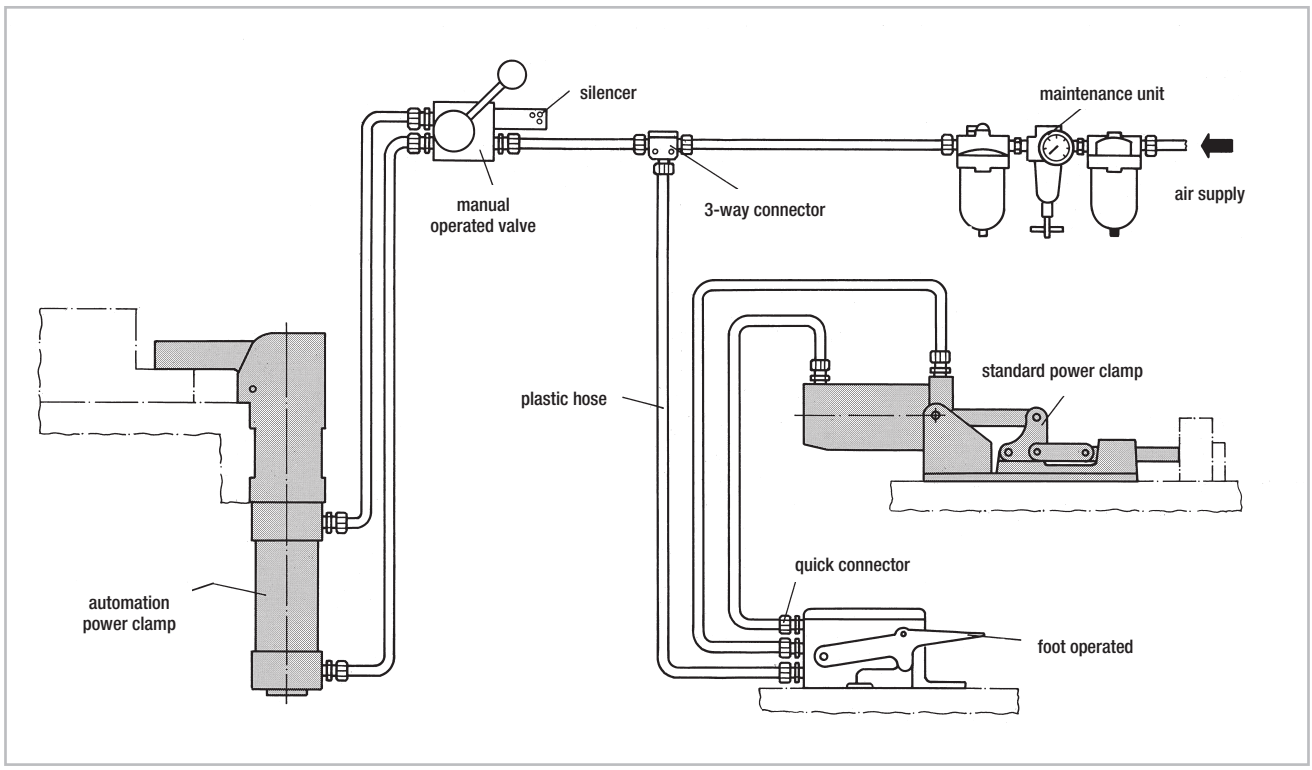
A particularly interesting advantage of DE-STA-CO power clamps is the fact that they may be mounted on rather inaccessible places of clamping fixtures and they may be operated simultaneously while being controlled by a control valve. Power clamps with an end position sensing system allow fully automated operation within controlled manufacturing processes.

Safety

DE-STA-CO power clamps are based on the toggle action principle (exceptions will be mentioned separately) and offer the same safety advantages as DE-STA-CO manual clamps: no risk of accidental opening of the clamp arm – even in case of a sudden pressure drop.

The toggle action principle with over-center locking guarantees safety during operation and protects the parts from damage. (Provided that the power clamps are mounted correctly and the air supply is reliable.)

Pneumatic diagramm



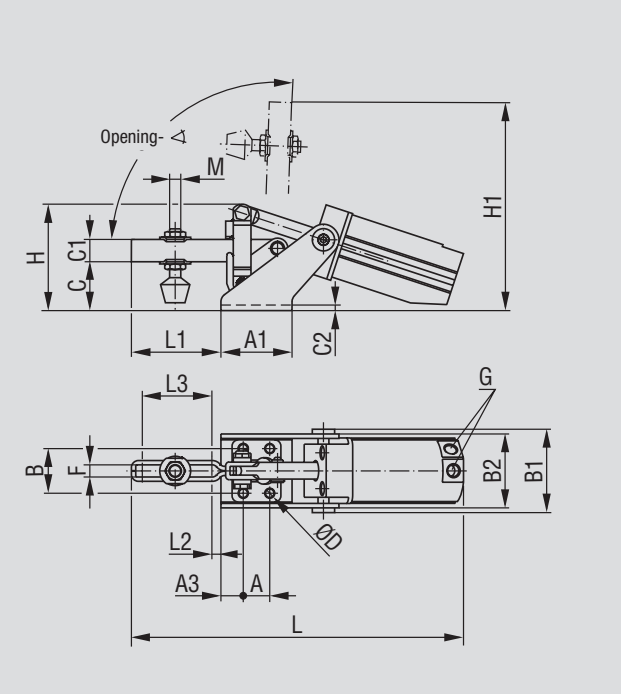
pneumatic accessories see page 13.1 forward

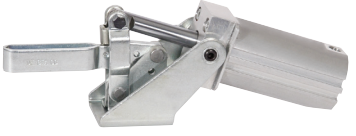
Models 802-U, 807-U, 810-U, 812-U, 847-U

Cylinder horizontal

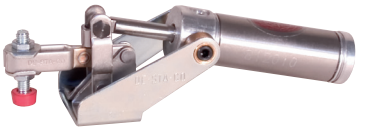
Model no.	Maximum Holding Capacity Inner	Maximum Holding Capacity Outer	Exerting Force @ 80 PSI Inner	Exerting Force @ 80 PSI Outer	Max. Operating Pressure [PSI]	Port Size	Weight	Standard equipment
802-U	200	110	200	160	40	1/8 NPT	1.00	202208-M
807-U	375	275	350	150	55	1/8 NPT	1.66	507107(flanged washers)
810-U	600	290	600	400	70	1/8 NPT	4.07	235106(flanged washers)
812-U	100	55	135	96	80	10-32 NF	0.46	305208-M
847-U	1,000	480	750	450	60	1/8 NPT	8.93	247109(flanged washers)

ALSO AVAILABLE	
With Magnetic Ring	Model 802-U-MR Model 807-U-MR Model 810-U-MR Model 812-U-MR Model 847-U-MR
With Viton Seals	Model 802-U-HT ▲ Model 807-U-HT ▲ Model 810-U-HT ▲ Model 812-U-HT ▲ Model 847-U-HT ▲
Switch Options	Page 13.4
See accessories beginning on pages 9.1 and 13.1.	
▲ Available upon request, as are a number of other modifications	

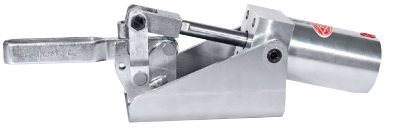




Model 807-U



Model 812-U

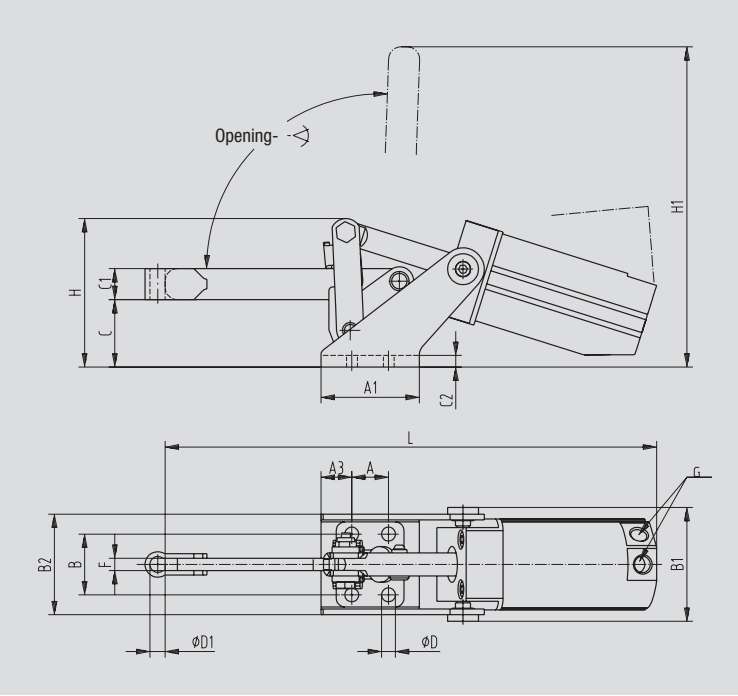


Model 847-U

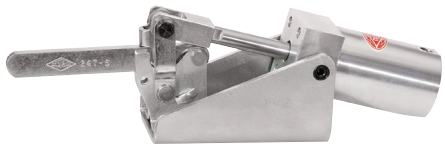
Model no.	A	A1	A3	B	B1	B2	C	C1	C2	øD	F	H	H1	L	L1	L2	L3	M	Opening angle +/-5°
802-U	0.50	1.50	0.25	1.06	2.22	1.93	1.04	0.38	0.24	0.22	0.28	2.58	3.82	7.69	1.73	0.50	0.99	M6	95°
807-U	0.75	2.00	0.63	1.24	2.26	2.06	1.38	0.63	0.25	0.28	0.34	3.02	5.98	9.05	2.51	0.26	2.23	M8	92°
810-U	1.25	4.22	0.38	1.79	3.07	2.86	1.79	0.79	0.24	0.33	0.40	3.79	7.28	12.32	3.57	0.86	2.35	M10	95°
812-U	0.63	1.00	0.18	0.94	1.54	1.50	0.68	0.31	0.13	0.18	0.22	1.53	–	5.59	1.02	0.11	0.75	M5	90°
847-U	1.25	6.22	0.38	1.78	3.62	3.56	2.25	0.88	0.44	0.34	0.53	4.40	–	15.95	4.87	1.36	3.14	M12	95°

Cylinder horizontal

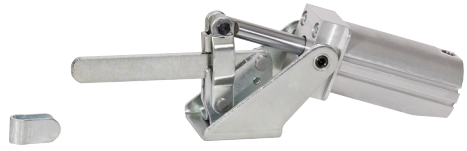
Model no.	Maximum Holding Capacity Inner	Maximum Holding Capacity Outer	Exerting Force @ 80 PSI Inner	Exerting Force @ 80 PSI Outer	Max. Operating Pressure [PSI]	Port Size	Weight	Bolt Retainer
807-S	500	260	500	150	80	1/8 NPT	1.66	207107
810-S	750	500	700	400	80	1/8 NPT	4.07	210114
847-S	1,000	650	1,000	450	80	1/8 NPT	8.91	247110



ALSO AVAILABLE	
With Magnetic Ring	Model 807-S-MR Model 810-S-MR Model 847-S-MR
With Viton Seals	Model 807-S-HT ▲ Model 810-S-HT ▲ Model 847-S-HT ▲
Switch Options	Page 13.4
See accessories beginning on pages 9.1 and 13.1.	
▲ Available upon request, as are a number of other modifications	



Model **847-S**



Model **807-S**

Model no.	A	A1	A3	B	B1	B2	C	C1	C2	øD	øD1	F	H	H1	L	L1			Opening angle +/-5°
807-S	0.75	2.00	0.63	1.24	2.26	2.06	1.38	0.63	0.25	0.28	0.34	0.25	3.02	6.52	10.02	3.17			92°
810-S	1.25	4.22	0.38	1.79	3.07	2.86	1.81	0.75	0.24	0.33	0.53	0.31	3.79	7.99	12.22	3.47			92°
847-S	1.25	6.22	0.38	1.78	3.62	3.56	2.25	0.88	0.44	0.34	0.56	0.38	4.40	–	15.90	4.87			92°

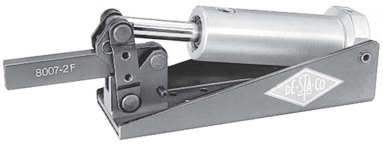
Models 8007-2F, 8007-2FA

Cylinder horizontal

NEW

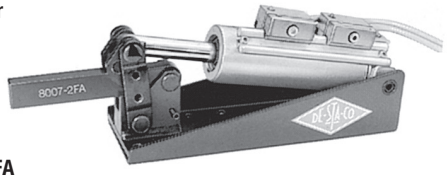
Model no.	Maximum Holding Capacity Inner	Maximum Holding Capacity Outer	Exerting Force @ 80 PSI Inner	Exerting Force @ 80 PSI Outer	Max. Operating Pressure [PSI]	Port Size	Weight	Standard equipment
8007-2F ▲	800	400	600	400	80	G 1/8	3.97	None
8007-2FA ▲	800	400	600	400	80	G 1/8	3.97	2x SMEO-1-LED 2x SMB-1 1x Assembly bar
8007-2FA is supplied with end position sensing								
▲ Available upon request								

Model **8007-2F**

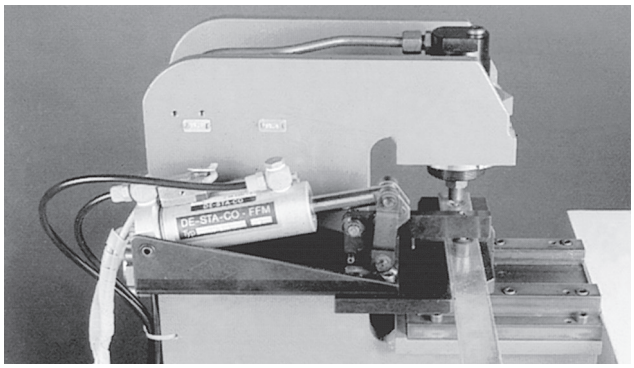


Power clamp with end position sensing

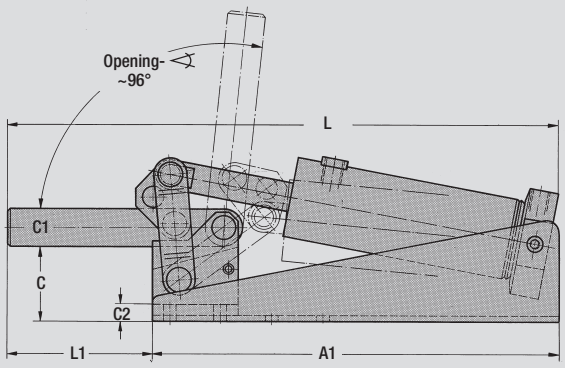
Standard equipment for the model 8007-2FA:
2 sensors (SMEO-1-LED*)
2 fastening sets for sensors (SMB-1)
1 assembly bar

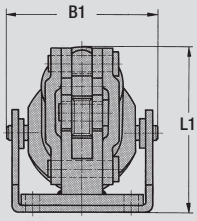


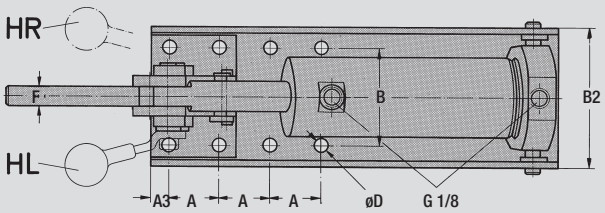
Model **8007-2FA**



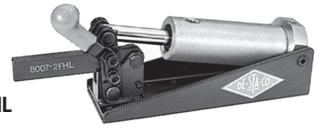
Power clamp with end position sensing at a rivet machine







All models available with hand lever;
optional r.h. or l.h. Add **HR** or **HL** to the part no.



Model **8007-2FHL**

Model no.	A	A1	A3	B	B1	B2	C	C1	C2	øD	F	H	L	L1					Opening angle +/-5°
8007-2F	0.94	7.52	0.31	1.81	2.76	2.60	1.40	0.71	0.31	0.25	0.39	3.07	10.16	2.68					96°

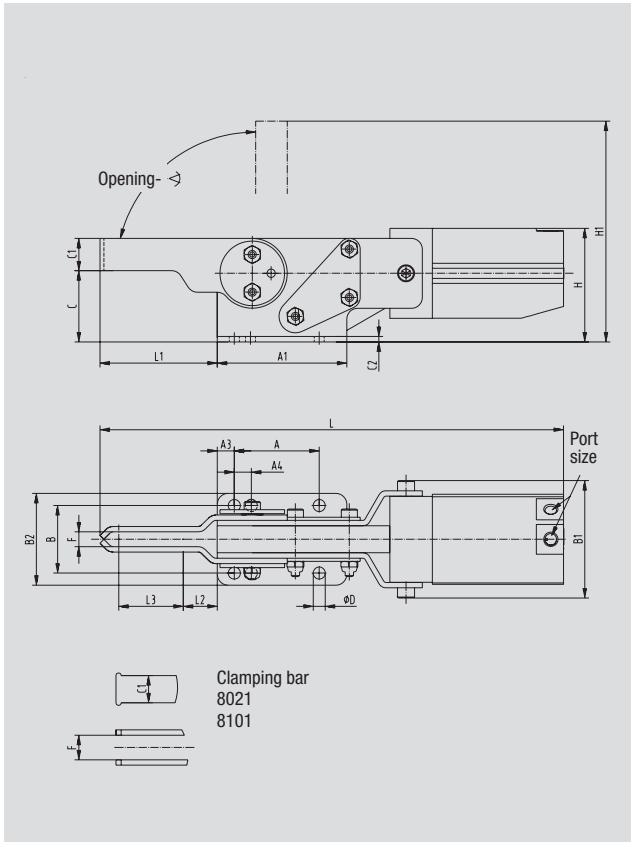
NEW

Models 8021, 8071, 8101

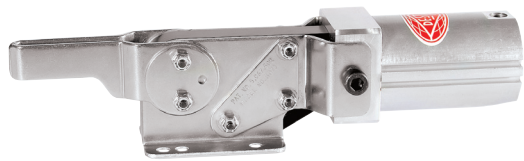
Enclosed version

DE-STA-CO's newest family of pneumatic workholding hold-down clamps is ideal for dirty environments such as spot and MIG welding. Holding capacities exceed that of their parent clamps the 802, 807-UL and 810-U. These models also feature an enclosed, protected cylinder rod and linkages, as well as a lower and narrower mounting profile. The non-pivoting cylinder can be hard-piped into fixtures. Maximum intermittent temperature rating is 230ºF. Clamps come with a magnetic ring for sensing as a standard feature. Switches must be ordered separately.

	Maximum Holding Capacity		Exerting Force @ 80 PSI		Max. Operating Pressure			
Model no.	Inner	Outer	Inner	Outer	[PSI]	Port Size	Weight	Flanged Washers
8021	390	–	175	100	175	1/8 NPT	2.30	8021122
8071	450	–	302	194	120	1/8 NPT	2.80	507107
8101	700	–	500	275	110	1/8 NPT	7.30	8101122



ALSO AVAILABLE	
With Viton Seals	Model 8021-HT ▲ Model 8071-HT ▲ Model 8101-HT ▲
Switch Options	Page 13.4
See accessories beginning on pages 9.1 and 13.1.	
▲ Available upon request, as are a number of other modifications	



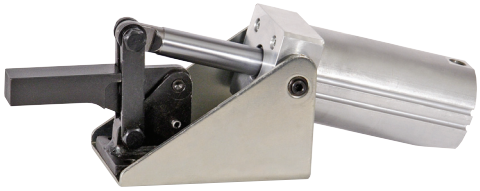
Model no.	A	A1	A3	A4	B	B1	B2	C	C1	C2	ØD	F	H	H1	L	L1	L2	L3	M	Opening angle +/-5°
8021	0.79	1.97	0.47	–	1.50	2.25	1.88	1.56	0.63	0.13	0.21	0.56	2.18	4.45	9.37	2.25	0.44	1.81	1/4 or M6	90°
8071	1.97	3.00	0.39	0.39	1.56	2.81	2.12	1.65	0.75	0.13	0.28	0.34	2.59	5.12	10.90	2.72	0.45	1.96	5/16 or M8	90°
8101	3.54	4.75	0.59	–	2.20	3.63	2.86	2.50	1.00	0.12	0.34	0.75	3.46	7.52	15.54	4.00	0.59	3.41	3/8 or M10	90°

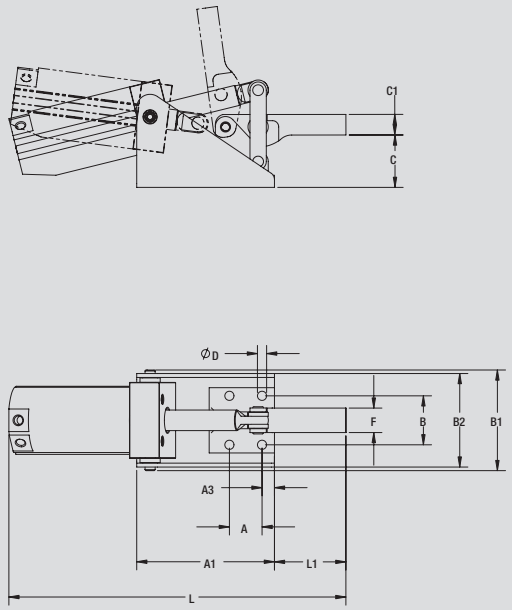
Model 846

Model no.	Maximum Holding Capacity Inner	Maximum Holding Capacity Outer	Exerting Force @ 80 PSI Inner	Exerting Force @ 80 PSI Outer	Max. Operating Pressure [PSI]	Port Size	Weight	Standard equipment
846	750	–	750	500	125	1/8 NPT	4.18	None

ALSO AVAILABLE	
With Magnetic Ring	Model 846-MR
With Viton Seals	Model 846-HT ▲
Switch Options	Page 13.4
See accessories beginning on pages 9.1 and 13.1.	
▲ Available upon request, as are a number of other modifications	

Model 846 is the pneumatic version of manual clamp Model 516. Its compact size is similar to that of Model 807; yet with more than twice the clamping capacity.



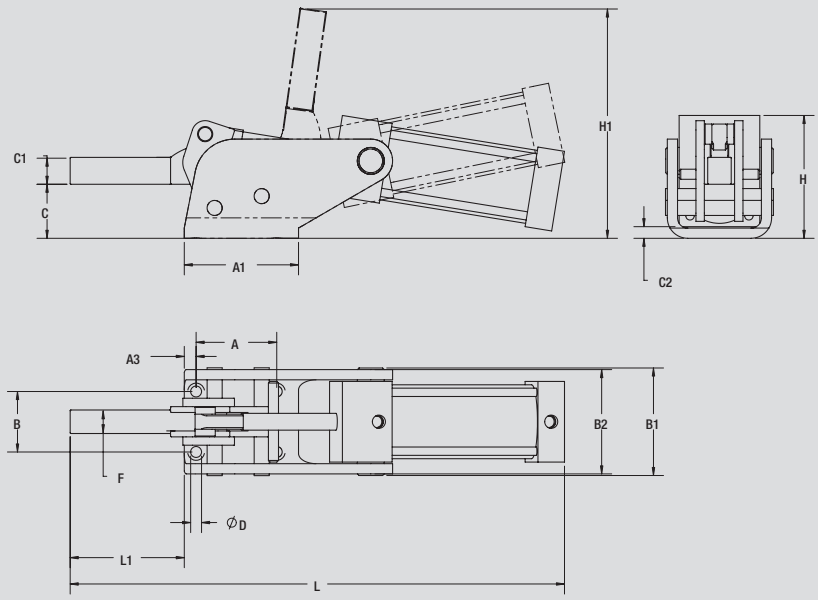


Model no.	A	A1	A3	B	B1	B2	C	C1	C2	øD	F	H	L	L1					Opening angle +/-5°
846	1.00	4.22	0.38	1.50	3.07	2.87	1.61	0.63	0.37	0.28	0.75	3.29	10.80	2.19					90°
																			90°

Model no.	Maximum Holding Capacity Inner	Maximum Holding Capacity Outer	Exerting Force @ 80 PSI Inner	Exerting Force @ 80 PSI Outer	Max. Operating Pressure [PSI]	Port Size	Weight	Standard equipment
849	2,000	–	1,200	1,000	125	1/8 NPT	14.83	None

A cam mechanism in the linkage of this unique clamp will accommodate up to a 1/2" part size variation. Once set to the nominal (or average) part size, parts up to 1/4" larger or 1/4" smaller can be clamped without changing the setting. Bar opens 90°. Clamp bar can be machined or altered to suit the application.

ALSO AVAILABLE	
With Magnetic Ring	Model 849-MR ▲
With Viton Seals	Model 849-HT ▲
Switch Options	Page 13.4
See accessories beginning on pages 9.1 and 13.1.	
▲ Available upon request, as are a number of other modifications	



Model no.	A	A1	A3	B	B1	B2	C	C1	øD	F	H	H1	L	L1	Opening angle +/-5°
849 ▲	3.00	4.25	0.44	2.25	4.01	3.88	2.01	0.94	0.41	0.82	4.57	8.53	18.36	4.22	90°

▲ Available upon request

Model 858

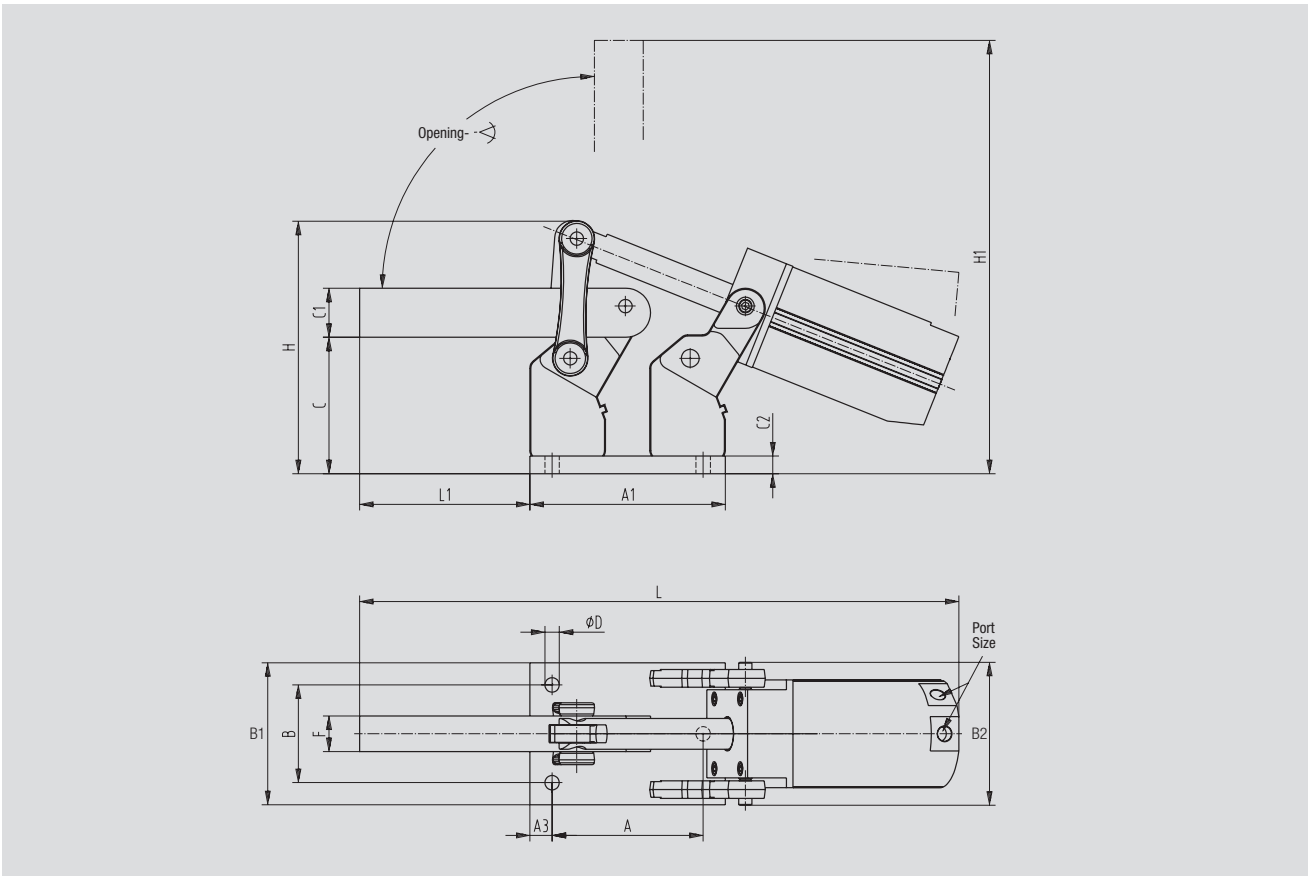
Cylinder horizontal

Model no.	Maximum Holding Capacity Inner	Maximum Holding Capacity Outer	Exerting Force @ 80 PSI Inner	Exerting Force @ 80 PSI Outer	Max. Operating Pressure [PSI]	Port Size	Weight	Standard equipment
858	4,000	2,000	1,600	900	200	1/8 NPT	16.11	None

ALSO AVAILABLE	
With Magnetic Ring	Model 858-MR
With Viton Seals	Model 858-HT ▲
Switch Options	Page 13.4
See accessories beginning on pages 9.1 and 13.1.	
▲ Available upon request, as are a number of other modifications	

The pneumatic version of Model 568, this heavy-duty model uses forged alloy steel links and steel components machined to close tolerances. Base is a 1/2" thick steel plate. All pivot points have hardened bushings fitted with hardened steel pivot pins. The 1 x 1-3/8" steel hold-down bar may be cut, drilled and tapped or welded to adapt to application. Bar opens 92°.

Model **858**



Model no.	A	A1	A3	B	B1	B2	C	C1	C2	ØD	F	H	L	L1					Opening angle +/-5°
858	4.25	5.60	0.63	2.75	3.88	4.00	3.84	1.38	0.50	0.41	1.00	7.12	18.19	4.81					92°

NEW

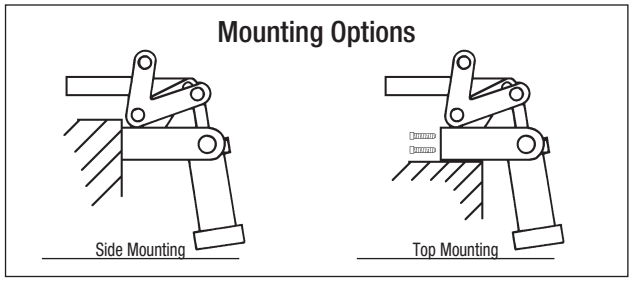
Models 817-S, 827-S

Cylinder vertical

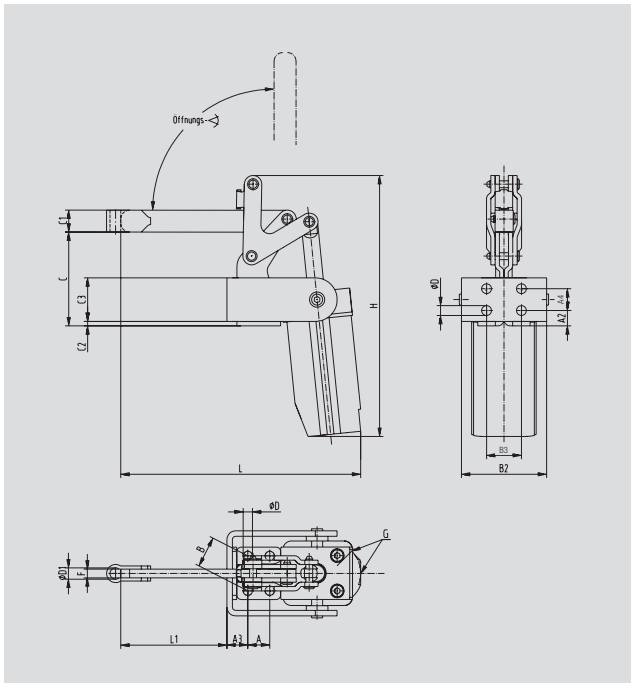
Model no.	Maximum Holding Capacity Inner	Maximum Holding Capacity Outer	Exerting Force @ 80 PSI Inner	Exerting Force @ 80 PSI Outer	Max. Operating Pressure [PSI]	Port Size	Weight	Standard equipment
817-S	450	200	400	200	100	1/8 NPT	2.31	207105
827-S	700	–	500	300	110	1/8 NPT	4.71	210114

Many times it is desirable to use a right angle model where space dictates. Applications such as rotary indexing tables and injection molding operations are examples. All three models can be mounted on the side of the fixture and Models 817 and 827 can also be top mounted. Model 817 is the pneumatic version of Model 317, and it accommodates any 5/16-18 spindle assembly (not included). Model 827 can accept any 3/8-16 spindle accessory (not included).

ALSO AVAILABLE	
With Magnetic Ring	Model 817-S-MR Model 827-S-MR
With Viton Seals	Model 817-S-HT ▲ Model 827-S-HT ▲
Switch Options	Page 13.4
See accessories beginning on pages 9.1 and 13.1.	
▲ Available upon request, as are a number of other modifications	



Note: Use two bolts in the "side" moutning holes to secure mounting bracket when "top" mounting.



Model 817-S

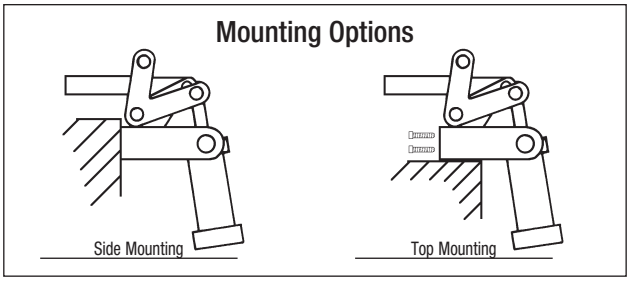
Model no.	A	A2	A3	A4	B	B2	B3	C	C1	C2	C3	øD	øD1	F	H	L	L1		Opening angle +/-5°
817-S	0.63	0.44	0.60	0.63	1.00	2.44	1.00	2.69	0.63	0.13	1.25	0.27	0.34	0.25	7.53	6.89	3.04		90°
827-S	1.25	0.50	0.66	1.25	1.75	2.94	1.75	3.91	0.75	0.13	2.00	0.34	0.53	0.31	9.50	8.60	3.18		88°

Models 817-U, 827-U

Cylinder vertical

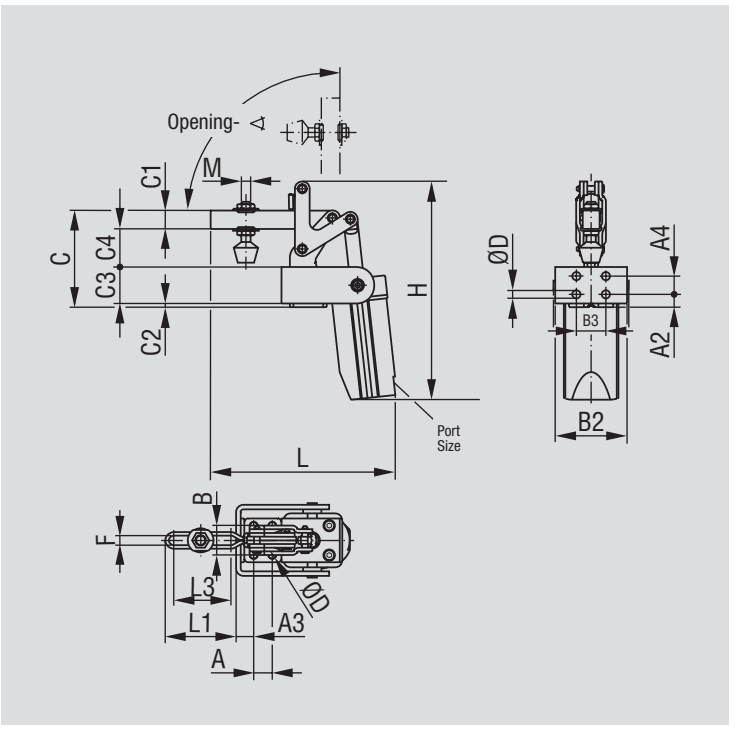
Model no.	Maximum Holding Capacity Inner	Maximum Holding Capacity Outer	Exerting Force @ 80 PSI Inner	Exerting Force @ 80 PSI Outer	Max. Operating Pressure [PSI]	Port Size	Weight	Standard equipment
817-U	375	200	320	200	80	1/8 NPT	2.31	507107
827-U	600	–	500	300	95	1/8 NPT	4.71	

ALSO AVAILABLE	
With Magnetic Ring	Model 817-U-MR Model 827-U-MR
With Viton Seals	Model 817-U-HT ▲ Model 827-U-HT ▲
Switch Options	Page 13.4
See accessories beginning on pages 9.1 and 13.1.	
▲ Available upon request, as are a number of other modifications	



Note: Use two bolts in the "side" mounting holes to secure mounting bracket when "top" mounting.

Model **817-U**



Model no.	A	A2	A3	A4	B	B2	B3	C	C1	C2	C3	C4	øD	H	L	L1	L3	M	Opening angle +/-5°
817-U	0.63	0.44	0.60	0.63	1.00	2.44	1.00	3.31	0.63	0.12	1.38	1.30	0.27	7.53	6.20	2.37	1.97	M8	90°
827-U	1.25	0.38	0.66	1.25	1.75	2.94	1.75	4.72	0.79	0.13	2.00	1.76	0.34	9.50	8.69	3.27	2.35	M10	90°

Model 868

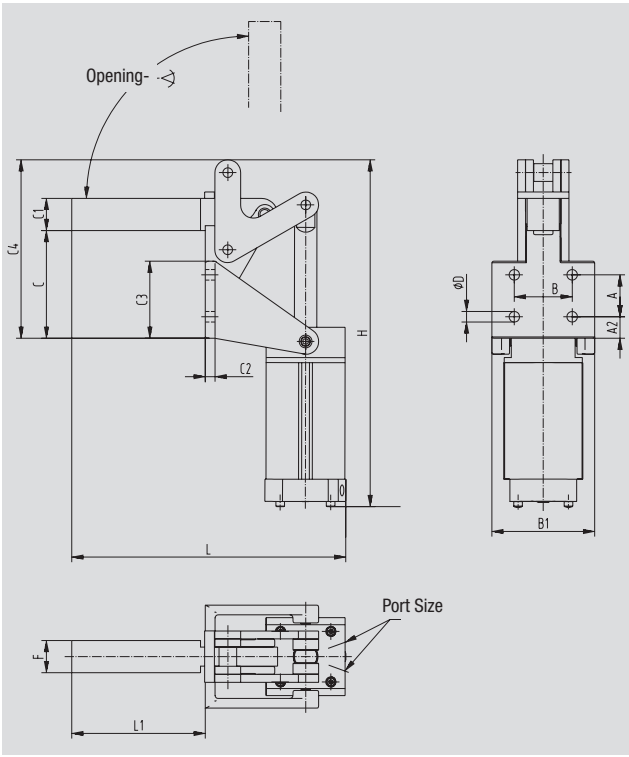
Cylinder vertical

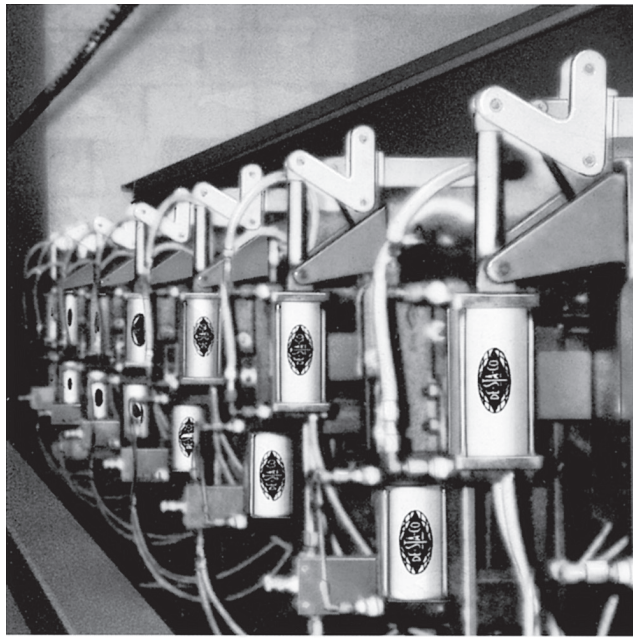
Model no.	Maximum Holding Capacity Inner	Maximum Holding Capacity Outer	Exerting Force @ 80 PSI Inner	Exerting Force @ 80 PSI Outer	Max. Operating Pressure [PSI]	Port Size	Weight	Standard equipment
868	4,000	–	1,600	900	200	1/8 NPT	17.00	None

Model **868**

ALSO AVAILABLE	
With Magnetic Ring	Model 868-MR
With Viton Seals	Model 868-HT ▲
Switch Options	Page 13.4
See accessories beginning on pages 9.1 and 13.1.	
▲ Available upon request, as are a number of other modifications	

■ Bar can be machined or welded





Power clamp model 868 in an automated welding fixture for clamping of longitudinal beams.

Model no.	A	A2	B	B1	C	C1	C2	C3	C4	øD	F	H	L	L1					Opening angle +/-5°
868	1.63	0.89	2.25	4.00	4.20	1.25	0.38	3.00	1.50	0.41	1.25	14.16	10.08	4.69					90°

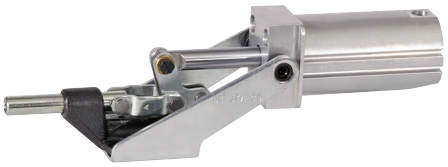
Models 803, 803-M

Straight-line action power clamp

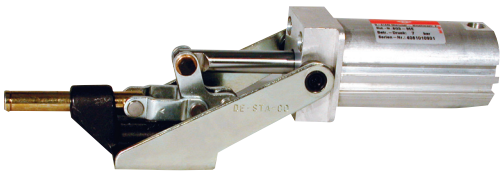
Model no.	Maximum Holding Capacity [lbs.]	Exerting Force @ 80 PSI	Max. Operating Pressure [PSI]	Plunger Travel	Port Size	Weight	Recommended (not supplied)
803	600	600	80	0.75	1/8 NPT	1.86	225208
803-M	600	600	80	0.75	G1/8	1.86	225208-M

ALSO AVAILABLE	
With Magnetic Ring	Model 803-MR
With Viton Seals	Model 803-HT ▲
Switch Options	Page 13.4
See accessories beginning on pages 9.1 and 13.1.	
▲ Available upon request, as are a number of other modifications	

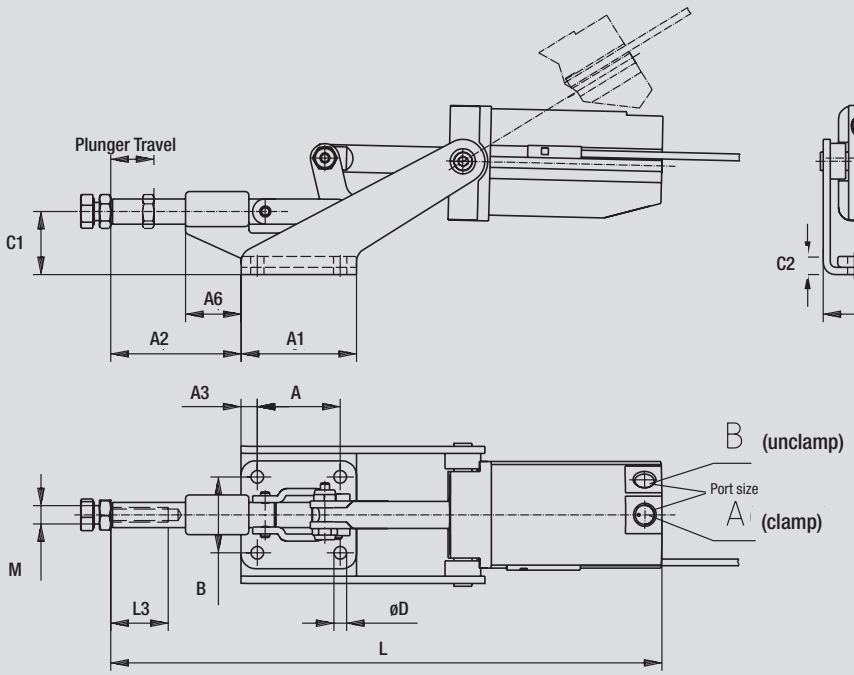
This compact plunger action clamp is less than 10" long but provides a holding capacity of up to 600 lbs. The 7/16" diameter plunger extends 3/4" to a locked position. The end of the plunger is drilled and tapped for a 5/16-18 spindle (not supplied).



Model **803**



Model **803-M**



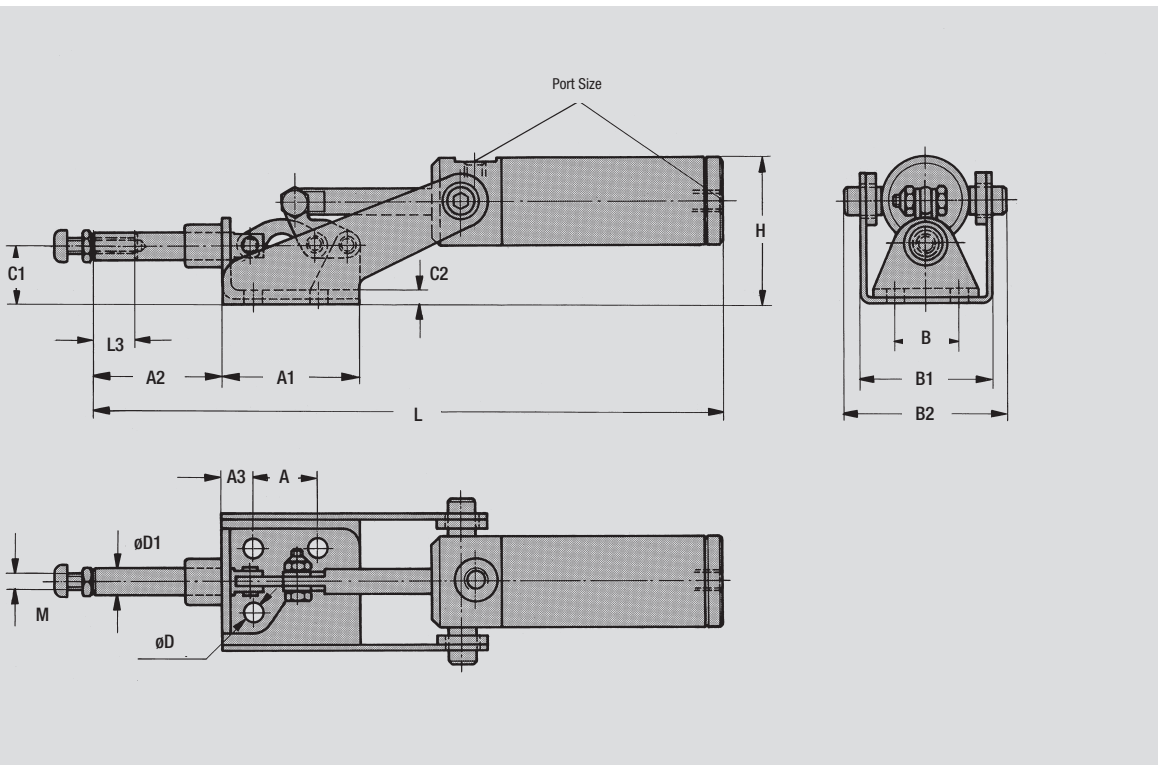
Model no.	A	A1	A2	A3	A6	B	B1	C1	C2	øD	H	L	L3	M
803	1.44	2.00	2.16	0.28	0.95	1.31	2.37	1.09	0.31	0.27	2.96	9.91	1.00	5/16-18
803-M	1.44	2.00	2.16	0.28	0.95	1.31	2.37	1.09	0.31	0.27	2.96	9.91	1.00	M8

Models 816, 816-M

Straight-line action power clamp

Model no.	Maximum Holding Capacity [lbs.]	Exerting Force @ 80 PSI	Max. Operating Pressure [PSI]	Plunger Travel	Port Size	Weight	Standard equipment
816	200	190	60	0.44	10-32 NF	0.43	105203
816-M	200	190	60	0.44	10-32 NF	0.43	205208-M

ALSO AVAILABLE	
With Magnetic Ring	Model 816-MR
With Viton Seals	Model 816-HT ▲
Switch Options	Page 13.4
See accessories beginning on pages 9.1 and 13.1.	
▲ Available upon request, as are a number of other modifications	



Model no.	A	A1	A2	A3	B	B1	B2	C1	C2	øD	øD1	H	L	L3	M
816	0..63	1.32	1.30	0.32	0.63	1.31	1.54	0.56	0.15	0.17	0.25	1.51	6.22	0.50	8-32
816-M	0.63	1.32	1.29	0.32	0.63	1.31	1.54	0.56	0.15	0.17	0.25	1.51	6.21	0.50	M4

Model 8031

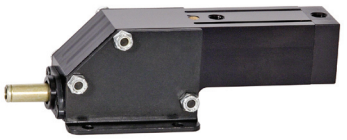
NEW

Model no.	Maximum Holding Capacity [lbs.]	Exerting Force @ 80 PSI	Max. Operating Pressure [PSI]	Plunger Travel	Port Size	Weight	Recommended (not supplied)
8031	2,000	600	80	0.75	1/8 NPT	2.58	225208-M

ALSO AVAILABLE

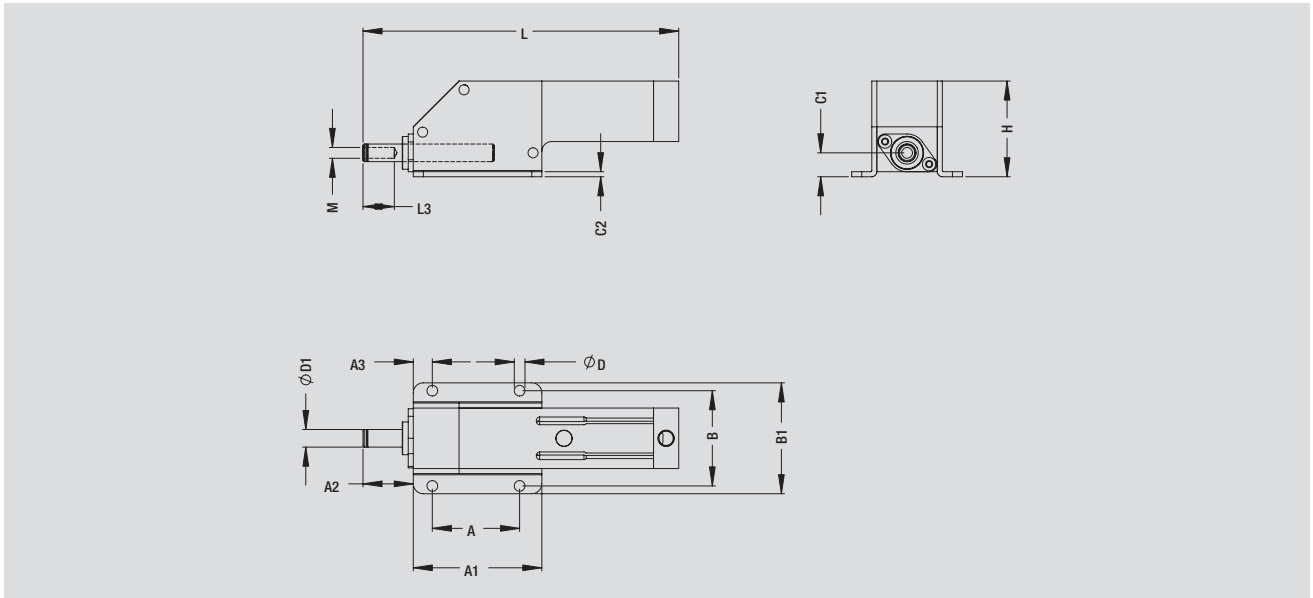
Switch Options	Page 13.4

See accessories beginning on pages 9.1 and 13.1.



Model 8031 is DE-STA-CO's newest clamp in a line of fully enclosed pneumatic clamps. Model 8031 is the fully enclosed version of the pneumatic clamp 803. With its patented design, this clamp can be used in the harshest environments. Cylinder is sensor ready, and the clamp can be hard piped.

- Light-weight compact design allows clamp to be used in tight areas
- Holding capacity up to 2000 lbs.
- Cylinder is sensor ready
- Fully enclosed design allows clamp to be used in the harshest environments
- Patent #6,755,406
- Rod wiper keeps grease in and contaminants out
- Can be hard piped – no need for hoses



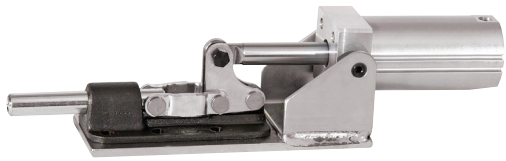
Model no.	A	A1	A2	A3	B	B1	C1	C2	øD	øD1	H	L	L3	M
8031	2.17	3.19	1.22	0.47	2.36	2.75	0.59	0.13	0.27	0.44	2.37	7.80	0.75	M8

Straight-line action power clamp

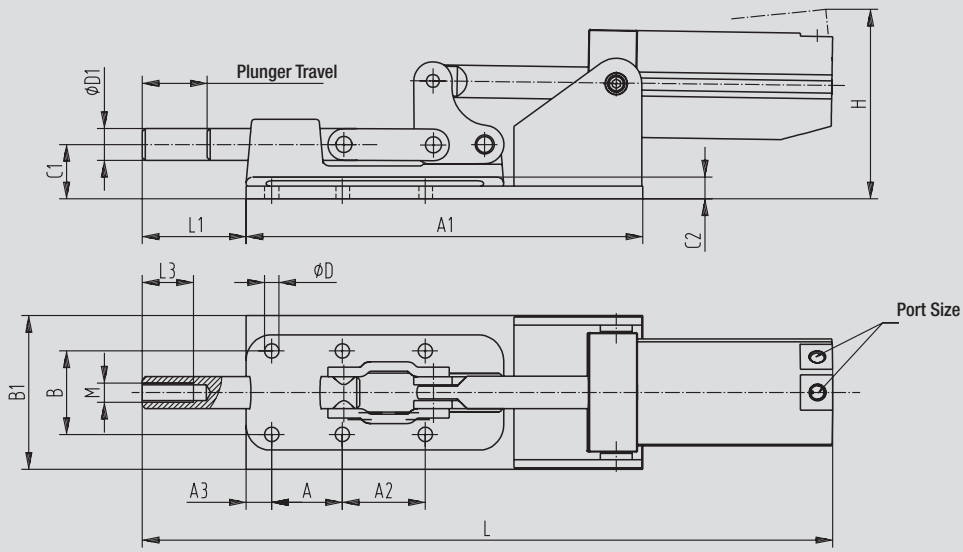
Model no.	Maximum Holding Capacity [lbs.]	Exerting Force @ 80 PSI	Max. Operating Pressure [PSI]	Plunger Travel	Port Size	Weight	Recommended (not supplied)
830	2,500	800	145	1.25	1/8 NPT	6.14	210203
830-M	2,500	800	145	1.25	1/8 NPT	6.14	210203-M

The 5/8" diameter plunger travels forward 1-1/4" from an open to a closed and locked position. Plunger is drilled and tapped to accept a 3/8-16 spindle (not supplied) or to mount your custom fixture.

ALSO AVAILABLE	
With Magnetic Ring	Model 830-MR
With Viton Seals	Model 830-HT ▲
Switch Options	Page 13.4
See accessories beginning on pages 9.1 and 13.1.	
▲ Available upon request, as are a number of other modifications	



Model **830**



Model no.	A	A1	A2	A3	B	B1	C1	C2	øD	øD1	H	L	L3	M
830	1.38	7.75	1.62	0.50	1.62	3.07	1.06	0.44	0.34	0.62	3.26	14.08	1.25	3/8-16
830-M	1.38	7.75	1.62	0.50	1.62	3.07	1.06	0.44	0.34	0.62	3.26	14.08	1.25	M10

Models 850, 850-M

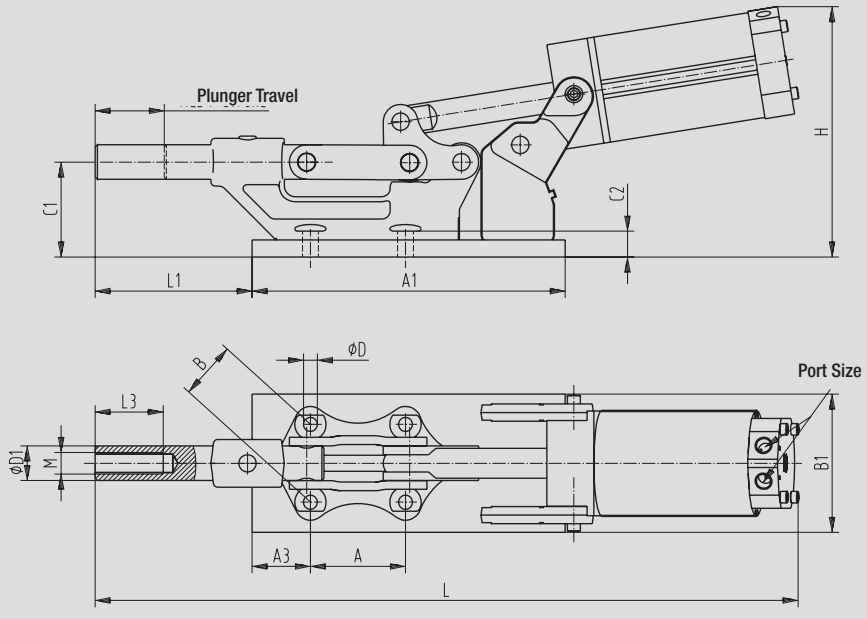
Straight-line action power clamp

Model no.	Maximum Holding Capacity [lbs.]	Exerting Force @ 80 PSI	Max. Operating Pressure [PSI]	Plunger Travel	Port Size	Weight	Recommended (not supplied)
850	16,000	2,050	125	2.00	1/8 NPT	16.66	250203
850-M	16,000	2,050	125	2.00	1/8 NPT	16.66	250203-M

ALSO AVAILABLE	
With Magnetic Ring	Model 850-MR
With Viton Seals	Model 850-HT ▲
Switch Options	Page 13.4
See accessories beginning on pages 9.1 and 13.1.	
▲ Available upon request, as are a number of other modifications	

Largest of the straight-line actions, this model has a full 1" diameter plunger that extends 2" and goes into a mechanical lock. A 3/8" thick steel base provides rigidity and can be welded or bolted in position. Snap ring construction permits easy removal of the plunger without disassembling the entire unit. End of plunger accommodates any 5/8-11 spindle assembly (not supplied).

Model **850**



Model no.	A	A1	A3	B	B1	C1	C2	øD	øD1	H	L	L1	L3	M
850	2.75	9.05	1.69	2.25	4.00	2.63	0.38	0.41	0.99	7.15	20.94	4.54	2.00	5/8-11
850-M	2.75	9.05	1.69	2.25	4.00	2.63	0.38	0.41	0.99	7.15	20.94	4.54	2.00	M16

Model no.	EDP no.	Cylinder Bore	Cylinder Area	Maximum Inlet Pressure at Max MA	Max. Mechanical Advantage (MA) at		Exerting Force at 80 PSIG	
					Spindle Loc. A	Spindle Loc. B	Spindle Loc. B	Spindle Loc. A
802-U	58020	1.13	0.994 sq. in.	40 PSIG	5:1	2:1	160 lbs.	200 lbs.
807-S	58071	1.13	0.994 sq. in.	80 PSIG	6:1	2:1	150 lbs.	500 lbs.
807-U	58070	1.13	0.994 sq. in.	550 PSIG	6:1	3:1	150 lbs.	350 lbs.
810-S	58101	1.50	1.767 sq. in.	80 PSIG	5:1	2.9:1	400 lbs.	700 lbs.
810-U	58100	1.50	1.767 sq. in.	70 PSIG	5:1	2.9:1	400 lbs.	600 lbs.
812-U	58120	0.75	0.441 sq. in.	80 PSIG	3.8:1	2.7:1	98 lbs.	135 lbs.
846	58460	1.50	1.767 sq. in.	125 PSIG	5.6:1	3.5:1	500 lbs.	750 lbs.
847-S	58471	2.00	3.141 sq. in.	80 PSIG	4:1	1.8:1	450 lbs.	1000 lbs.
847-U	58470	2.00	3.141 sq. in.	60 PSIG	4:1	1.8:1	450 lbs.	750 lbs.
849	58490	2.50	4.903 sq. in.	125 PSIG	2.4:1	2.0:1	1000 lbs.	1200 lbs.
858	58580	2.50	4.903 sq. in.	200 PSIG	4:1	2.3:1	900 lbs.	1600 lbs.
8021	58025	1.13	0.881 sq. in.	175 PSIG	2.2:1	1.3:1	100 lbs.	1750 lbs.
8071	58080	1.50	1.654 sq. in.	105 PSIG	4.2:1	2.4:1	250 lbs.	450 lbs.
8101	58105	2.00	2.830 sq. in.	110 PSIG	2.0:1	1.1:1	275 lbs.	500 lbs.

Model no.	EDP no.	Cylinder Bore	Cylinder Area	Maximum Inlet Pressure	Max. Mechanical Advantage (MA) at		Exerting Force at 80 PSIG
					Spindle Loc. A	Spindle Loc. B	
817-S	58171	1.13	0.994 sq. in.	100 PSIG	4:1	2.5:1	200/400 lbs.
817-U	58170	1.13	0.994 sq. in.	80 PSIG	4:1	2.5:1	200/320 lbs.
827-S	58271	1.50	1.767 sq. in.	110 PSIG	3.5:1	2:1	300/500 lbs.
827-U	58270	1.50	1.767 sq. in.	95 PSIG	3.5:1	2:1	300/500 lbs.
868	58680	2.50	4.903 sq. in.	200 PSIG	4:1	2.3:1	900/1600 lbs.

Model no.	EDP no.	Cylinder Bore	Cylinder Area	Maximum Inlet Pressure	Max. Mechanical Advantage (MA) at	Exerting Force at 80 PSIG
803	58030	1.13	0.994 sq. in.	80 PSIG	7.5:1	600 lbs.
816	58160	0.75	0.441 sq. in.	60 PSIG	5.5:1	190 lbs.
830	58300	1.50	1.767 sq. in.	145 PSIG	5.7:1	800 lbs.
850	58500	2.50	4.903 sq. in.	125 PSIG	5.2:1	2050 lbs.
8031	58301	1.12	0.994 sq. in.	80 PSIG	7.5:1	600 lbs.

*All power clamps may also be used with hydraulic oil as the pressure medium, but in no case should the inlet pressure be high enough to create an exerting force that exceeds the clamp's maximum holding capacity.

Formula For Calculating Maximum Allowable Inlet Pressure

$$\text{Maximum Line Pressure} = \frac{\text{Holding Capacity}}{\text{Cylinder Area} \times \text{Mechanical Advantage}}$$

Formula For Calculating Exerting Force

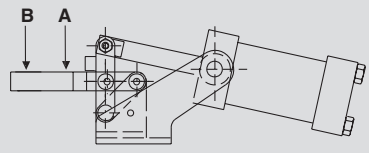
Exerting Force = Inlet Pressure x MA x Cylinder Area

Example For Model 830:
Holding Capacity = 2500 lbs.
Inlet Pressure = 80 PSIG
Cylinder Area = 1.767 $in.^2$
MA = 5.7:1

$$\text{Maximum Line Pressure} = \frac{2500 \text{ lbs.}}{1.767 \text{ in.}^2 \times 9.8} = 248 \text{ PSIG}$$

Exerting Force = 80 PSIG x 1.767 $in.^2$ x 5.7 = 806 lbs.

Spindle position to determine mechanical advantage.



Models 800, 1200

Even the smallest shop can now have rapid power clamping. The DE-STA-CO Low Profile Pneumatic Retractor Clamp operates on ordinary shop line air (properly filtered and lubricated). The clamp arm completely retracts from the work area, for ease in part loading and unloading. The resulting increase in productivity can also reduce your labor costs.

- Compact size and low profile for mounting in restricted areas.
- Uniform clamping force throughout full stroke.
- Variable clamping force allowed by regulating input pressure.
- Requires no auxiliary power source.
- Operates in any position or mounting angle.
- Clamping capacities to 1,600 lbs. (at 150 PSIG).
- Both models available with extended arm, as Models 800-E and 1200-E.

Here's how it works:

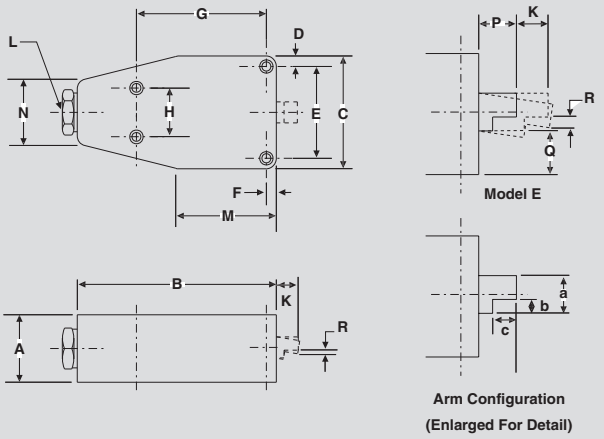
1. Clamp arm retracts fully for loading and unloading ease.
2. Clamp arm moves straight forward
3. Clamp arm pivots down to hold workpiece firmly in position.
4. Use Model 930 or 940 valve and plug one end port on each side to operate as a three way valve.

ALSO AVAILABLE

See accessories beginning on pages 9.1 and 13.1.

Model 800

Model 800-E



Clamping Arm Configuration		
a	b	c
0.50	0.19	0.31

Model no.	Input Pressure [PSI]	Exerting Force Range
800	70-150 PSI	850-1500
800-E	70-150 PSI	650-1200
1200	70-150 PSI	750-1600
1200-E	70-150 PSI	550-1200
Minimum Operating Pressure 70 PSIG		

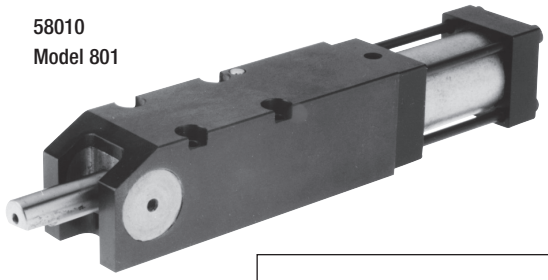
Model no.	EDP no.	Weight	A	B	C	D	E	F	G	H	K	L	M	N	P	Q	Clamping Range R	Mtg. Holes
800	58000	2.50 lbs.	1.63	4.81	2.72	0.25	2.21	0.25	3.13	1.19	0.50	1/4 NPT	2.31	1.50	–	0.59	0.09	0.26
800-E	58001	2.50 lbs.	1.63	4.81	2.72	0.25	2.21	0.25	3.13	1.19	0.50	1/4 NPT	2.31	1.50	0.50	0.59	0.16	0.26
1200	51200	4.00 lbs.	2.25	6.00	3.00	0.28	2.44	0.28	4.25	1.50	1.00	1/4 NPT	3.00	1.38	–	0.63	0.25	0.26
1200-E	51201	4.00 lbs.	2.25	6.00	3.00	0.28	2.44	0.28	4.25	1.50	1.00	1/4 NPT	3.00	1.38	0.69	0.63	0.38	0.26

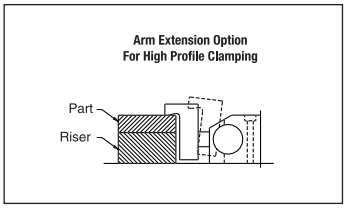
Note: For use with pneumatic power only. 3-way air valve required to power unit (single-acting, spring return).

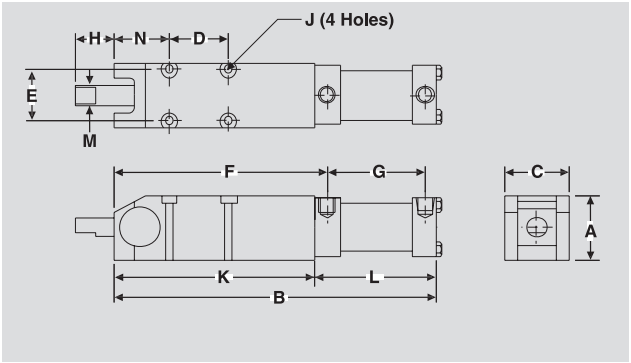
This clamp is the newest in our line of pneumatic retracting clamps. The unit is completely enclosed, making it useful in heavy machining applications. Its low and narrow profile allows it to be fit into tight, confined areas. The clamping arm action extends out horizontally, and then clamps down. The double-acting cylinder has built in restriction to help control the speed of the cylinder.

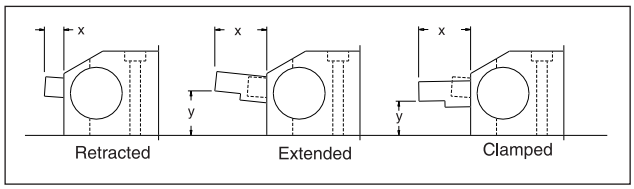
ALSO AVAILABLE	
With Magnetic Ring	Model 801-MR
Switch Options	Page 13.4
See accessories beginning on pages 9.1 and 13.1.	

58010
Model 801

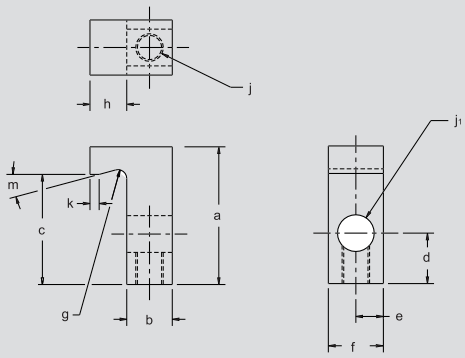








Model 801010
(Arm Extension Option)



Clamping Arm Configuration		
	x	y
Retracted	0.38	–
Extended	1.00	0.85
Clamped	1.00	0.65

Clamp Assembly with 1.12 Dia. Cylinder		
Air/ PSI	Standard Arm	Extended Arm
40	45 lbs.	38 lbs.
50	67 lbs.	57 lbs.
60	98 lbs.	77 lbs.
70	125 lbs.	94 lbs.
80	164 lbs.	114 lbs.
90	192 lbs.	129 lbs.
100	216 lbs.	147 lbs.
110	238 lbs.	165 lbs.

Arm Extension & Set Screw

Model no.	EDP no.	a	b	c	d	e	f	g	h	j Dia.	j_1 Dia.	k	m
801010	58119	1.87	0.62	1.5	0.69	0.38	0.75	0.12 R.	0.50	3/8-24	0.501	0.12	15º

Model no.	EDP no.	A	B	C	D	E	F	G	H	J	K	L	M	N	Port Size
801	58010	1.62	8.42	1.62	1.50	1.32	5.37	2.84	1.00	#10	5.06	3.36	0.50	1.38	1/8 NPT

Models 870, 871

Power clamps with the roller and cam principle

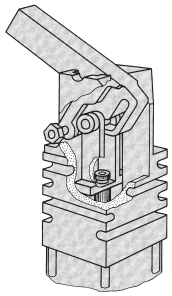
Model no.	Maximum Holding Capacity [lbs.]	Exerting Force @ 80 PSI	Max. Operating Pressure [PSI]	Clamping range at end of arm in fully closed position	Cylinder Area	Mechanical advantage	Weight	Port Size
870	2,000	170 / 350	250	0.18	1.767 sq. in.	1:2 to 2.5:1	7.00	1/4 NPT
871	2,000	170 / 350	250	0.14	1.767 sq. in.	1:2 to 2.5:1	7.00	1/4 NPT

ALSO AVAILABLE	
With Magnetic Ring	Model 870-MR Model 871-MR
Switch Options	Page 13.4
See accessories beginning on page 13.1.	

These models use a roller and cam principle and provide the following benefits:

- Able to clamp work of inconsistent thickness and still maintain a locked condition.
- Modular units 2-1/8" square can stack together for minimum distance between clamping points.
- Four-way mounting surface for full mounting flexibility.
- Built-in pre-stop eliminates need to bottom out cylinder. Gives extra travel to automatically compensate for wear. Also permits arm to be machined accurately relative to mounting surface.
- Clamp arms can be altered by welding, drilling, or machining to suit the application.
- Standard mounting plate included.

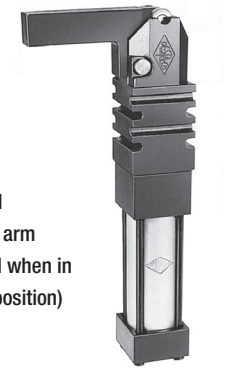
Application Note: Clamping range at end of arm in fully closed position:
Model 870 – 0.18"
Model 871 – 0.14"



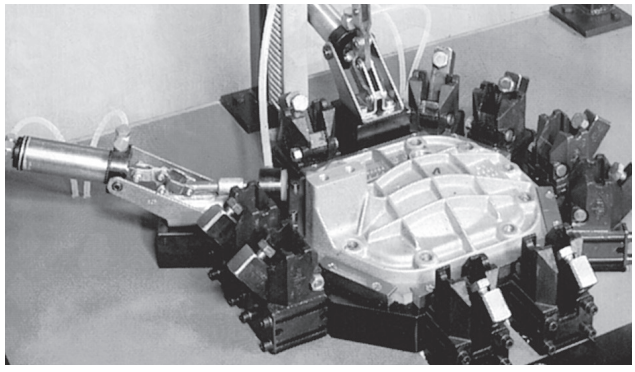
Roller and cam mechanism of the Models 870 and 871

Standard equipment:
1 assembly plate, part no. 870116

Model 870
(clamping arm **vertical** when in clamped position)



Model 871
(clamping arm **horizontal** when in clamped position)

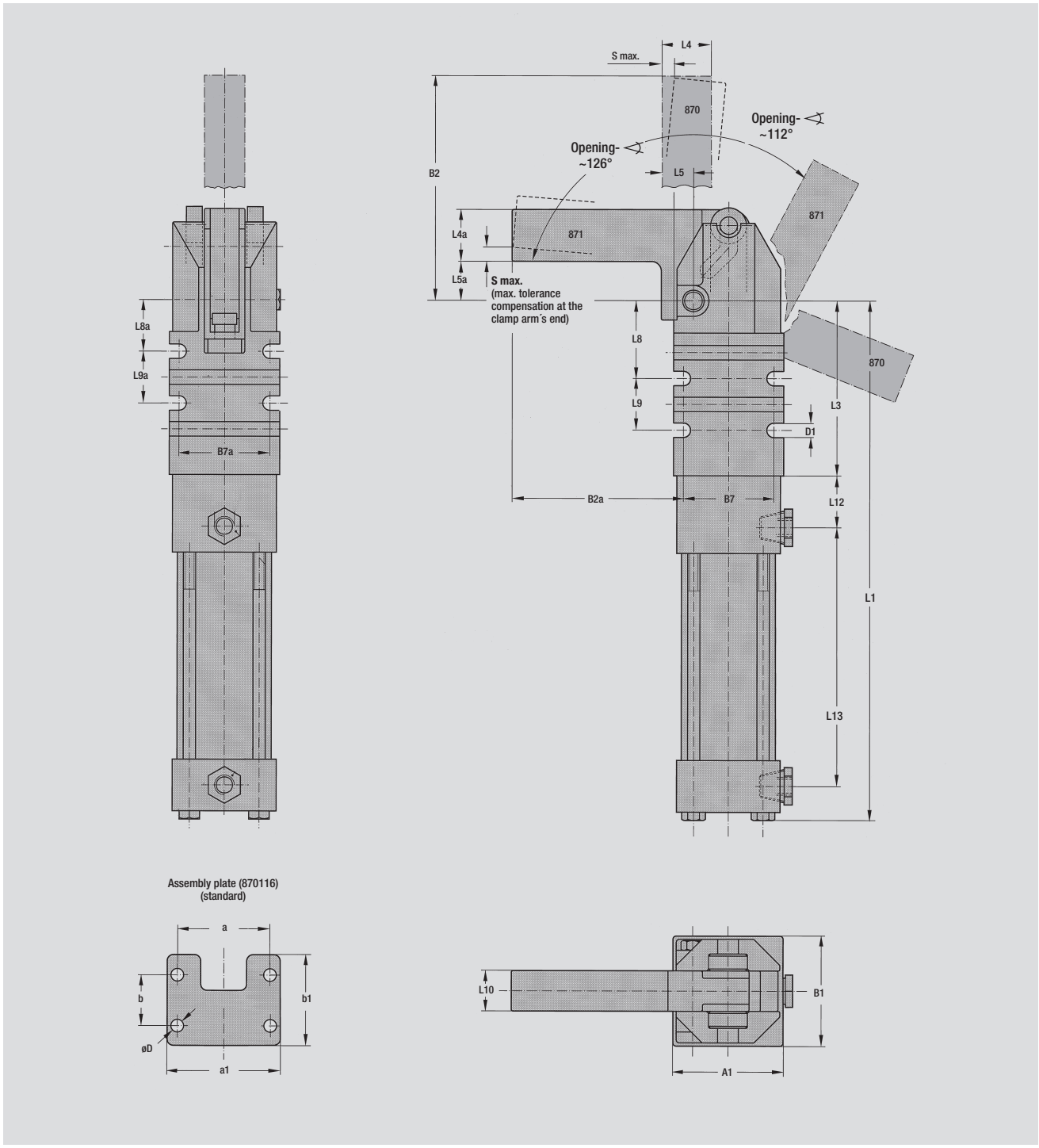


Power clamp models 871 and 803 on a pressure test fixture for vehicle gearbox lids

Sensors

Order separately:
sensors **for -MR versions**
(2 pieces required to sense both the open and closed positions of the cylinder)

Power clamps with the roller and cam principle



Model no.	a	a1	A1	b	b1	B1	B2	B2a	B7	B7a	øD	D1	L1	L3	L4	L4a	L5	L5a	L8	L8a	L9	L9a	L10	L12	L13
870	1.75	2.19	2.13	1.00	1.75	2.13	4.25	–	1.75	1.75	0.25	0.28	9.58	3.38	1.00	–	0.62	–	1.50	1.00	1.00	1.00	0.78	1.00	4.50
871	1.75	2.19	2.13	1.00	1.75	2.13	–	3.31	1.75	1.75	0.25	0.28	9.96	3.38	–	1.00	–	0.76	1.50	1.00	1.00	1.00	0.78	1.00	4.88

Notes

NEW

9100 Series

page 12.8

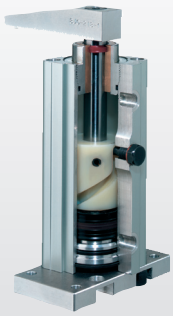
NEW

9200 Series

page 12.8

NEW

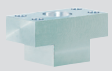
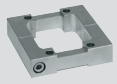
89R Series



page 12.11

Product group – pneumatic swing clamps

Model Series no.	Model no.			Page
8000 	8011 8015 8016 8015-LA 8016-LA	Design Xtra		12.5
8100 	8111 8115 8116 8115-LA 8116-LA	Design Xtra		12.5
8200 	8211 8215 8216 8215-LA 8216-LA	Design Xtra		12.5
8300 	8311 8315 8316 8315-LA 8316-LA	Design Xtra		12.5
8400 	8411 8415 8416 8415-LA 8416-LA	Design Xtra		12.5
	8215-SO-25 8215-SO-26 8215-SO-27 8215-SO-28			12.7
9100 	9125 9126 9135 9136 9145 9146 9155 9156 9165 9166			12.8
9200 	9225 9226 9235 9236 9245 9246 9255 9256 9265 9266			12.8

Model Series no.	Model no.	Used on		Page
89R 	89R20-010-1 89R32-010-1 89R40-010-1 89R40-025-1 89R50-025-1 89R63-025-1			12.11
8JG 	8MA-084-1 8MA-086-1 8MA-087-1 8MA-087-1 8MA-088-1 8MA-089-1	89R20-010-1 89R32-010-1 89R40-010-1 89R40-025-1 89R50-025-1 89R63-025-1	Blank Arm	12.13
8MA 	8MA-092-1 8MA-094-1 8MA-095-1 8MA-095-1 8MA-096-1 8MA-097-1	89R20-010-1 89R32-010-1 89R40-010-1 89R40-025-1 89R50-025-1 89R63-025-1	Body Mount Flange	12.13
8JG 	8JG-215-1 8JG-217-1 8JG-218-1 8JG-218-1 8JG-219-1 8JG-220-1	89R20-010-1 89R32-010-1 89R40-010-1 89R40-025-1 89R50-025-1 89R63-025-1	Standard Clamp Arm	12.14
8MA 	8MA-061-1 8MA-063-1 8MA-064-1 8MA-064-1 8MA-065-1 8MA-066-1	89R20-010-1 89R32-010-1 89R40-010-1 89R40-025-1 89R50-025-1 89R63-025-1	End Mount Flange	12.14
SME 	SME-3-LED SME-3-LED SME-3-LED SME-3-LED SME-3-LED SME-3-LED	89R20-010-1 89R32-010-1 89R40-010-1 89R40-025-1 89R50-025-1 89R63-025-1	Magnetic Sensors	12.15
8MA 	8MA-018-1 8MA-020-1 8MA-021-1 8MA-021-1 8MA-022-1 8MA-023-1	89R20-010-1 89R32-010-1 89R40-010-1 89R40-025-1 89R50-025-1 89R63-025-1	Mounting Feet	12.15

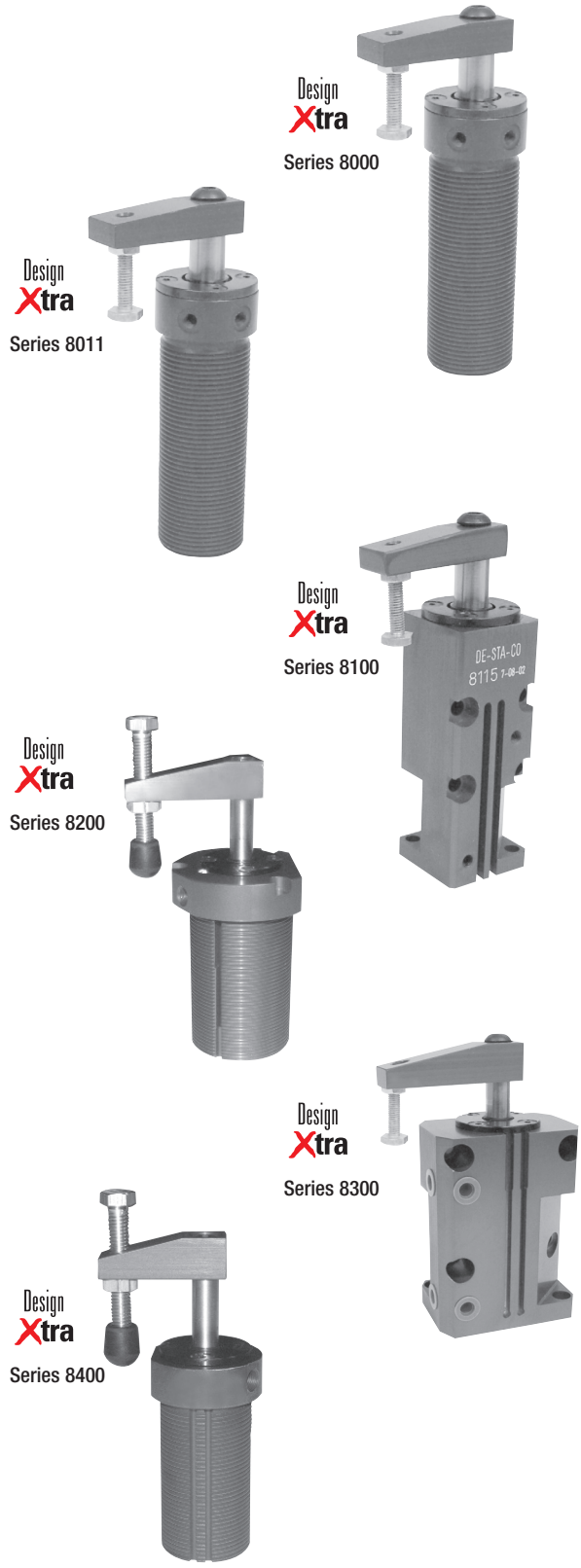
Quick, Clean & Economical

DE-STA-CO's new 8400 Series joins the 8000/8100 and 8200/8300 Series, rounding out a versatile, time-saving line of swing cylinders. Ideal for installations where hydraulic power is not suitable, these pneumatic power clamps from DE-STA-CO have all the same quick-acting advantages and can produce up to 160 lbs. clamping force from shop line air pressure (see chart). These double-acting clamps are red anodized aluminum with either a threaded body that permits three mounting options, or a block-style mounting body.

Intended for quick clamping in secondary manufacturing operations on metallic or non-metallic products. These clamps offer a combination of features that makes them uniquely adaptable to such applications, as welding and assembly operations. Spindles are included.

Every DE-STA-CO pneumatic swing clamp now is equipped with sensing capabilities as a standard feature. See page 12.7 for details.

- 90° swing of clamping arm minimizes obstruction in the workspace and makes loading or unloading of parts easy.
- 1/2" clamping stroke (vertical arm travel) for Series 8200/8300 and 3/8" clamping stroke for Series 8000/8100 allows wide variation in part size. The clamp adjusts automatically on every cycle.
- New Series 8400, designed for mid-range applications, features 1/2" clamping stroke.
- A new series of straight-line cylinder clamps is also now available. These new pneumatic clamps operate in only straight-line of vertical clamping strokes – the arms do not swing, and the piston rods do not rotate. Models 8011 and 8111 have strokes of .84", while Models 8211, 8311 and 8411 have stokes of 1.25".
- Improved design features additional mounting screws to more effectively secure clamp housing.
- Internal piston design features new seal technology.
- Quick swing-and-clamp movement reduces cycle times in your operation.
- Pneumatic operation is economical and clean, and allows precise control and monitoring of the clamping force.
- Multiple mounting options allow the clamp to be adapted to the fixture for the best use of space and to minimize installation time.
- Clamping force is adjustable across a wide range: 20 lbs. to 160 lbs. Clamp exerts just the force your operation requires...without deforming delicate parts.
- Broad operating temperature range of -40° F to 250° F allows installations in extreme environments.
- Multiple mounting and arm options allow the clamp to be adapted to the fixture for the best use of space and to minimize installation time.
- Maximum inlet pressure 130 PSIG.



Note: See pages 12.6 & 9.1 for accessories

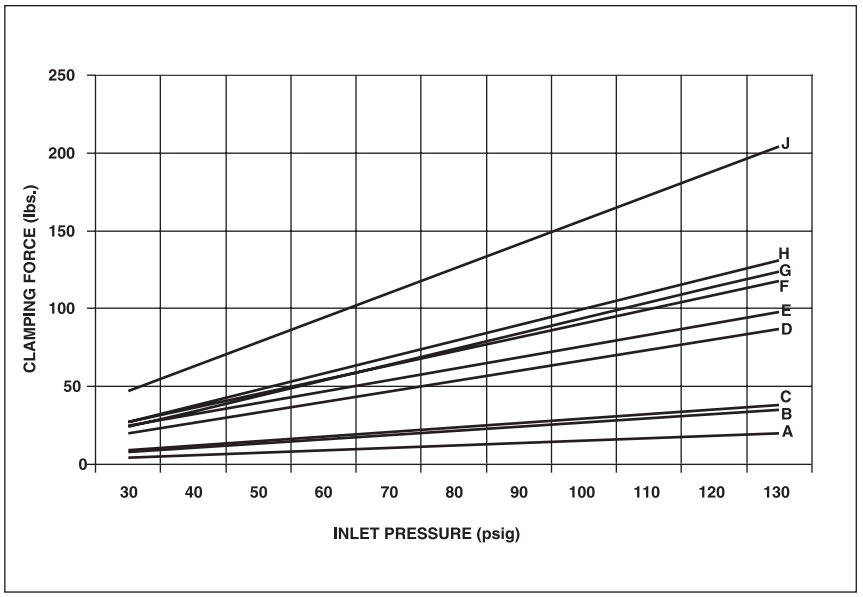
Model Series 8000, 8100, 8200, 8300, 8400

Cylinder Specifications

Series no.	Bore [in.]	Red [in.]	Stroke [in.]	Effective Clamping Area [sq. in.]	Effective Unclamping Area [sq. in.]	Clamp Volume [cu. in.]	Unclamp Volume [cu. in.]
8000	0.750	0.438	0.85	0.291	0.442	0.25	0.38
8100	0.750	0.438	0.85	0.291	0.442	0.25	0.38
8200	1.500	0.500	1.28	1.571	1.767	2.01	2.26
8300	1.500	0.500	1.28	1.571	1.767	2.01	2.26
8400	1.188	0.500	1.28	0.911	1.108	1.17	1.42

Pneumatic Swing Cylinder Clamping Forces

Series no.	Arm Style		
	Long Arm	Standard Arm	T-Arm
8000	A	B	C
8100	A	B	C
8200	G	H	J
8300	G	H	J
8400	D	E	F



Application Note:

When using a T-Arm, the clamping force at each end of the arm is equal if the arm length of each end is equal.

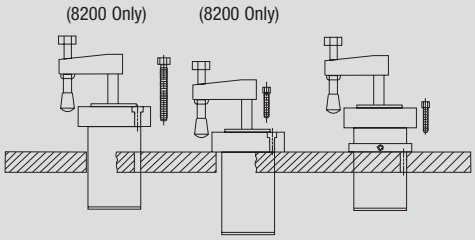
Force Data (lbs.)

PSI	8000/8100 with Long Arm	8000/8100 with Standard Arm	8000/8100 Straight Pull or Tee Arm	8400 with Long Arm	8400 with Standard Arm	8400 Straight Pull or Tee Arm	8200/8300 with Long Arm	8200/8300 with Standard Arm	8200/8300 Straight Pull or Tee Arm
	A	B	C	D	E	F	G	H	J
30	4	8	9	20	25	27	24	27	47
40	5	10	12	29	32	36	34	38	63
50	7	13	15	34	41	46	44	48	79
60	8	16	17	42	47	55	55	57	94
70	10	18	20	49	55	64	65	67	110
80	12	22	23	55	62	73	75	80	126
90	13	25	26	60	68	82	83	89	141
100	15	27	29	65	76	91	93	99	157
110	17	30	32	74	82	100	105	112	173
120	18	32	35	80	91	109	114	121	189
130	20	35	38	87	98	118	124	131	204

Swing Cylinder Rotation: Frame of reference for specifying rotation is the clamp arm viewed from above during the clamping stroke. A right-hand unit rotates clockwise and then clamps down; a left-hand unit rotates counter-clockwise, and then clamps down.

Note: Tolerance on arm swing position is ±3°.

8000, 8200, 8400 Mounting Options

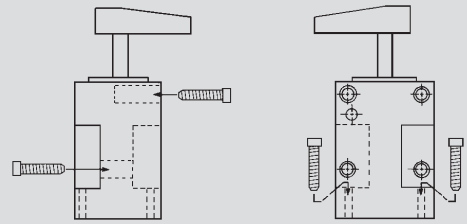


Threaded body in a tapped hole. Position is locked by a single cap screw into a tapped hole in fixture.

Cylinder body passes through a clearance hole. Three mounting screws pass through the top flange into holes tapped in the fixture.

Optional mounting block may be used above or below the work surface. Clamp height is easily reset.

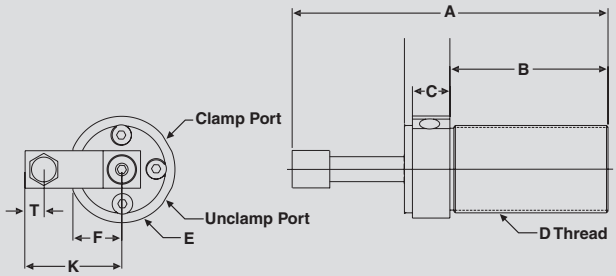
8100, 8300 Mounting Options



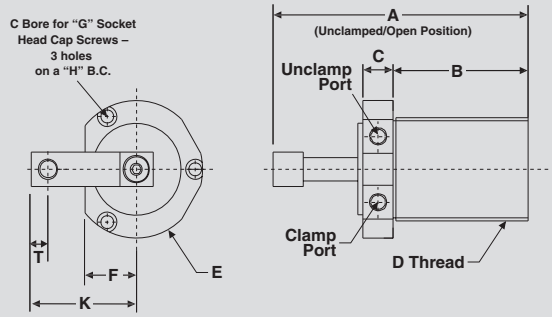
Can be mounted to the side or front of the fixture, or mounted back to back for multiple clamping operations.

Mounted to the top of the work surface through the two mounting holes in the bottom of unit.

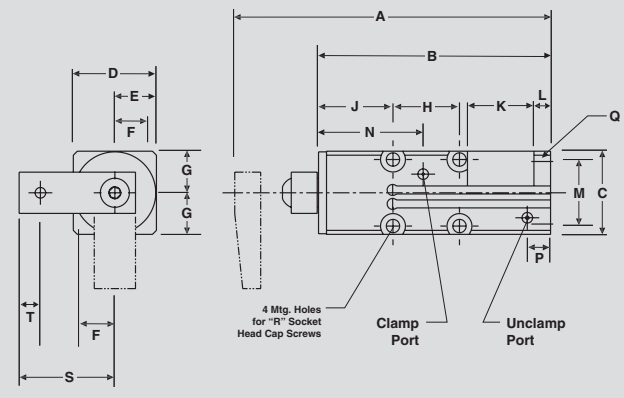
SERIES 8000, 8400



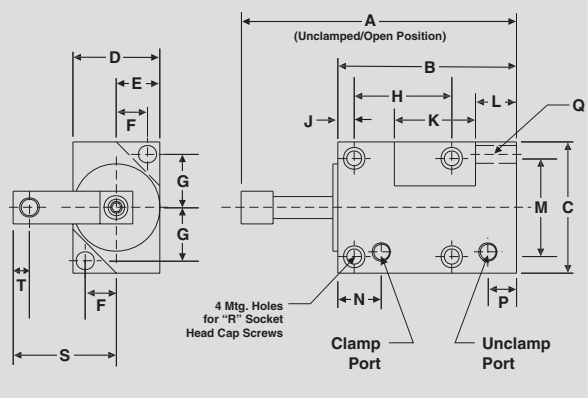
SERIES 8200



SERIES 8100



SERIES 8300



Series no.	Dimensions																		Port Size
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	
8000	4.88	2.87	0.62	1 1/8-16	1.25	–	–	–	–	1.44	–	–	—	—	—	—	—	0.31	#10-32
8100	4.88	3.50	1.25	1.25	0.53	0.47	0.47	1.00	1.12	1.00	0.25	1.00	1.57	0.35	0.20	#10	1.44	0.31	#10-32
8200	6.36	3.36	0.87	2 1/4-12	3.00	1.16	0.25	2.66	–	2.38	–	–	–	–	–	–	–	0.38	1/8 NPT
8300	6.36	4.27	3.00	2.00	1.00	0.72	1.22	2.25	0.53	2.37	0.44	2.25	1.16	0.65	0.40	0.33	2.38	0.38	1/8 NPT
8400	6.14	3.17	0.88	1 3/4-12	2.13	0.98	–	–	–	1.94	–	–	–	–	–	–	–	0.38	1/8 NPT

Model Series 8000, 8100, 8200, 8300, 8400

Model no.	EDP no.	Swing	Arm Supplied	Spindle Supplied	Travel Dur. Rotation	Vertical Clamp Stroke	Maximum Arm Length	Weight [lbs]
8011 ▲	58014	NONE	801528	305203	–	0.84	–	1.00
8015	58015	RH	801528	305203	0.466	0.38	2.25	1.00
8016	58016	LH	801528	305203	0.466	0.38	2.25	1.00
8015-LA*	58017	RH	OPTIONAL	–	0.466	0.38	2.25	1.00
8016-LA*	58018	LH	OPTIONAL	–	0.466	0.38	2.25	1.00
8111 ▲	58111	NONE	801528	305203	–	0.84	–	1.00
8115	58115	RH	801528	305203	0.466	0.38	2.25	1.00
8116	58116	LH	801528	305203	0.466	0.38	2.25	1.00
8115-LA*	58117	RH	OPTIONAL	–	0.466	0.38	2.25	1.00
8116-LA*	58118	LH	OPTIONAL	–	0.466	0.38	2.25	1.00
8211 ▲	58211	NONE	82512	485203-AL	–	1.25	–	2.00
8215	58215	RH	82512	485203-AL	0.75	0.50	3.00	2.00
8216	58216	LH	82512	485203-AL	0.75	0.50	3.00	2.00
8215-LA*	58217	RH	OPTIONAL	–	0.75	0.50	3.00	2.00
8216-LA*	58218	LH	OPTIONAL	–	0.75	0.50	3.00	2.00
8311 ▲	58311	NONE	82512	485203-AL	–	1.25	–	2.00
8315	58315	RH	82512	485203-AL	0.75	0.50	3.00	2.00
8316	58316	LH	82512	485203-AL	0.75	0.50	3.00	2.00
8315-LA*	58317	RH	OPTIONAL	–	0.75	0.50	3.00	2.00
8316-LA*	58318	LH	OPTIONAL	–	0.75	0.50	3.00	2.00
8411 ▲	58412	NONE	82512	485203-AL	–	1.25	–	1.50
8415	58415	RH	82512	485203-AL	0.75	0.50	2.31	1.50
8416	58416	LH	82512	485203-AL	0.75	0.50	2.31	1.50
8415-LA*	58414	RH	OPTIONAL	–	0.75	0.50	2.31	1.50
8416-LA*	58420	LH	OPTIONAL	–	0.75	0.50	2.31	1.50

Design Xtra

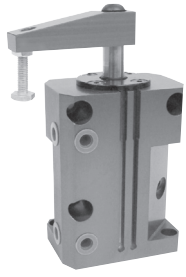
Series 8000

Design Xtra

Series 8100

Design Xtra

Series 8200

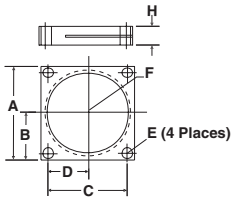


Design Xtra

Series 8300

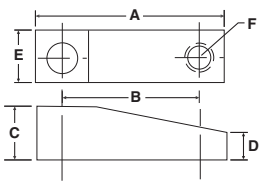
Design Xtra

Series 8400



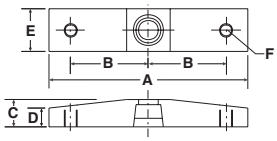
Mounting Block

Part no.	EDP no.	Use With Series no.	A	B	C	D	E	F	H
801553	58033	8000	1.38	0.69	1.08	0.54	0.20	1-1/8-16	0.50
821553	58233	8200	2.50	1.25	2.12	1.06	0.28	2-1/4-16	0.50
841550	58418	8400	2.00	1.00	1.60	0.80	0.28	1-3/4-12	0.50



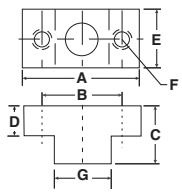
Arm

Part no.	EDP no.	Use With Series no.	A	B	C	D	E	F	G
801528	58058	8000, 8100	1.75	1.12	0.39	0.27	0.62	10-32	–
801529	58059	8000, 8100	2.87	2.25	0.39	0.27	0.62	10-32	–
821512	58252	8200, 8300	2.75	2.00	0.75	0.37	0.75	3/8-16	–
821513	58253	8200, 8300	3.75	3.00	0.75	0.37	0.75	3/8-16	–
841512	58417	8400	2.31	1.56	0.75	0.37	0.75	3/8-16	–



T-Arm

Part no.	EDP no.	Use With Series no.	A	B	C	D	E	F	G
801530	58053	8000, 8100	2.88	1.12 (2)	0.39	0.27 (2)	0.62	10-32 (2)	–
801531	58051	8000, 8100	5.12	2.25 (2)	0.39	0.27 (2)	0.62	10-32 (2)	–
821554	58254	8200, 8300	4.75	2.00 (2)	0.75	0.37 (2)	0.75	3/8-16 (2)	–
821555	58251	8200, 8300	6.75	3.00 (2)	0.75	0.37 (2)	0.75	3/8-16 (2)	–



Blank Arm

Part no.	EDP no.	Use With Series no.	A	B	C	D	E	F	G
801532	58052	8000, 8100	1.37	1.00	0.39	0.25	0.62	10-32 (2)	0.62
821556	58256	8200, 8300	1.50	1.06	0.75	0.37	0.75	1/4-20 (2)	0.75

Models 8215-SO-25, 8215-SO-27

NEW

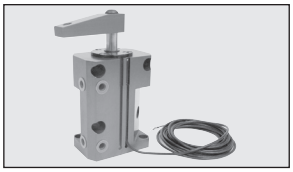
Design Xtra **With Standard Sensing Feature**

Every DE-STA-CO pneumatic swing cylinder is now supplied with sensing functionality as a standard feature. For added safety and control, DE-STA-CO now makes it easy for users of its pneumatic swing cylinders to determine exactly when these clamps are fully open and fully closed. To sense the clamp's open and closed positions, small, low voltage Hall Effect switches are installed in a groove machined into the side of the cylinder body. The switches are actuated by a magnetic piston ring as the cylinder's piston moves up and down. The open or closed condition of the switches is then read by programmable logic controller (PLC) or other electronic device. All you need to do is determine what switch is right for the application. Order one switch if you want to sense only the open or closed position. Order two switches to sense both positions.

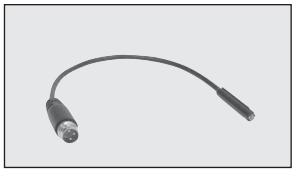
Model no.	EDP no.	NPN/PNP	Lead Length
8215-SO-25	58407	PNP	3 Meters (118 inch cable)
8215-SO-27	58423	PNP	6" with pigtail connector

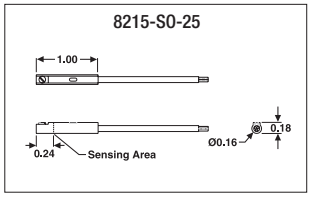
Switching Logic	Normally Open
Output	PNP Current Sourcing
Operating Voltage	5~28 VDC
Switching Current	50 mA max
Power Rating	1.5 Watts – WARNING: Never exceed rating (Watt = Voltage x Amperage). Permanent damage to sensor will occur.
Voltage Drop	1.2V@25 mA max
Current Consumption	9 mA@24 VDC max
Leakage Current	0.01 mA max
LED Indicator	Green
Cable	Robotic Grade, abrasion resistant polyurethane (PUR) jacket, PVC insulation
Operating Frequency	1000Hz
Magnet Requirement	50 Gauss parallel
Temperature Range	14 to 158ºF (-10 to +70ºC)
Enclosure Classification	IP 67 (NEMA 6)
Protection Circuit	Reverse Polarity, Surge Suppression

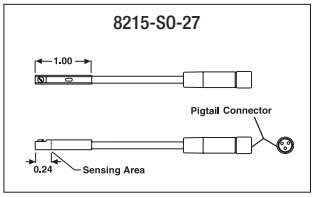
Model 8315 with sensor

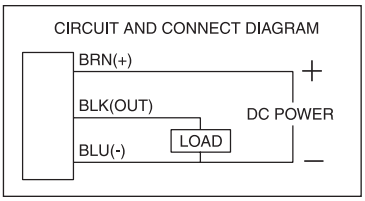


Model 8215-SO-27







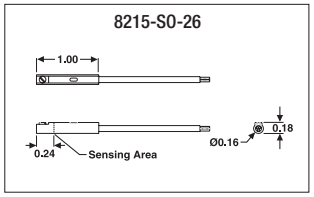


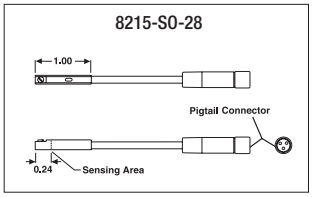
Models 8215-SO-26, 8215-SO-28

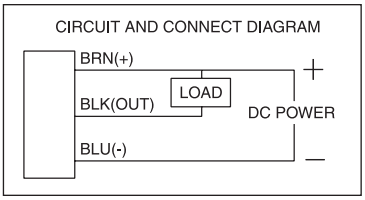
NEW

Model no.	EDP no.	NPN/PNP	Lead Length
8215-SO-26	58408	NPN	3 Meters (118 inch cable)
8215-SO-28	58424	NPN	6" with pigtail connector

Switching Logic	Normally Open
Output	NPN Current Sourcing
Operating Voltage	5~28 VDC
Switching Current	50 mA max
Power Rating	1.5 Watts – WARNING: Never exceed rating (Watt = Voltage x Amperage). Permanent damage to sensor will occur.
Voltage Drop	0.5V@25 mA max
Current Consumption	7 mA@24 VDC max
Leakage Current	0.01 mA max
LED Indicator	Red
Cable	Robotic Grade, abrasion resistant polyurethane (PUR) jacket, PVC insulation
Operating Frequency	1000Hz
Magnet Requirement	50 Gauss parallel
Temperature Range	14 to 158ºF (-10 to +70ºC)
Enclosure Classification	IP 67 (NEMA 6)
Protection Circuit	Reverse Polarity, Surge Suppression







Warning: Reverse wiring will destroy solid state electronic components. Presence of external magnetic/electromagnetic field may interfere with the operation of the sensor.

Model no.		Bore Size [mm]	Total Stroke	Clamping Stroke
9125	9126	25	1.036	0.531
9135	9136	32	1.132	0.565
9145	9146	40	1.197	0.630
9155	9156	50	1.181	0.553
9165	9166	63	1.191	0.562

Series 9100

DE-STA-CO's line of Pneumatic Swing/Pull Clamps is designed for applications not requiring hydraulic power. The fast acting DE-STA-CO clamp can generate 50 to 430 pounds of clamping force from shop air. DE-STA-CO pneumatic clamps are ideal for a wide variety of manufacturing and assembly operations.

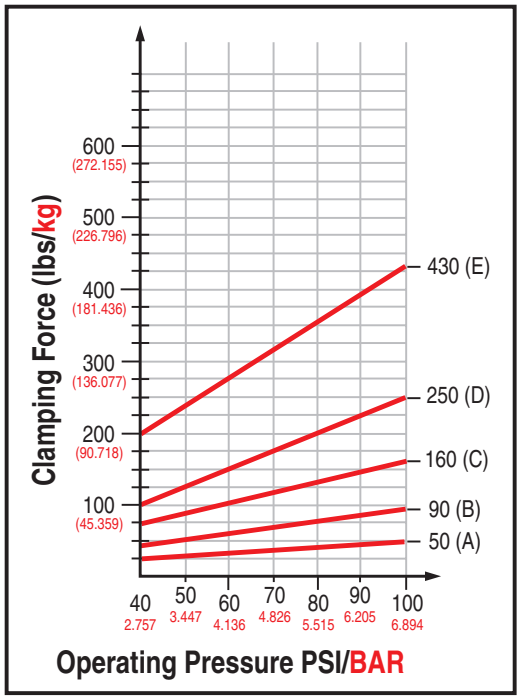
Note: All items supplied with 90° arm swing. Other arm swings are available upon request.

- Four (4) styles of arms
- Double-locked arm design is bolted to piston shaft and around shaft diameter for extra rigidity
- Double-acting design
- Dual-seal design with a wiper seal to keep contaminants out
- Long clamping stroke accommodates a wide thickness of materials
- Clamping force is adjustable using regulated air
- Smooth swing motion for better operating performance
- Clamps supplied without arms

Max. Operating Pressure: 100 PSI
Normal Operating Pressure: 40-80 PSI
Cylinder Operation: Double-acting

Model no.		Bore Size [mm]	Total Stroke	Clamping Stroke
9225	9226	25	1.015	0.511
9235	9236	32	1.055	0.488
9245	9246	40	1.091	0.524
9255	9256	50	1.134	0.506
9265	9266	63	1.185	0.557

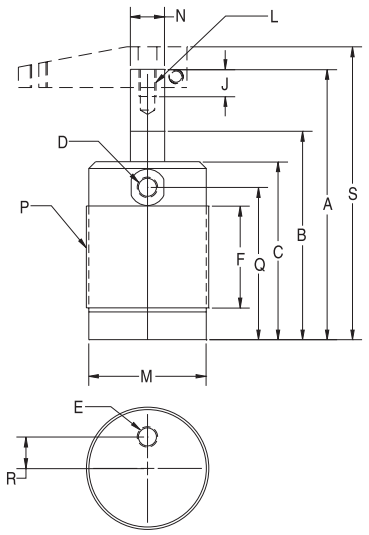
Series 9200



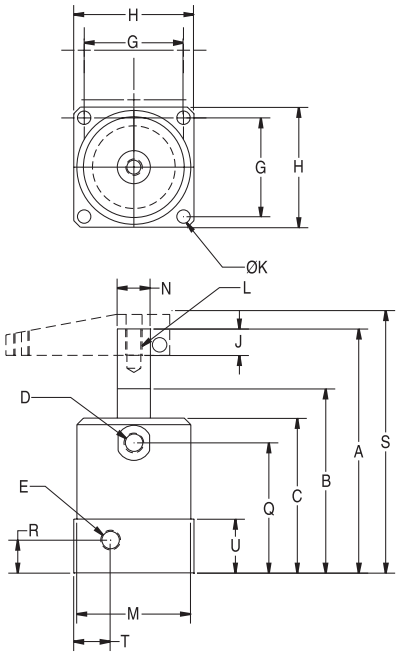
A = 25 mm, B = 32 mm, C = 40 mm, D = 50 mm, E = 63 mm

Model Series 9100, 9200 cont.

Series 9100
(Threaded Body Mount)



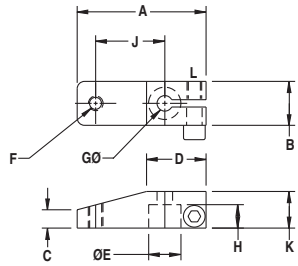
Series 9200
(Flange Mount)



Model no.	Arm Swing	A Unclamped Position	B Clamped Position	C Body Height	D Clamp Port	E Unclamp Port	F Threaded Body	G Flange Mount	H Flange	J Thread Depth	K Hole Dia.	L Thread Size	M Body Dia.	N Shaft Dia.	P Thread Size	Q	R	S	T	U
9125	RH	4.36	3.324	2.76	10-32 UNF	10-32 UNF	1.50	–	–	0.665	–	1/4-20 UNC	1.418	0.551	1 1/2-16 UNC	2.25	0.035	4.575	–	–
9126	LH	4.36	3.324	2.76	10-32 UNF	10-32 UNF	1.50	–	–	0.665	–	1/4-20 UNC	1.418	0.551	1 1/2-16 UNC	2.25	0.035	4.575	–	–
9135	RH	5.00	3.868	3.115	1/8 NPT	1/8 NPT	1.72	–	–	0.575	–	5/16-18 UNC	1.788	0.63	1 7/8-16 UNC	2.625	0.45	5.165	–	–
9136	LH	5.00	3.868	3.115	1/8 NPT	1/8 NPT	1.72	–	–	0.575	–	5/16-18 UNC	1.788	0.63	1 7/8-16 UNC	2.625	0.45	5.165	–	–
9145	RH	5.237	4.04	3.275	1/8 NPT	1/8 NPT	1.879	–	–	0.70	–	5/16-18 UNC	2.16	0.63	2 1/4-16 UNC	2.80	0.625	5.39	–	–
9146	LH	5.237	4.04	3.275	1/8 NPT	1/8 NPT	1.879	–	–	0.70	–	5/16-18 UNC	2.16	0.63	2 1/4-16 UNC	2.80	0.625	5.39	–	–
9155	RH	5.36	4.179	3.425	1/8 NPT	1/8 NPT	2.00	–	–	1.00	–	3/8-16 UNC	2.40	0.787	2 1/2-16 UNC	2.95	0.70	5.75	–	–
9156	LH	5.36	4.179	3.425	1/8 NPT	1/8 NPT	2.00	–	–	1.00	–	3/8-16 UNC	2.40	0.787	2 1/2-16 UNC	2.95	0.70	5.75	–	–
9165	RH	5.59	4.40	3.625	1/8 NPT	1/8 NPT	2.11	–	–	1.00	–	3/8-16 UNC	3.02	0.787	3 1/8-16 UNC	3.10	0.80	5.94	–	–
9166	LH	5.59	4.40	3.625	1/8 NPT	1/8 NPT	2.11	–	–	1.00	–	3/8-16 UNC	3.02	0.787	3 1/8-16 UNC	3.10	0.80	5.94	–	–
9225	RH	4.23	3.215	2.62	10-32 UNF	10-32 UNF	–	1.22	1.577	0.665	0.175	1/4-20 UNC	1.377	0.551	–	2.10	0.50	4.435	0.50	0.907
9226	LH	4.23	3.215	2.62	10-32 UNF	10-32 UNF	–	1.22	1.577	0.665	0.175	1/4-20 UNC	1.377	0.551	–	2.10	0.50	4.435	0.50	0.907
9235	RH	4.707	3.652	2.80	1/8 NPT	1/8 NPT	–	1.732	2.13	0.575	0.253	5/16-18 UNC	1.97	0.63	–	2.325	0.57	4.85	0.57	0.907
9236	LH	4.707	3.652	2.80	1/8 NPT	1/8 NPT	–	1.732	2.13	0.575	0.253	5/16-18 UNC	1.97	0.63	–	2.325	0.57	4.85	0.57	0.907
9245	RH	4.981	3.89	2.95	1/8 NPT	1/8 NPT	–	1.889	2.29	0.70	0.253	5/16-18 UNC	2.16	0..63	–	2.50	0.65	5.00	0.65	1.027
9246	LH	4.981	3.89	2.95	1/8 NPT	1/8 NPT	–	1.889	2.29	0.70	0.253	5/16-18 UNC	2.16	0.63	–	2.50	0.65	5.00	0.65	1.027
9255	RH	5.061	3.927	3.15	1/8 NPT	1/8 NPT	–	2.165	2.68	1.00	0.337	3/8-16 UNC	2.365	0.787	–	0.27	0.65	5.44	0.65	1.025
9256	LH	5.061	3.927	3.15	1/8 NPT	1/8 NPT	–	2..165	2.68	1.00	0.337	3/8-16 UNC	2.365	0.787	–	0.27	0.65	5.44	0.65	1.025
9265	RH	5.385	4.20	3.38	1/8 NPT	1/8 NPT	–	2.51	3.135	1.00	0.337	3/8-16 UNC	2.956	0.787	–	2.90	0.75	5.67	0.75	1.18
9266	LH	5.385	4.20	3.38	1/8 NPT	1/8 NPT	–	2.51	3.135	1.00	0.337	3/8-16 UNC	2.956	0.787	–	2.90	0.75	5.67	0.75	1.18

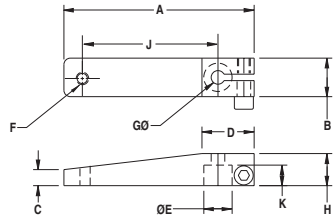
Standard Arm

Part no.	A	B	C	D	E	F	G	H	J	K	L
955101	2.38	0.75	0.313	1.016	0.551	1/4-20 UNC	0.265	0.4	1.361	0.625	1/4-20 UNC-28
963001	3.10	0.75	0.375	1.105	0.630	5/16-18 UNC	0.344	0.5	2.000	0.750	1/4-20 UNC-28
978701	4.00	1.00	0.500	1.307	0.787	3/8-16 UNC	0.390	0.7	2.750	1.000	5/16-18 UNC-28



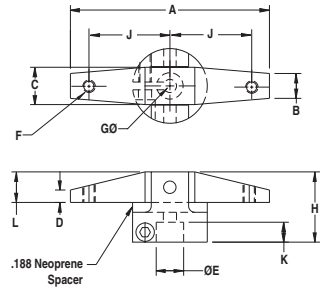
Extended Arm

Part no.	A	B	C	D	E	F	G	H	J	K
955102	3.380	0.750	0.313	1.016	0.551	1/4-20 UNC	0.265	0.625	2.361	0.400
963002	4.725	0.750	0.375	1.105	0.630	5/16-18 UNC	0.344	0.750	3.625	0.500
978702	6.250	1.000	0.500	1.307	0.787	3/8-16 UNC	0.390	1.000	5.000	0.700



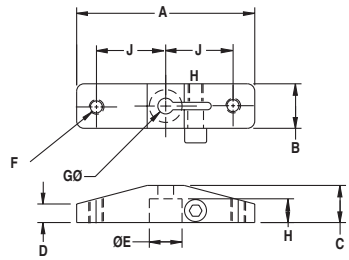
Dual Pivot Arm

Part no.	A	B	C	D	E	F	G	H	J	K	L
955103	3.28	0.500	0.750	0.312	0.551	1/4-20 UNC	0.265	0.412	1.36	0.400	0.614
963003	4.72	0.500	0.856	0.300	0.630	5/16-18 UNC	0.344	1.750	2.00	0.500	0.800
978703	6.00	0.500	0.980	0.344	0.787	3/8-16 UNC	0.390	2.013	3.00	0.700	8.650



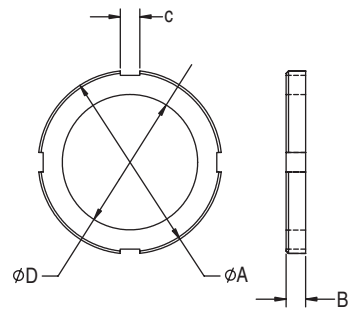
Dual Stationary Arm

Part no.	A	B	C	D	E	F	G	H	J
955104	3.28	0.750	0.625	0.313	0.551	1/4-20 UNC	0.265	0.400	1.36
963004	4.72	0.750	0.750	0.375	0.630	5/16-18 UNC	0.344	0.500	2.00
978704	6.00	1.000	1.000	0.500	0.787	3/8-16 UNC	0.390	0.700	3.00



Jam Nut

Part no.	Clamp Used On	Dim A	Dim B	Dim C	Dim D
912500	9125, 9126	2.283	0.315	0.275	1-1/2-16 UN
913200	9135, 9136	2.755	0.315	0.275	1-7/8-16 UN
914000	9145, 9146	2.953	0.315	0.315	2-1/4-16 UN
915000	9155, 9156	3.346	0.354	0.315	2-1/2-16 UN
916300	9165, 9166	4.134	0.393	0.354	3-1/8-16 UN



89R Series – Features

Your requirements
- Compact – ideal for restricted space applications
- Access to the workpiece possible from above
- High flexibility in the application – various “add on” options
- Reduced exerting forces are sufficient in order to hold the workpiece securely

The solution
- The new pneumatic swing clamps from DE-STA-CO

Special features
- Mounting flexibility by means of body mount flange, end mount flange, mounting feet (accessories)
- Easily adjustable left-hand, right-hand, straight pull actions (20 mm diameter not adjustable)
- Double-acting cylinder
- Magnetic ring on piston with sensors available
- Lightweight aluminum body
- Piston rod, hard-chrome plated
- Rod seal and wiper built in
- Clamp can produce several million cycles
- Operation with oil-free air

Adjustment of the swivel direction
1. Unscrew the guide bolt
2. Adjust the piston rod until the required swivel groove (right, left, straight) is lined up with the hole in the body
3. Insert guide bolt and tighten it
4. Take care that the seal ring is seated correctly

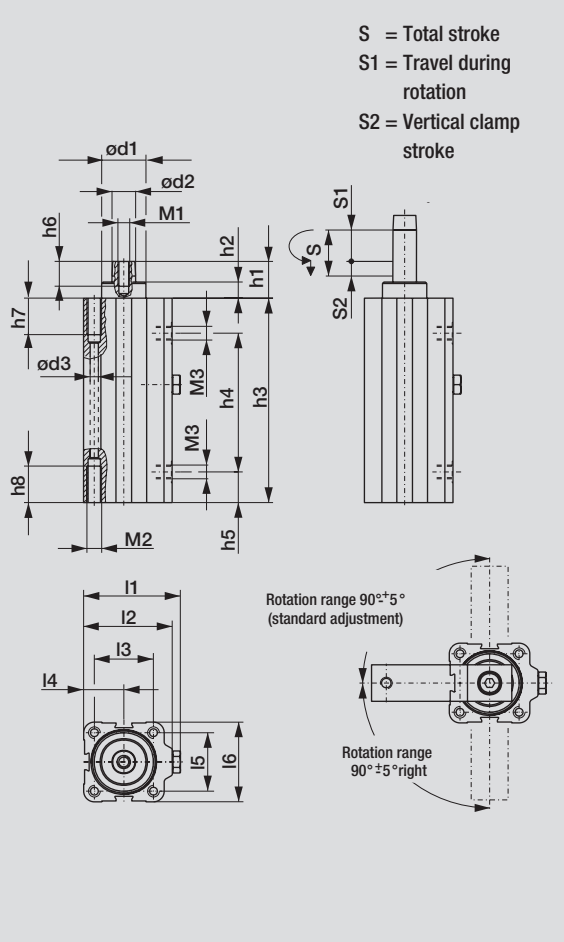
Technical data
- Cylinder diameter:
  20 mm, 32 mm, 40 mm, 50 mm, 63 mm
- Clamping strokes: 10 mm, 25 mm, 50 mm
  (upon request for diameters 40, 50 and 63 mm)
- Exerting forces: 20 lbs. to 242 lbs. at 80 PSI

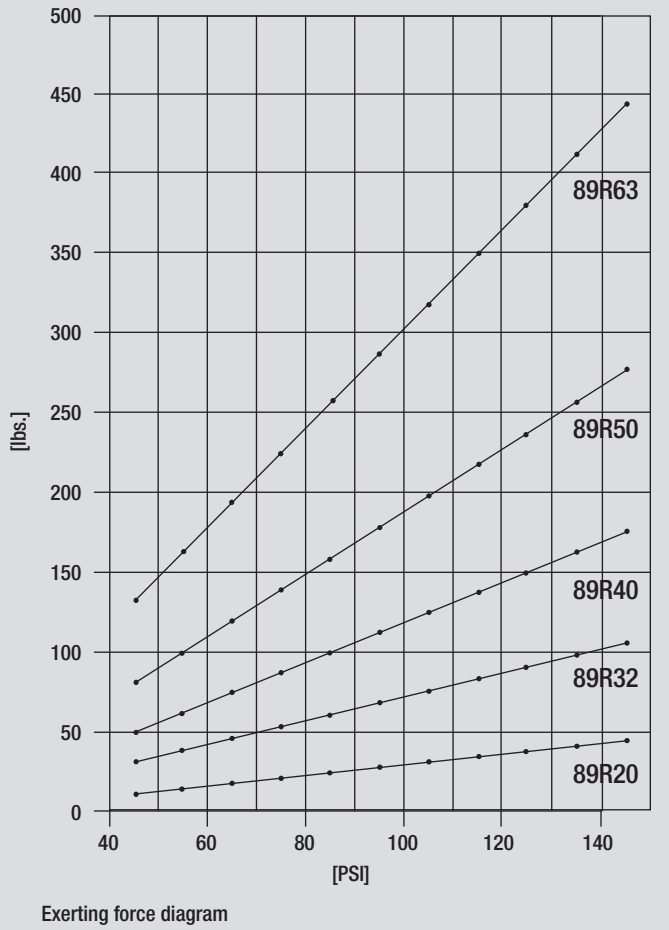
Operating instruction

A pdf-file of the operating instruction is available
You can also download it from our homepage on www.destaco.com

Practical tips
- Rotational movement of clamp arm should not be restricted
- Clamping operation should not occur during rotation of the clamp arm
- Remove the clamp arm from the piston rod by tapping only from below and not from the side

Clamp arm assembly
- See operating instructions





Exerting force diagram

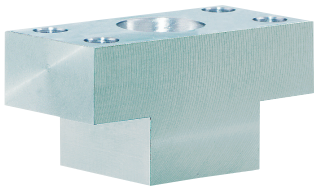
Model no.	Total stroke S [mm]	Travel during rotation S1 [mm]	Vertical clamp S2 [mm]	Operating pressure min. PSI	Operating pressure max. PSI	Exerting force at 80 PSI	Piston dia. S1 [mm]	Weight [lbs.]	
89R20-010-1	21.0	11.0	10			20	20	0.66	
89R32-010-1	28.0	18.0	10			62	32	1.32	
89R40-010-1	31.5	21.5	10	30	145	94	40	2.09	
89R40-025-1	46.5	21.5	25			94	40	2.43	
89R50-025-1	52.0	27.0	25			154	50	3.97	
89R63-025-1	58.5	33.5	25			242	63	6.17	

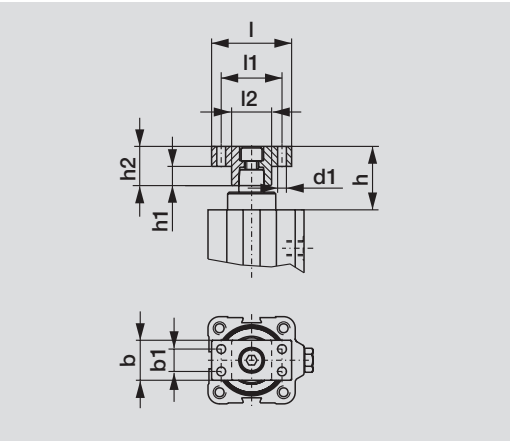
Model no.	ød1	ød2	ød3	h1	h2	h3	h4	h5	h6	h7	h8	l1	l2	l3	l4	l5	l6	M1	M2	M3
89R20-010-1	18	10	4.6	19.8	8	105.5	66.0	13.2	15	14	14	39.5	35.0	22	16.0	22	32	M5	M6	M5
89R32-010-1	22	12	5.5	23.7	11	125.0	83.0	17.5	17	16	16	60.0	54.0	36	24.0	32	45	M6	M8	G1/8
89R40-010-1	30	16	5.5	25.0	11	140.0	95.0	21.0	17	25	25	66.0	60.0	40	27.3	40	54.5	M8	M8	G1/8
89R40-025-1	30	16	5.5	25.0	11	170.0	125.0	21.0	17	25	25	66.0	60.0	40	27.3	40	54.5	M8	M8	G1/8
89R50-025-1	40	18	7.4	31.4	11	194.5	137.0	26.7	25	25	25	78.5	72.5	50	32.5	50	65	M10	M10	G1/8
89R63-025-1	45	20	9.3	33.0	15	211.5	154.5	26.5	25	25	25	95.0	88.0	62	40.0	62	80	M10	M12	G1/4

Blank Arm

Product features

- For attaching custom made clamp arms
- 360° rotatable arm
- Made of aluminum



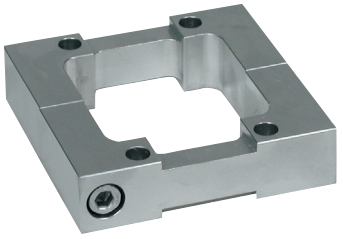


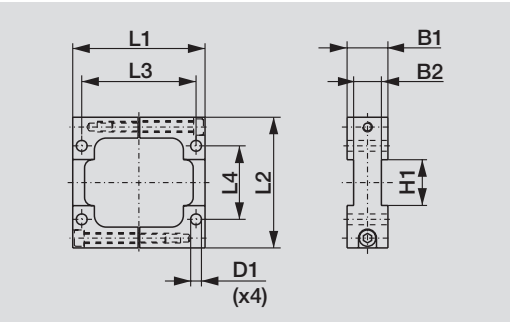
Order no. Adaptor	Use with Clamp Model no.	l	l1 ±0,2	l2	h	h1	M1	b ±0,2	b1	Weight [lbs./pc]
8MA-084-1	89R20-010-1	40	28	16	27.8	7	15	5.5	–	0.03
8MA-086-1	89R32-010-1	50	35	20	35.7	9	20	5.5	–	0.08
8MA-087-1	89R40-010-1	50	38	25	40.0	12	25	5.5	14	0.11
8MA-087-1	89R40-025-1	50	38	25	40.0	12	25	5.5	14	0.11
8MA-088-1	89R50-025-1	60	45	30	48.4	15	30	7.0	15	0.19
8MA-089-1	89R63-025-1	65	48	32	53.0	18	35	9.0	18	0.28

Body Mount Flange

Product features

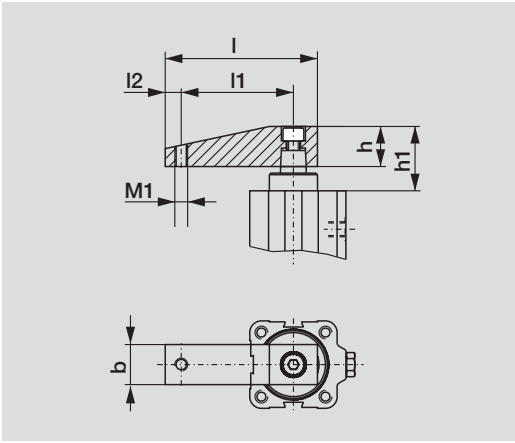
- For use as a model recessed to the fixture
- Variable height adjustment
- Can be used with end position sensors
- Made of aluminum





Order no. Body Mount Flange	Use with Clamp Model no.	L1	L2	L3	L4	D1	B1	B2	H1	Weight [lbs./pc]
8MA-092-1	89R20-010-1	57	55	47	24	5.5	15	–	–	0.22
8MA-094-1	89R32-010-1	81	75	70	40	6.6	20	12	25	0.44
8MA-095-1	89R40-010-1	81	80	70	45	6.6	25	17	28	0.55
8MA-095-1	89R40-025-1	81	80	70	45	6.6	25	17	28	0.55
8MA-096-1	89R50-025-1	101.5	100	85.5	50	9	25	17	37	0.88
8MA-097-1	89R63-025-1	122	120	104	68	11	30	20	38	1.43

Standard Clamp Arm

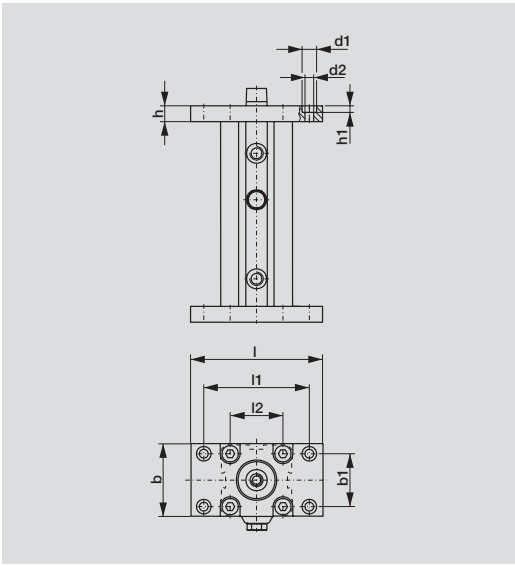


Product features

- For standard use
- 360° rotatable arm
- Spindle is an accessory part
  (see manual clamp accessories section for spindle option beginning page 9.1)
- Made of aluminum

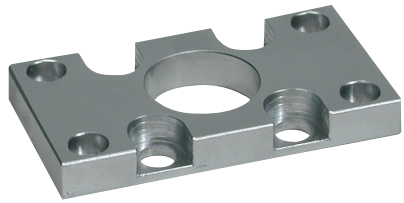
Order no. Clamping Arm	Used with Clamp Model no.	l	l1	l2	h	h1	M1	b	Weight [lbs./pc]
8JG-215-1	89R20-010-1	67	52	7	15	27.8	M6	15	0.08
8JG-217-1	89R32-010-1	80	60	10	20	35.7	M8	20	0.14
8JG-218-1	89R40-010-1	95	70	10	25	40.0	M8	25	0.28
8JG-218-1	89R40-025-1	95	70	10	25	40.0	M8	25	0.28
8JG-219-1	89R50-025-1	106	80	10	30	48.4	M8	30	0.42
8JG-220-1	89R63-025-1	120	90	12	35	53.0	M10	35	0.66

End Mount Flange



Product features

- Can be mounted on bottom side and top side of clamp
- Made of aluminum



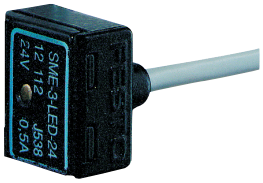
Order no. End Mount Flange	Used with Clamp Model no.	h	h1	d1	d2	l	l1 ±0,2	b	b1 ±0,2	Weight [lbs./pc]
8MA-061-1	89R20-010-1	10	7	11	6.6	65	50	32	18	0.07
8MA-063-1	89R32-010-1	12	7	11	6.6	80	64	50	32	0.20
8MA-064-1	89R40-010-1	12	7	11	6.6	100	80	55	40	0.29
8MA-064-1	89R40-025-1	12	7	11	6.6	100	80	55	40	0.29
8MA-065-1	89R50-025-1	15	9	15	8.5	120	100	65	45	0.46
8MA-066-1	89R63-025-1	15	9	15	8.8	130	110	80	60	0.66

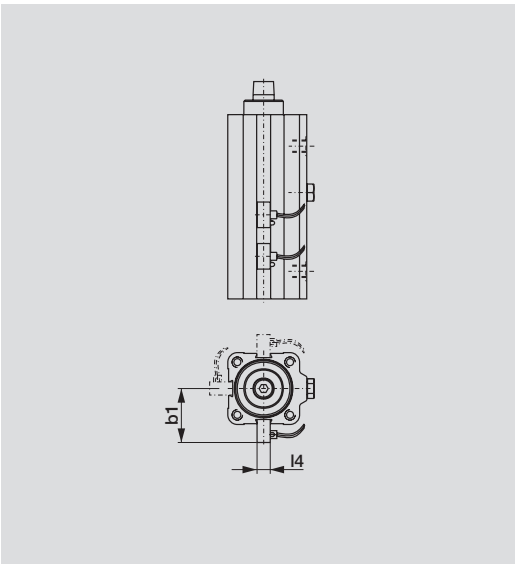
Magnetic Sensors

Product features

- Switch groove located on 3 sides of the cylinder
- Continuously adjustable by means of dovetailed groove

Sensors for magnetic field workpiece control system (SME-3-LED) with integrated protective circuit and light-emitting diode (PNP output)





Technical Data

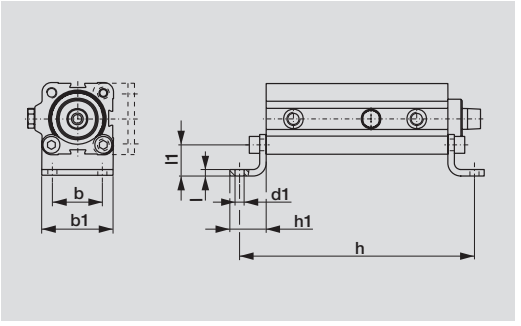
- Medium: magnetic field and electric current
- Type of design: electrical signal transmitter for contactless position indication
- Type of attachment: clamping in longitudinal keyway
- Connection: 3-core cable, 2.5 m, max. 10 W/500 mA/12-27 V AC/DC
- Type of protection in accordance with DIN 40050: IP 66
- Temperature range: fixed cable installation -20 to + 60° C, moveable cable installation -5 to + 60° C
- Material: housing GD-Mg, cable PVC

Order no. Magnetic Sensors	Used with Clamp Model no.	b1	l4	Weight [lbs./pc]
SME-3-LED	89R20-010-1	31.0	10.5	0.09
SME-3-LED	89R32-010-1	37.5	10.5	0.09
SME-3-LED	89R40-010-1	42.3	10.5	0.09
SME-3-LED	89R40-025-1	42.3	10.5	0.09
SME-3-LED	89R50-025-1	47.5	10.5	0.09
SME-3-LED	89R63-025-1	55.0	10.5	0.09

Mounting Feet

Product features

- Can be mounted on bottom side or front side
- Can be mounted on 4 sides of the cylinder
- Made of aluminum



Order no. Mounting Feet	Used with Clamp Model no.	h	h1	d1	l	l1	b	b1	Weight [lbs./pc]
8MA-018-1	89R20-010-1	137.5	22	7	4	16	22	35	0.08
8MA-020-1	89R32-010-1	166.0	28	7	4	18	35	50	0.15
8MA-021-1	89R40-010-1	181.0	28	7	5	24	40	55	0.22
8MA-021-1	89R40-025-1	211.0	28	7	5	24	40	55	0.22
8MA-022-1	89R50-025-1	238.5	32	9	6	24	50	67	0.33
8MA-023-1	89R63-025-1	263.5	40	11	6	27	62	85	0.52

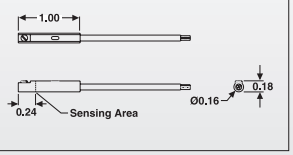
Notes

NEW

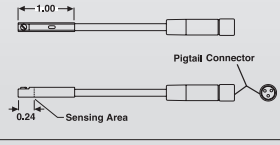
Models 8215-S0-25, 8215-S0-27: With Standard Sensing Feature

page 13.4

8215-S0-25



8215-S0-27

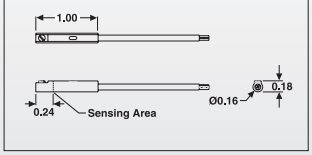


NEW

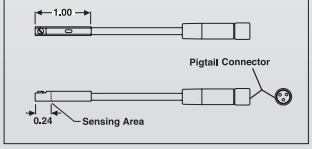
Models 8215-S0-26, 8215-S0-28:

page 13.4

8215-S0-26



8215-S0-28



Valves

Valves
930, 940

Valves

Part no.	EDP no.	Description
930	59300	Four-way hand operated valve, pneumatic. Used on double-acting cylinders. Supplied with 1/8-27 NPT fittings. Operates on 35-125 psig, and can be used to control any of the air powered clamps.
940	59400	Four-way hand operated valve, pneumatic. Same as the Model 930, except without the 1/8-27 NPT fittings. Ports are 1/4 NPT.

NOTE: If using as a three-way valve, plug one end port on each side of the valve.

Foot Valve
945

Foot Valve

Part no.	EDP no.	Description
945	59450	Four-way foot operated valve, pneumatic.

NOTE: If using as a three-way valve, plug one end port on each side of the valve.

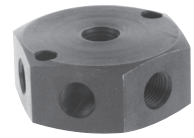
Rapid Exhaust Valve
70914

Rapid Exhaust Valve

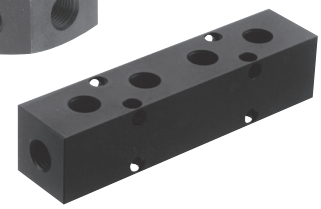
Part no.	EDP no.	Description
70914	70914	Rapid exhaust valve, pneumatic. 3/8 NPT ports. Allows pneumatic back pressure to be exhausted out of the cylinder instead of traveling back to the valve. Result is faster operation.

Manifolds

Part no.	EDP no.	Description
70901	70901	Air or hydraulic seven-ported (1/4 NPT) manifold. Can be used as power or exhaust manifold in multiple clamp installations.
70903	70903	Air or hydraulic in-line six-ported (1/4 NPT) manifold. Can be used as power or exhaust manifold in multiple clamp installations.



Manifold
70901



Manifold
70903

Filter-Regulator-Lubricator (FRL)

Part no.	EDP no.	Description
70905	70905	Filter, Regulator, Lubricator. Attaches to shop air source. Allows direct control of air pressure into pneumatic clamping system. (3/8 NPT ports)

Filter-Regulator-
Lubricator (FRL)
70905

Breather Vent

Part no.	EDP no.	Description
701062	71062	Breather vent accessory for pneumatic valve. Threads into exhaust ports on valve. (1/4 NPT) (Used on valve 930, 940 and 945)

Breather Vent
701062

Hose Kits

Part no.	EDP no.	Description
812816	81281	One eight foot hose with fittings and adaptors to connect one Model 812 or 816 clamp to Model 930 valve.

Hose Kit
812816

Models 8215-SO-25, 8215-SO-27

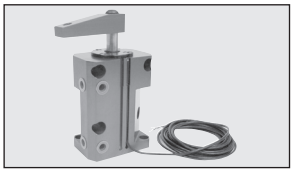
Design Xtra **With Standard Sensing Feature**

NEW

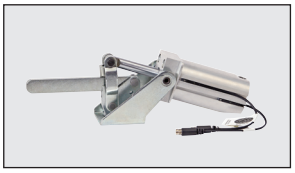
For added safety and control, DE-STA-CO now makes it easy for users of its pneumatic clamps to determine exactly when these clamps are fully open and fully closed. To sense the clamp's open and closed positions, small, low voltage Hall Effect switches are installed in a groove machined into the side of the cylinder body. The switches are actuated by a magnetic piston ring as the cylinder's piston moves up and down. The open or closed condition of the switches is then read by programmable logic controller (PLC) or other electronic device. All you need to do is determine what switch is right for the application. Order one switch if you want to sense only the open or closed position. Order two switches to sense both positions.

Model no.	EDP no.	NPN/PNP	Lead Length
8215-SO-25	58407	PNP	3 Meters (118 inch cable)
8215-SO-27	58423	PNP	6" with pigtail connector

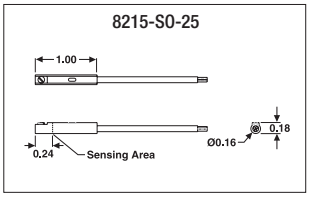
Model 8315 with sensor

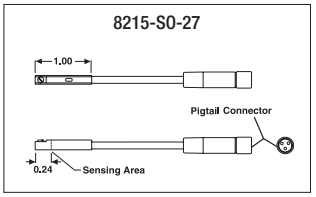


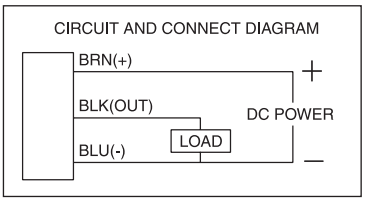
Model 8215-SO-27



Switching Logic	Normally Open
Output	PNP Current Sourcing
Operating Voltage	5~28 VDC
Switching Current	50 mA max
Power Rating	1.5 Watts – WARNING: Never exceed rating (Watt = Voltage x Amperage). Permanent damage to sensor will occur.
Voltage Drop	1.2V@25 mA max
Current Consumption	9 mA@24 VDC max
Leakage Current	0.01 mA max
LED Indicator	Green
Cable	Robotic Grade, abrasion resistant polyurethane (PUR) jacket, PVC insulation
Operating Frequency	1000Hz
Magnet Requirement	50 Gauss parallel
Temperature Range	14 to 158ºF (-10 to +70ºC)
Enclosure Classification	IP 67 (NEMA 6)
Protection Circuit	Reverse Polarity, Surge Suppression





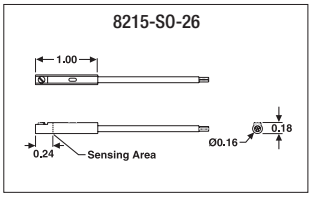


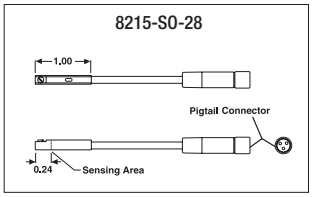
Models 8215-SO-26, 8215-SO-28

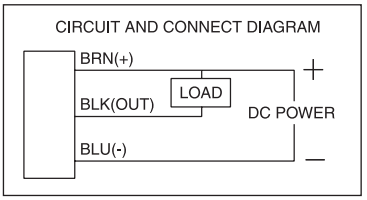
NEW

Model no.	EDP no.	NPN/PNP	Lead Length
8215-SO-26	58408	NPN	3 Meters (118 inch cable)
8215-SO-28	58424	NPN	6" with pigtail connector

Switching Logic	Normally Open
Output	NPN Current Sourcing
Operating Voltage	5~28 VDC
Switching Current	50 mA max
Power Rating	1.5 Watts – WARNING: Never exceed rating (Watt = Voltage x Amperage). Permanent damage to sensor will occur.
Voltage Drop	0.5V@25 mA max
Current Consumption	7 mA@24 VDC max
Leakage Current	0.01 mA max
LED Indicator	Red
Cable	Robotic Grade, abrasion resistant polyurethane (PUR) jacket, PVC insulation
Operating Frequency	1000Hz
Magnet Requirement	50 Gauss parallel
Temperature Range	14 to 158ºF (-10 to +70ºC)
Enclosure Classification	IP 67 (NEMA 6)
Protection Circuit	Reverse Polarity, Surge Suppression







Warning: Reverse wiring will destroy solid state electronic components. Presence of external magnetic/electromagnetic field may interfere with the operation of the sensor.

Models 810151, 810152, 810153, 810154, 810155, 810156, 810157, 810158

Switch options are available for the following Models: 801, 802, 803, 807-S, 807-U, 8071, 810-S, 810-U, 812-U, 816, 817, 827, 830, 830-10, 840, 841, 846, 847-S, 847-U, 849, 850, 858, 860, 861, 863, 864, 868, 870, 871, 890, 891, 893, 894, 1000 & 1001.

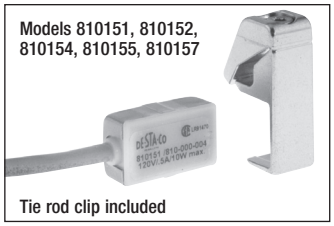
Reed Switches are now available from factory stock. The switches are activated by a magnetic ring installed on the cylinder piston. As the magnetic ring moves under the switch, it closes the contacts and sends a signal to a programmable controller or other electronic device.

Note: To use these switches, a clamp model must have the "–MR" suffix (indicates magnetic ring). Switches and clamps are ordered separately.

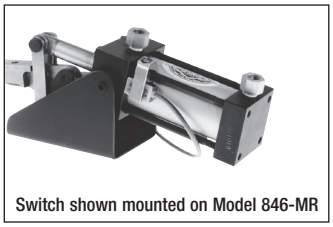
Switches have nine-foot leads as standard. Longer leads are available upon special request.

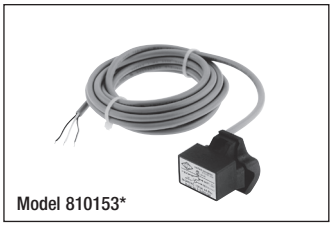
Hall Effect switches are also available on special order. Contact our Customer Service Department.

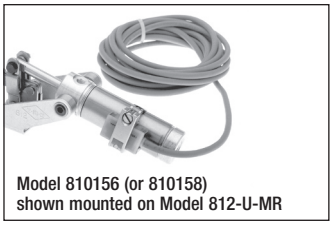
Switches have a tie-rod mounting clamp as standard. A band clamp is required for 812-U-MR and 816-MR cylinders, used with Switch Models 810156 and 810158.



Tie rod clip included


Switch shown mounted on Model 846-MR


Model 810153*

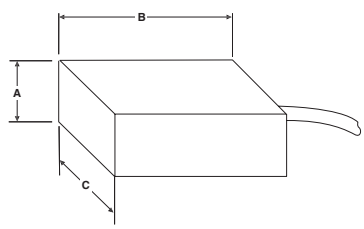

Model 810156 (or 810158)
shown mounted on Model 812-U-MR

Part no.	EDP no.	Type	Function	Switching Voltage	Switching Current	Switching Power	Maximum Voltage Drop	Temperature Limit (Ambient)	Lead Wire	Sensitivity and Orientation
810151	58150	REED, MOV, LED	SPST Normally Open	5-120V AC/DC 50/60 HZ	.5A Max. .005A Min.	10 Watts Max.	3.5 Volts	176º F (80º C)	9'	85 Gauss Parallel
810152	58152	REED, MOV, LED	SPST Normally Open	5-120V AC/DC 50/60 HZ	.5A Max. .005A Min.	10 Watts Max.	3.5 Volts	176º F (80º C)	12'	85 Gauss Parallel
810153	58104	REED, MOV, LED	Normally Open	24-240V AC 50/60 HZ	4A Max. .005A Min. 50A in Rush	100 Watts Max.	1 Volt	176º F (80º C)	9'	85 Gauss Parallel
810154	58154	REED, No MOV, No LED	SPST Normally Open	0-120V AC/DC 50/60 HZ	.5A Max.	10 Watts Max.	0 Volt	176º F (80º C)	9'	85 Gauss Parallel
810155	58155	Hall Effect, LED Sourcing	Normally Open PNP Output	6-24V DC 50/60 HZ	.5A Max.	12 Watts Max.	1 Volt	176º F (80º C)	9'	85 Gauss Parallel
810156	58156	REED, MOV, LED	SPST Normally Open	5-120V AC/DC 50/60 HZ	.5A Max. .005A Min.	10 Watts Max.	3.5 Volts	176º F (80º C)	9'	85 Gauss Parallel
810157	58157	Hall Effect	Normally Open PNP Output	6-24V DC	.5A Max.	12 Watts Max.	1 Volt	176º F (80º C)	9'	85 Gauss Parallel
810158	58158	Hall Effect	Normally Open PNP Output	6-24V DC	.5A Max.	12 Watts Max.	1 Volt	176º F (80º C)	9'	85 Gauss Parallel

Note: Models 810156 and 810158 use 810156-1 band clamp to mount the switch to the wall of the cylinder. All other Models use tie-rod clip 810151-1.

Warranty on Electrical Products

DE-STA-CO expressly limits the Product Warranty as applied to any electrical or electronic component used on or associated or connected with any product to a period of one (1) year from the date the product is delivered to the first user.



Switch Dimensions (Less Mounting Clip)

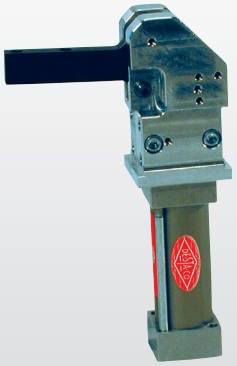
Part no.	EDP no.	A	B	C
810151	58105	0.37	0.93	0.53
810152	58152	0.37	0.93	0.53
810153	58104	0.87	1.30	0.67
810154	58154	0.37	0.93	0.53
810155	58155	0.37	0.93	0.53
810156	58156	0.37	0.93	0.53
810157	58157	0.37	0.93	0.53
810158	58158	0.37	0.93	0.53

*To be used on larger clamp models only – Series 847 and higher.

Notes

NEW

Models 8820, 8825



page 14.9

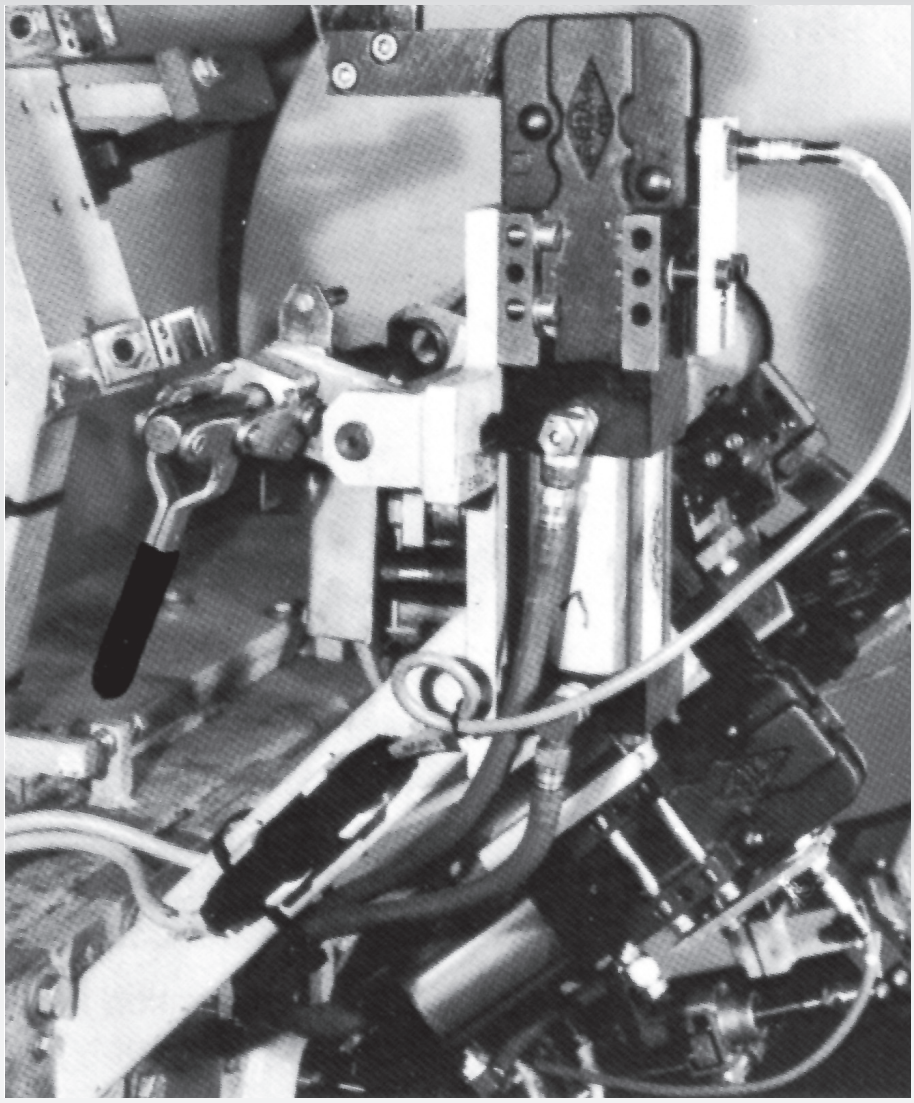
NEW

82L Series

page 14.13

Product group – automation power clamps

	Model no.	Holding Capacity max. [lbs.]	Category	Page
	840 841	1,500 1,500		14.3
	860 861 890 891 1000 1001	3,000 3,000 5,000 5,000 10,000 10,000		14.5
	863 864 893 894			14.7
	8820-2000000 8825-1000000			14.9
	82L25 82L25		Without manual handle	14.15
	82L32 82L40		Without manual handle	14.18
	82L25 82L32 82L40		With manual handle	14.27
	82L32 82L40		With manual handle	14.27



Heavy-duty power clamp 891 and Model 624 straight-line action clamp modified on a welding machine.

Models 840, 841

Designed for high production applications, these toggle action pneumatic clamps offer exceptional clamping forces and holding capacities – far greater than other clamps of similar size. And unlike most pneumatic toggle clamps, they do not require greater pressure to open than to close.

Of special importance in the design of the Series 840 is the oval cylinder. Because of the extremely narrow profile of these clamps, they can be used in cramped quarters or can be ganged closer together in multiple installations.

The even numbered models in this series feature a 180° clamping arm which travels to an over-center locked position parallel (180°) to the clamp centerline. The corresponding odd numbered models have a 90° arm. The angular locked position of both versions is precisely controlled by the hardened steel insert. Clamp arms can be machined, drilled, cut off or welded to suit the application requirements.

Models 840 and 841 are tongue-mount clamps.

ALSO AVAILABLE	
With Magnetic Ring	Model 840-MR Model 841-MR
Switch Options	Page 13.4
See accessories beginning on pages 9.1 and 13.1.	

58400
Model 840

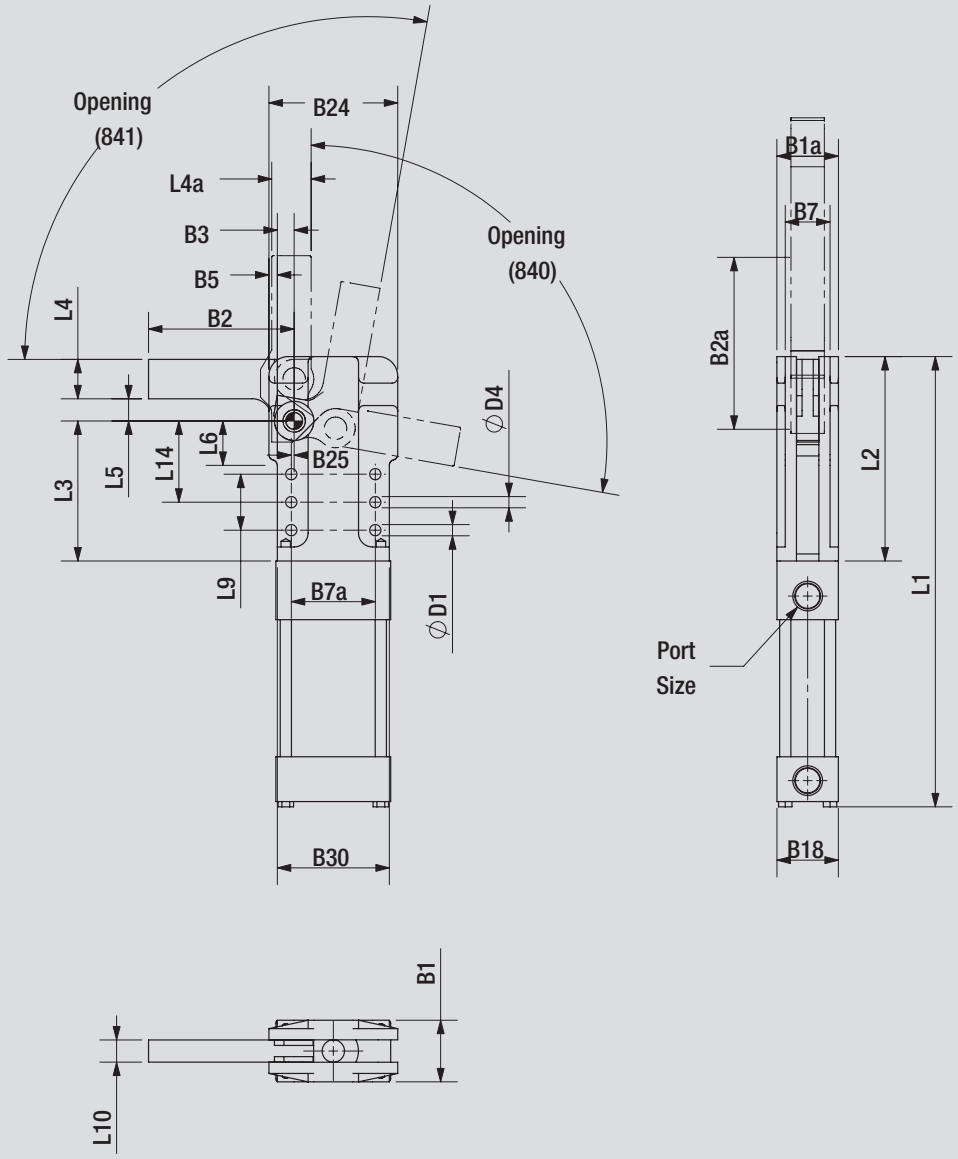
58410
Model 841

Design Xtra Model no.	Formula to Calculate Exerting Force
840 841	Max. Clamp Arm Exerting Force (lbs.) = 12 x Line Pressure (PSI) / Distance from Pivot Point to Clamping Point (in.)

Model no.	Holding Capacity max. [lbs.]	Exerting Force max. @ 80 PSI	Piston – [in.]	Arm Position	Weight [lbs.]	Port Size NPT	B1	B1a	B2	B2a	B3	B5	B7	B7a	B18
840	1,500	480	1.50	100°	3.90	3/8	1.38	1.38	–	3.69	0.38	0.19	1.00	1.88	1.37
841	1,500	480		100°	4.25	3/8	1.38	1.38	3.25	–	0.38	0.19	1.00	1.88	1.37

Model no.	B24	B25	B30	øD1	øD4	L1	L2	L3	L4	L4a	L5	L6	L9	L10	L14
840	2.88	0.06	2.50	0.25	0.25	10.05	4.56	3.13	–	0.88	–	0.88	1.25	0.50	1.81
841	2.88	0.06	2.50	0.25	0.25	10.05	4.56	3.13	0.88	–	0.49	0.88	1.25	0.50	1.81

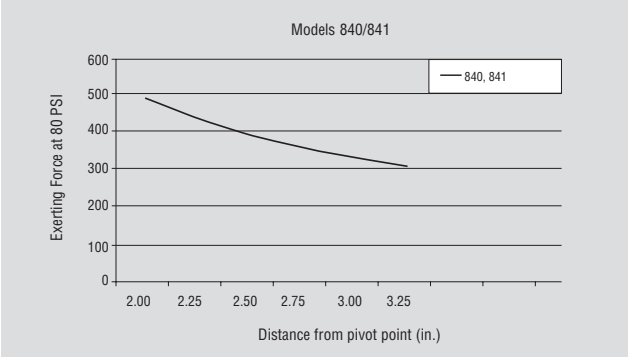
Models 840, 841



Spare parts

Model no.	Seal kit	Cylinder
840	8410400	840CYL
841	8410400	840CYL

Diagram of Exerting Force (at 80 PSI)



Models 860, 861, 890, 891, 1000, 1001

■ **Automation power clamp, heavy design**

Application:
Clamping, holding, gripping and positioning of sheet metal and other parts in jigs and handling systems.

Key areas of application:
High production applications

Features:
- High holding capacities
- Long cycle life
- Mounting flexibility on all four sides
- Clamping arm in horizontal or vertical clamping position
- Toggle action mechanism

ALSO AVAILABLE	
With Magnetic Ring	Model 840-MR Model 860-MR Model 890-MR Model 1000-MR
Switch Options	Page 13.4
See accessories beginning on pages 9.1 and 13.1.	

Design Xtra Model no.	Formula to Calculate Exerting Force
860 861	Max. Clamp Arm Exerting Force (lbs.) = 31.25 x Line Pressure (PSI) / Distance from Pivot Point to Clamping Point (in.)
890 891	Max. Clamp Arm Exerting Force (lbs.) = 67.5 x Line Pressure (PSI) / Distance from Pivot Point to Clamping Point (in.)
1000 1001	Max. Clamp Arm Exerting Force (lbs.) = 150 x Line Pressure (PSI) / Distance from Pivot Point to Clamping Point (in.)

Model **861, 891** or **1001** (clamping arm in horizontal clamping position)

Sensors (optional)

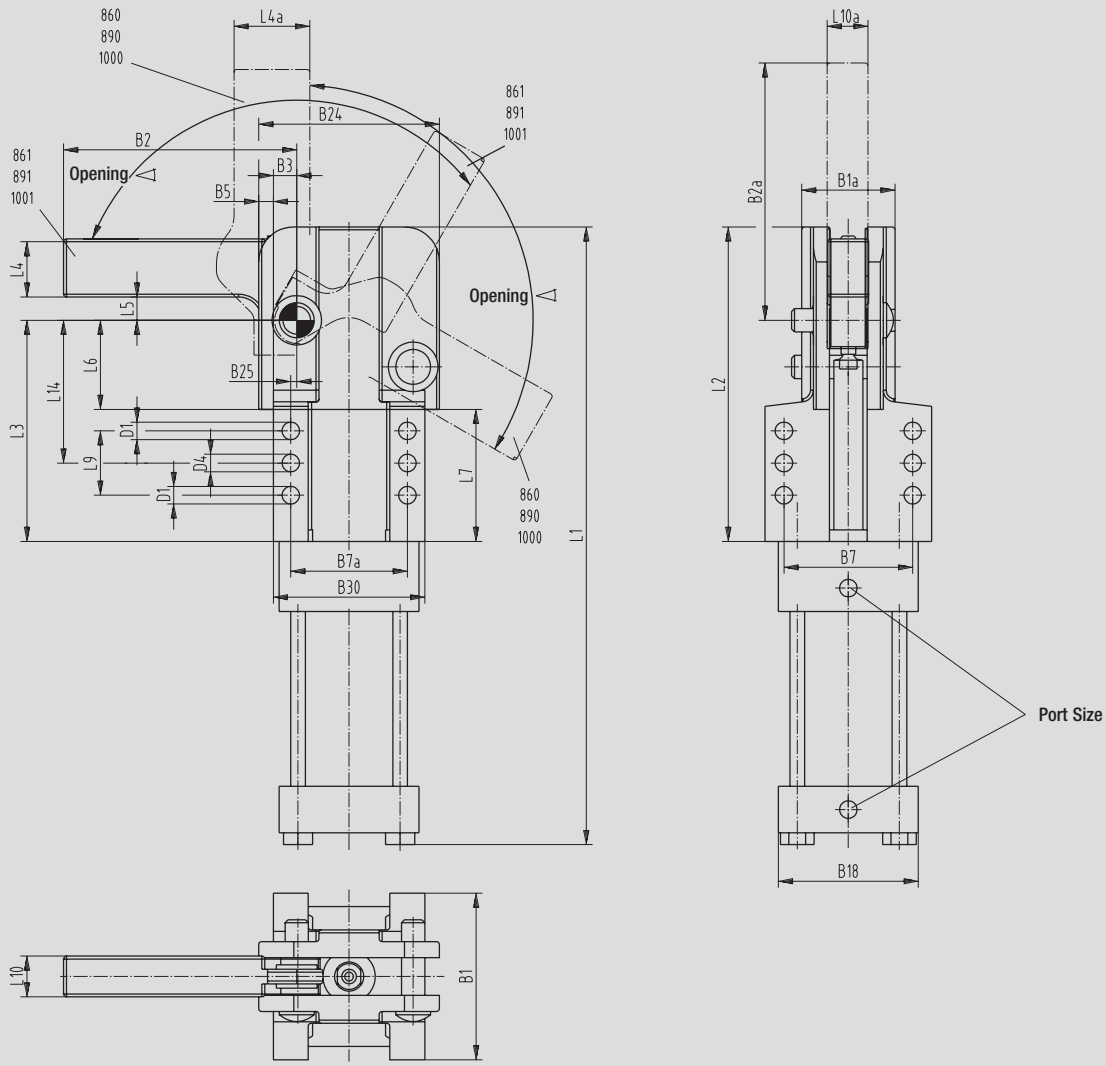
Model **860, 890** or **1000** (clamping arm in vertical clamping position)

Technical data

Model no.	Holding Capacity max. [lbs.]	Exerting Force max. @ 80 PSI	Piston – [in.]	Arm Position	Weight [lbs.]	Port Size G	B1	B1a	B2	B2a	B3	B5	B7	B7a	B18
860	3,000	1,250	2.00î	180°	8.75	3/8	2.94	1.75	–	5.44	0.41	0.25	2.31	2.19	2.50
861	3,000	1,250	2.00î	90°	9.00	3/8	2.94	1.75	4.00	–	0.41	0.25	2.31	2.19	2.50
890	5,000	2,700	2.50î	180°	13.00	3/8	3.56	2.00	–	6.57	0.50	0.31	2.76	2.50	3.00
891	5,000	2,700	2.50î	90°	13.50	3/8	3.56	2.00	5.06	–	0.50	0.31	2.76	2.50	3.00
1000	10,000	6,000	3.25î	180°	32.00	1/2	4.50	2.62	–	9.00	0.63	0.44	3.50	3.50	3.75
1001	10,000	6,000	3.25î	90°	33.00	1/2	4.50	2.62	7.00	–	0.63	0.44	3.50	3.50	3.75

Model no.	B24	B25	B30	øD1	øD4	L1	L2	L3	L4	L4a	L5	L6	L7	L9	L10	L14
860	3.31	0.09	2.81	0.34	0.31	12.44	5.75	4.06	–	1.12	–	1.44	2.50	1.25	0.62	2.50
861	3.31	0.09	2.81	0.34	0.31	12.44	5.75	4.06	1.13	–	0.40	1.44	2.50	1.25	0.62	2.50
890	3.87	0.13	3.25	0.41	0.38	13.37	6.75	4.75	–	1.25	–	1.75	2.65	1.38	0.81	3.06
891	3.87	0.13	3.25	0.41	0.38	13.37	6.75	4.75	1.25	–	0.50	1.75	2.65	1.38	0.81	3.06
1000	5.38	0.13	4.50	0.53	0.50	17.51	9.25	6.25	–	1.75	–	2.25	3.96	2.00	1.00	3.75
1001	5.38	0.13	4.50	0.53	0.50	17.51	9.25	6.25	1.75	–	0.88	2.25	3.96	2.00	1.00	3.75

Models 860, 861, 890, 891, 1000, 1001

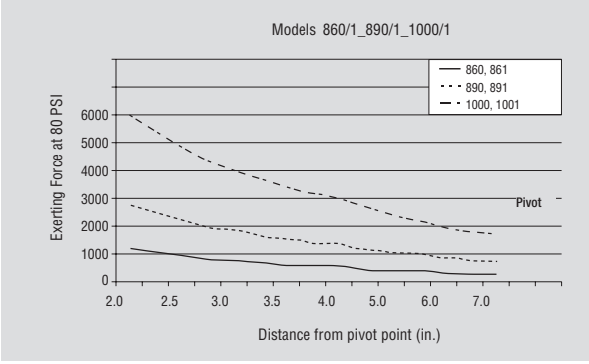


Information for machining of clamp arm: Steel 1.0726

Spare parts

Model no.	Seal kit	Cylinder
860	8610100	865133
861	8610100	865132
890	8910100	895133
891	8910100	895132
1000	10010100	1005134
1001	10010100	1005133

Diagram of Exerting Force (at 80 PSI)



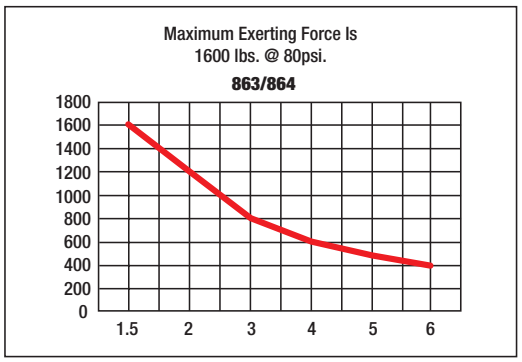
Models 863, 864, 893, 894

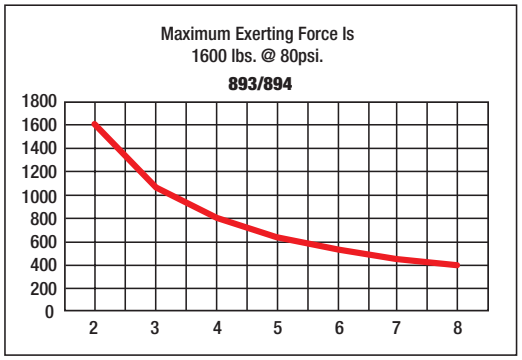
These power clamps have many unique features which make them ideal for use in hostile welding and machining environments.

- Linkage is completely enclosed to keep contaminants out.
- Clamp arm is offset, and it can be mounted on the left-side (L), right-side (R) or on both sides of the clamp (D).
- Over-center toggle-lock design for maximum reliability and clamping forces.
- Mounting surfaces allow blade mounting on either side of the clamp.
- Clamp arms are indexable and can be repositioned in 45° increments.
- Magnetic ring sensing options available.
- Clamp arm is weldable/machinable to suit any application.
- Must install supplied restrictor fittings before use.

ALSO AVAILABLE	
With Magnetic Ring: add -MR to Model number callout	
Switch Options	Page 13.4
See accessories beginning pages 9.1 and 13.1	

Design Xtra Model no.	Formula to Calculate Exerting Force
863 864	Max. Clamp Arm Exerting Force (lbs.) = 30 x Line Pressure (PSI) / Distance from Pivot Point to Clamping Point (in.)
893 894	Max. Clamp Arm Exerting Force (lbs.) = 40 x Line Pressure (PSI) / Distance from Pivot Point to Clamping Point (in.)





58631
Model 863-L

58640
Model 864-D

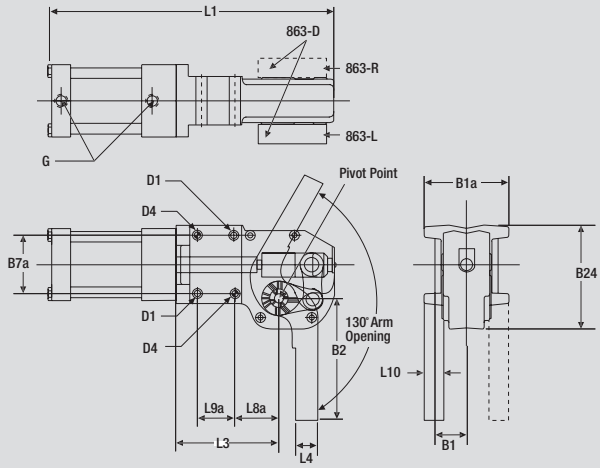
58930
Model 893-D

58932
Model 893-R

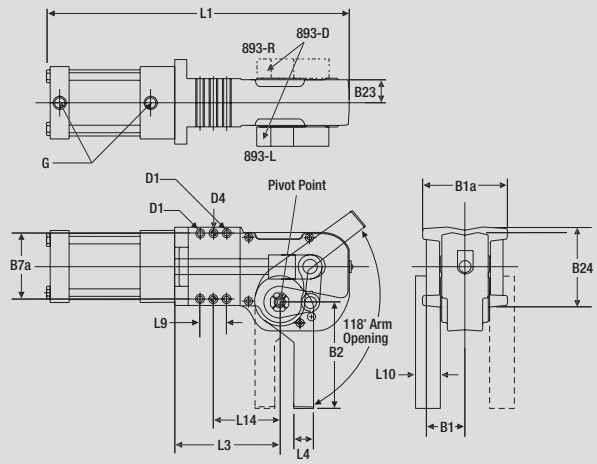
Technical data

Model no.	EDP no.	Weight	Arm Style	Arm Opening
863-D	58630	13.5 lbs.	90° DUAL	130°
863-L	58631	12.5 lbs.	90° L.H.	130°
863-R	58632	12.5 lbs.	90° R.H.	130°
864-D	58640	13.5 lbs.	180° DUAL	121°
864-L	58641	12.5 lbs.	180° L.H.	121°
864-R	58642	12.5 lbs.	180° R.H.	121°
893-D	58930	20.0 lbs.	90° DUAL	118°
893-L	58931	18.0 lbs.	90° L.H.	118°
893-R	58932	18.0 lbs.	90° R.H.	118°
894-D	58940	20.0 lbs.	180° DUAL	118°
894-L	58941	18.0 lbs.	180° L.H.	118°
894-R	58942	18.0 lbs.	180° R.H.	118°

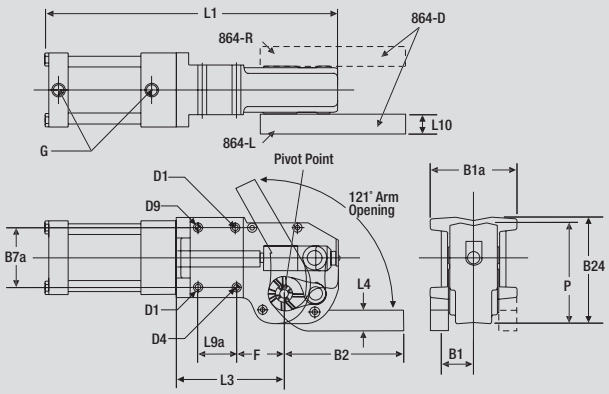
Model 863



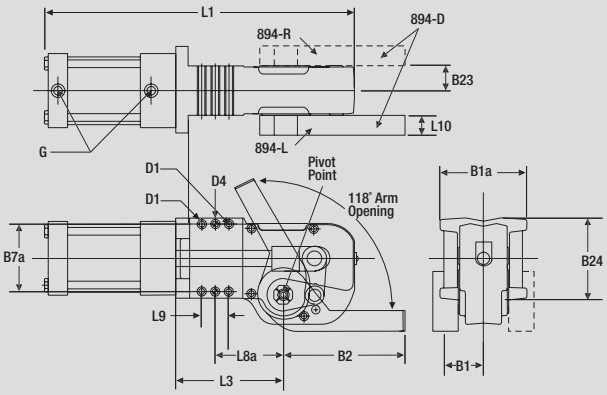
Model 893



Model 864



Model 894



Model no.	B1	B1a	B2	B7a	B23	B24	D1	D4	G	L1	L3	L4	L8a	L9a	L10		
863-D	1.31	2.50	5.00	1.77	–	3.64	3/8-16 (4)	0.37 (2)	3/8 NPT(2)	13.58	4.31	1.00	1.61	1.77	0.75		
863-L	1.31	2.50	5.00	1.77	–	3.64	3/8-16 (4)	0.37 (2)	3/8 NPT(2)	13.58	4.31	1.00	1.61	1.77	0.75		
863-R	1.31	2.50	5.00	1.77	–	3.64	3/8-16 (4)	0.37 (2)	3/8 NPT(2)	13.58	4.31	1.00	1.61	1.77	0.75		
864-D	1.31	2.50	5.00	1.77	–	3.64	3/8-16 (4)	0.37 (2)	3/8 NPT(2)	13.58	4.31	1.00	1.61	1.77	0.75		
864-L	1.31	2.50	5.00	1.77	–	3.64	3/8-16 (4)	0.37 (2)	3/8 NPT(2)	13.58	4.31	1.00	1.61	1.77	0.75		
864-R	1.31	2.50	5.00	1.77	–	3.64	3/8-16 (4)	0.37 (2)	3/8 NPT(2)	13.58	4.31	1.00	1.61	1.77	0.75		
893-D ▲	1.50	3.48	5.00	2.50	1.01	3.22	3/8-16 (8)	0.37 (2)	3/8 NPT(2)	14.60	4.86	1.00	3.00	1.38	1.00		
893-L ▲	1.50	3.48	5.00	2.50	1.01	3.22	3/8-16 (8)	0.37 (2)	3/8 NPT(2)	14.60	4.86	1.00	3.00	1.38	1.00		
893-R ▲	1.50	3.48	5.00	2.50	1.01	3.22	3/8-16 (8)	0.37 (2)	3/8 NPT(2)	14.60	4.86	1.00	3.00	1.38	1.00		
894-D ▲	1.50	3.48	5.00	2.50	1.01	3.22	3/8-16 (8)	0.37 (2)	3/8 NPT(2)	14.60	4.86	1.00	3.00	1.38	1.00		
894-L ▲	1.50	3.48	5.00	2.50	1.01	3.22	3/8-16 (8)	0.37 (2)	3/8 NPT(2)	14.60	4.86	1.00	3.00	1.38	1.00		
894-R ▲	1.50	3.48	5.00	2.50	1.01	3.22	3/8-16 (8)	0.37 (2)	3/8 NPT(2)	14.60	4.86	1.00	3.00	1.38	1.00		

▲ Available upon request, as are a number of other modifications Note: See pages 9.1 and 13.1 for accessories

Models 825-MRM, 991-MRM, 1091-MRM

Extreme Temperature Pneumatic Clamps

Model
825-MRM

These new, fully-enclosed high temperature power clamps are manufactured using proprietary coatings and extreme temperature grease and seals. This makes them ideal for rotary molding applications. With the clamps over-center toggle lock design, air lines can be disconnected allowing the clamps to travel in and out of high temperature ovens while maintaining constant clamping pressure.

Features:

- Roller bearing used in high-stress loading points
- Over-center toggle lock mechanism
- Fully-enclosed mechanism packed with no melt, extreme temperature grease
- Extreme temperature polymer seals
- Totally enclosed clamp assembly

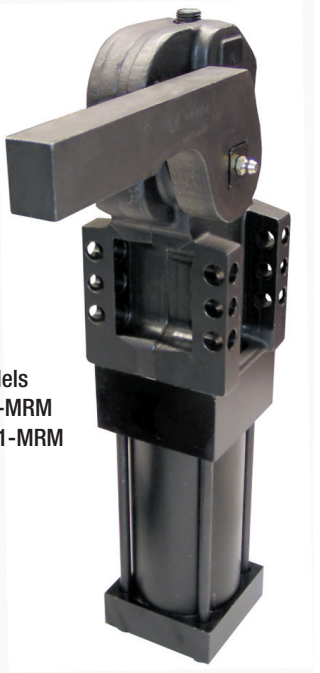
Benefits:

- Powerful holding and exerting forces
- Clamp remains locked when air pressure is lost or removed
- Specifically designed for rotary molding applications
- Capable of continuous exposure to 500°F and short exposure to 700°F ovens
- Retains lubrication while keeping out quench spray and other contaminants for reduced maintenance

Model no.	Weight	Arm Style*	Arm Opening
825-MRM	4.7 lbs.	90º RH	90º
991-MRM	18 lbs.	90º Dual	118º
1091-MRM	33 lbs.	90º Dual	98º

*Clamp arm can be positioned in 180° by removing the arm while the clamp is in the closed position – then adjusting arm to the 180° position

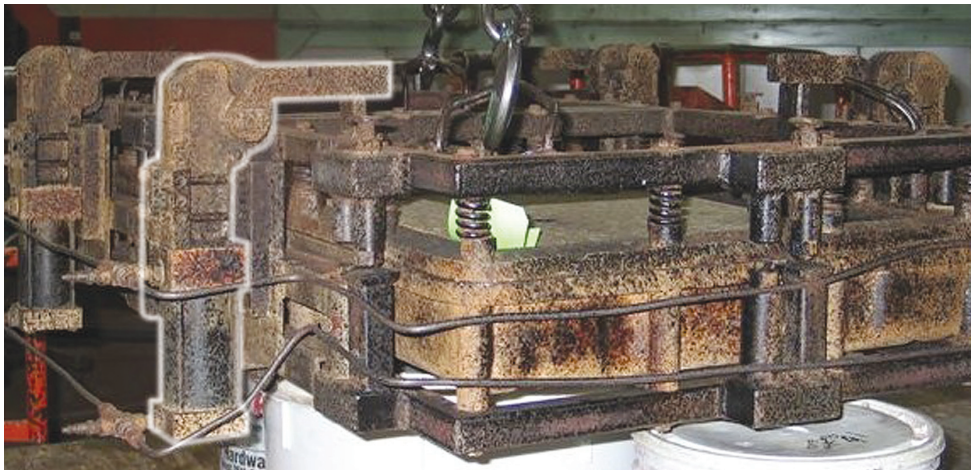
Model no.	Formula to Calculate Exerting Force
825-MRM	Max. Clamp Arm Exerting Force (lbs.) = 10 x Line Pressure (PSI) / Distance from Pivot Point to Clamping Point (in.)
991-MRM	Max. Clamp Arm Exerting Force (lbs.) = 40 x Line Pressure (PSI) / Distance from Pivot Point to Clamping Point (in.)
1091-MRM	Max. Clamp Arm Exerting Force (lbs.) = 92.5 x Line Pressure (PSI) / Distance from Pivot Point to Clamping Point (in.)



Models
991-MRM
1091-MRM

Models 825-MRM, 991-MRM, 1091-MRM

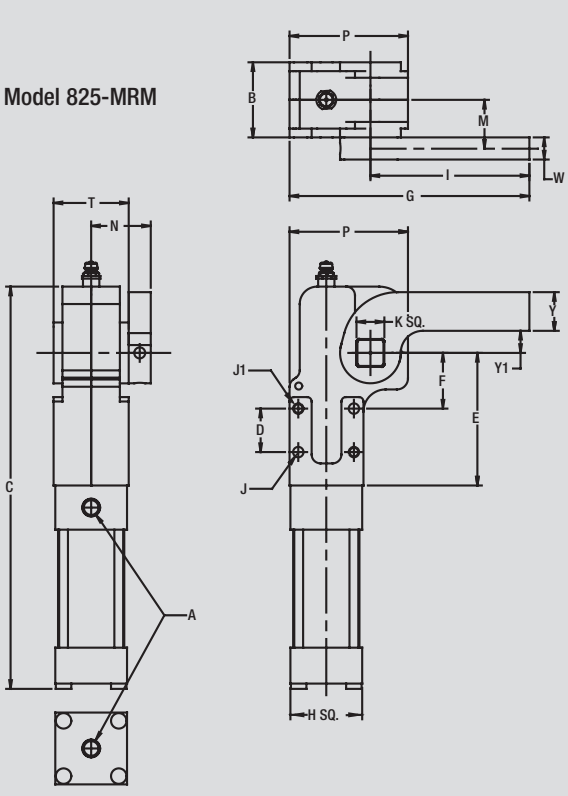
Extreme Temperature Pneumatic Clamps



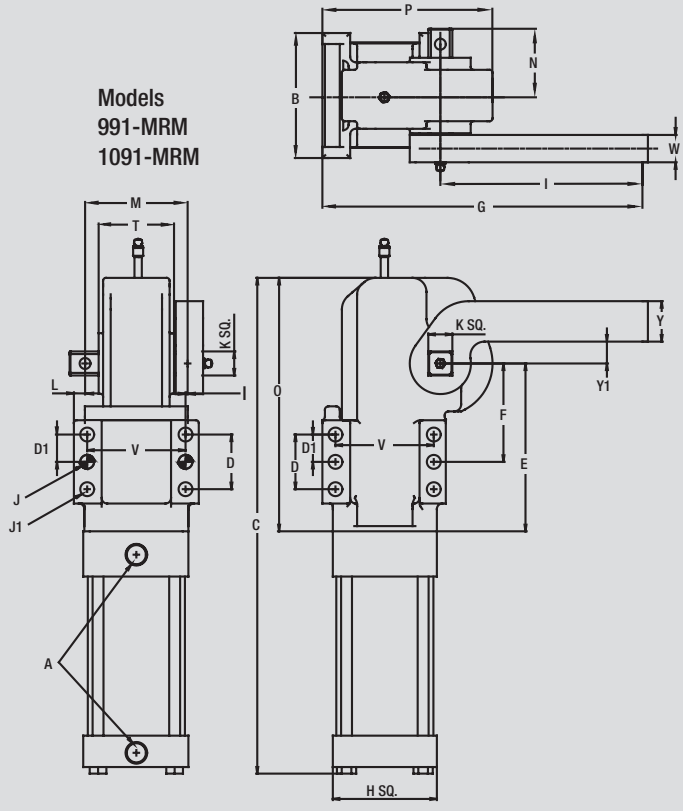
991 MRM clamps (4) used to clamp two mold halves together.

Clamp to be lubed with extreme temperature grease once per month of clamp service using standard grease fitting

Model 825-MRM



Models
991-MRM
1091-MRM



Model no.	A	B	C	D	D1	E	F	G	H	I	øJ	øJ1	K
825-MRM	1/8 G Port	43	246	25	–	76	32	138	41 Sq.	91.7	6	M6 x 1	16
991-MRM	3/8 G Port	86	376	35	17.5	123	76.2	225	76 Sq.	150	9.5	10.0	19
1091-MRM	1/2 G Port	116	448	51	25	153	90	293	95 Sq.	195	13	13.5	22

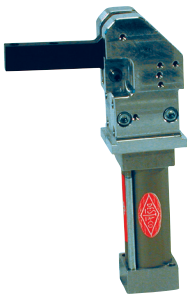
Model no.	L	M	N	O	P	T	U	V	W	Y	Y1
825-MRM	–	28	34	114	68	43	32	–	13	22	13
991-MRM	10	70	43	183	104	49	65	70	20	33	20
1091-MRM	10.2	94	61	232	156	68	90	90	25	37	20

Series 8820-2, 8825-1

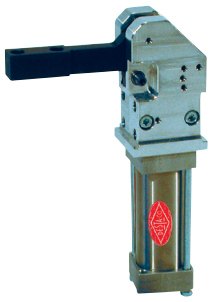
Automation power clamps, miniature design

Application:

Ideal for the clamping, holding, gripping and positioning of sheet metal and other parts in jigs and part handling systems. Linkage is shielded from debris. A retractable cover prevents contaminants from getting into the interior of the clamp.



8820-2000000



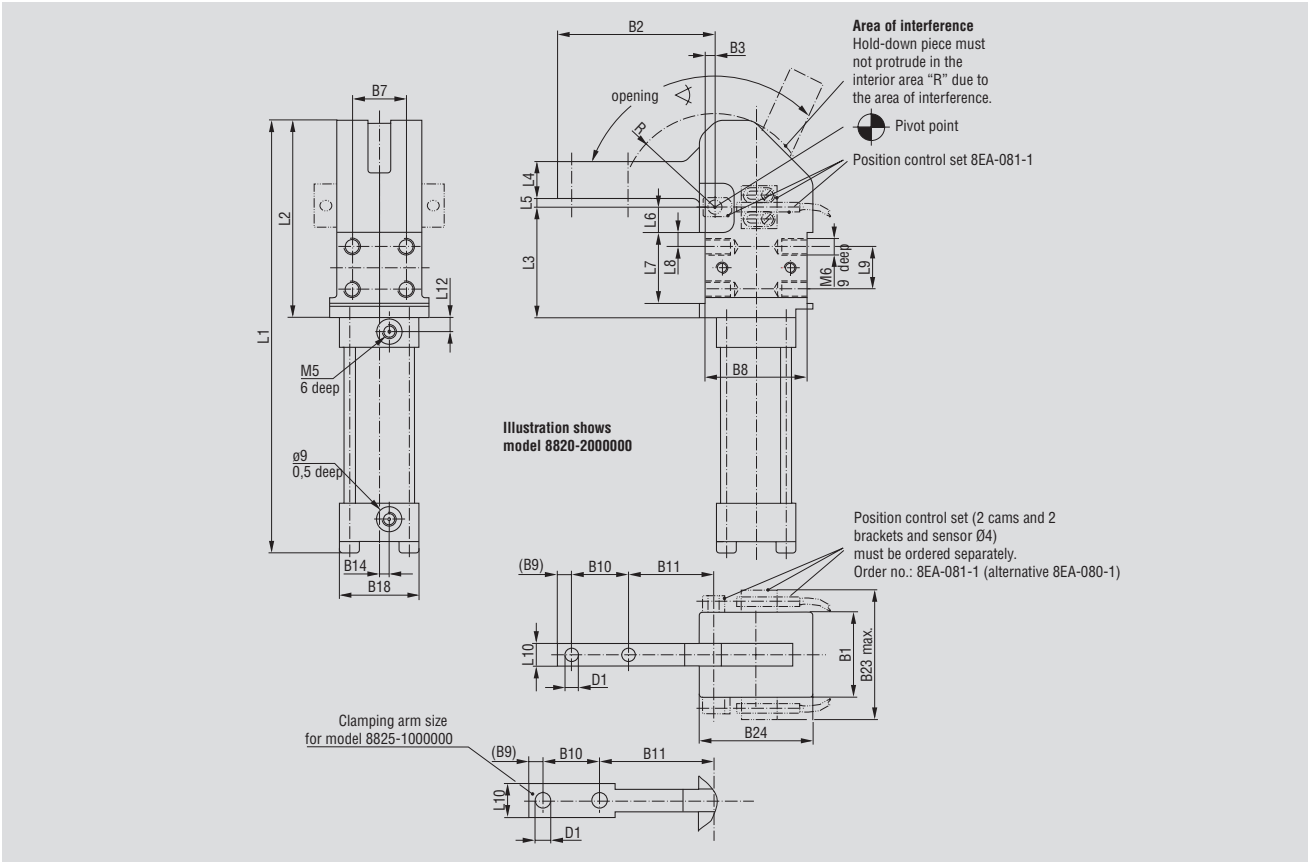
8825-1000000

Features:

- Compact design
- Long cycle life
- High holding capacities
- Low weight (aluminium body)
- Two sizes (20 mm or 25 mm cylinder diameter)
- Two mounting options (front and rear)
- Toggle action mechanism
- The models can be quickly retrofitted with an inductive end position sensing system. (2 alternatives available)

ALSO AVAILABLE	
Switch Options	Page 14.0
See accessories beginning on pages 9.1 and 13.1	

New Model no.	Old Model no.	Piston Dia. ø [mm]	Opening angle	Clamping position	Max. holding capacity [lbs/]	Clamping force @ 80 PSI [lbs.]	Port Size	Weight [lbs.]
8820-2000000	8820-2	20	120°	horizontal	663	110	M5	0.88
8825-1000000	8825-1	25	120°	horizontal	663	221	M5	1.00

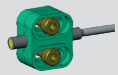
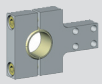


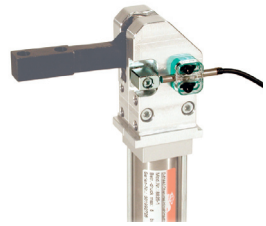
Technical data

Model no.	Opening angle	Clamping position	Piston Dia. ø	Port Size	B1	B2	B3 ±0,1	B7 ±0,1	B8 ±0,1	B9	B10 ±0,2	B11	B14
8820-2000000	120°	horizontal	20	M5	35	55,5	2.5	20	34	5	20	30,5	4
8825-1000000	120°	horizontal	25	M5	35	65,5	2.5	20	34	5	20	40,5	0

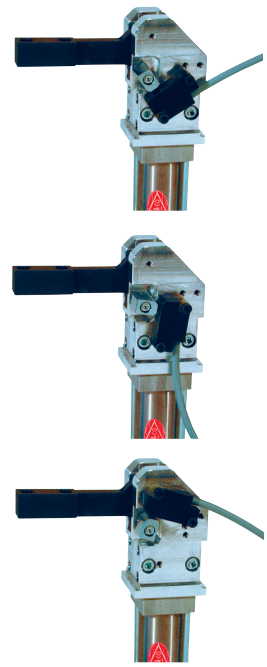
Model no.	B18	B23 max.	B24	L1 –	L2 –	L3	L4	L5	L6	L7 ±0,1	L8	L9	L10	L12	D1 ø	R
8820-2000000	28	50	40	152	70	39	13	3	9	25	5	15	7,5	5	4,5	34
8825-1000000	30	50	40	152	70	39	13	3	9	25	5	15	12	5,5	6,4	34
Medium: air, max. 116 PSI; operation with oil-free air is permissible. All dimensions shown in metric (mm).																
CAD files available																

Accessories – sensors for inductive end position sensing and mounting hardware

Specification		Order no. 8820-2/8825-1	Comment
Cam-set with 2 cams (without sensor)		8EA-083-1	consists out of 2 cams
Sensing kit incl. sensor ø4		8EA-081-1	consists of 2 cams, 2 brackets and 2 sensor ø4 (wire-length 2m, without connector)
Sensing set incl. block-sensors		8EA-080-1	consists of 2 cams, 2 sensors (wire-length 10 cm, connector M8x1)
Adapter		82ZB-004-1	Adapter for tubesystem ø25



Sensing set 8EA-081-1

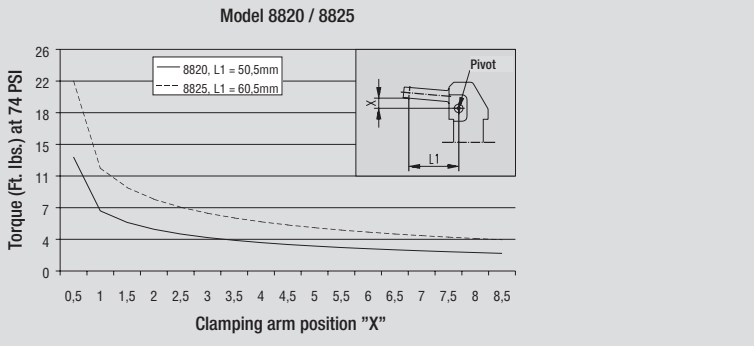


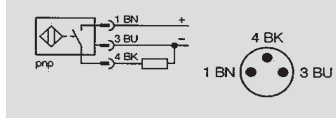
Assembly options 8EA-080-1

Spare parts

Specification	Order no. 8820-2000000	Order no. 8825-1000000
Complete Cylinder	8PW-068-1	8PW-010-1
Seal kit (O-ring and piston)	8820-2-00	8825-1-00

Diagram of Clamping Force (at 74 PSI)



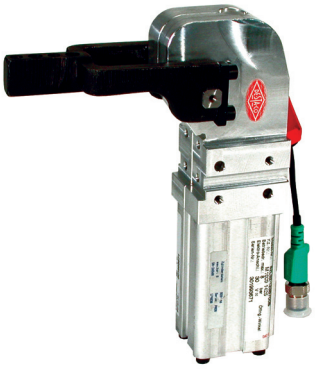


Pin assignment 8EA-080-1

Automation power clamps, lightweight design

Clamp-family 82L-1 without manual handle option

- **82L25-1 without manual handle**
  page 14.15



- **82L32-1 without manual handle**
  page 14.18

- **82L40-1 without manual handle**
  page 14.18

- **Accessories**
  page 14.29

Clamp-family 82L-1 with manual handle option

- **82L25-1 with manual handle**
  page 14.27

- **82L32-1 with manual handle**
  page 14.27

- **82L40-1 with manual handle**
  page 14.27

- **Accessories**
  page 14.29

Automation power clamps, lightweight design

- **Modular system for lightweight automation power clamps**

Models: **82L25-1....0.B** **82L25-1....H.B**
82L32-1....0.B **82L32-1....H.B**
82L40-1....0.B **82L40-1....H.B**

Procedure:

- Select the base model (with or without manual handle)
- Select the desired sensing option
- Select the desired clamping arm
- Assemble the components required to complete the assembly (only here will the clamp be fully configured and set up).

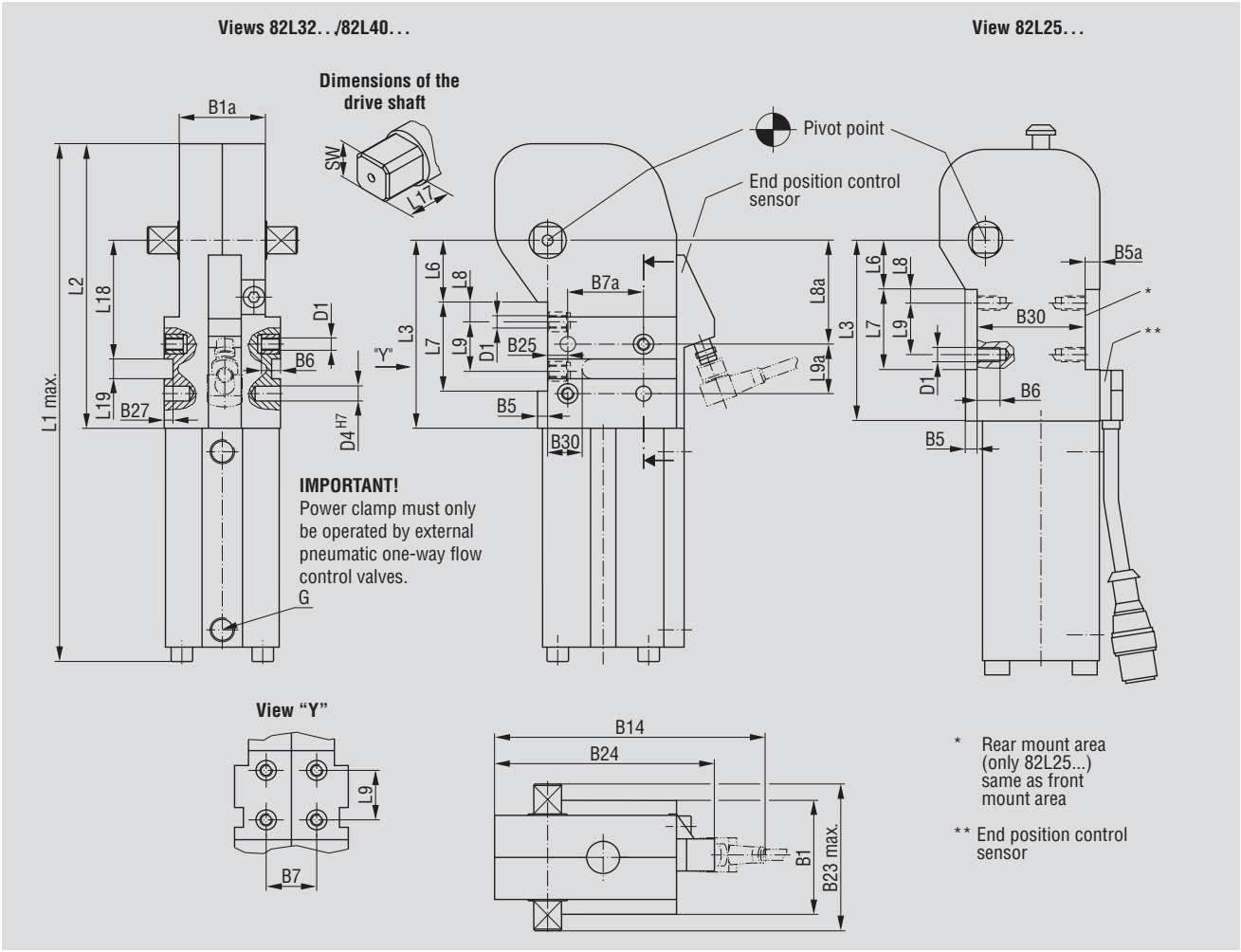
Benefits:

- Faster delivery because standard models are in stock
- Fewer part numbers for spare parts management
- Improved flexibility of clamp configuration

82L... series
Base model without sensing option
and without clamping arm

Component	Description	Order number for series 82L25-1	82L32-1	82L40-1
Base model w/o clamping arm w/o sensing Standard opening Angle 96° 	w/ manual handle	82L25-14300H0B	82L32-16300H0B	82L40-16300H0B
	w/o manual handle	82L25-1430000B	82L32-1630000B	82L40-1630000B
Clamping arm 	On-center arm	8JG-075-3-01	8JG-065-2-01	8JG-067-2-01
		Dimensions see page		
		14.16, 14.17	14.20	14.20
	Offset single arm	–	14.24	14.24
Sensing system 		–	8JG-066-1-01	8JG-068-1-01
	M8 x 1, fixed (C8)	–	8EA-023-2	8EA-023-2
	M12 x 1, fixed (B7)	–	8EA-060-1	8EA-060-1
	M12 x 1, w/lead (B8)	8EA-033-1	–	–
	M12 x 1, w/lead (B8)	–	8EA-031-1	8EA-031-1
Opening angle stroke limiter	90°	8CE-216-1	8CE-096-1	8CE-196-1
	75°	8CE-213-1	8CE-093-1	8CE-193-1
	60°	8CE-211-1	8CE-091-1	8CE-191-1
	45°	8CE-209-1	8CE-089-1	8CE-189-1
	30°	8CE-207-1	8CE-087-1	8CE-187-1

82L25/32/40 Base models without clamping arm



Technical data (see page 14.30 for additional dimensions of models with manual handle)

Base Model no.	Max. holding torque [Ft. lbs.]	Clamping torque at 74 PSI 17 lbs.	= Piston Diameter	Max. operating angle	Weight [lbs.]	Port Connection G	B1	B1a -0,5	B5	B5a
82L25-1430000B 82L25-14300H0B	55	18	25	96°	2.2	G 1/8	35	35	4	5
82L32-1630000B 82L32-16300H0B	133	41	32	96°	3.3	G 1/8	46	34	4	–
82L40-1630000B 82L40-16300H0B	280	89	40	96°	4.84	G 1/8	40	40	6,5	–

Base Model no.	B6	B7 ±0,1	B7a ±0,1	B14	B23 max.	B24	B25 ±0,1	B27	B30	D1	D4 H7	L1 max.	L2 max.	L3	L6 ±0,05	L7 ±0,1	L8 ±0,1	L8a ±0,1	L9 ±0,1	L9a** ±0,1	L17	L18	L19 N9	SW h9
82L25-1430000B 82L25-14300H0B	8	25	–	–	53	63	–	–	37	M5	–	196	95	63	17	28	5	–	18	–	8,5	–	–	9
82L32-1630000B 82L32-16300H0B	7,5	20	30	107	60	87	8	3,5	–	M5	6	209	115	76	25	36	8	42	20	20	16	48	8	11
82L40-1630000B 82L40-16300H0B	8,5	25	35	117	74	97	9	3,5	12	M6	6	260	128	83	30	40	10	50	20	25	12,5	58,5	8	16

** Tolerance for distance to dowel hole ±0,02 All dimensions shown in metric (mm).

Series 82L25-1, 82L32-1, 82L40-1, (without manual handle)

■ **Automation power clamps, lightweight design, enclosed model, without manual handle**

Models: **82L25-1....0..**

Application:
Ideal for clamping, holding, gripping and positioning of sheet metal and other parts, mainly in jigs and part handling systems. Your best choice for carefully inserting the workpiece into the fixture are clamps with a manual handle option.

Key areas of application:
Application areas include automotive manufacturing, sheet metal processing industries and robotic welding.

Features:
- Enclosed body
- Dirt-resistant
- Compact design
- High holding capacities
- Long cycle life
- Low weight (aluminium body)
- Mounting areas at front and back
- Toggle action mechanism
- Manual unlocking in case of pressure drop
- Inductive sensing module (optional)

82L25-103B800
Horizontal clamped position

Model no. w/o sensing	Model no. w/ sensing	Standard opening	Max. holding torque	Clamping torque at 74 PSI	Clamping Arm	Clamping Position	Cylinder Ø	Weight ~
		angle	[Ft. lbs.]	[FT. lbs.]				[lbs.]
82L25-1030000	82L25-103B800	105°	55	18	on-center	horizontal	25mm	2.2
82L25-1430000	82L25-143B800	96°	55	18	on-center	vertical	25mm	2.2

Concept guideline (with reference to axis of clamping arm rotation)

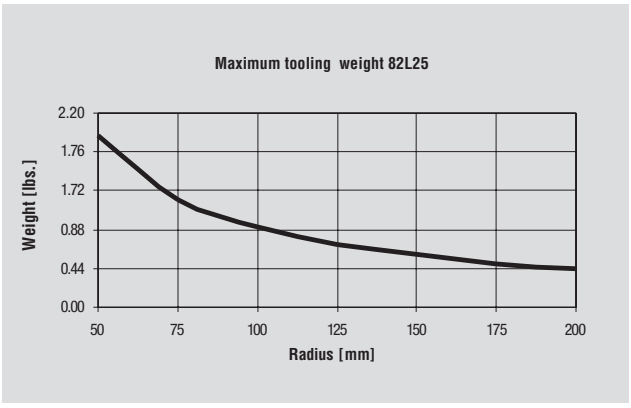
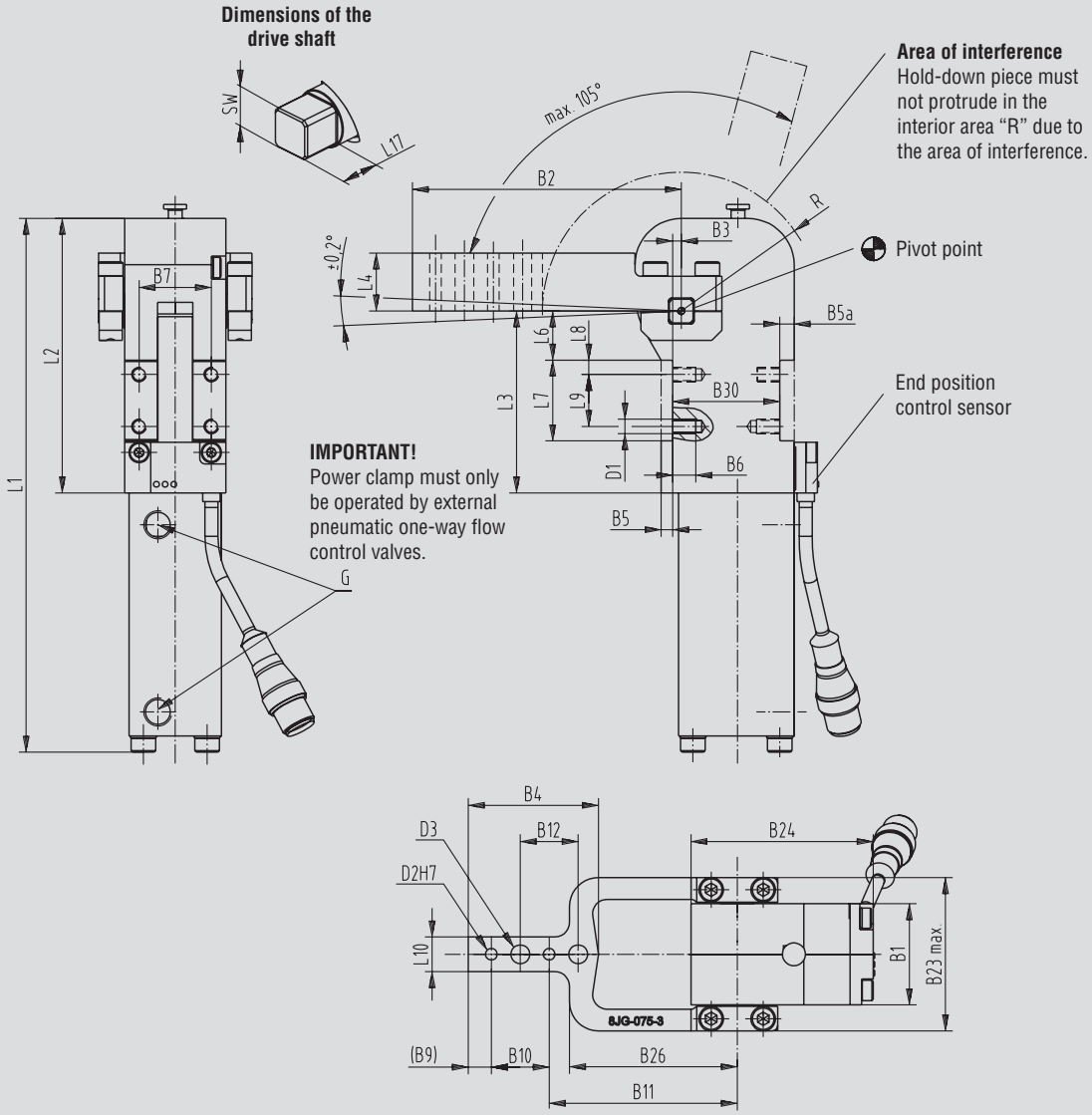


Diagram of Clamping Force for 82L25-1:
See page 14.20

All details apply under an air pressure of 88 PSI and opening and closure times of 1 second each.

82L25-103...



Area of interference
Hold-down piece must not protrude in the interior area "R" due to the area of interference.

Technical data

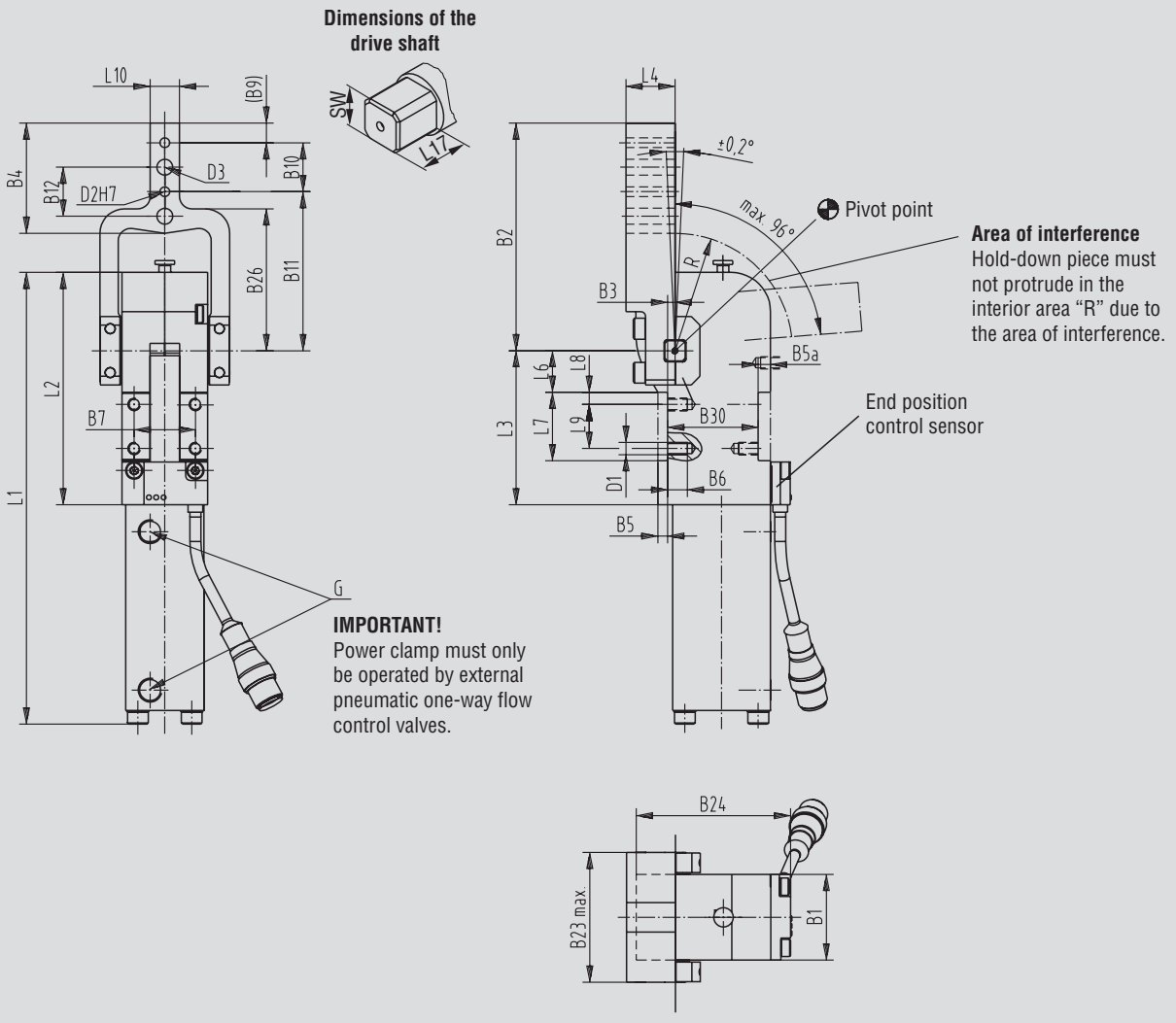
Model no.	Standard opening angle	Clamping position	Port Connection G	B1	B2	B3 ±0,1	B4	B5	B5a	B6	B7 ±0,1	B9	B10 ±0,02	B11 +0,1	B12 ±0,2	
82L25-103_ _00	105°	horizontal	G 1/8	35	93	3	45	4	5	8	25	8	20	65	20	

Model no.	B23 max.	B24	B26	B30 ±0,1	D1	D2 H7 Ø	D3 Ø	L1 max.	L2	L3	L4 ±0,1	L6 ±0,05	L7 +0,1	L8 ±0,1	L9 ±0,1	L10	L17	R	SW h9
82L25-103_ _00	53	63	58	37	M5	4	6,5	185	95	63	20	17	28	5	18	12	8,5	48	9
Medium: air, max. 116 PSI																			

Operation with oil-free air is permissible. All dimensions shown in metric (mm).

Series 82L25-1, 82L32-1, 82L40-1, (without manual handle)

82L25-143...



Technical data

Model no.	Standard opening angle	Clamping position	Port connection G	B1	B2	B3 ±0,1	B4	B5	B5a	B6	B7 ±0,1	B9	B10 ±0,02	B11 +0,1	B12 ±0,2	
82L25-143_ _00	96°	vertical	G 1/8	35	93	3	45	4	5	8	25	8	20	65	20	

Model no.	B23 max.	B24	B26	B30 ±0,1	D1	D2 H7 Ø	D3 Ø	L1 max.	L2	L3	L4 ±0,1	L6 ±0,05	L7 ±0,1	L8 ±0,1	L9 ±0,1	L10	L17	R	SW h9
82L25-103_ _00	53	63	58	37	M5	4	6,5	185	95	63	20	17	28	5	18	12	8,5	48	9

Medium: air, max. 116 PSI

Operation with oil-free air is permissible. All dimensions shown in metric (mm).

Automation power clamps, lightweight design, enclosed model, without manual handle

Models: **82L32-1....0..**
82L40-1....0..

82L40-103B700
Horizontal clamped position

82L32-103B800
Horizontal clamped position

Model no.				Standard opening angle	Max. holding torque [Ft. lbs.]	Clamping torque at 74 PSI [FT. lbs.]	Clamping arm location	Clamping position	Cylinder Ø	Weight ~ [lbs.]
w/o sensing	w/ sensing									
	Connector M8 x 1, fixed	Connector M12 x 1, w/lead	Connector M12 x 1, fixed							
82L32-1030000	82L32-103C800	82L32-103B800	82L32-103B700	105°	133	41	on-center	horizontal	32	3.3
82L32-1430000	82L32-143C800	82L32-143B800	82L32-143B700	96°	133	41	on-center	vertical	32	3.3
82L32-1110000	82L32-111C800	82L32-111B800	82L32-111B700	105°	133	41	left	horizontal	32	3.3
82L32-1120000	82L32-112C800	82L32-112B800	82L32-112B700	105°	133	41	right	horizontal	32	3.3
82L32-1510000	82L32-151C800	82L32-151B800	82L32-151B700	96°	133	41	left	vertical	32	3.3
82L32-1520000	82L32-152C800	82L32-152B800	82L32-152B700	96°	133	41	right	vertical	32	3.3
82L32-1230000	82L32-123C800	82L32-123B800	82L32-123B700	105°	133	41	dual	horizontal	32	3.3
82L32-1630000	82L32-163C800	82L32-163B800	82L32-163B700	96°	133	41	dual	vertical	32	3.3
82L40-1030000	82L40-103C800	82L40-103B800	82L40-103B700	105°	280	89	on-center	horizontal	40	4.4
82L40-1430000	82L40-143C800	82L40-143B800	82L40-143B700	96°	280	89	on-center	vertical	40	4.4
82L40-1110000	82L40-111C800	82L40-111B800	82L40-111B700	105°	280	89	left	horizontal	40	4.4
82L40-1120000	82L40-112C800	82L40-112B800	82L40-112B700	105°	280	89	right	horizontal	40	4.4
82L40-1510000	82L40-151C800	82L40-151B800	82L40-151B700	96°	280	89	left	vertical	40	4.4
82L40-1520000	82L40-152C800	82L40-152B800	82L40-152B700	96°	280	89	right	vertical	40	4.4
82L40-1230000	82L40-123C800	82L40-123B800	82L40-123B700	105°	280	89	dual	horizontal	40	4.4
82L40-1630000	82L40-163C800	82L40-163B800	82L40-163B700	96°	280	89	dual	vertical	40	4.4

Sensing options for 82L32-1... and 82L40-1...

B8 connecting plug
M12x1 with lead

B7 connecting plug
M12x1

C8 connecting plug
M8x1

Series 82L25-1, 82L32-1, 82L40-1, (without manual handle)

Dimensions

Model no.	Standard opening angle	Clamping arm position	Clamping position	Piston Ø	Port connection	B1	B1a -0,5	B2	B4	B5	B6	B7 ±0,1	B7a[1] ±0,1
82L32-103_ _00	105°	on-center	horizontal	32	G 1/8	46	34	105	45	4	7,5	20	30
82L40-103_ _00	105°	on-center	horizontal	40	G 1/4	40	40	110	45	6,5	8,5	25	35

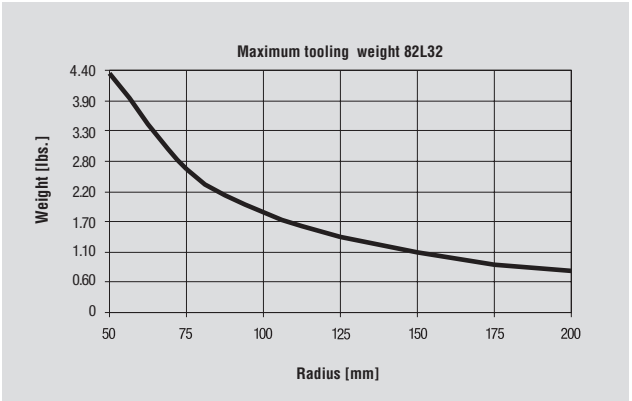
Model no.	B9	B10 ±0,02	B11 +0,1	B12 ±0,02	B14	B23 max.	B24	B25 +0,1	B26	B27	B30	D1	D2 H7 Ø	D3	D4 H7 Ø	L1 max.	L2 max.	L3	L4 ±0,1	L6 ±0,05
82L32-103_ _00	6	20	79	20	104	54	87	8	68,5	3,5	–	M5	6	7	6	209	115	76	20	25
82L40-103_ _00	6	20	84	20	107	65	97	9	75	3,5	12	M6	6	7	6	260	128	83	22	30

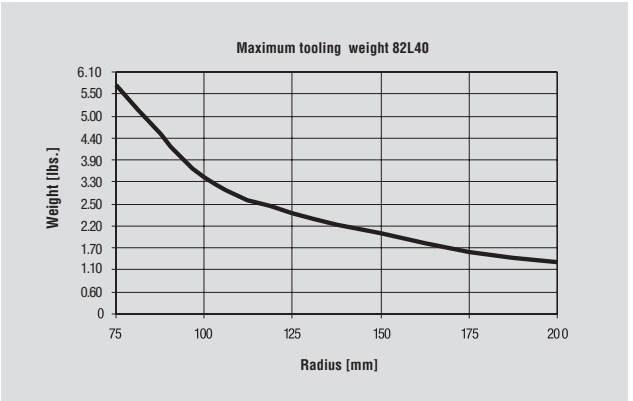
Model no.	L7 +0,1	L8 ±0,1	L8a ±0,1	L9 ±0,1	L9a[1] ±0,1	L10 -0,1	L17	L18	L19 N9	R	SW h9
82L32-103_ _00	36	8	42	20	20	12	9,5	48	8	60	11
82L40-103_ _00	40	10	50	20	25	15	11	58,5	8	65	16

Medium: air, max.116 PSI, operation with oil-free air is permissible. All dimensions shown in metric (mm).

[1] Tolerance for distance to dowel hole ±0,02

Concept guideline (with reference to axis of clamping arm rotation)





All details apply under an air pressure of 88 PSI and opening and closure times of 1 second each.

82L32/40-103...

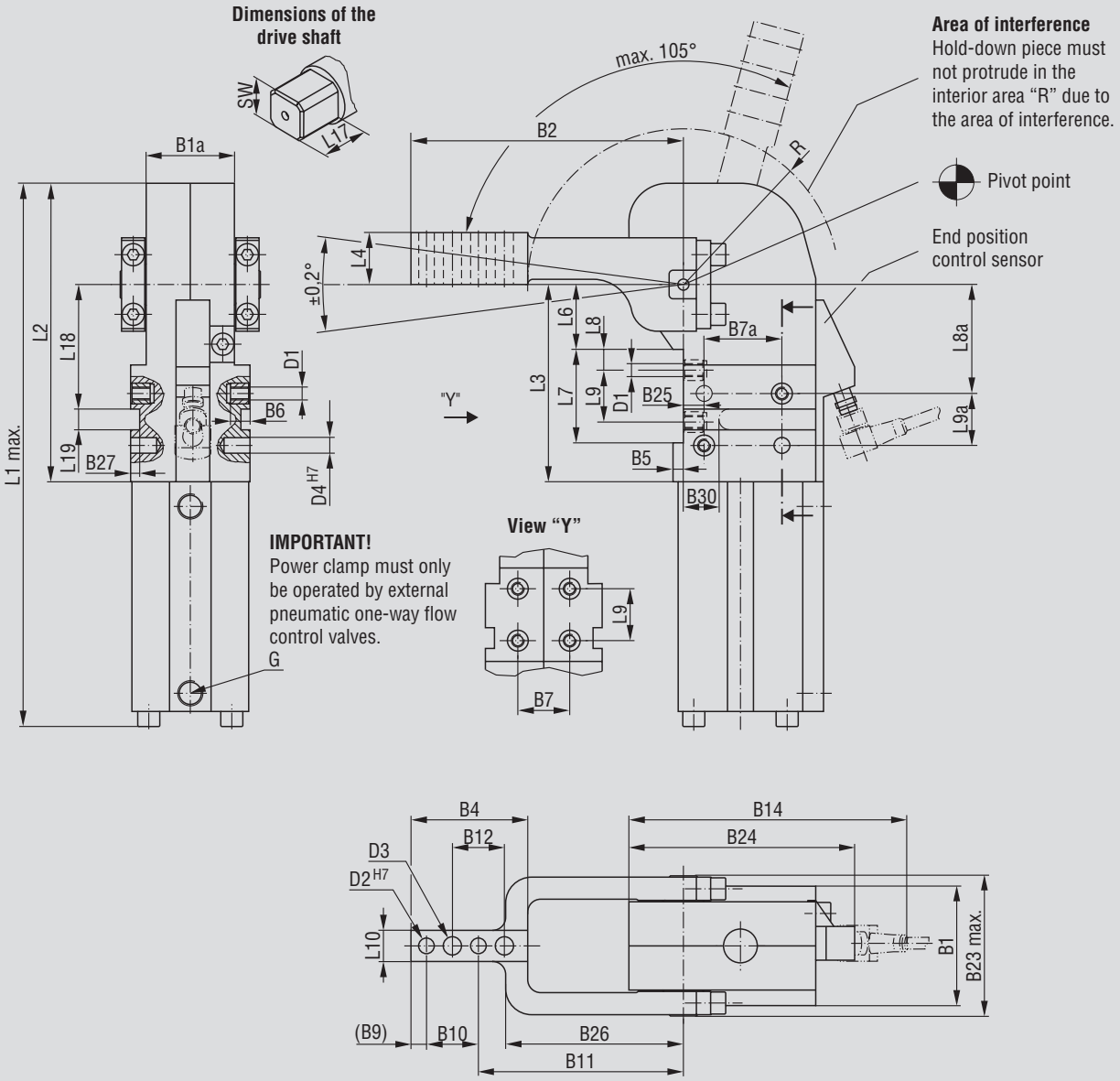
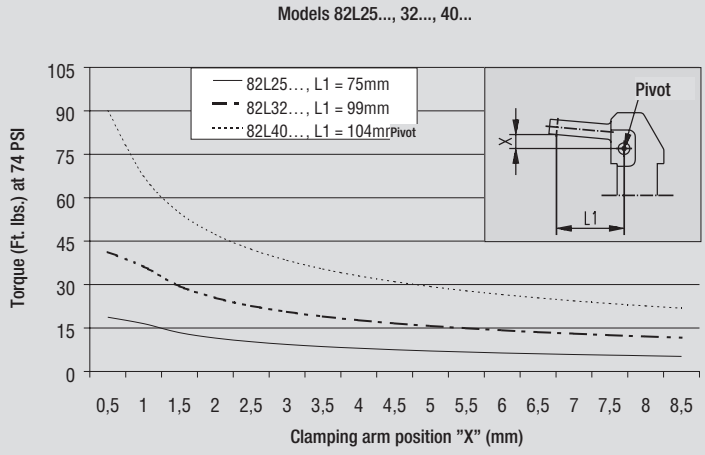


Diagram of Clamping Force (at 74 PSI)



Series 82L25-1, 82L32-1, 82L40-1, (without manual handle)

Technical data

Model no.	Standard opening angle	Clamping arm location	Clamping position	Piston Ø	Port connection	B1	B1a -0,5	B2	B4	B5	B6	B7 ±0,1	B7a[1] ±0,1
82L32-143_ _00	96°	on-center	vertical	32	G 1/8	46	34	105	45	4	7,5	20	30
82L40-143_ _00	96°	on-center	vertical	40	G 1/4	40	40	110	45	6,5	8,5	25	35

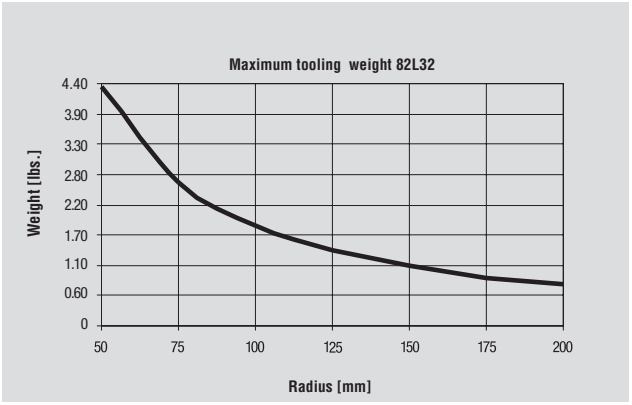
Model no.	B9	B10 ±0,02	B11 +0,1	B12 ±0,02	B14	B23 max.	B24	B25 +0,1	B26	B27	B30	D1	D2 H7 Ø	D3	D4 H7 Ø	L1 max.	L2 max.	L3	L4 ±0,1	L6 ±0,05
82L32-143_ _00	6	20	79	20	107	54	87	8	68,5	3,5	–	M5	6	7	6	209	115	76	20	25
82L40-143_ _00	6	20	84	20	117	65	97	9	75	3,5	12	M6	6	7	6	260	128	83	22	30

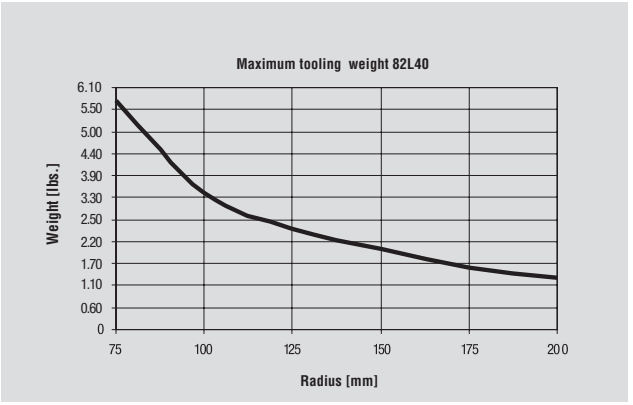
Model no.	L7 +0,1	L8 ±0,1	L8a ±0,1	L9 ±0,1	L9a[1] ±0,1	L10	L17	L18	L19 N9	R	SW h9
82L32-143_ _00	36	8	42	20	20	12	9,5	48	8	60	11
82L40-143_ _00	40	10	50	20	25	15	11	58,5	8	65	16

Medium: air, max. 116 PSI, operation with oil-free air is permissible. All dimensions shown in metric (mm).

[1] Tolerance for distance to dowel hole ±0,02

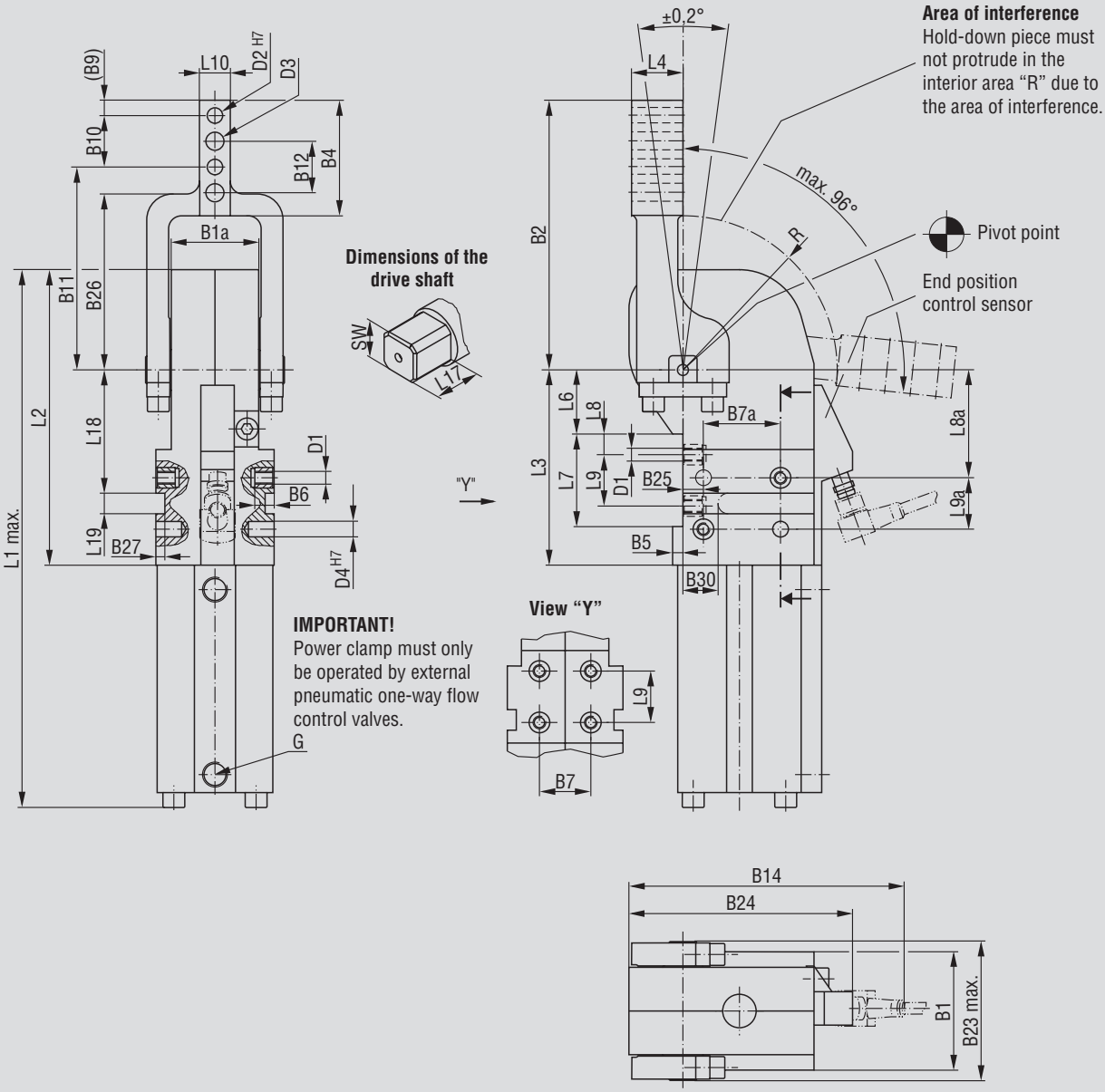
Concept guideline (with reference to axis of clamping arm rotation)





All details apply under an air pressure of 88 PSI and opening and closure times of 1 second each.

82L32/40-143...


(B9)
L10
D2 H7
D3
B10
B12
B4
B1a
B11
B26
L2
L18
D1
B6
L1 max.
L19
B27
D4 H7
Dimensions of the drive shaft
SW
L17
"Y"
IMPORTANT!
Power clamp must only be operated by external pneumatic one-way flow control valves.
G
±0,2°
L4
B2
Area of interference
Hold-down piece must not protrude in the interior area "R" due to the area of interference.
max. 96°
R
Pivot point
End position control sensor
L6
L8
B7a
L8a
L3
L7
L9
D1
B25
L9a
B5
B30
View "Y"
L9
B7
B14
B24
B1
B23 max.

Series 82L25-1, 82L32-1, 82L40-1, (without manual handle)

Technical data

Model no.	Standard opening angle	Clamping arm location	Clamping position	Piston Ø	Port connection	B1	B1a -0,5	B2	B4	B5	B6	B7 ±0,1	B7a[1] ±0,1
82L32-111__00	105°	left	horizontal	32	G 1/8	46	34	105	45	4	7,5	20	30
82L32-112__00	105°	right	horizontal	32	G 1/8	46	34	105	45	4	7,5	20	30
82L32-123__00	105°	both	horizontal	32	G 1/8	46	34	105	45	4	7,5	20	30
82L40-111__00	105°	left	horizontal	40	G 1/4	40	40	92	45	6,5	8,5	25	35
82L40-112__00	105°	right	horizontal	40	G 1/4	40	40	92	45	6,5	8,5	25	35
82L40-123__00	105°	both	horizontal	40	G 1/4	40	40	92	45	6,5	8,5	25	35

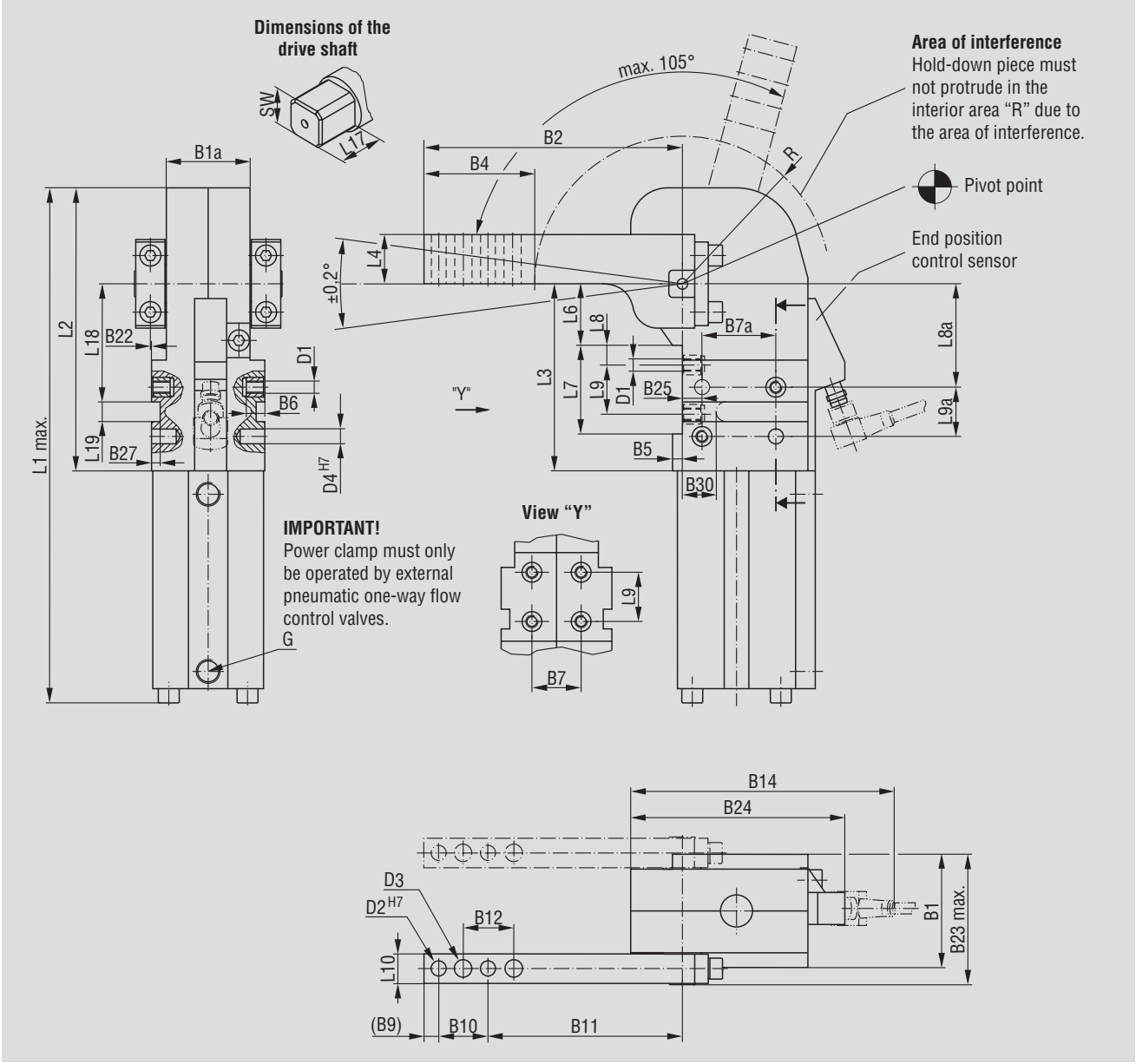
Model no.	B9	B10 ±0,02	B11 +0,1	B12 ±0,02	B14	B22	B23 max.	B24	B25 +0,1	B27	B30	D1	D2 H7 Ø	D3	D4 H7 Ø	L1 max.	L2 max.	L3	L4 ±0,1	L6 ±0,05
82L32-111__00	6	20	79	20	107	0,5	53	87	8	3,5	–	M5	6	7	6	209	115	76	20	25
82L32-112__00	6	20	79	20	107	0,5	53	87	8	3,5	–	M5	6	7	6	209	115	76	20	25
82L32-123__00	6	20	79	20	107	0,5	53	87	8	3,5	–	M5	6	7	6	209	115	76	20	25
82L40-111__00	6	20	84	20	117	0,5	57	97	9	3,5	12	M6	6	7	6	260	128	83	22	30
82L40-112__00	6	20	84	20	117	0,5	57	97	9	3,5	12	M6	6	7	6	260	128	83	22	30
82L40-123__00	6	20	84	20	117	0,5	57	97	9	3,5	12	M6	6	7	6	260	128	83	22	30

Model no.	L7 +0,1	L8 ±0,1	L8a ±0,1	L9 ±0,1	L9a[1] ±0,1	L10 -0,1	L17	L18	L19 N9	R	SW h9
82L32-111__00	36	8	42	20	20	12	12,5	48	8	60	11
82L32-112__00	36	8	42	20	20	12	12,5	48	8	60	11
82L32-123__00	36	8	42	20	20	12	12,5	48	8	60	11
82L40-111__00	40	10	50	20	25	15	16	58,5	8	65	16
82L40-112__00	40	10	50	20	25	15	16	58,5	8	65	16
82L40-123__00	40	10	50	20	25	15	16	58,5	8	65	16

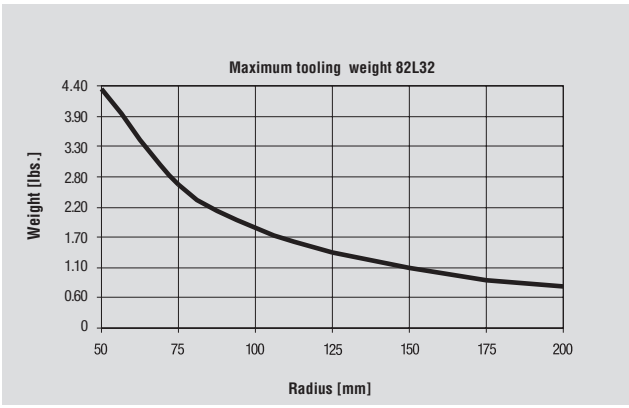
Medium: air, max. 116 PSI, operation with oil-free air is permissible. All dimensions shown in metric (mm).

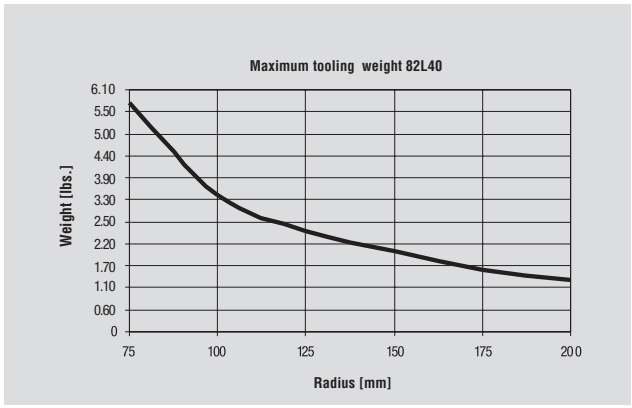
[1] Tolerance for distance to dowel hole ±0,02

82L32/40-111../-112../-123..



Concept guideline (with reference to axis of clamping arm rotation)





All details apply under an air pressure of 88 PSI and opening and closure times of 1 second each.

Series 82L25-1, 82L32-1, 82L40-1, (without manual handle)

Technical data

Model no.	Standard opening angle	Clamping arm location	Clamping position	Piston Ø	Port connection	B1	B1a -0,5	B2	B4	B5	B6	B7 ±0,1	B7a[1] ±0,1
82L32-151__00	96°	left	vertical	32	G 1/8	46	34	105	45	4	7,5	20	30
82L32-152__00	96°	right	vertical	32	G 1/8	46	34	105	45	4	7,5	20	30
82L32-163__00	96°	both	vertical	32	G 1/8	46	34	105	45	4	7,5	20	30
82L40-151__00	96°	left	vertical	40	G 1/4	40	40	92	45	6,5	8,5	25	35
82L40-152__00	96°	right	vertical	40	G 1/4	40	40	92	45	6,5	8,5	25	35
82L40-163__00	96°	both	vertical	40	G 1/4	40	40	92	45	6,5	8,5	25	35

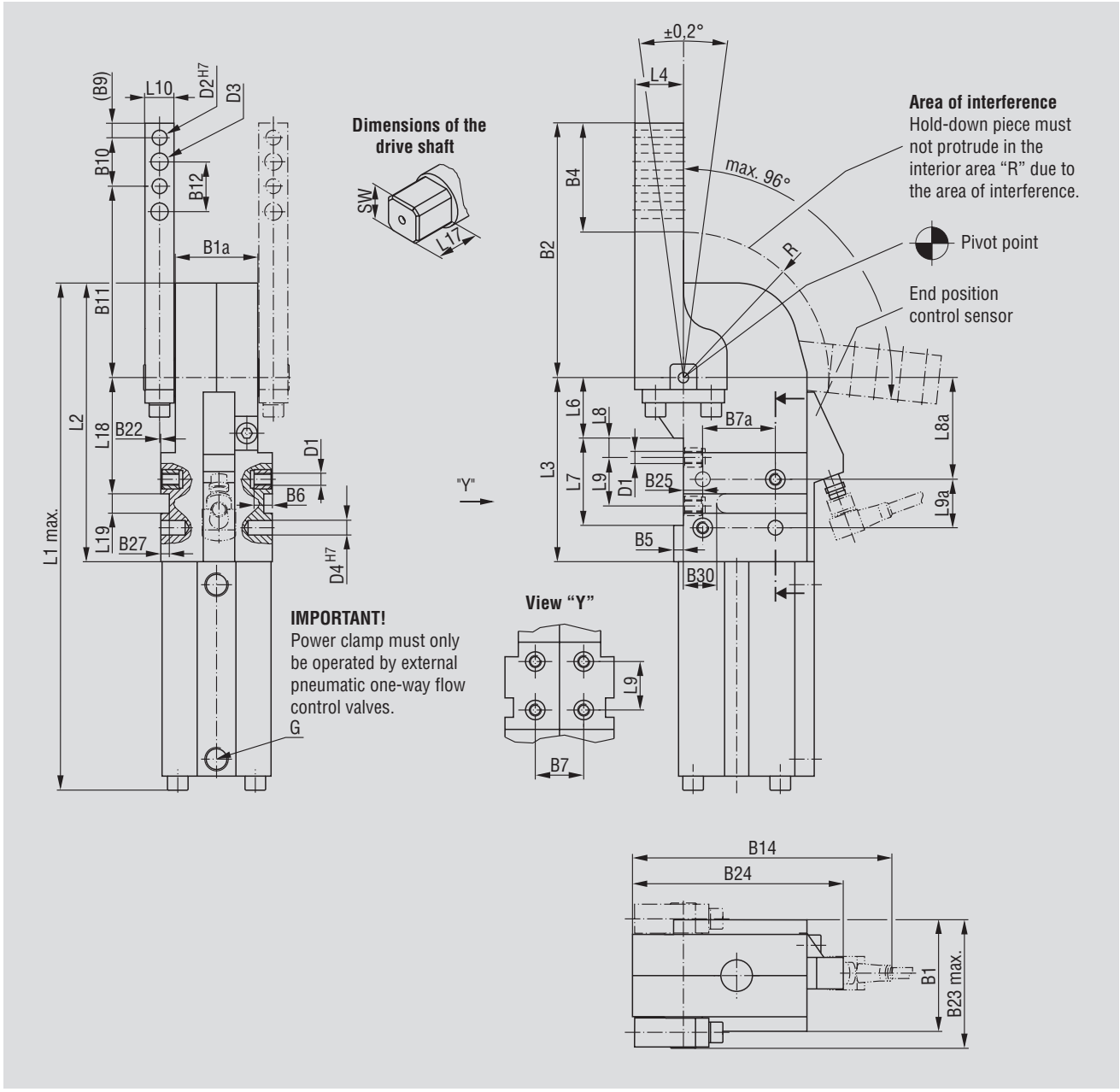
Model no.	B9	B10 ±0,02	B11 +0,1	B12 ±0,02	B14	B22	B23 max.	B24	B25 +0,1	B27	B30	D1	D2 H7 Ø	D3	D4 H7 Ø	L1 max.	L2 max.	L3	L4 ±0,1	L6 ±0,05
82L32-151__00	6	20	79	20	107	0,5	53	87	8	3,5	–	M5	6	7	6	209	115	76	20	25
82L32-152__00	6	20	79	20	107	0,5	53	87	8	3,5	–	M5	6	7	6	209	115	76	20	25
82L32-163__00	6	20	79	20	107	0,5	53	87	8	3,5	–	M5	6	7	6	209	115	76	20	25
82L40-151__00	6	20	84	20	117	8,5	57	97	9	3,5	12	M6	6	7	6	260	128	83	22	30
82L40-152__00	6	20	84	20	117	8,5	57	97	9	3,5	12	M6	6	7	6	260	128	83	22	30
82L40-163__00	6	20	84	20	117	8,5	57	97	9	3,5	12	M6	6	7	6	260	128	83	22	30

Model no.	L7 +0,1	L8 ±0,1	L8a ±0,1	L9 ±0,1	L9a[1] ±0,1	L10 -0,1	L17	L18	L19 N9	R	SW h9
82L32-151__00	36	8	42	20	20	12	12,5	48	8	60	11
82L32-152__00	36	8	42	20	20	12	12,5	48	8	60	11
82L32-163__00	36	8	42	20	20	12	12,5	48	8	60	11
82L40-151__00	40	10	50	20	25	15	16	58,5	8	65	16
82L40-152__00	40	10	50	20	25	15	16	58,5	8	65	16
82L40-163__00	40	10	50	20	25	15	16	58,5	8	65	16

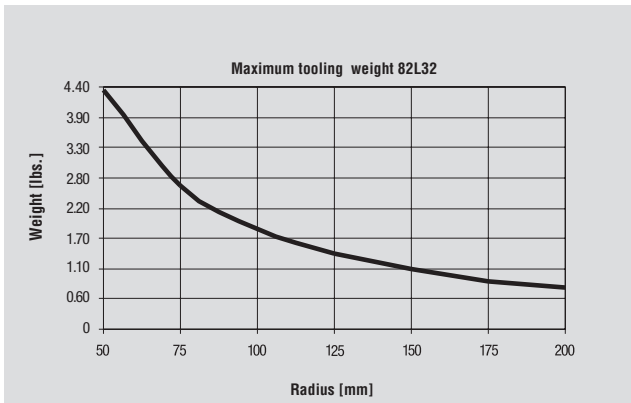
Medium: air, max. 116 PSI, operation with oil-free air is permissible. All dimensions shown in metric (mm).

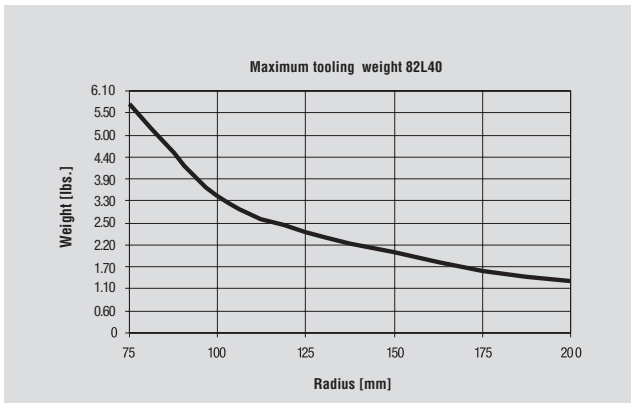
[1] Tolerance for distance to dowel hole ±0,02

82L32/40-151../-152../-163..



Concept guideline (with reference to axis of clamping arm rotation)





All details apply under an air pressure of 88 PSI and opening and closure times of 1 second each.

Series 82L25-1, 82L32-1, 82L40-1, (with manual handle)

Automation power clamps, lightweight design, enclosed model, with manual handle

Models: **82L25-1....H..**
82L32-1....H..
82L40-1....H..

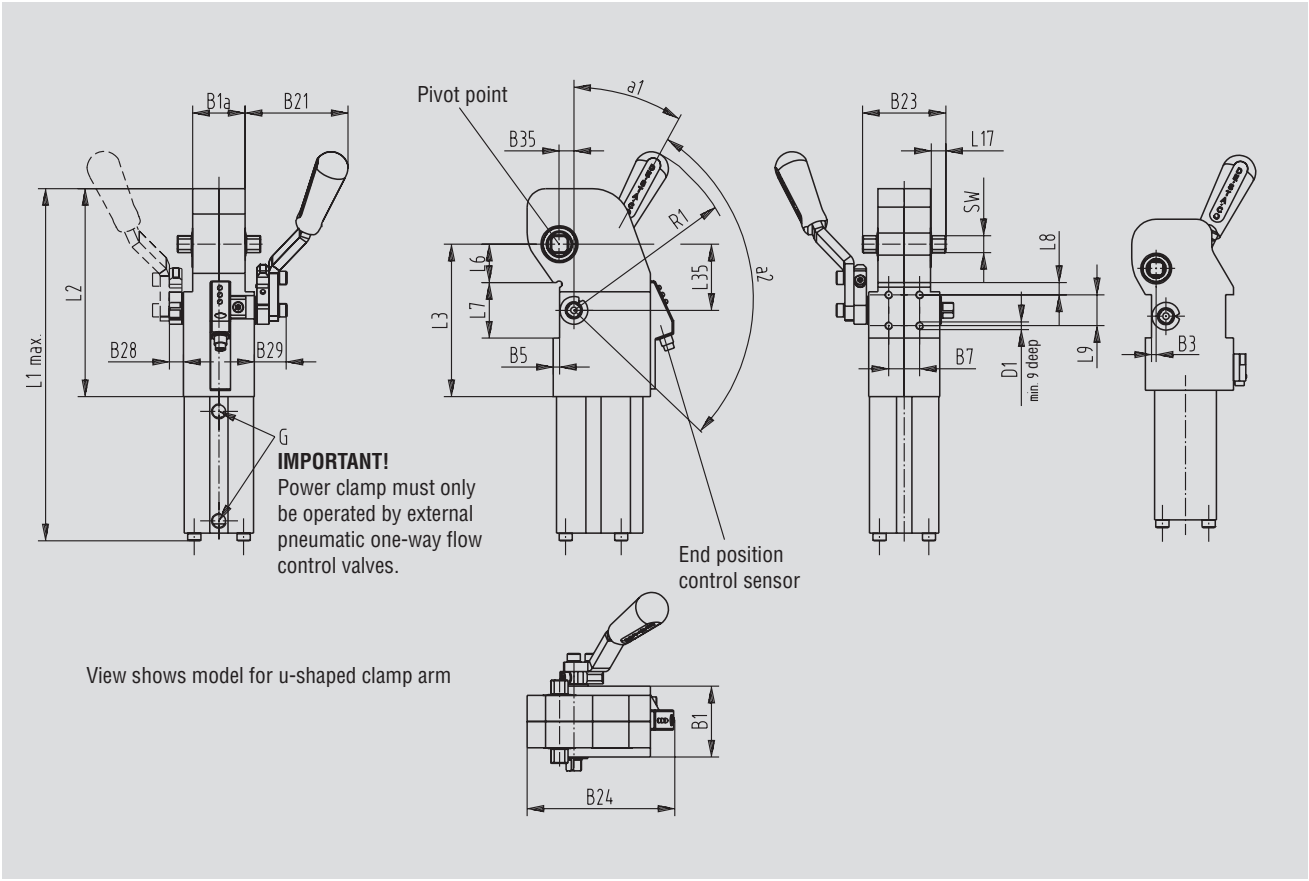
82L25-10300H0

82L32-103C8H0

82L40-10300H0

Model no.				Standard opening angle	Max. holding torque [Ft. lbs.]	Clamping torque at 74 PSI [Ft. lbs.]	Clamping arm location	Clamping position	Cylinder Ø	Weight ~ [lbs.]
w/o sensing	w/ sensing									
	Connector M8 x 1, fixed	Connector M12 x 1, w/lead	Connector M12 x 1, fixed							
82L25-10300H0	–	82L25-103B8H0	–	105°	55	18	on-center	horizontal	25	2.6
82L25-14300H0	–	82L25-143B8H0	–	96°	55	18	on-center	vertical	25	2.6
82L32-10300H0	82L32-103C8H0	82L32-103B8H0	82L32-103B7H0	105°	133	41	on-center	horizontal	32	3.75
82L32-14300H0	82L32-143C8H0	82L32-143B8H0	82L32-143B7H0	96°	133	41	on-center	vertical	32	3.75
82L32-11100H0	82L32-111C8H0	82L32-111B8H0	82L32-111B7H0	105°	133	41	left	horizontal	32	3.75
82L32-11200H0	82L32-112C8H0	82L32-112B8H0	82L32-112B7H0	105°	133	41	right	horizontal	32	3.75
82L32-15100H0	82L32-151C8H0	82L32-151B8H0	82L32-151B7H0	96°	133	41	left	vertical	32	3.75
82L32-15200H0	82L32-152C8H0	82L32-152B8H0	82L32-152B7H0	96°	133	41	right	vertical	32	3.75
82L32-12300H0	82L32-123C8H0	82L32-123B8H0	82L32-123B7H0	105°	133	41	both	horizontal	32	3.75
82L32-16300H0	82L32-163C8H0	82L32-163B8H0	82L32-163B7H0	96°	133	41	both	vertical	32	3.75
82L40-10300H0	82L40-103C8H0	82L40-103B8H0	82L40-103B7H0	105°	280	89	on-center	horizontal	40	4.84
82L40-14300H0	82L40-143C8H0	82L40-143B8H0	82L40-143B7H0	96°	280	89	on-center	vertical	40	4.84
82L40-11100H0	82L40-111C8H0	82L40-111B8H0	82L40-111B7H0	105°	280	89	left	horizontal	40	4.84
82L40-11200H0	82L40-112C8H0	82L40-112B8H0	82L40-112B7H0	105°	280	89	right	horizontal	40	4.84
82L40-15100H0	82L40-151C8H0	82L40-151B8H0	82L40-151B7H0	96°	280	89	left	vertical	40	4.84
82L40-15200H0	82L40-152C8H0	82L40-152B8H0	82L40-152B7H0	96°	280	89	right	vertical	40	4.84
82L40-12300H0	82L40-123C8H0	82L40-123B8H0	82L40-123B7H0	105°	280	89	both	horizontal	40	4.84
82L40-16300H0	82L40-163C8H0	82L40-163B8H0	82L40-163B7H0	96°	280	89	both	vertical	40	4.84

82L25/32/40 with manual handle, additional dimensions



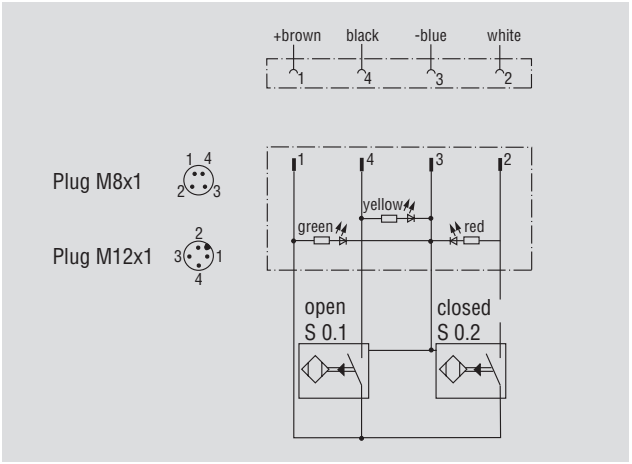
Technical data (additional dimensions for models with hand lever)

Model no.	Cylinder Ø	Port connector G	B1	B1a -0,5	B3 ±0,1	B5	B7 ±0,1	B21 ~	B23	B24 ~	B28	B29	B35
82L25-1_ _ _H_	25	G 1/8	35	35	3	4	25	63	53	75	9	21	6,3
82L32-1_ _ _H_	32	G 1/8	46	34	–	4	20	69	54	96	9	21	9,3
82L40-1_ _ _H_	40	G 1/4	40	40	–	6,5	25	63	64	113	9	21	10,3

Model no.	D1	L1 max.	L2	L3	L6 ±0,05	L7 +0,1	L8 ±0,1	L9 ±0,1	L17	L35	R1	SW h9	a1	a2
82L25-1_ _ _H_	M5	200	11	79	17	28	5	18	8,5	31	122	9	32°	113°
82L32-1_ _ _H_	M5	229	135	99	25	36	8	20	9,5	43	122	11	33.5°	108.5°
82L40-1_ _ _H_	M6	274	142	97	30	40	10	20	11	50	122	16	27°	87°

All dimensions shown in metric (mm).

Series 82L25-1, 82L32-1, 82L40-1, (with and without manual handle)



Wiring diagram for electrical sensing system

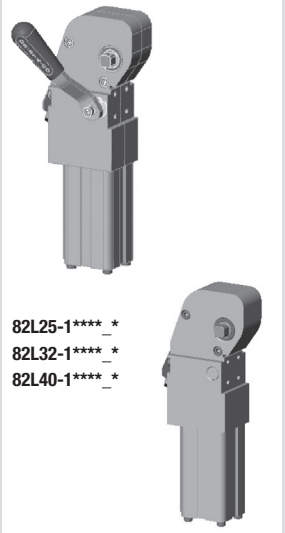
Sensing system immune to interference from DC arc welding and AC arc welding.

Inductive version: **C8, B7, B8**

Pin assignment

Model No. Code for 82L..-1.....

Example Model No.: 82L32 – 1 03 B7 H 0 B



Base Models

** 105° standard opening angle
* 96° standard opening angle

03 = U-shaped clamp arm
** central 90°

43 = U-shaped clamp arm
* central 180°

11 = lateral clamp arm
** 90°, mounted on the left

12 = lateral clamp arm
** 90°, mounted on the right

51 = lateral clamp arm
* 180°, mounted on the left

52 = lateral clamp arm
* 180°, mounted on the right

23 = lateral clamp arm
** 90°, mounted on both sides

63 = lateral clamp arm
* 180°, mounted on both sides

Clamp Arms

00 = without sensing cover plate 8AB-041-1

C8 = with sensing 8EA-023-1 P&F M8x1 for 82L32+82L40

B7 = with sensing 8EA-060-1 P&F M12x1 for 82L32+82L40

B8 = with sensing 8EA-031-1 P&F M12x1 for 82L32+82L40

B8 = with sensing 8EA-033-1 Turck for 82L25

Sensing System

0 = without hand lever

H = with hand lever

Opening angle limitation

0 = Standard-opening angle

3 = 90° opening angle

4 = 75° opening angle

5 = 60° opening angle

6 = 45° opening angle

7 = 30° opening angle

Clamps wih reduced opening angle upon request

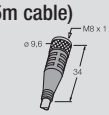
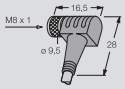
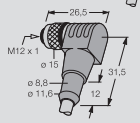
= base model Power clamp without clamping arm to be marked with an additional „B“

Attention: Combination of numbers only possible according to lists in this catalog.

Major spare parts for all 82L.. models

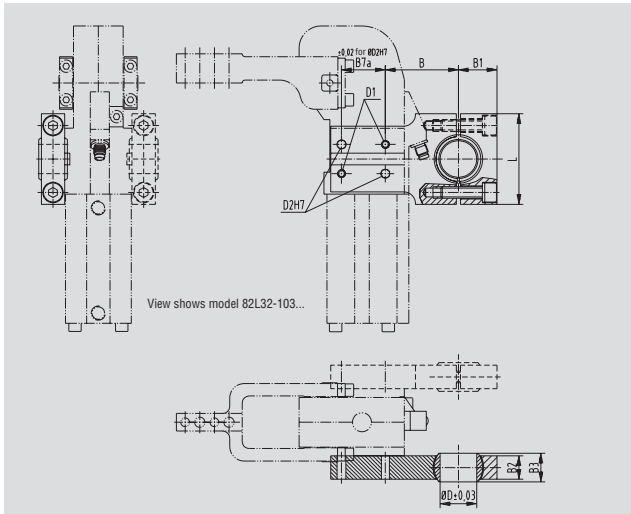
	Order no. for base model		Order no. for base model		Order no. for base mocel	
Specification	82L25-1....0..	82L25-1....H..	82L32-1....0..	82L32-1....H..	82L40-1....0..	82L40-1....H..
Cylinder	8PW-030-1	8PW-042-1	8PW-015-1	8PW-043-1	8PW-016-1	8PW-044-1
Seal kit	8PW-030-1-00	8PW-030-1-00	8PW-015-1-00	8PW-015-1-00	8PW-016-1-00	8PW-016-1-00
End position sensors						
C8 connecting plug M8 x 1, fixed	–	–	8EA-023-2	8EA-023-2	8EA-023-2	8EA-023-2
B8 connecting plug M12 x 1, with lead	8EA-033-1	8EA-033-1	8EA-031-1	8EA-031-1	8EA-031-1	8EA-031-1
B7 connecting plug M12 x 1, fixed	–	–	8EA-060-1	8EA-060-1	8EA-060-1	8EA-060-1
Manual handle	–	8KB-031-1	–	8KB-031-1	–	8KB-032-1

Accessories, with or without manual handle

Specification	Order no. for base model 82L25-1....0.. /82L25-1....H..	Order no. for base model 82L32-1....0.. /82L32-1....H..	Order no. for base model 82L40-1....0.. /82L40-1....H..
Opening angle limitation spacer			
96º	8CE-218-1	8CE-098-1	8CE-198-1
90º	8CE-216-1	8CE-096-1	8CE-196-1
75º	8CE-213-1	8CE-093-1	8CE-193-1
60º	8CE-211-1	8CE-091-1	8CE-191-1
45º	8CE-209-1	8CE-089-1	8CE-189-1
30º	8CE-207-1	8CE-087-1	8CE-187-1
Clamping arm			
On-center U-shaped	8JG-075-3-01	8JG-065-2-01	8JG-067-2-01
Single arm	–	8JG-066-1-01	8JG-068-1-01
Connector cable (1 connector socket & 5m cable)			
Connector socket M8 x 1 straight, 4-pin 	–	8EL-009-1	8EL-009-1
Connector socket M8 x 1 angular, 4-pin 	–	8EL-007-1	8EL-007-1
Connector socket M12 x 1 straight, 5-pin 	8EL-002-1	8EL-002-1	8EL-002-1
Connector socket M12 x 1 angular, 4-pin 	8EL-003-1	8EL-003-1	8EL-003-1
Adaptor M8 x 1-to-M12 x 1, 4-pin, straight	–	8EL-008-1	8EL-008-1
Adaptor for Ø25 tube systems (clamps without hand lever only)	82ZB-012-1	82ZB-005-1	82ZB-006-1

Adapter for Ø25 tube system for

82L32-1...0.., 82L40-1...0.., 82ZB-005-1, 82ZB-006-1



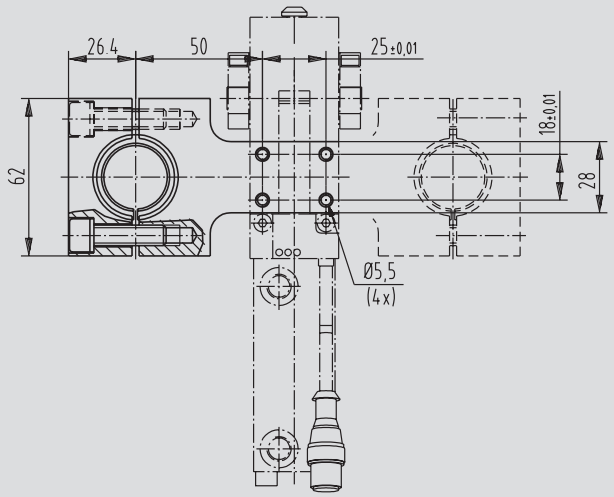
Model no.	B	B1	B2	B3	B7a ±0,1	D ±0,03 Ø	D1	D1 H7	L
82ZB-005-1	50	26,4	16	19,6	30	25	5,5	6	62
82ZB-006-1	55	26,4	16	19,6	35	25	6,6	6	62

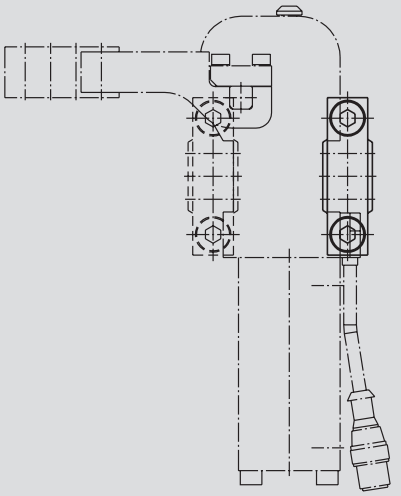
All dimensions shown in metric (mm).

Series 82L25-1, 82L32-1, 82L40-1, (with and without manual handle)

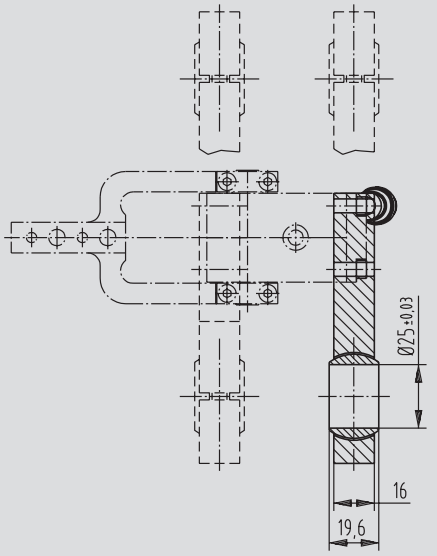
Adapter for Ø 25 tube system for 82L25-1...0..

82ZB-012-1





View shows model 82L25-103...



Notes

StrongHold *SELECT* Series

MRO Interchange

Reduced Maintenance Costs

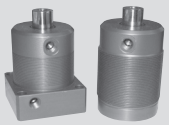
StrongHold

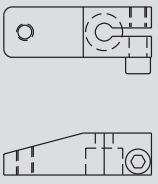
StrongHold Standard Series

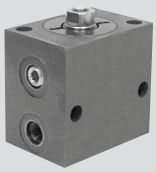
Proven Application Performance

Robust Products

Product group – stronghold clamping system

	Model no.	Page
	035-125-145 035-125-160 035-125-190 035-125-245 035-125-260 035-125-290 035-125-300 035-225-145 035-225-160 035-225-190 035-225-245 035-225-260 035-225-290 035-225-300	15.22
	035-132-145 035-132-160 035-132-190 035-132-245 035-132-260 035-132-290 035-132-300 035-232-145 035-232-160 035-232-190 035-232-245 035-232-260 035-232-290 035-232-300	15.23
	035-140-145 035-140-160 035-140-190 035-140-245 035-140-260 035-140-290 035-140-300 035-240-145 035-240-160 035-240-190 035-240-245 035-240-260 035-240-290 035-240-300	15.24

	Model no.	Page
	035-150-145 035-150-160 035-150-190 035-150-245 035-150-260 035-150-290 035-150-300 035-250-145 035-250-160 035-250-190 035-250-245 035-250-260 035-250-290 035-250-300	15.25
	035-163-145 035-163-160 035-163-190 035-163-245 035-163-260 035-163-290 035-163-300 035-263-145 035-263-160 035-263-190 035-263-245 035-263-260 035-263-290 035-263-300	15.26
	036-551-01 036-630-01 036-787-01 036-551-02 036-630-02 036-787-02 036-551-03 036-630-03 036-787-03 036-551-04 036-630-04 036-787-04	15.27

	Model no.	Page
	202208 215208 225208 507208 240208 527208 235208 202203 205203 461203 441203 207203 491203 210203 240203 527203 JAMNUT25 JAMNUT32 JAMNUT40 JAMNUT50 JAMNUT63	15.28
	010-011-113 010-012-221 010-012-224 010-013-332 010-013-334 010-021-111 010-021-114 010-022-222 010-022-225 010-023-333 010-023-335	15.29
	090-011-113 090-012-221 090-012-224 090-013-332 090-013-334 090-021-111 090-021-114 090-022-222 090-022-225 090-023-333 090-023-335	15.30
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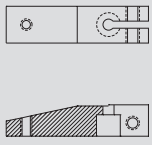
	030-1-S-4000 030-1-D-4000	15.34
	031-S-475 031-L-475 031-S-1100 031-L-1100 031-S-2400 031-L-2400	15.35
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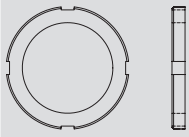	FM475 FM1100 FM2400 FM4000 JN475 JN1100 JN2400 JN5000 JN4000	15.37

Product group – stronghold clamping system

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	110013DE 110014DE 110015DE 110016DE 110017DE 110018DE	15.42
	110007DE 110008DE 110009DE 110010DE 110011DE 110012DE	15.43
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	100951DE 100952DE 100953DE 100957DE 100958DE 100959DE	15.45

	Model no.	Page
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	100859DE 100860DE 100868DE 100960DE 100961DE 100962DE	15.48
	100985DE 100896DE 100897DE 100963DE 100964DE 100965DE	15.49
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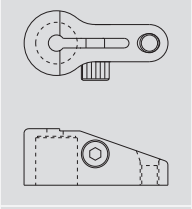
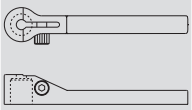
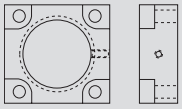
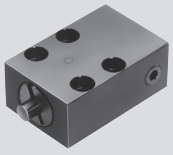
	500167DE 500168DE 500154DE 500155DE 500150DE 500151DE 500152DE 500153DE 350912DE 350195DE 350913DE 350916DE 350914DE 350917DE	15.52
		
	100979DE 100127DE 100980DE 100916DE 100910DE 100912DE	15.54
	70250 70260	15.55
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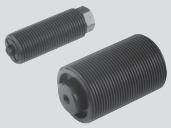	010-210-400 010-210-501 010-210-702 010-211-002 010-211-004 010-211-502 010-211-504 010-212-004	15.58
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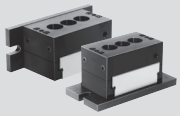	080-650-000	15.65
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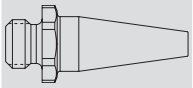
	100876DE 100877DE	15.72

Product group – stronghold clamping system

	Model no.	Page
	500180DE 500181DE	15.73
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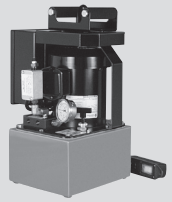	100888DE 100888-230DE	15.81
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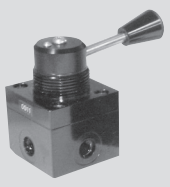	100974DE	15.90
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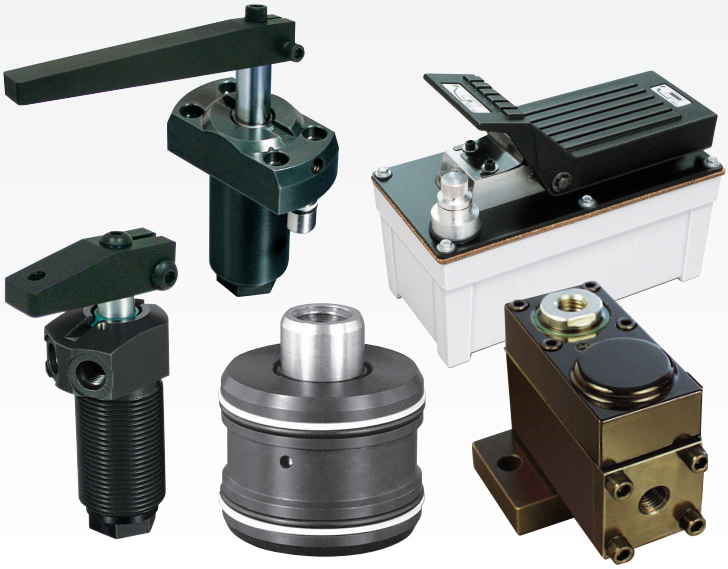

	Model no.	Page
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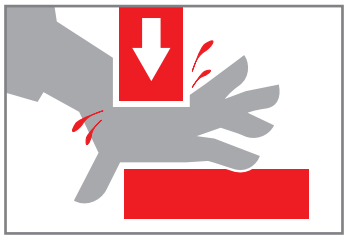
	100915DE	15.94
	9612DE 9573DE 9574DE 9611DE	15.95
	500177DE 100138DE 100222DE 100982DE 100983DE	15.96
	15068DE 253605DE	15.97

Building safe workholding systems

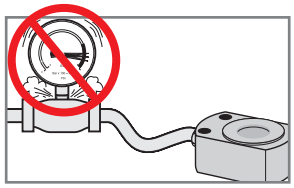
Safety means paying attention to the smallest details. A hastily assembled workholding system can result in a hazardous operator environment. Hydraulic workholding is not a generic technique where most anything will work, nor is there one right or best answer for all situations. Each application is different and can be approached in many different ways. Because of this versatility, there is no rule-of-thumb to follow to guarantee safety. A careful balance of knowledge, fixture design and common sense are key to avoiding injuries.

Plan your fixture installation with operator safety in mind. By nature, most clamping devices have pinch points. Many times the fixture can be designed to shield the operator from a pinching hazard. Often the placement of the clamping device in the fixture can minimize the gap between the clamp and the workpiece, thus reducing or eliminating the pinch point. Perhaps the clamping control valve or switch can be located such that the operator cannot reach the fixture and the control at the same time. Dual palm buttons on electrically-actuated systems serve the same purpose.



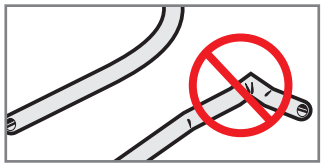
Do not require the operator to hold the workpiece in position during the clamping operation. Make sure that the workpiece is self-supporting and self-locating so that operator hands are out of danger when the hydraulic system is actuated. Often a simple spring plunger is all that is necessary.

The ***lowest*** **pressure rating** of any component in the clamping system sets the *maximum* pressure rating for the entire system.

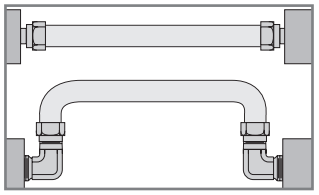


Most hydraulic workholding components are rated at 5,000 PSI maximum. However, some components are rated at less than 5,000 PSI. The maximum pressure is listed on each product page of this catalog. ***Never exceed this rating.***

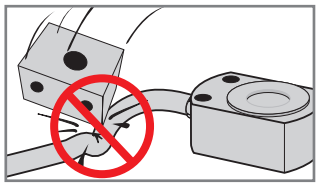
Just having a clamp that is rated at 5,000 PSI is not enough. Every hose, fitting, valve, adapter and tube exposed to pressure must be rated at or above the maximum hydraulic system pressure. Most "hardware store" fittings are intended only for low pressure plumbing. *Never use water pipe fittings or copper tubing and brass fittings for hydraulic service.*



Use **proper tools** when bending tubing, and maintain proper minimum bend radii for hoses and tubing. If a hose or tube is ever kinked, replace it. Don't risk a rupture. Fluid escaping under high pressure is dangerous. The resulting loss in pressure could release the workpiece from the fixture and cause serious injury and equipment damage by being ejected from the machine or breaking tooling.

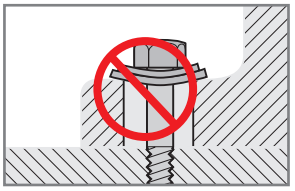


Tubing and hoses do flex when pressurized. Allow for that movement by supporting the fluid lines away from surfaces which could abrade the surface and eventually cause damage. Avoid straight lengths of hose and tubing. A bend will allow for this deflection without putting too much stress on the line.



Even if proper hydraulic tubing and fittings are specified, be sure to protect them from abuse. Components damaged from abrasion or accidental dropping of a workpiece will no longer have the strength and safety of the original design.

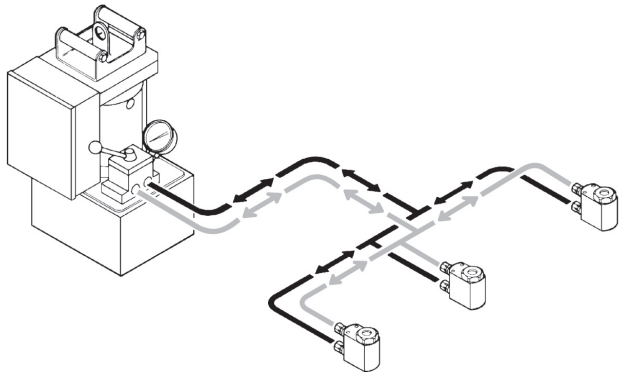
Use **proper mounting hardware** when installing workholding clamps and other components. Always use the largest bolt available to fit in the mounting hole. In many cases, the recommended cap screw or thread is specified on the product page of this catalog. Sometimes the mounting hardware is included with the component. Always use supplied hardware.



Safety means paying attention to the smallest details.

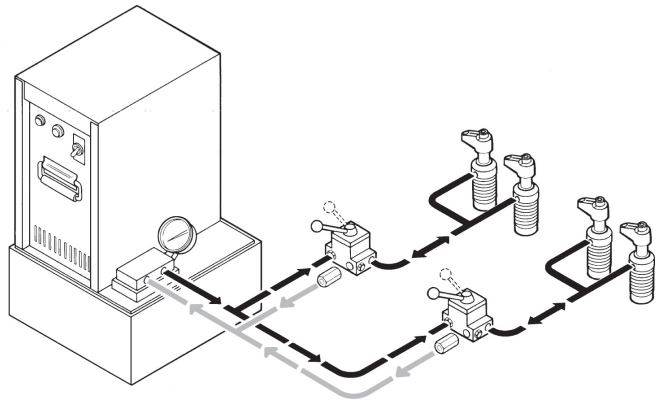
Application A

Multiple double-acting actuators can be operated simultaneously when powered by a pump.



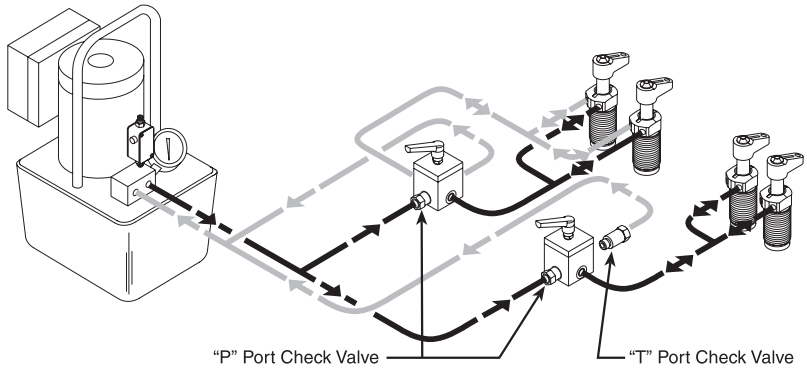
Application B

Two pairs of single-acting actuators are independently operated by remote mounted control valves and powered by one pump. Check valves prevent return line pressure fluctuations from affecting released clamps. Pressure port "P" check valves are built into the control valve.



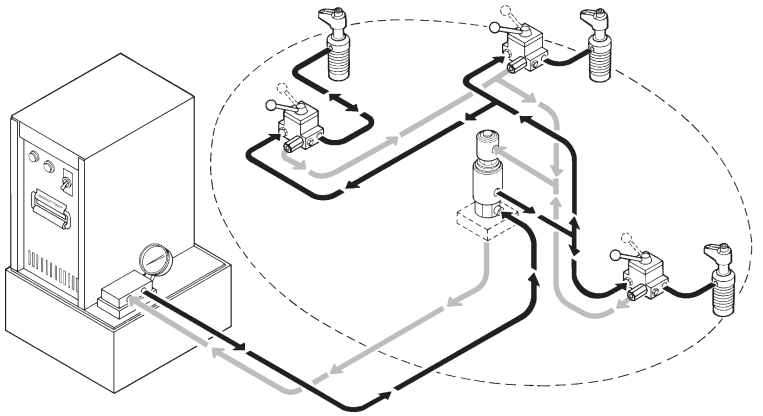
Application C

Similar to Application C, one pair of single-acting actuators and one pair of double-acting actuators are independently controlled by 100969DE directional control valves. When using more than one directional valve in one circuit, "P" port check valves 500174DE are required to prevent loss of clamping pressure in one circuit while actuating another. "T" port check valves 500173DE should be used in single-acting circuits where return line pressure fluctuations may affect released clamps.



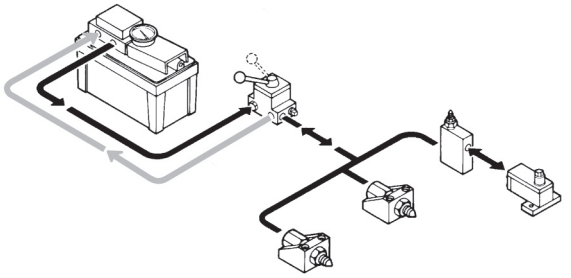
Application D

Rotating unions are used to connect pressure and return lines on applications where fixture rotation does not allow fixed plumbing. Here, three single-acting actuators are independently operated by three remote mounted control valves. Each valve is connected to the rotating union which, in turn, is connected to a single pump.



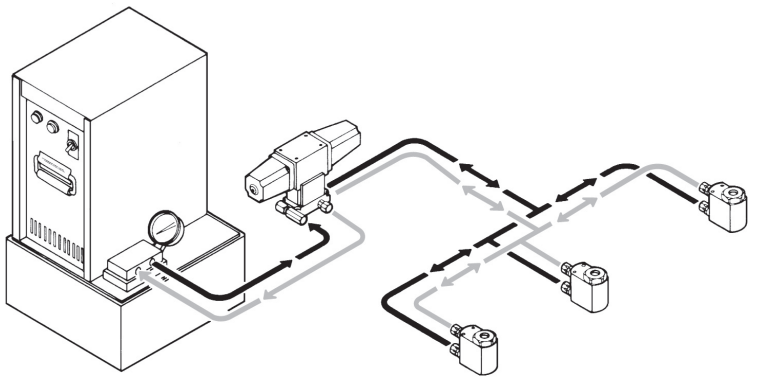
Application E

Two single-acting actuators operate simultaneously, controlled by a remote manual valve. A sequence valve insures that the workpiece is clamped before the work support is locked.



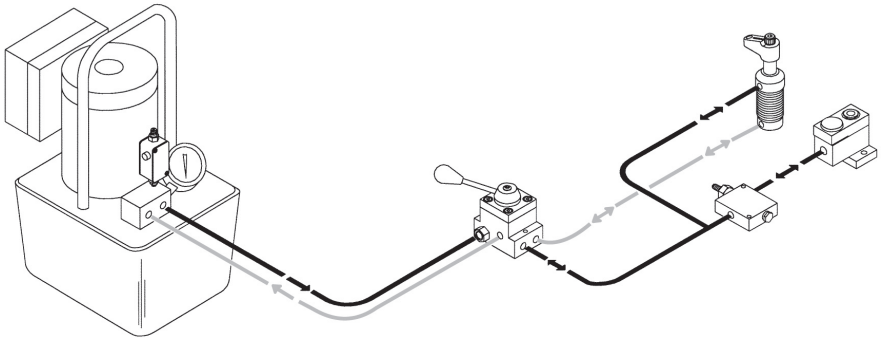
Application F

Similar to Application B, (on page 15.8) the three actuators are operated by a remote mounted control valve. This type of valve allows the pump to be located away from the workstation. The valve can be manually operated or, as shown, an electrically operated remote control valve is used. This valve can be used to give the operator push-button convenience or fully automated control by the machine tool.



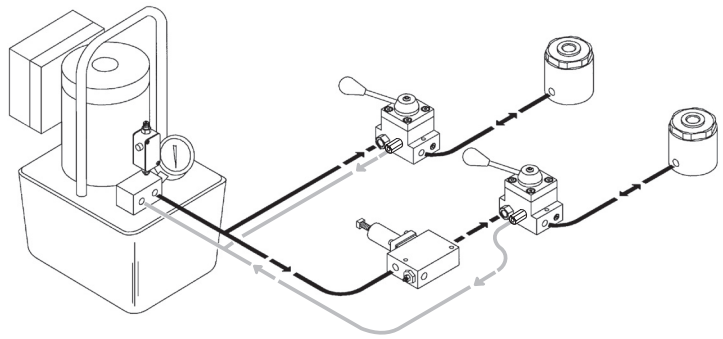
Application G

Similar to Application F (above), a double-acting swing clamp is actuated before sequencing a work support. When released, the work support drains back through the sequence valve's internal check valve.



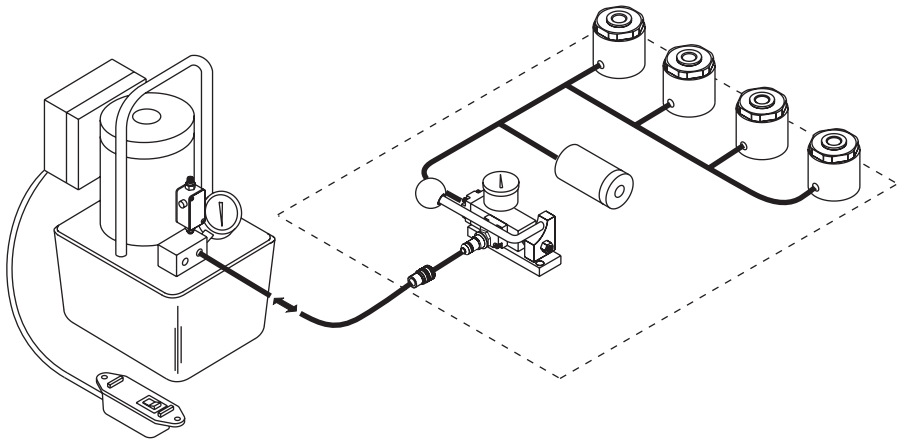
Application H

Like Application C (on page 2), two single-acting systems are independently operated by remote mounted control valves. Here the pressure reducing valve allows each system to have its own maximum pressure. The cylinder on the left operates at the pressure of the power source. The cylinder on the right can be set at a lower pressure by adjusting the pressure reducing valve.



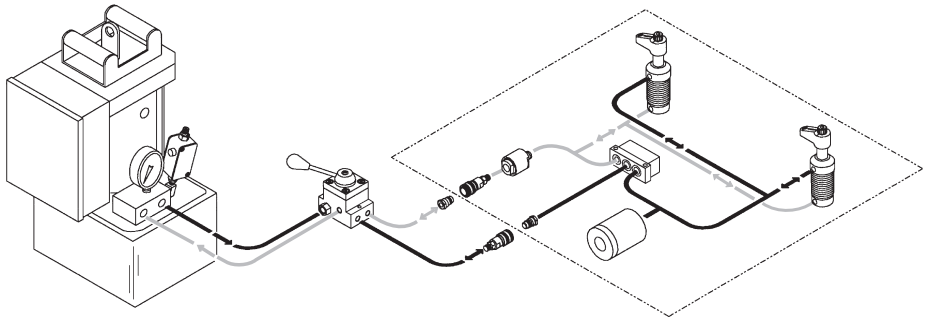
Application I

DE-STA-CO's Manual Pallet Valve is the simplest way to disconnect the power source from a pressurized pallet. For use only with single-acting actuators, it provides an automatic, leak free shut-off. An accumulator makes up for temperature changes and minor leakage. Built-in filtration protects this valve from contamination.



Application J

For pallets using double-acting actuators, DE-STA-CO's double-acting pallet valve system uses a pilot-operated check valve to maintain pressure on the pallet. The three position directional valve mounts at the operator's workstation instead of the pallet. Any of DE-STA-CO's standard, constant pressure pumps operate the system. An accumulator makes up for temperature change and minor leakage.



System design information

Planning

The most important and cost effective part of the fixture design process is planning. All facets of the project should be considered, and all questions answered before fixture design begins.

- How many operations are required?
- What machine will be used?
- What is the expected cycle time?
- How many parts will be run? How often?
- How fast must the workpiece be changed?

The answers to questions like these will help determine the relative cost/benefit of the clamping system chosen for the fixture.

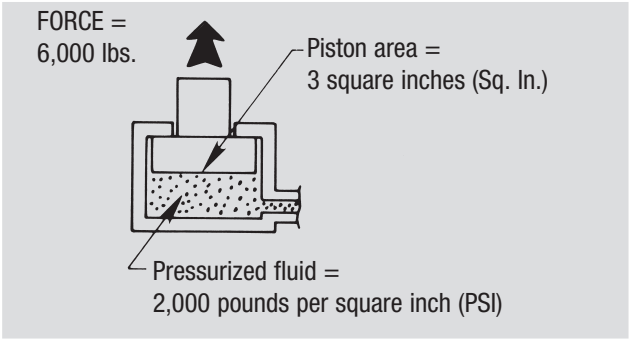
The following information will help prove that a hydraulic power clamping system can be a cost effective fixturing alternative.

Hydraulic Force

A basic principle of hydraulics states that pressure applied to a confined fluid is transmitted equally in all directions. This principle allows the transmission of pressure through tubes and hoses to remotely located actuators where that pressure is converted to usable force.

The simplicity of hydraulic power clamping can be summed up in one small equation:

FORCE = Pressure X Area



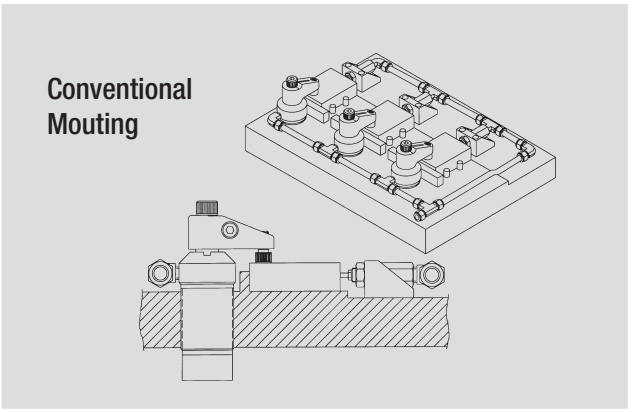
In the cylinder above, the fluid pressurized at 2,000 PSI is acting on the 3 sq. in. piston. As the formula says, 2,000 PSI times 3 sq. in. yields a force of 6,000 pounds.

This same concept applies to all hydraulic actuators.

Plumbing Options

The method used to route the pressure to the actuators on the fixture should be determined early in the planning stage. The plumbing is an essential part of the fixture and should never be left as an afterthought. There are two basic plumbing methods: conventional and manifold mount.

Conventionally mounted components have threaded ports which accept fittings for tubing and hoses. Many different types of fittings are available, giving you several options for customizing your design. Since most of these components are commonly available, conventional mounting will typically be the lower cost option.



The threaded ports are usually one of two designs, NPT tapered pipe threads or SAE O-Ring boss.

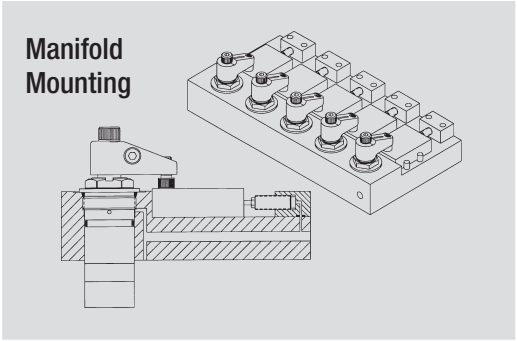
NPT Tapered Pipe Threads depend on the interference of the mating thread forms. This thread form has been in use for general plumbing applications for many years. Consequently there is a wide selection of fittings available for even the most unique applications. However, the thread form is the same whether the application is a household water supply or a high pressure hydraulic workholding system. It is important to specify only fittings that are rated for the maximum pressure to be seen in your application. *Plastic, copper and iron pipe fittings are not acceptable alternatives.*

Straight Thread, O-Ring Boss Ports per SAE J514 are common in both industrial and mobile hydraulic systems. Because this system of ports and fittings depends on a simple, replaceable O-ring for sealing instead of the interference of perfectly formed threads, the chance for leakage is greatly reduced.

Systems can be disassembled and reassembled numerous times with no additional make-up required. Fittings will always be in the exact same place and elbows will always point in the right direction. There is never the need to over or under-tighten elbows to properly align them in your system.

Pipe sealants and teflon tapes that can contaminate your system are not required. The torque needed to properly tighten these fittings is less, too.

All of DE-STA-CO's newest products have the SAE ports. In addition, we have made many of our other products available with SAE ports. Where available, this is noted on the product description page.



Manifold mounted components eliminate the need for external fittings, tubing, and hoses because the fluid passages are machined directly into the fixture. Securing the workholding component to the fixture automatically makes the hydraulic connection.

Manifold Mounting:

- Provides no-tool hydraulic connections
- Saves valuable fixture space
- Eliminates tubes, hoses or fittings that disrupt coolant flow and collect chips
- Simplifies post-machining fixture cleaning
- Reduces assembly and maintenance time
- Improves performance
- Means fewer hydraulic connections resulting in fewer potential leak points
- Results in a cleaner, more professional-looking fixture

Plumbing Sizing

When designing and assembling your hydraulic system, keep in mind that your choices of size and length of plumbing lines can significantly change the performance of your fixture. The back-pressure created by fittings, tubing and hoses can slow the operation of your system, especially single-acting systems. Larger diameter plumbing runs with a minimum number of bends and fittings will reduce this back pressure.

When sizing hydraulic lines, make sure you look at the inside diameter: 1⁄4" hose is not the same as 1⁄4" tubing. Hose is specified by its inside diameter. Hydraulic tubing is usually specified by the outside diameter. As example, 1⁄4" O.D., .035" wall tubing has an inside diameter of .180", a flow carrying capacity of only 50% of that of the hose.

Single-acting clamps can develop only a limited amount of pressure to force hydraulic fluid out of the clamp and allow it to retract. When the return fluid from multiple clamps must share the same hydraulic line, back pressure can easily become excessive and slow the clamp's retraction.

When connecting multiple clamps, you can use either a "daisy chain" or "home run" configuration. In a daisy chain, you use a tee at each clamp and run tubing from the first clamp to the second and then to the third and then the fourth, etc. When using a home run configuration, you begin at a manifold and run hydraulic lines all the way from the manifold to each clamp.

The daisy chain method uses less tubing so it might appear that this would minimize back pressure. However, in the daisy chain the fluid from all of the clamps must pass through a single hydraulic line. In the home run, while there may be longer runs, each line only has to accommodate flow from one clamp.

The viscosity of the hydraulic fluid used will also affect back pressure. Viscosity is affected by temperature. Contact the factory to discuss applications running below room temperature. We recommend using only DE-STA-CO fluids. Other fluids may have different viscosities or other characteristics that can adversely affect system operation.

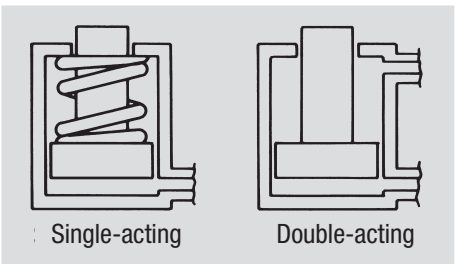
Single-acting vs. Double-acting

Another decision to be made early in the planning stage is whether to use single-acting or double-acting components.

Single-acting components are typically actuated using hydraulic pressure. When released, the pressure is removed and the actuator is returned by a spring which forces the hydraulic fluid back into the pump reservoir. This type of system is usually the most cost effective because each actuator needs only one pressure source connection for operation. Single-acting actuators should be vented to clean atmosphere whenever appropriate. Remember to double the plumbing for double-acting systems. This does, however, use more valuable fixture space and adds to the cost.

Nevertheless, there are good reasons to use double-acting systems. The larger and/or more complex the circuit design, the greater the potential for return restrictions which will slow the return of the single-acting actuators. Double-acting actuators are ideal for applications which require both pushing and pulling or returning clamps with heavy, custom designed attachments. They work well for powering linkages which require fast actuation in both directions.

Double-acting clamps are often used in automated systems where coordinating the action of the clamp with that of the rest of the system requires fast, positive, predictable cycle times. By installing pressure switches in both the pressure and return lines, the status of the clamp can constantly be monitored.



System design information

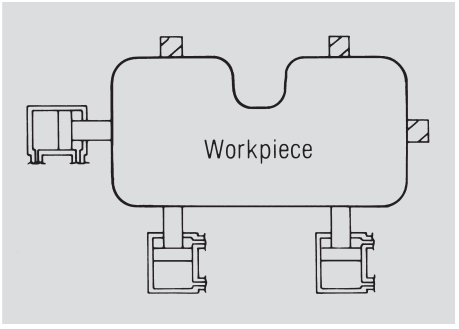
Automation

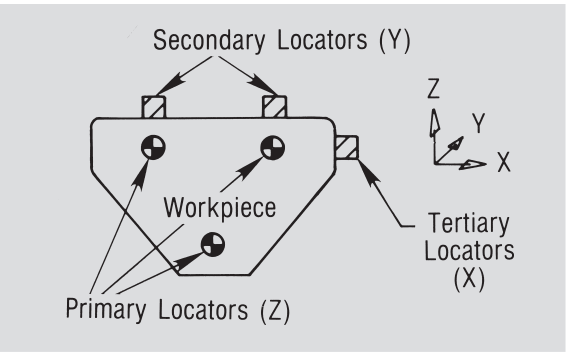
Hydraulic power clamping provides varying degrees of automation. During the planning stage, the method of actuating the fixture must be considered. The simplest systems use manually operated valves where the operator turns a handle to clamp and unclamp the fixture. In totally automated systems, the machine tool itself can be programmed to control the clamping and unclamping functions through the use of electric solenoid valves.

Positioning vs. Clamping

Hydraulic actuators are typically used on a fixture to perform one of two functions: positioning or clamping. The primary purpose of a positioning actuator is to push the workpiece against the solid positioning stops built into the fixture. Clamping actuators hold the workpiece in position during machining.

With a properly designed fixture, all the operator needs to do is to place the workpiece into the fixture. The positioning actuators (typically cylinders) will move and correctly orient the workpiece against the stops, and hold it there while the clamps are sequenced, thus securing the part to resist machining forces. While clamps are always needed to hold the part, positioning actuators are sometimes optional depending on the workpiece, fixture design, and the level of operator involvement.





3-2-1 Locating Principle

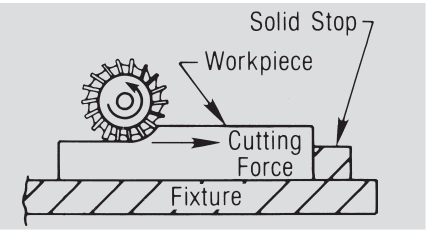
One of the most basic concepts of workholding is referred to as the 3-2-1 Locating Principle. To repeatedly locate (or reference) a workpiece, it must be oriented and positioned in three planes: X, Y and Z.

Thinking of a typical fixture where the workpiece is loaded and gravity holds it in place during clamping, start with the Z axis. Knowing that three points define a plane, it follows that any rigid object in the fixture is technically being supported at only three points regardless of shape. With the part supported in this manner, the workpiece is prevented from moving in the Z direction, but is still free to rotate or slide in the X and Y directions. To prevent rotation and position the workpiece in the Y direction, two stops are used. With the part contacting three stops in the Z axis, and two stops in the Y axis, the only direction the part can move is in the X direction. A single stop is all that is needed to prevent this motion. Always use three locators as the primary Z locators, two secondary Y locators and one tertiary X locator; thus, the name 3-2-1 principle. In rigid parts, these are the only solid stops required to locate the part. Any more are a duplication and can affect repeatability from one part to the next.

Resisting Forces – Stops vs. Clamps

When designing the solid stops for a fixture, it is usually best to locate them so that they directly resist the machining forces.

If the cutting tool forces are resisted by solid stops, the workholding clamps need only hold the part in position and can typically be much smaller, saving money and valuable fixture space.



Torque vs. Tension

A user's first introduction to hydraulic power workholding is often the replacement of the nut on a typical strap clamp with a center hole cylinder.

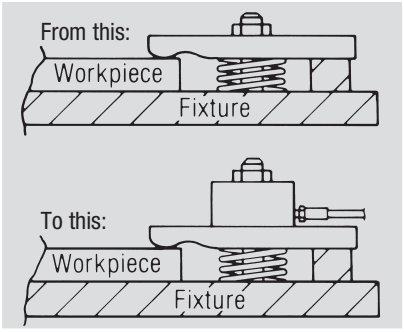
If the torque of the nut is known, the resulting tension on the bolt or stud can be easily approximated.

$$\frac{\text{Torque (In. Lbs.)}}{\text{Nominal thd. size (In.) X .12}} = \text{Tension (Lbs.)}$$

For example, a 1⁄2-13 UNC nut is torqued to 300-inch pounds. The resulting approximate tension would be:

$$\frac{300}{.5 \text{ x } .12} = 5{,}000 \text{ lbs. Tension}$$

The most accurate way to determine that the hydraulic power clamping system is exactly duplicating the mechanical system is to place the center hole cylinder over the stud or bolt and replace the nut loosely over the cylinder. Use the hydraulic system to partially extend the cylinder until it contacts the nut. Use a torque wrench to torque the nut to its original value while monitoring the system pressure gauge. When the nut is properly torqued, the gauge will indicate the exact system pressure setting for this application.



Operating Pressures

Most DE-STA-CO workholding components are rated at 5,000 PSI. When designing, it is a good rule of thumb to choose components for your fixture that will give you the forces you need at a pressure of about 3,000 PSI. This gives you plenty of latitude to adjust the system pressure both up and down when fine tuning the fixture on the machine tool. Operating at lower pressures, while sometimes necessary, does not make the most efficient use of these components. Higher pressures allow the use of smaller components, saving cost and fixture space.

Design Stroke Length

Clamps and cylinders should never be designed into a fixture at their rated full stroke. Always use something less than full stroke to make sure that all tolerances and variations in the workpiece, workholding device and fixture can be accepted, insuring that the workpiece is properly clamped.

Volume Calculations

The total volume required to actuate a circuit should be checked to make sure that the power source chosen has enough usable fluid capacity. The fluid volume required to fully actuate each clamp and cylinder is listed in the charts on each product page throughout the catalog. By totaling this value for each component, you know the maximum fluid volume that could possibly be used in this fixture. Even the smallest DE-STA-CO pumps have enough fluid volume for most applications.

Since the fixture is designed to use less than the full stroke of the actuators, the actual fluid volume will be less. If it becomes necessary to get an exact figure, it can be easily calculated using the following formula:

Effective Area (Sq. In.) X Stroke (In.)
= Fluid Capacity (Cu. In.)

The effective area of the actuators (from product chart) multiplied by the stroke used (not total stroke) will result in the fluid volume. For example, if a cylinder has an effective area of 2 square inches, and an actual stroke of 3 inches, its fluid volume will be 2 x 3 or 6 cubic inches. (For easy reference, 231 cubic inches = 1 gallon.)

System Care and Maintenance

The single most important factor in determining the life of a properly designed system is the effort taken to keep the fluid clean.

System Flushing

During assembly, make sure all fluid-carrying components are flushed with clean solvent and blown dry. Hydraulic tubing is particularly notorious for the amount of contaminants found inside. If not removed, this debris will quickly damage seals and score precision-fit metal parts. The contamination will also clog passages in pumps and control valves.

After fixture assembly, the entire system should be flushed to remove any contamination created during assembly. Use only hydraulic fluid for this procedure. Solvents may become trapped in the system, contaminating the fluid.

Once the fluid in the system is clean, be sure to keep it that way by changing the fluid on a regular basis and making sure that extreme care is taken whenever the system is disconnected or disassembled so that new contaminants are not introduced.

System design information

System Bleeding

Air trapped in the hydraulic system is the most common cause of erratic operation and slow return times. The most common way to bleed a system is to pressurize the circuit and carefully loosen a fitting just enough to let fluid escape. The trapped air will usually be flushed out with the fluid. With conventionally mounted components, the fittings required for connection provide ideal bleeding locations. Since manifold mounting eliminates external fittings and lines, the fixture designer/builder no longer gets bleeding points by default and must now consciously plan for system bleeding.

As workholding hydraulic systems become more sophisticated, compact and automated, proper bleeding becomes increasingly important. Air trapped in the system is most often revealed by the slow retraction of single-acting (spring return) components. To understand why, picture the following example:

- Single-acting actuators – return springs develop 15 PSI
- Flow required to clamp – 1 cubic inch
- System pressure – 3,000 PSI

Return time for this application is dictated by the time it takes to force 1 cubic inch of fluid through all of the return line restrictions at 15 PSI.

Take the same example with 1 cubic inch of air (at atmospheric pressure) trapped anywhere in the system:

> When pressurized, this “bubble” compresses and becomes 200 times smaller or .005 cubic inch. This means that .995 cubic inch of oil must be pumped into the system just to compress the bubble. Now when the clamps are released, 1.995 cubic inches of fluid must leave the system – nearly double that of the same system without air.

Calculating Machining Forces

To help you choose the right cylinders, clamps, and work supports, it is important to know how much clamping or supporting force is necessary.

There are numerous ways to calculate the approximate forces that the cutting tool places on the workpiece. **Please note that the results of these calculations are estimates and must never replace experience, common sense, and caution.** In addition, these results indicate only the magnitude of the force, not the direction. Depending on the specific application, the direction of the force may vary significantly from the beginning to the end of the cut.

Milling, Turning and Boring

A rough estimate of cutting tool force – if the horsepower required to make the cut is known – is the result of the following equation:

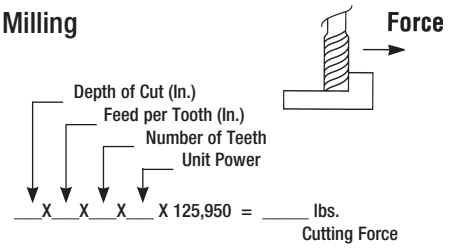
$$\text{Cutting Force (Lbs.)} = \frac{\text{HP x 24,750}}{\text{Cutting Speed (SFPM)}}$$

For example, an operation is expected to take 5 horsepower with a cutting speed of 150 surface feet per minute.

$$\frac{5 \times 24{,}750}{150} = 825 \text{ lbs. Cutting Force}$$

Where horsepower is not yet known, a value called unit power comes into play. Unit power is the horsepower required to remove one cubic inch of material in one minute. (Refer to Table A on Page 10.)

Milling



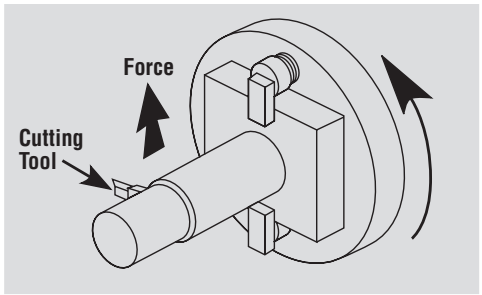
Example: a 4-flute end mill is used to machine aluminum. The cut is 1⁄2" deep and the feed per tooth is .002". From the table the unit power value is 0.4. So the cutting force transferred to the workpiece is:

$$.5 \times .002 \times 4 \times .4 \times 125{,}950 = 202 \text{ lbs. Cutting Force}$$

Note that this calculation assumes a full width cut. Applications using less than the full cut may reduce the calculated force by the percentage of the full cut being taken.

Turning and Boring

A similar calculation applies to turning and boring. Note that the cutting force is usually perpendicular to the cutting tool but since the tool or workpiece is rotating, the direction of the force relative to the work piece is constantly changing.



Depth of Cut (In.)
Feed per Revolution (In.)
Unit Power

____X____X____X 396,000 = _____ lbs.
Cutting Force

Example: Boring a hole in alloy steel heat treated to 37 Rc (unit power 1.7), with a depth of cut of .060", a feed rate of .003" inches per revolution gives a result of:

.060 x .003 X 1.7 x 396,000 = 121 lbs. Cutting Force

Drilling

The forces involved in drilling can be separated into two distinctly different categories: thrust and torque. With the number of drill styles available, the thrust varies tremendously. Torque is somewhat less variable and can be estimated as shown:

Feed (IPR) x (Drill Dia.)^2 x Unit Power x 49,500 = Drilling Torque (In. Lbs.)

For example, drilling a 3⁄4" diameter hole in magnesium (unit power .2) with a feed rate of .010" per revolution gives a result of:

.010 x .75^2 x .2 x 49,500 = 56 in. lbs.

Friction Coefficient

Now that an estimate of the amount of cutter force being transferred to the workpiece is available, we must determine how much clamping force is necessary to resist the cutter force. This depends on the amount of friction between the workpiece and the fixture, commonly referred to as the friction coefficient.

Typically, if an object is lying on a surface, the amount of force required to slide it sideways will be considerably less than the weight of the object. It follows then that when clamping a workpiece to resist machining forces, the clamping force will need to be much higher than the machining force. The following chart shows approximate friction coefficients:

Static Friction Coefficients
for Steel on Various Materials

Material	Friction Coefficient	
	Clean	Lubricated
Brass	0.35	0.19
Bronze	–	0.16
Bronze, Aluminum	0.45	–
Bronze, Phosphor	0.35	–
Bronze, Sintered	–	0.13
Carbon, Hard	0.14	0.11-0.14
Copper-Lead Alloy	0.22	–
Graphite	0.10	0.10
Iron, Cast	0.40	0.21
Steel	0.80	0.16
Tungsten Carbide	0.4-0.6	0.1-0.2

The estimated clamping force is divided by the appropriate friction coefficient and then multiplied by a suitable safety factor to get an estimated total clamping force required.

$$\frac{\text{Machining Force (Lbs.)}}{\text{Friction Coefficient}} \times \text{Safety Factor} = \text{Total Clamping Force (Lbs.)}$$

Example: A steel workpiece on steel rest buttons is being machined using coolant. The estimated machining force is 300 lbs. From the table the friction coefficient for steel on steel (lubricated) is .16. After choosing an appropriate safety factor (usually about 2), the estimated total clamping force would be:

$$\frac{300}{.16} \times 2 = 3750 \text{ lbs. Total Clamping Forces}$$

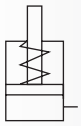
This total clamping force may now be divided by the number of clamps holding the workpiece, which equals the clamping force needed for each clamp.

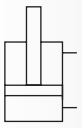
TABLE A

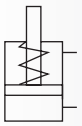
Material	Hardness Bhn	Unit Power hp/in^3/min		
		Turning	Drilling	Milling
		HSS & Carbide Tools	HSS Drills	HSS & Carbide Tools
STEELS Plain Carbon Alloy Steels	85-200 35-40Rc 40-50Rc 50-55Rc 55-58Rc	1.4 1.7 1.9 2.5 4.2	1.3 1.7 2.1 2.6 3.2	1.4 1.9 2.2 2.6 3.2
CAST IRONS Gray, Ductile & Malleable	110-190 190-320	0.9 1.7	1.2 2.0	0.8 1.4
STAINLESS STEELS	135-275 30-45Rc	1.6 1.7	1.4 1.5	1.7 1.9
TITANIUM	250-375	1.5	1.4	1.4
NICKEL ALLOYS	80-360	2.5	2.2	2.4
ALUMINUM ALLOYS	30-150 500 kg	0.3	0.2	0.4
MAGNESIUM ALLOYS	40-90 500 kg	0.2	0.2	0.2
COPPER ALLOYS	10-80Rb 80-100Rb	0.8 1.2	0.6 1.0	0.8 1.2

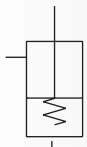
Design symbols

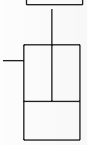
Cylinder Symbols


Cylinder, Single-acting

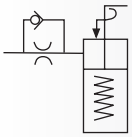

Cylinder, Double-acting

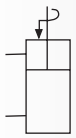

Cylinder, Single-acting or Double-acting

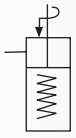

Pull Cylinder, Single-acting, Spring Return


Pull Cylinder, Single-acting

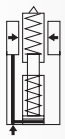
Clamp Symbols


Swing/Pull Clamp, Single-acting
with Flow Restrictor Valve

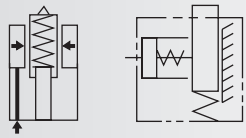

Swing/Pull Clamp, Double-acting

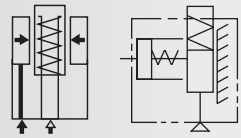

Swing/Pull Clamp, Single-acting

Work Support Symbols


Work Support, Fluid Advance

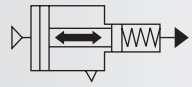
Work Support Symbols

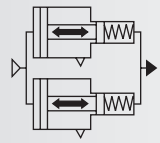

Work Support, Spring Advance

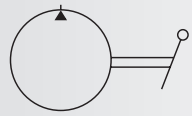

Work Support, Air Advance

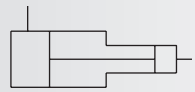
Power Source Symbols

Electric/Hydraulic Pump

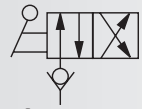

Air/Hydraulic Pump, Reciprocating

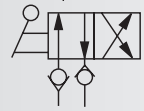

Air/Hydraulic Pump,
Reciprocating 2-stage


Screw Pump

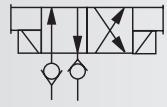

Intensifier

Control Valve Symbols


Directional Control Valve, Manual 4-Way,
2-Position with Inlet Check Valve

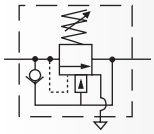

Directional Control Valve, Manual 4-Way,
2-Position with Inlet and Outlet Check Valves

Directional Control Valve, Manual 4-Way,
3-Position Detented

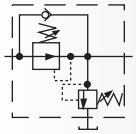

Directional Control Valve, Electric 4-Way,
2-Position with Inlet and Outlet Check Valves
with Manual Override


Directional Control Valve, Manual 4-Way,
2-Position

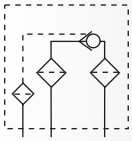
Control Valve Symbols



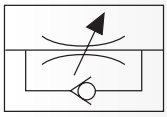
Pressure Sequence Valve, Adjustable with Reverse Free-Flow Check Valve



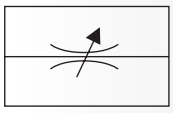
Pressure Reducing Valve, Adjustable with Reverse Free-Flow Check Valve w/Over-Pressure Relief Valve



Check Valve, Pilot Operated with Filters

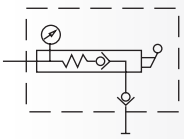


Flow Restrictor, Adjustable with Reverse Free-Flow Check Valve

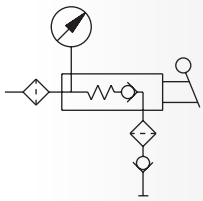


Flow Restrictor, Adjustable

Pallet Coupling Symbols

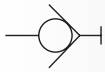


Manual Pallet Valve with Gauge and Male Coupler

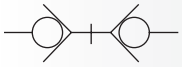


Manual Pallet Valve with Filters, Gauge and Coupler

Accessory Symbols



Hydraulic Coupler, Half-Male or Female

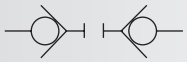


Hydraulic Coupler Set, Coupled

Accessory Symbols

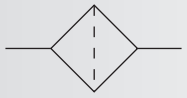
Check Valve

Flow Restrictor, Fitted with Reverse Free-Flow Check Valve with Filtered Orifice



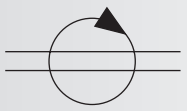
Hydraulic Coupler Set, Uncoupled

Accumulator, Gas Charged

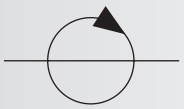


Filter

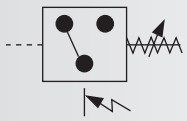
Pressure Gauge



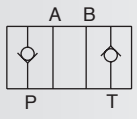
Rotating Union, Dual Circuit



Rotating Union, Single Circuit



Pressure Switch, Adjustable



Check Valve Sub-Plate

Air Bleed Valve

Ball Valve

Introducing
StrongHold *SELECT*
Workholding Products from DE-STA-CO.

The new StrongHold ***SELECT*** series brings you hydraulic swing clamps, work supports, threaded body cylinders, block cylinders, pneumatic swing clamps and accessories.

Immediate advantages include:

- **MRO Interchange:** Flexibility to upgrade and interchange with other brands, or use in new/duplicate fixture designs
- **Long-life, decreased maintenance:** Advanced seal and wiper technology that resist contamination and leaks
- **Corrosion resistance:** Treated metal surfaces for better wear
- **Reduced maintenance costs:** High cycle life with less down time, lower replacement costs
- **Productivity improvement:** Significant set-up time reduction as operators can clamp entire fixture from one location
- **Competitive pricing:** Better quality components with higher ROI

Our new StrongHold ***SELECT*** series is yet another example by DE-STA-CO making the best even better. Improving upon our existing StrongHold brand, we continue to design products and expand our product selection that help you, our customers, achieve tangible cost reduction in your manufacturing process.

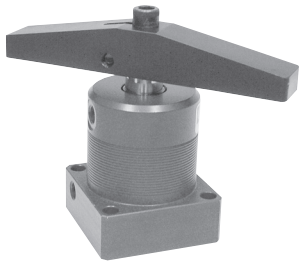
We look forward to working with you!

DE-STA-CO is a global leader in the innovation, manufacture, and support of clamping, gripping, transfer and robotic tooling solutions for workplace automation needs. The DE-STA-CO family of companies is committed to being a lean resource for its customers. Our wide range of products and value-added services allows us to offer you solutions that increase profitability and efficiency through the use of optimal clamping and automation solutions.

Pneumatic Clamps

035-163-190

035-125-190

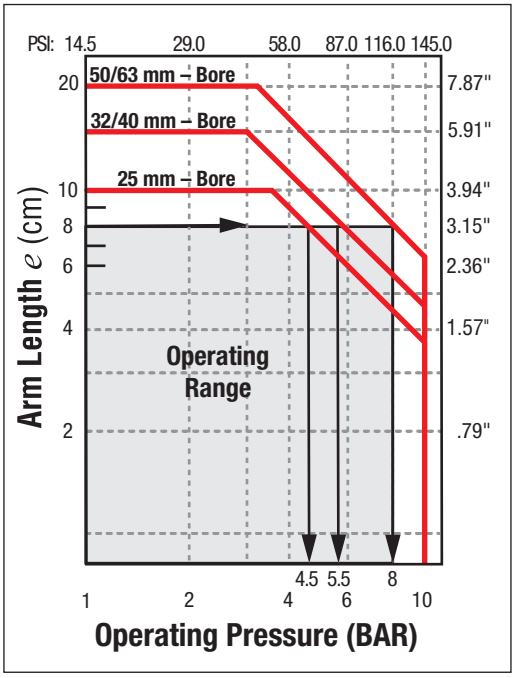


035-250-290

035-225-190

Pneumatic Swing/Pull Clamps are for applications that require a lighter touch than the forces generated by hydraulic powered clamps.

DE-STA-CO's line of pneumatic swing/pull clamps are fast acting and can generate from 50 up to 430 pounds of clamping force from shop air.



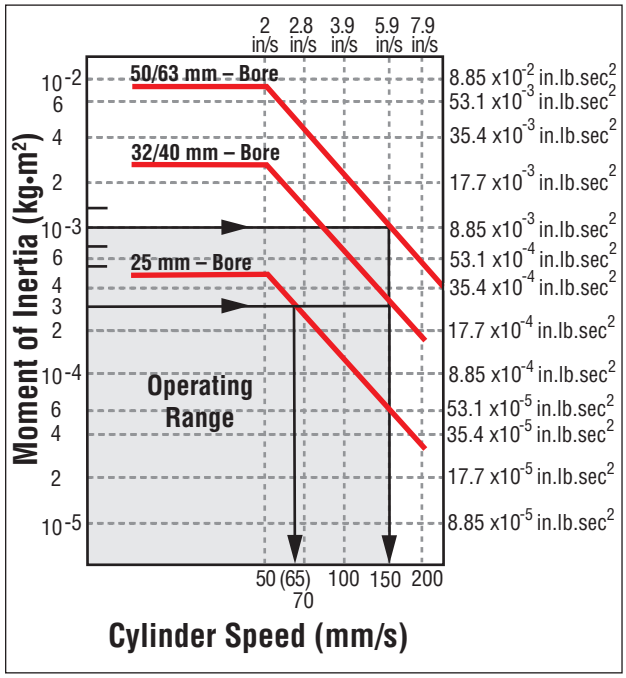
Allowable Bending Moment

Use the arm length and operating pressure within this graph for allowable bending moment loaded piston rod.

When arm length is 8cm (3.15"), pressure should be less than:

- 25mm Bore: 4.5 BAR (65 PSI)
- 32/40mm Bore: 5.5 BAR (80 PSI)
- 50/63mm Bore: 8 BAR (116 PSI)

See Page 15.28 – Calculation for Moment of Inertia



Mass Moment of Inertia

When the arm is long and heavy, damage of internal parts may be caused due to inertia. Use the inertia moment and cylinder speed within this graph based on arm requirements.

When arm's inertia is 3 X 10^{-4}kg•m² (2.7 X 10^{-3}in-lb•sec²) cylinder speed should be less than:

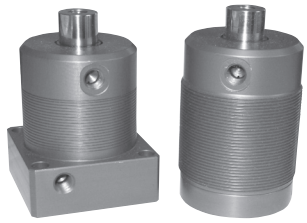
- 25 mm Bore: 65mm/s (2.6 in/s)
- 32/40 mm Bore: 150mm/s (5.9 in/s)
- When arm's inertia is 1 X 10^{-3} kg•m² (8.85 X 10^{-3}in-lb•sec²) cylinder speed should be less than 50/63 mm Bore: 150 mm/s (5.9 in/s)

Swing Clamp Order Information

035	-	125	-	145
Family		Style / Bore Size (mm)		Swing Direction / Swing Angle

Style	Bore Size	Swing Direction	Swing Angle
1 – Threaded Body	25 mm	1 – Right	00°
2 – Bottom Flange	32 mm	2 – Left	45°
	40 mm	3 – None	60°
	50 mm		90°
	63 mm		

Pneumatic Swing/Pull Clamp – 25mm Bore

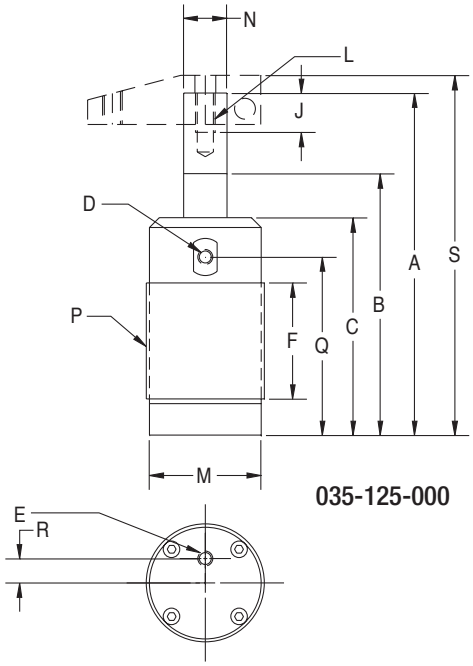


DE-STA-CO's line of *Pneumatic Swing/Pull Clamps* is designed for applications not requiring hydraulic power. The fast acting DE-STA-CO clamp can generate up to 50 pounds of clamping force from shop air. DE-STA-CO pneumatic clamps are ideal for a wide variety of manufacturing and assembly operations.

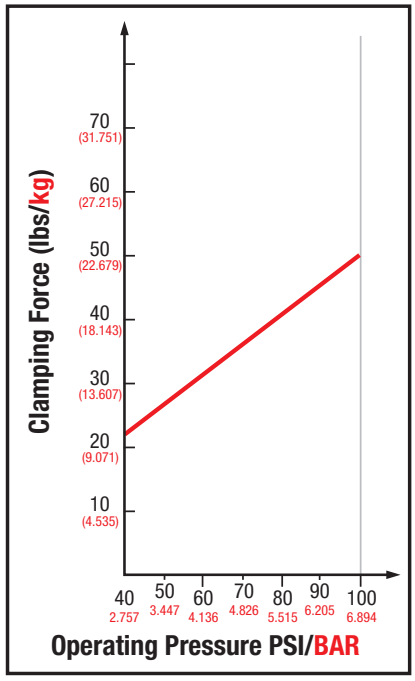
Features:

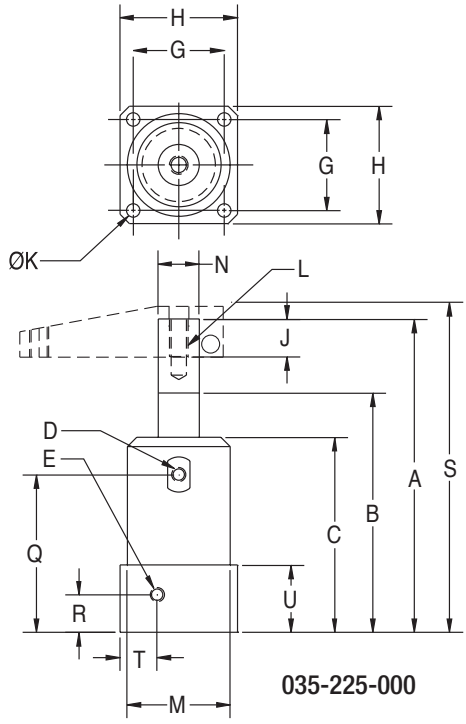
- Swing motion available in 0, 45, 60, and 90 degrees
- Four (4) styles of arms
- Double-locked arm design is bolted to piston shaft and around shaft diameter for extra rigidity
- Double-acting design
- Dual-seal design with a wiper seal to keep contaminants out
- Long clamping stroke accommodates a wide thickness of materials
- Clamping force is adjustable using regulated air
- Smooth swing motion for better operating performance

Max. Operating Pressure: 100 PSI
Clamping Annulus Area: .522 IN^2
Normal Operating Pressure: 40 – 80 PSI
Cylinder Operating: Double-acting



035-125-000



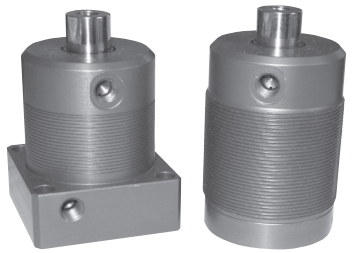


035-225-000

Cat. no.	Imperial Dimensions (inches)																		
	Total Stroke	Clamping Stroke	A Unclamped Position	B Clamped Position	C Body Height	D Clamp Port	E Unclamp Port	F Threaded Body	G Flange Mount	H Flange	J Thread Depth	øK Hole Dia.	L Thread Size	M Body Dia.	N Shaft Dia.	P Thread Size	Q	R	S
035-125-145 035-125-160 035-125-190 035-125-245 035-125-260 035-125-290 035-125-300	1.036	0.531	4.36	3.324	2.76	10-32 UNF	10-32 UNK	1.5	–	–	0.665	–	1/4-20 UNC	1.418	0.551	1½-16 UN	2.25	0.35	4.575
035-225-145 035-225-160 035-225-190 035-225-245 035-225-260 035-225-290 035-225-300	1.051	0.511	4.23	3.215	2.62			–	1.22	1.577		1.75		1.377		–	2.1	0.5	4.435

See Page 15.27 for available arms

Pneumatic Swing/Pull Clamp – 32mm Bore

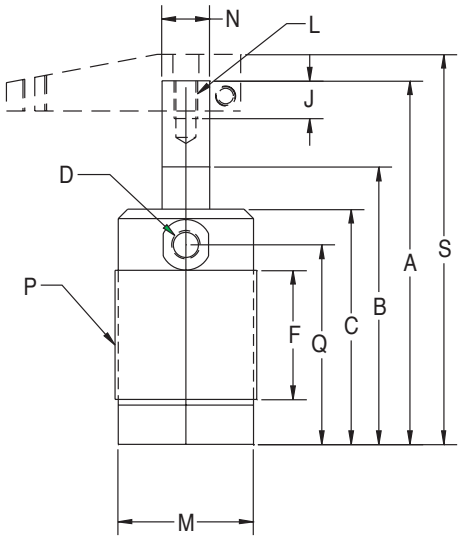


Max. Operating Pressure: 100 PSI
Clamping Annulus Area: .935 IN²
Normal Operating Pressure: 40 – 80 PSI
Cylinder Operating: Double-acting

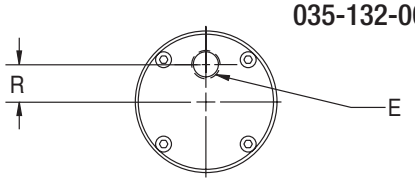
DE-STA-CO's line of *Pneumatic Swing/Pull Clamps* is designed for applications not requiring hydraulic power. The fast acting DE-STA-CO clamp can generate up to 90 pounds of clamping force from shop air. DE-STA-CO pneumatic clamps are ideal for a wide variety of manufacturing and assembly operations.

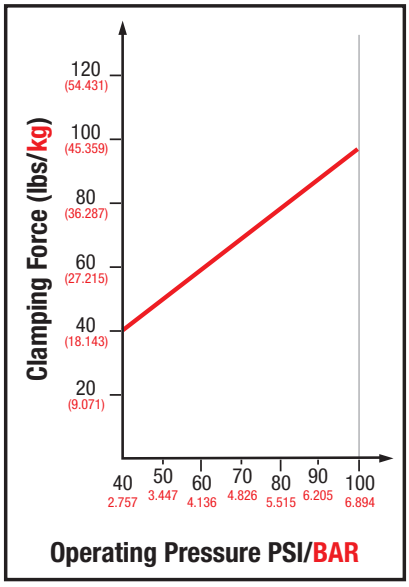
Features:

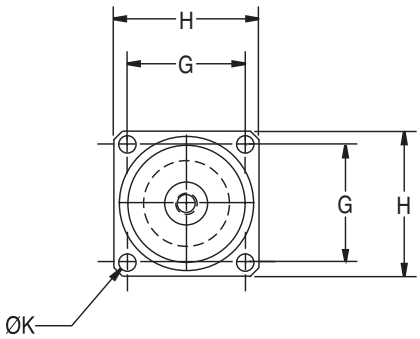
- Swing motion available in 0, 45, 60, and 90 degrees
- Four (4) styles of arms
- Double-locked arm design is bolted to piston shaft and around shaft diameter for extra rigidity
- Double-acting design
- Dual-seal design with a wiper seal to keep contaminants out
- Long clamping stroke accommodates a wide thickness of materials
- Clamping force is adjustable using regulated air
- Smooth swing motion for better operating performance

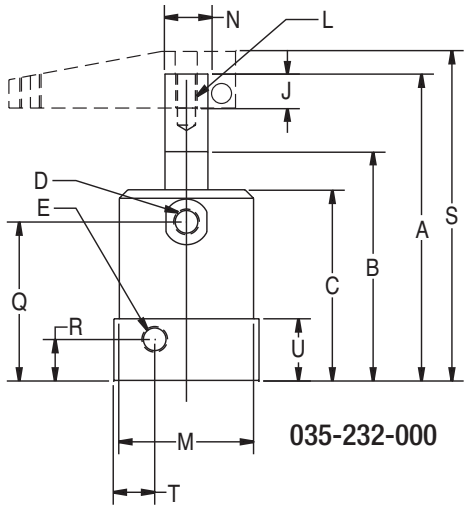


035-132-000







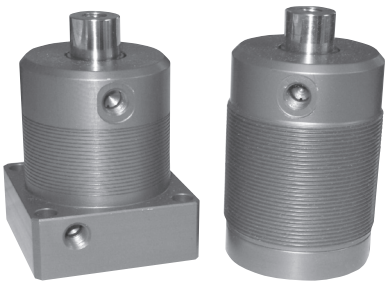


035-232-000

Cat. no.	Imperial Dimensions (inches)																				
	Total Stroke	Clamping Stroke	A Unclamped Position	B Clamped Position	C Body Height	D Clamp Port	E Unclamp Port	F Threaded Body	G Flange Mount	H Flange	J Thread Depth	øK Hole Dia.	L Thread Size	M Body Dia.	N Shaft Dia.	P Thread Size	Q	R	S	T	U
035-132-145 035-132-160 035-132-190 035-132-245 035-132-260 035-132-290 035-132-300	1.132	0.565	5.00	3.868	3.115	1/8 NPT	1/8 NPT	1.72	–	–	0.575	–	5/16-18 UNC	1.788	0.630	1⅛-16 UN	2.625	0.45	5.165	–	–
035-232-145 035-232-160 035-232-190 035-232-245 035-232-260 035-232-290 035-232-300	1.055	0.488	4.707	3.652	2.8			–	1.732	2.13		0.253		1.97		–	2.325	0.57	4.85	0.57	0.907

See Page 15.27 for available arms

Pneumatic Swing/Pull Clamp – 40mm Bore

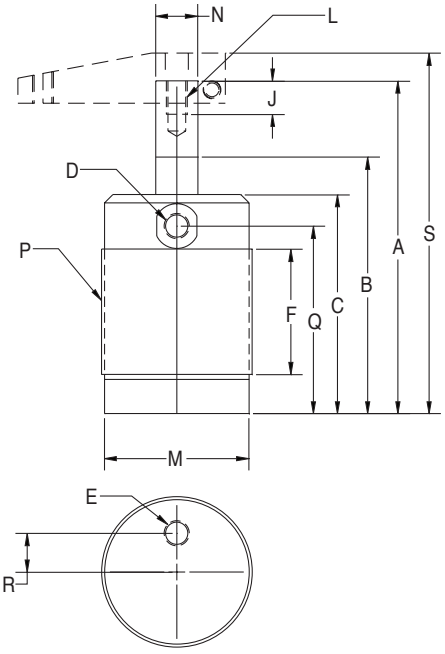


Max. Operating Pressure: 100 PSI
Clamping Annulus Area: 1.636 IN²
Normal Operating Pressure: 40 – 80 PSI
Cylinder Operating: Double-acting

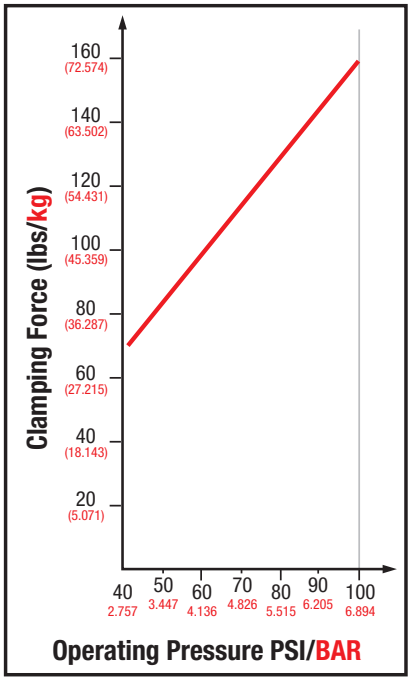
DE-STA-CO's line of *Pneumatic Swing/Pull Clamps* is designed for applications not requiring hydraulic power. The fast acting DE-STA-CO clamp can generate up to 160 pounds of clamping force from shop air. DE-STA-CO pneumatic clamps are ideal for a wide variety of manufacturing and assembly operations.

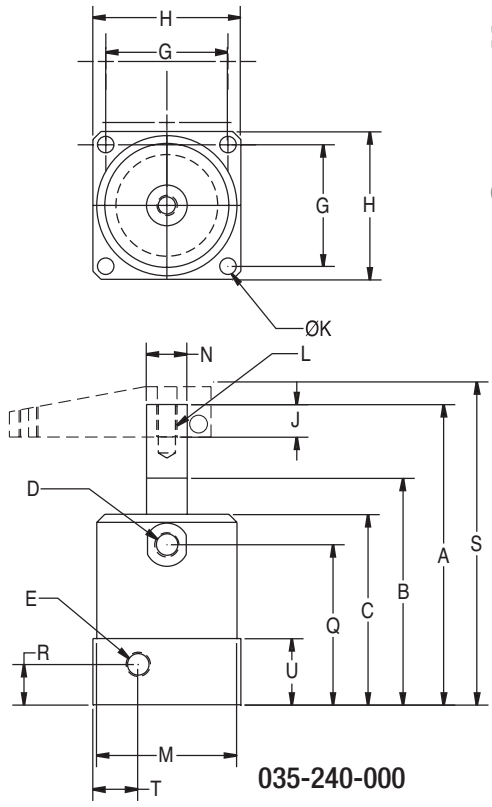
Features:

- Swing motion available in 0, 45, 60, and 90 degrees
- Four (4) styles of arms
- Double-locked arm design is bolted to piston shaft and around shaft diameter for extra rigidity
- Double-acting design
- Dual-seal design with a wiper seal to keep contaminants out
- Long clamping stroke accommodates a wide thickness of materials
- Clamping force is adjustable using regulated air
- Smooth swing motion for better operating performance



035-140-000



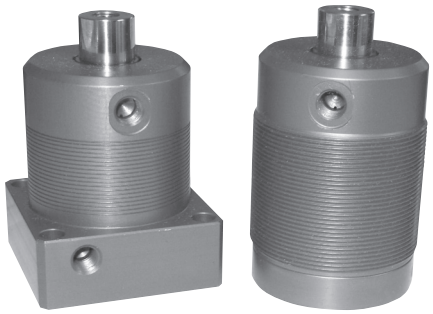


035-240-000

Cat. no.	Imperial Dimensions (inches)																				
	Total Stroke	Clamping Stroke	A Unclamped Position	B Clamped Position	C Body Height	D Clamp Port	E Unclamp Port	F Threaded Body	G Flange Mount	H Flange	J Thread Depth	øK Hole Dia.	L Thread Size	M Body Dia.	N Shaft Dia.	P Thread Size	Q	R	S	T	U
035-140-145 035-140-160 035-140-190 035-140-245 035-140-260 035-140-290 035-140-300	1.197	0.630	5.37	4.04	3.275	1/8 NPT	1/8 NPT	1.879	–	–	0.7	–	5/16-18 UNC	2.16	0.630	2¼-16 UN	2.8	0.625	5.39	–	–
035-240-145 035-240-160 035-240-190 035-240-245 035-240-260 035-240-290 035-240-300	1.091	0.524	4.981	3.89	2.95			–	1.889	2.29		0.253		2.16		–	2.5	0.65	5.00	0.65	1.027

See Page 15.27 for available arms

Pneumatic Swing/Pull Clamp – 50mm Bore

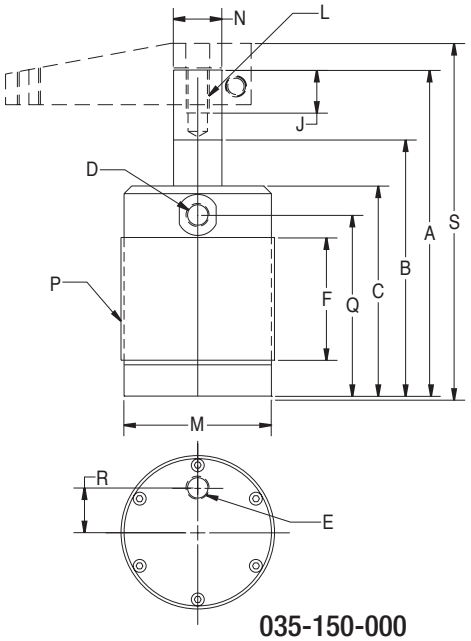


Max. Operating Pressure: 100 PSI
Clamping Annulus Area: 2.556 IN²
Normal Operating Pressure: 40 – 80 PSI
Cylinder Operating: Double-acting

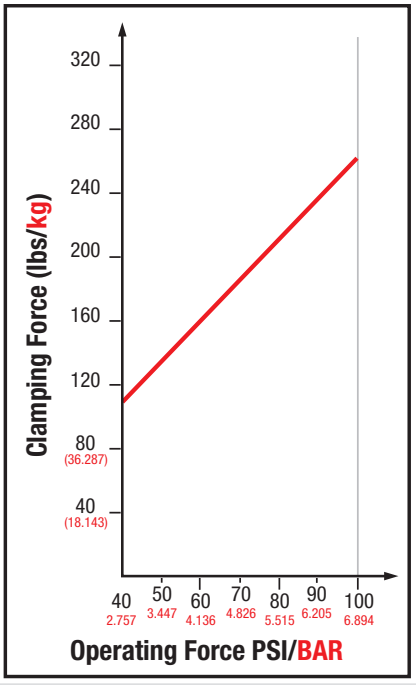
DE-STA-CO's line of *Pneumatic Swing/Pull Clamps* is designed for applications not requiring hydraulic power. The fast acting DE-STA-CO clamp can generate up to 250 pounds of clamping force from shop air. DE-STA-CO pneumatic clamps are ideal for a wide variety of manufacturing and assembly operations.

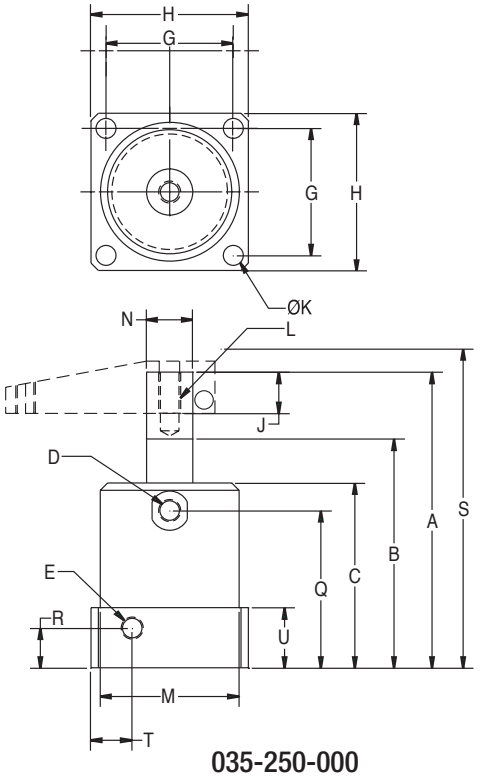
Features:

- Swing motion available in 0, 45, 60, and 90 degrees
- Four (4) styles of arms
- Double-locked arm design is bolted to piston shaft and around shaft diameter for extra rigidity
- Double-acting design
- Dual-seal design with a wiper seal to keep contaminants out
- Long clamping stroke accommodates a wide thickness of materials
- Clamping force is adjustable using regulated air
- Smooth swing motion for better operating performance



035-150-000



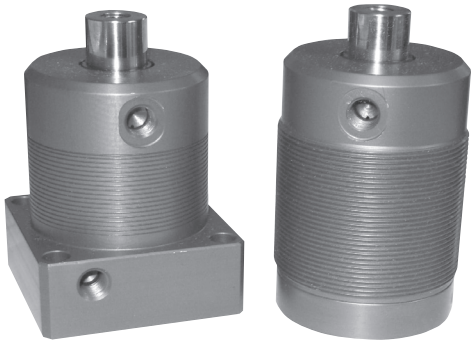


035-250-000

Cat. no.	Imperial Dimensions (inches)																				
	Total Stroke	Clamping Stroke	A Unclamped Position	B Clamped Position	C Body Height	D Clamp Port	E Unclamp Port	F Threaded Body	G Flange Mount	H Flange	J Thread Depth	øK Hole Dia.	L Thread Size	M Body Dia.	N Shaft Dia.	P Thread Size	Q	R	S	T	U
035-150-145 035-150-160 035-150-190 035-150-245 035-150-260 035-150-290 035-150-300	1.181	0.553	5.36	4.179	3.475	1/8 NPT	1/8 NPT	2.0	–	–	1.0	–	3/8-16 UNC	2.4	0.787	2½-16 UN	2.95	0.7	5.75	–	–
035-250-145 035-250-160 035-250-190 035-250-245 035-250-260 035-250-290 035-250-300	1.134	0.506	5.061	3.927	3.15			–	2.165	2.68		0.337		2.365		–	2.7	0.65	5.44	0.65	1.025

See Page 15.27 for available arms

Pneumatic Swing/Pull Clamp – 63mm Bore

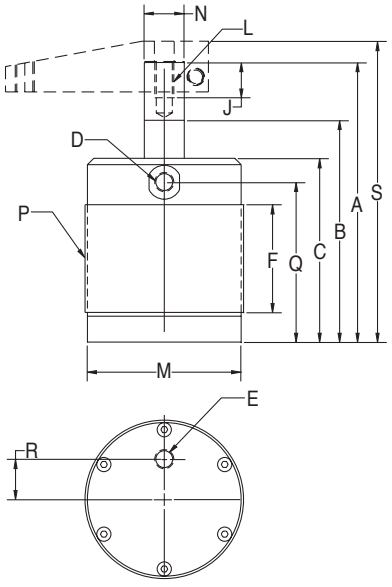


Max. Operating Pressure: 100 PSI
Clamping Annulus Area: 4.343 IN²
Normal Operating Pressure: 40 – 80 PSI
Cylinder Operating: Double-acting

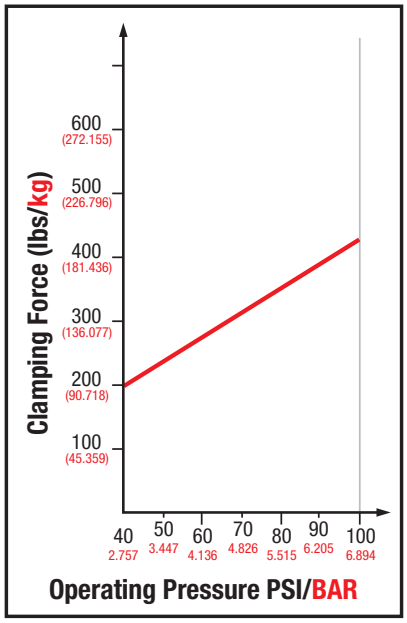
DE-STA-CO's line of *Pneumatic Swing/Pull Clamps* is designed for applications not requiring hydraulic power. The fast acting DE-STA-CO clamp can generate up to 430 pounds of clamping force from shop air. DE-STA-CO pneumatic clamps are ideal for a wide variety of manufacturing and assembly operations.

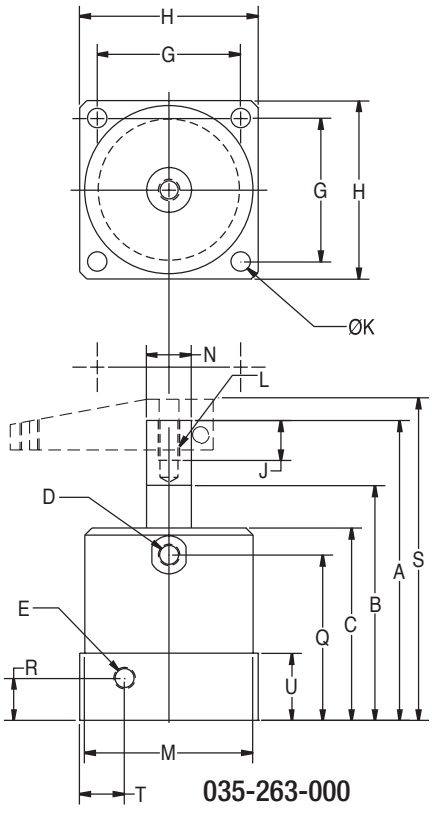
Features:

- Swing motion available in 0, 45, 60, and 90 degrees
- Four (4) styles of arms
- Double-locked arm design is bolted to piston shaft and around shaft diameter for extra rigidity
- Double-acting design
- Dual-seal design with a wiper seal to keep contaminants out
- Long clamping stroke accommodates a wide thickness of materials
- Clamping force is adjustable using regulated air
- Smooth swing motion for better operating performance



035-163-000

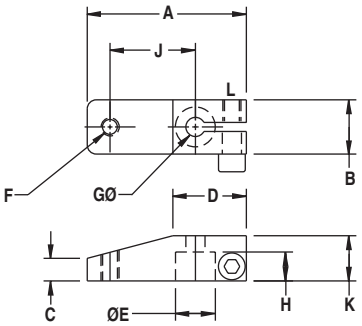




035-263-000

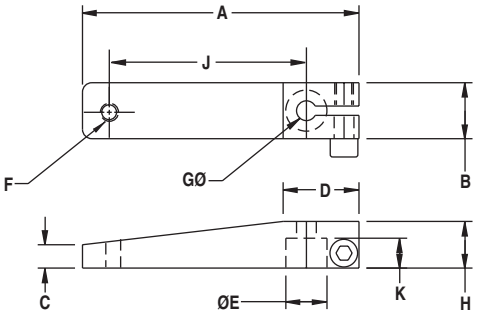
Cat. no.	Imperial Dimensions (inches)																			
	Total Stroke	Clamping Stroke	A Unclamped Position	B Clamped Position	C Body Height	D Clamp Port	E Unclamp Port	F Threaded Body	G Flange Mount	H Flange	J Thread Depth	øK Hole Dia.	L Thread Size	M Body Dia.	N Shaft Dia.	P Thread Size	Q	R	S	T	U
035-163-145 035-163-160 035-163-190 035-163-245 035-163-260 035-163-290 035-163-300	1.191	0.562	5.59	4.4	3.625	1/8 NPT	1/8 NPT	2.11	–	–	1.0	–	3/8-16 UNC	3.02	0.787	3⅛-16 UN	3.1	0.8	5.94	–	–
035-263-145 035-263-160 035-263-190 035-263-245 035-263-260 035-263-290 035-263-300	1.185	0.557	5.385	4.2	3.38			–	2.51	3.135		0.337		2.956		–	2.9	0.75	5.67	0.75	1.18

See Page 15.27 for available arms



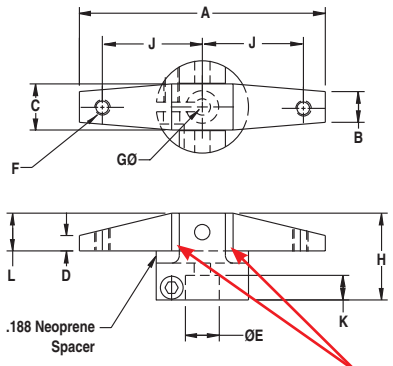
Standard Arm
036-000-01

Part no.	A	B	C	D	E	F	G	H	J	K	L
036-551-01	2.380	0.750	0.313	1.016	0.551	¼-20 UNC	0.265	0.400	1.361	0.625	¼-20 UNC-2B
036-630-01	3.100	0.750	0.375	1.105	0.630	⅝-18 UNC	0.344	0.500	2.000	0.750	⅝-18 UNC-2B
036-787-01	4.000	1.000	0.500	1.307	0.787	⅜-16 UNC	0.390	0.700	2.750	1.000	⅜-16 UNC-2B



Extended Arm
036-000-02

Part no.	A	B	C	D	E	F	G	H	J	K
036-551-02	3.380	0.750	0.313	1.016	0.551	¼-20 UNC	0.265	0.625	2.361	0.400
036-630-02	4.725	0.750	0.375	1.105	0.630	⅝-18 UNC	0.344	0.750	3.625	0.500
036-787-02	6.360	1.000	0.500	1.307	0.787	⅜-16 UNC	0.390	1.000	5.000	0.700



Dual Pivot Arm
036-000-03

Part no.	A	B	C	D	E	F	G	H	J	K	L
036-551-03	3.28	0.500	0.750	0.312	0.551	¼-20 UNC	0.265	0.412	1.36	0.400	0.614
036-630-03	5.25	0.500	0.856	0.300	0.630	⅝-18 UNC	0.344	1.750	2.25	0.500	0.800
036-787-03	7.00	0.500	0.980	0.344	0.787	⅜-16 UNC	0.390	2.013	3.13	0.700	0.865

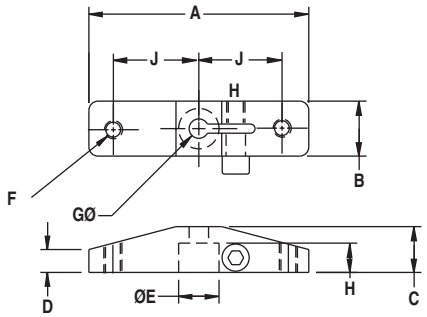
Neoprene spacer acts as a spring to allow the clamp to return to level upon release

NEW

Arm Order Information

036 - XXX - 01

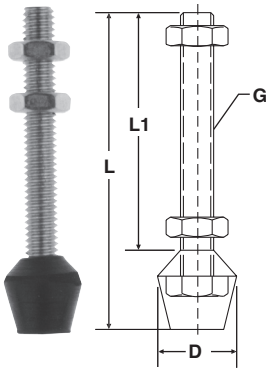
- 036 — Family
- XXX — Shaft Diameter (E DIM)
- 01 — Style
  - 01 – Standard Arm
  - 02 – Extended Arm
  - 03 – Dual Pivot Arm
  - 04 – Dual Stationary Arm



Dual Stationary Arm
036-000-04

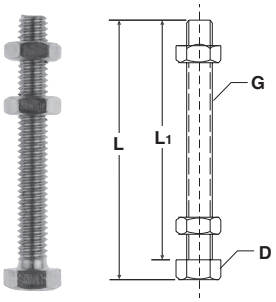
Part no.	A	B	C	D	E	F	G	H	J
036-551-04	3.28	0.750	0.625	0.313	0.551	¼-20 UNC	0.265	0.400	1.36
036-630-04	4.72	0.750	0.750	0.375	0.630	⅝-18 UNC	0.344	0.500	2.00
036-787-04	6.00	1.000	1.000	0.500	0.787	⅜-16 UNC	0.390	0.700	2.75

Flat-Tip Bonded Neoprene Cap Spindle



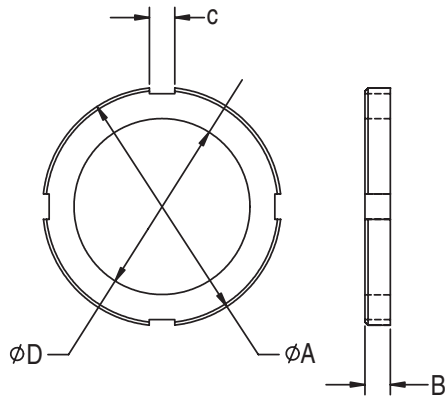
Part no.	L	L1	D	Thread (G)
202208	1.63	1.13	0.66	1/4-20
215208	2.13	1.63	0.66	1/4-20
225208	2.25	1.56	0.75	5/16-18
507208	3.00	2.25	0.75	5/16-18
240208	3.25	2.25	0.88	3/8-16
527208	3.50	2.50	0.88	3/8-16
235208	5.75	4.75	0.88	3/8-16

Hex-Head Fully Threaded Carbon Steel Spindle



Part no.	L	L1	D	Thread (G)
202203	3.13	3.00	7/16	1/4-20
205203	1.88	1.69	7/16	1/4-20
461203	1.00	0.81	1/2	5/16-18
441203	1.94	1.75	1/2	5/16-18
207203	2.75	2.50	1/2	5/16-18
491203	1.50	1.25	9/16	3/8-16
210203	3.00	2.75	9/16	3/8-16
240203	4.25	4.00	9/16	3/8-16
527203	5.25	5.00	9/16	3/8-16

Pneumatic Clamp Jam Nut

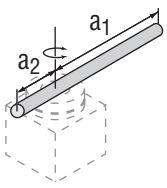


Part no.	Clamp Used On	Dim A	Dim B	Dim C	Dim D
JAMNUT25	035-125-XXX	2.283	0.315	0.275	1-1/2-16 UN
JAMNUT32	035-132-XXX	2.755	0.315	0.275	1-7/8-16 UN
JAMNUT40	035-140-XXX	2.953	0.315	0.315	2-1/4-16 UN
JAMNUT50	035-150-XXX	3.346	0.354	0.315	2-1/2-16 UN
JAMNUT63	035-163-XXX	4.134	0.393	0.354	3-1/8-16 UN

Calculation for Mass Moment of Inertia

I: Mass Moment of Inertia (kg • m2)(lb-in-sec²) m: Load Mass (kg)($\frac{\text{lb-sec}^2}{\text{in}}$)

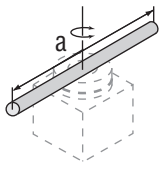
NOTE: $m = \frac{w(lbf)}{g\ in/sec^2}$ w = weight, g = 386 in/sec²



1. Thin Bar

Position of rotary axis: Vertical to the bar and through the end

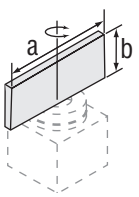
$$I = m1 \bullet \frac{a1^2}{3} + m2 \bullet \frac{a2^2}{3}$$



2. Thin Bar

Position of rotary axis: Vertical to the bar and through the center of gravity

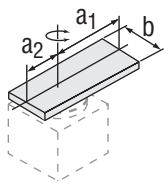
$$I = m \bullet \frac{a^2}{12}$$



3. Thin Rectangular Plate

Position of rotary axis: Parallel to side b and through center of gravity

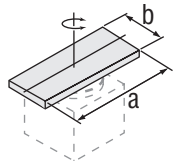
$$I = m \bullet \frac{a^2}{12}$$



4. Thin Rectangular Plate

Position of rotary axis: Vertical to the plate and through the end

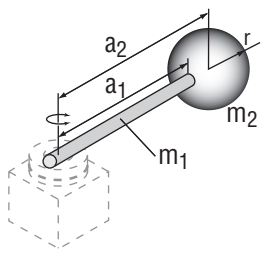
$$I = m1 \bullet \frac{4a1^2+b^2}{12} + m2 \bullet \frac{4a2^2+b^2}{12}$$



5. Thin Rectangular Plate

Position of rotary axis: Through the center of gravity and vertical to the plate

$$I = m \bullet \frac{a^2+b^2}{12}$$



6. Load at the End of Lever Arm

$$I = m1 \bullet \frac{a1^2}{3} + m2 \bullet a2^2 + K$$

$$I = m2 \bullet \frac{2r^2}{5}$$

Threaded Body Cylinders

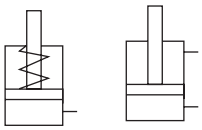
DE-STA-CO's *Single-acting* (spring return) and *Double-acting Threaded Cylinders* are extremely versatile and durable. They can be designed into a variety of high production applications including workpiece positioning, holding and ejecting applications where space is at a premium.

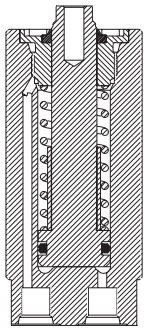
Double-acting cylinders assure complete powered retraction for CNC controlled operations (where time is critical) or when using heavy end effectors. Double-acting models are also suited to manufacturing applications, such as production punching.

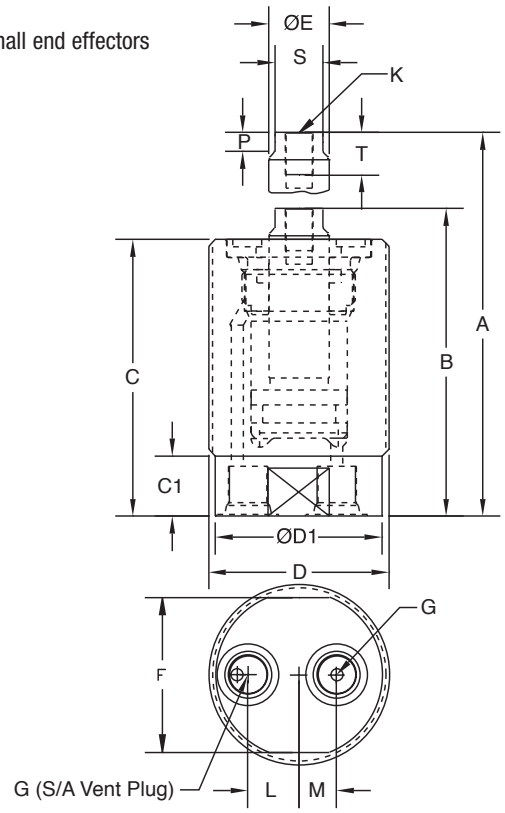
Single-acting cylinders should be used with small end effectors only and where retraction speed is not critical.

Features:

- Stainless steel pistons won't "mushroom" even when used without grippers
- Variety of sizes that support precise fixture designs
- Springs are designed to return the cylinder and contact points, not intended to pull mechanisms.
- SAE fluid ports are common to all models
- Operating Pressure – 150 to 5,000 PSI







Single-acting Threaded Cylinders

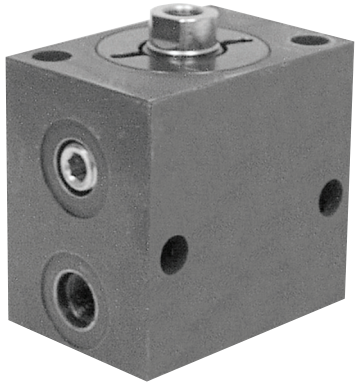
Cat no.	Force at 5,000 PSI (lbs.) Push	Bore ø (in.)	Rod ø (in.)	Stroke (in.)	Effective Area (sq. in.) Push	Oil Capacity (Cu. in.) Push
010-011-113	2,220	0.750	0.437	0.380	0.442	0.168
010-012-221	3,900	1.000	0.625	0.270	0.785	0.212
010-012-224	3,900	1.000	0.625	0.600	0.785	0.471
010-013-332	8,800	1.500	1.000	0.297	1.767	0.525
010-013-334	8,800	1.500	1.000	0.447	1.767	0.789

Double-acting Threaded Cylinders

Cat no.	Force at 5,000 PSI (lbs.) Push	Force at 5,000 PSI (lbs.) Pull	Bore ø (in.)	Rod ø (in.)	Stroke (in.)	Effective Area (sq. in.) Push	Effective Area (sq. in.) Pull	Oil Capacity (Cu. in.) Push	Oil Capacity (Cu. in.) Pull
010-021-111	2,220	1,400	0.750	0.437	0.630	0.442	0.292	0.279	0.184
010-021-114	2,220	1,400	0.750	0.437	1.500	0.442	0.292	0.663	0.438
010-022-222	3,900	2,390	1.000	0.625	0.790	0.785	0.478	0.620	0.378
010-022-225	3,900	2,390	1.000	0.625	2.000	0.785	0.478	1.570	0.956
010-023-333	8,800	4,900	1.500	1.000	1.000	1.767	0.982	1.767	0.982
010-023-335	8,800	4,900	1.500	1.000	2.000	1.767	0.982	3.534	1.964

Dimension Chart – Single & Double-acting Threaded Cylinders

Cat. no. Single Acting	Cat. no. Double Acting	A(S.ACT.)	A(D.ACT.)	Dimensions (In Inches) B	C	C1	D	D1	E	F	G	K	L	M	P	S	T
–	010-021-111	–	3.444	2.814	2.494	0.625	1.750-16UN	1.564	0.437	1.375	SAE#4	1/4-20UNC	0.422	0.390	0.200	0.375	0.500
010-011-113	010-021-114	4.064	5.184	3.684	3.364	0.625	1.750-16-UN	1.564	0.437	1.375	SAE#4	1/4-20UNC	0.422	0.390	0.200	0.375	0.500
010-012-221	010-022-222	3.465	3.985	3.195	2.875	0.625	1.875-16UN	1.730	0.625	1.610	SAE#4	5/16-24UNC	0.530	0.390	0.200	0.500	0.625
010-012-224	010-022-225	5.005	6.405	4.405	4.085	0.625	1.875-16UN	1.730	0.625	1.610	SAE#4	5/16-24UNC	0.530	0.390	0.200	0.500	0.625
010-013-332	010-023-333	3.917	4.620	3.620	3.125	0.690	2.500-16UN	2.375	1.000	2.250	SAE#4	1/2-13UNC	0.800	0.550	0.375	0.835	0.625
010-013-334	010-023-335	5.067	6.620	4.620	4.125	0.690	2.500-16UN	2.350	1.000	2.250	SAE#4	1/2-13UNC	0.800	0.550	0.375	0.835	0.625



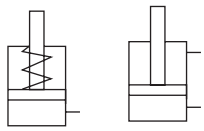
DE-STA-CO's *Single-acting* (spring return) and *Double-acting Block Cylinders* are designed for punching, pressing, riveting and bending applications. These block cylinders require no special mounting hardware and can be dual-position mounted (parallel or perpendicular) to piston travel on every model.

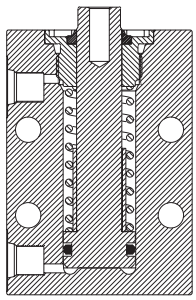
Tapped piston-ends allow the use of custom end attachments (double-acting recommended for attachments or mechanisms), while a vent port featuring a single-acting filter gives the cylinder a place to "breathe" and helps keep chips and other contaminants from sucking past the wipers (double-acting unclamp port).

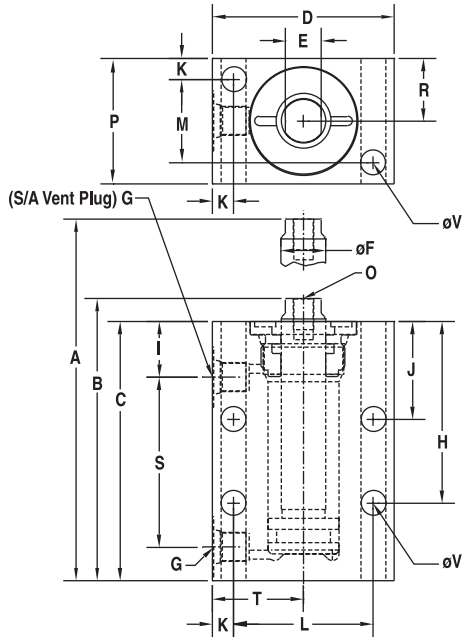
Adjustable force ranging from "negligible" to maximum cylinder capacity is achieved by adjusting the input pressure. Advanced side-porting is provided for easy plumbing access.

Features:

- Stainless-steel plunger for long-lasting performance
- Variety of strokes to meet specific design needs
- SAE oil ports
- No special mounting hardware required
- Operating Pressure – 150 to 5,000 PSI







Single-acting Block Cylinders

Cat no.	Force at 5,000 PSI (lbs.) Push	Bore ø (in.)	Rod ø (in.)	Stroke (in.)	Effective Area (sq. in.) Push	Oil Capacity (Cu. in.) Push
090-011-113	2,220	0.750	0.437	0.380	0.442	0.168
090-012-221	3,900	1.000	0.625	0.270	0.785	0.212
090-012-224	3,900	1.000	0.625	0.600	0.785	0.471
090-013-332	8,800	1.500	1.000	0.297	1.767	0.525
090-013-334	8,800	1.500	1.000	0.447	1.767	0.789

Double-acting Block Cylinders

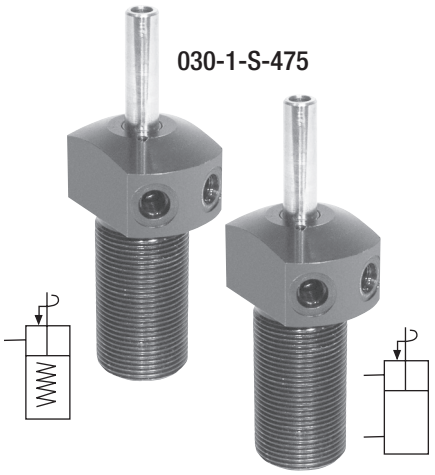
Cat no.	Force at 5,000 PSI (lbs.) Push	Force at 5,000 PSI (lbs.) Pull	Bore ø (in.)	Rod ø (in.)	Stroke (in.)	Effective Area (sq. in.) Push	Effective Area (sq. in.) Pull	Oil Capacity (Cu. in.) Push	Oil Capacity (Cu. in.) Pull
090-021-111	2,220	1,400	0.750	0.437	0.630	0.442	0.292	0.279	0.184
090-021-114	2,220	1,400	0.750	0.437	1.500	0.442	0.292	0.663	0.438
090-022-222	3,900	2,390	1.000	0.625	0.790	0.785	0.478	0.620	0.378
090-022-225	3,900	2,390	1.000	0.625	2.000	0.785	0.478	1.570	0.956
090-023-333	8,800	4,900	1.500	1.000	1.000	1.767	0.982	1.767	0.982
090-023-335	8,800	4,900	1.500	1.000	2.000	1.767	0.982	3.534	1.964

Dimension Chart – Single & Double-acting Block Cylinders

Cat. no. Single Acting	Cat. no. Double Acting	A(S.ACT.)	A(D.ACT.)	Dimensions (In Inches) B	C	D	E	F	G	H	I	J	K	L	M	O	P	R	S	T	V
–	090-021-111	–	3.078	2.448	2.128	2.360	0.375	0.437	SAE#4	0	0.756	1.206	0.295	1.770	0.980	1/4-20UNC	1.570	0.785	0.900	1.180	0.280
090-011-113	090-021-114	3.698	4.818	3.318	2.998	2.360	0.375	0.437	SAE#4	2.058	0.756	1.248	0.295	1.770	0.980	1/4-20UNC	1.570	0.785	1.770	1.180	0.280
090-012-221	090-022-222	30031	3.551	2.761	2.441	2.559	0.500	0.625	SAE#4	0	0.788	1.378	0.295	1.969	1.181	5/16-24UNF	1.772	0.886	1.181	1.280	0.350
090-012-224	090-022-225	4.571	5.971	3.971	3.651	2.559	0.500	0.625	SAE#4	2.558	0.788	1.378	0.295	1.969	1.181	5/16-24UNF	1.772	0.886	2.391	1.280	0.350
090-013-332	090-023-333	3.472	4.175	3.175	2.680	3.150	0.835	1.000	SAE#4	0	0.708	1.420	0.374	2.403	1.548	1/2-13UNC	2.295	1.148	1.500	1.575	0.391
090-013-334	090-023-335	4.622	6.175	4.175	3.680	3.150	0.835	1.000	SAE#4	2.620	0.708	1.440	0.374	2.403	1.548	1/2-13UNC	2.295	1.148	2.500	1.575	0.391

Hyd. Swing/Pull Clamps – 475 lb.

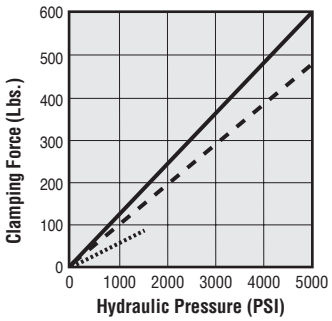
StrongHold *SELECT*



The DE-STA-CO StrongHold ***SELECT*** Threaded Body Swing/Pull Clamps are available in both single-acting and double-acting versions. They incorporate the latest hydraulic swing clamp technology. The top port design allows easy access for plumbing connections. They are available with 90° left or right hand rotation, or with guided straight pull. The breather port on single-acting models may be replaced with tubing for remote venting. The optional arms clamp securely to the piston rod to reduce fatigue and deflection. Arms may be easily modified or custom arms may be substituted.

SELECT Features Include:

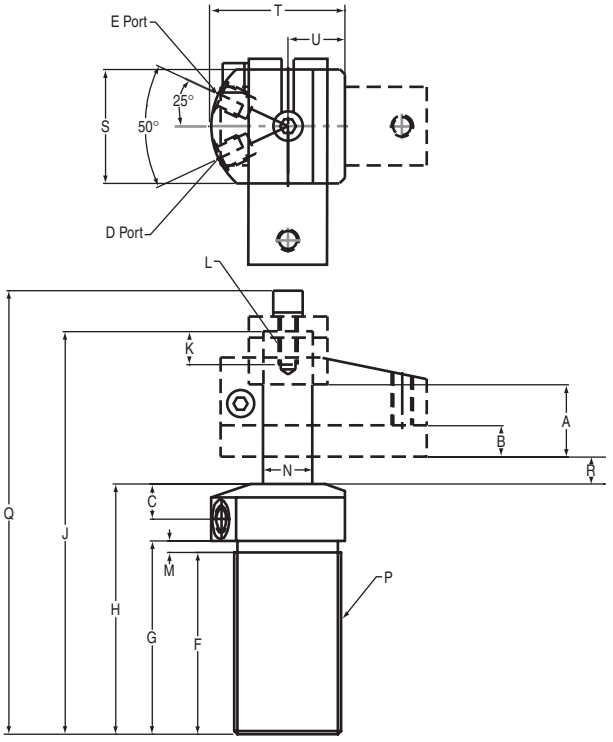
- Advanced seals and wipers utilize a special, highly wear-resistant construction for long cycle life and 5,000 PSI operation
- Triple track piston rod design for field adjustable swing direction
- Hardened and hard chrome plated piston rod for increased strength and wear resistance
- Advanced metal treated body for superior wear and corrosion resistance
- MRO interchange design
- Straight pull capacity 600 lbs. at 5,000 PSI max



Performance

- With 031-L-475 Arm (3.25" long)
- With 0-31-S-475 Arm (1.22" long)
- Straight Pull

For 475 lb. Swing/Pull Clamp Arms see Page 15.35



Cat. no.	Specifications							Max Oil Flow in3/min
	Oper.	Swing Direction	*Force (lbs.)	Eff. Area (Sq. In.)		Oil Cap. (Cu. In.)		
				Clamp	Unclamp	Clamp	Unclamp	
030-1-S-475(-X)	Single-Acting	Left Hand (Counter Clockwise)	475	0.12	–	0.08	–	12
030-1-D-475(-X)	Double-acting	Right Hand (Clockwise) Straight Pull			0.24		0.15	

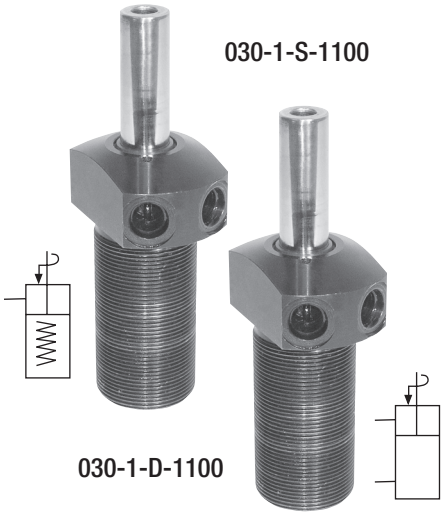
Ordering Notes:

- Left hand swing (ccw) is standard – no suffix
- Add –R suffix for right hand swing
- Add –S suffix for straight guided pull *We will assemble and mark them that way.*

Cat. no.	Specifications																		
	A Total Stroke	B Clamping Stroke	C	D Clamp Port	E Unclamp Port[Δ]	F	G	H	J	K	L	M	N	P	Q	R	S	T	U
030-1-S-475	0.65	0.210	0.59	SAE-2	SAE-2	1.929	2.086	3.07	4.429	0.8	M6x1	0.157	0.393	1-1/8-16UN	4.96	0.495	1.3	1.55	0.61
030-1-D-475	0.65	0.32	0.59																

NOTE: * With 1.22" long arm at 5,000 PSI maximum operating pressure.
[Δ] Do not pressurize – single-acting only
[†] See page 15.35 for arms, accessories and custom arm mounting

For additional Swing Clamps see Pages 15.42 – 15.54

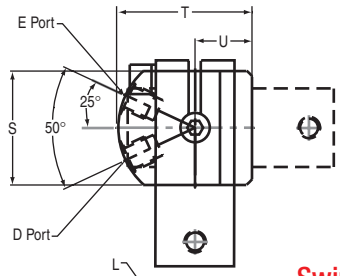


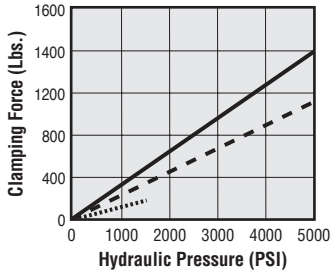
The DE-STA-CO StrongHold ***SELECT*** Threaded Body Swing/Pull Clamps are available in both *single-acting* and *double-acting* versions. They incorporate the latest hydraulic swing clamp technology. The top port design allows easy access for plumbing connections.

They are available with 90° left or right hand rotation, or with guided straight pull. The breather port on single-acting models may be replaced with tubing for remote venting. The optional arms clamp securely to the piston rod to reduce fatigue and deflection. Arms may be easily modified or custom arms may be substituted.

SELECT Features Include:

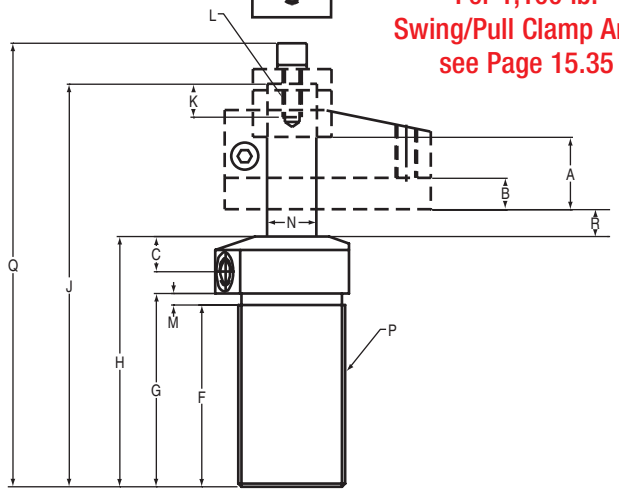
- Advanced seals and wipers utilize a special, highly wear-resistant construction for long cycle life and 5,000 PSI operation
- Triple track piston rod design for field adjustable swing direction
- Hardened and hard chrome plated piston rod for increased strength and wear resistance
- Advanced metal treated body for superior wear and corrosion resistance
- MRO interchange design
- Straight pull capacity
  1,400 lbs. at 5,000 PSI max.





Performance

With 031-L-1100 Arm (5.31" long)
With 031-S-1100 Arm (1.89" long)
Straight Pull



For 1,100 lb. Swing/Pull Clamp Arms see Page 15.35

Cat. no.	Specifications							Max Oil Flow in3/min
	Oper.	Swing Direction	*Force (lbs.)	Eff. Area (Sq. In.)		Oil Cap. (Cu. In.)		
				Clamp	Unclamp	Clamp	Unclamp	
030-1-S-1100(-X)	Single-Acting	Left Hand (Counter Clockwise) Right Hand (Clockwise) Straight Pull	1100	0.28	–	0.25	–	25
030-1-D-1100(-X)	Double-acting				0.59		0.52	

Ordering Notes:

- Left hand swing (ccw) is standard – no suffix
- Add –R suffix for right hand swing
- Add –S suffix for straight guided pull

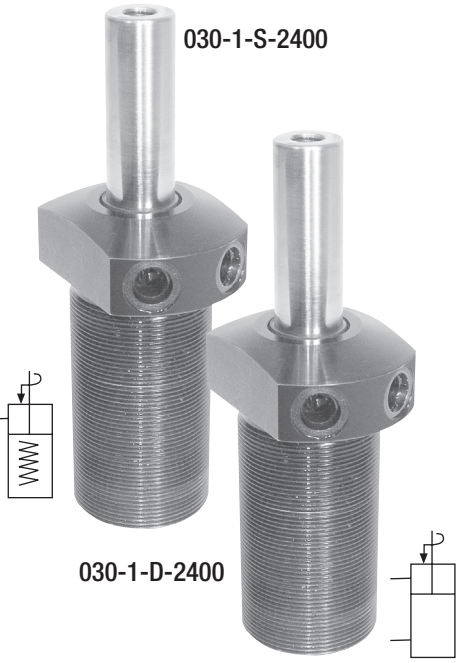
We will assemble and mark them that way.

Cat. no.	Specifications																		
	A Total Stroke	B Clamping Stroke	C	D Clamp Port	E Unclamp Port[Δ]	F	G	H	J	K	L	M	N	P	Q	R	S	T	U
030-1-S-1100	0.89	0.39	0.6	SAE-4	SAE-4	2.4	2.6	3.58	5.305	0.94	M8x1.25	0.196	0.629	1-3/8-18UN	5.965	0.400	1.5	1.87	0.75
030-1-D-1100																			

NOTE: * With 1.89" long arm at 5,000 PSI maximum operating pressure.
[Δ] Do not pressurize – single-acting only
† See page 15.35 for arms, accessories and custom arm mounting

For additional Swing Clamps see Pages 15.42 – 15.54

Hyd. Swing/Pull Clamps – 2400 lb.

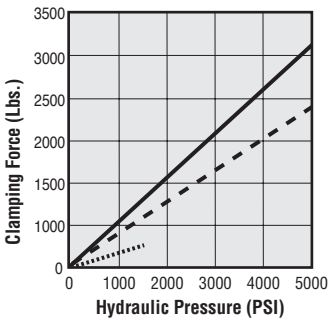


The DE-STA-CO StrongHold ***SELECT*** Threaded Body Swing/Pull Clamps are available in both *single-acting* and *double-acting* versions. They incorporate the latest hydraulic swing clamp technology. The top port design allows easy access for plumbing connections.

They are available with 90° left or right hand rotation, or with guided straight pull. The breather port on single-acting models may be replaced with tubing for remote venting. The optional arms clamp securely to the piston rod to reduce fatigue and deflection. Arms may be easily modified or custom arms may be substituted.

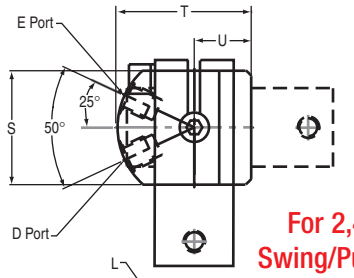
SELECT Features Include:

- Advanced seals and wipers utilize a special, highly wear-resistant construction for long cycle life and 5,000 PSI operation
- Triple track piston rod design for field adjustable swing direction
- Hardened and hard chrome plated piston rod for increased strength and wear resistance
- Advanced metal treated body for superior wear and corrosion resistance
- MRO interchange design
- Straight pull capacity
  3,150 lbs. at 5,000 PSI max.

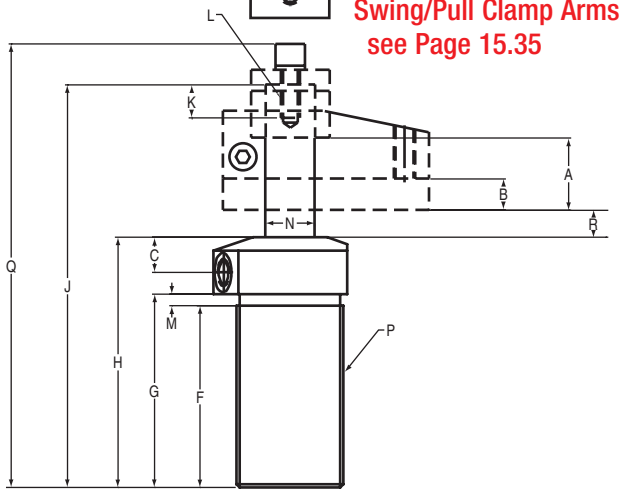


Performance

With 031-L-2400 Arm (6.36" long)
With 031-S-2400 Arm (2.43" long)
Straight Pull



For 2,400 lb. Swing/Pull Clamp Arms see Page 15.35



Cat. no.	Specifications							Max Oil Flow in3/min
	Oper.	Swing Direction	*Force (lbs.)	Eff. Area (Sq. In.)		Oil Cap. (Cu. In.)		
				Clamp	Unclamp	Clamp	Unclamp	
030-1-S-2400(-X)	Single-Acting	Left Hand (Counter Clockwise)	2400	0.63	–	0.7	–	100
030-1-D-2400(-X)	Double-acting	Right Hand (Clockwise) Straight Pull			1.23		1.40	

Ordering Notes:

- Left hand swing (ccw) is standard – no suffix
- Add –R suffix for right hand swing
- Add –S suffix for straight guided pull
  We will assemble and mark them that way.

Cat. no.	Specifications																		
	A Total Stroke	B Clamping Stroke	C	D Clamp Port	E Unclamp Port△	F	G	H	J	K	L	M	N	P	Q	R	S	T	U
030-1-S-2400	1.12	0.5	0.62	SAE-4	SAE-4	3.18	3.38	4.38	6.8	1.28	M10x1.5	0.196	0.87	1-7/8-16UN	7.543	0.517	2.0	2.38	1.0
030-1-D-2400																			

NOTE: * With 2.43" long arm at 5,000 PSI maximum operating pressure.
△Do not pressurize – single-acting only
†See page 15.35 for arms, accessories and custom arm mounting

For additional Swing Clamps see Pages 15.42 – 15.54

NEW

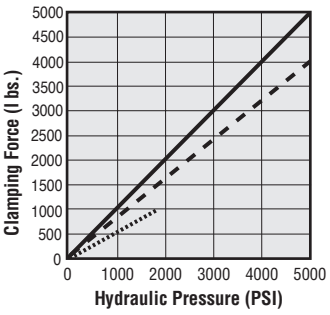
Hyd. Swing/Pull Clamps – 4000 lb.

The DE-STA-CO StrongHold ***SELECT*** Threaded Body Swing/Pull Clamps are available in both *single-acting* and *double-acting* versions. They incorporate the latest hydraulic swing clamp technology. The top port design allows easy access for plumbing connections.

They are available with 90° left or right hand rotation, or with guided straight pull. The breather port on single-acting models may be replaced with tubing for remote venting. The optional arms clamp securely to the piston rod to reduce fatigue and deflection. Arms may be easily modified or custom arms may be substituted.

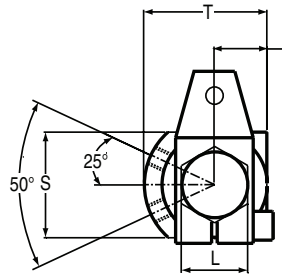
SELECT Features Include:

- Advanced seals and wipers utilize a special, highly wear-resistant construction for long cycle life and 5,000 PSI operation
- Triple track guide rod design incorporates three balls engaged in three tracks for increased cycle life. Swing direction can be field converted by replacing the guide rod
- Hardened and hard chrome plated piston rod for increased strength and wear resistance
- Advanced metal treated body for superior wear and corrosion resistance
- MRO interchange design
- Straight pull capacity 5,500 lbs. at 5,000 PSI max.

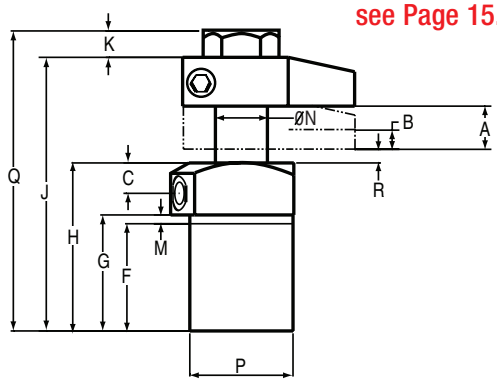


Performance

With 031-L-4000 Arm (7.01" long)
With 031-S-4000 Arm (2.75" long)
Straight Pull



For 4,000 lb. Swing/Pull Clamp Arms see Page 15.36



Cat. no.	Specifications							Max Oil Flow in3/min
	Oper.	Swing Direction	*Force (lbs.)	Eff. Area (Sq. In.)		Oil Cap. (Cu. In.)		
				Clamp	Unclamp	Clamp	Unclamp	
030-1-S-4000(-X)	Single-Acting	Left Hand (Counter Clockwise)	4000	1.10	–	1.22	–	140
030-1-D-4000(-X)	Double-acting	Right Hand (Clockwise) Straight Pull			2.35		2.60	

Ordering Notes:

- Left hand swing (ccw) is standard – no suffix
- Add –R suffix for right hand swing
- Add –S suffix for straight guided pull *We will assemble and mark them that way.*

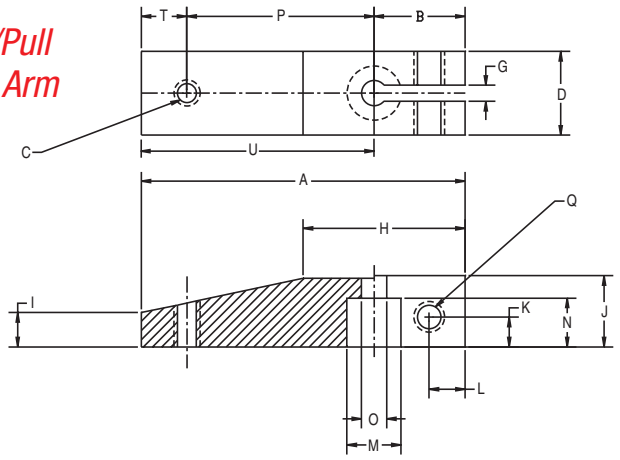
Cat. no.	Specifications																		
	A Total Stroke	B Clamping Stroke	C	D Clamp Port	E Unclamp Port△	F	G	H	J	K	L	M	N	P	Q	R	S	T	U
030-1-S-4000	1.07	0.45	0.75	SAE#4	SAE#4	2.70	2.83	4.09	6.67	0.64	1.61	0.14	1.26	2-1/2-16UN	7.30	0.33	2.56	2.99	1.28
030-1-D-4000																			

NOTE: * With 2.75" long arm at 5,000 PSI maximum operating pressure.
△ Do not pressurize – single-acting only
† See page 15.36 for arms, accessories and custom arm mounting

For additional Swing Clamps see Pages 15.42 – 15.54

Hyd. Swing/Pull Clamp 475-2400 lb. Arms

Swing/Pull Clamp Arm



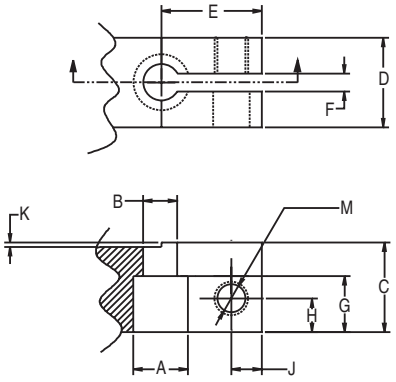
Custom built arms of any length must clamp to the swing/pull clamp's piston rod in a manner similar to the DE-STA-CO arms or some derating of the clamp will be necessary.

The design feature "K," in the chart and drawing at the bottom of this page, is recommended for all applications of custom, single arms. See the accompanying chart for design details. In applications where there is no bending stress being transferred into the piston rod (like push/pull linkages and equalizing double arms), this design detail may be eliminated. In these applications, the clamp's full capacity (referred to as "straight pull" capacity) is available.

	Specifications																	
Cat. no.	A	B	C	D	G	H	I	J	K	L	M	N	O	P	Q	T	U	Weight (lbs.)
031-S-475	1.929	0.709	M6	0.63	0.126	1.139	0.394	0.630	0.236	0.217	0.394	0.394	0.256	0.984	M6	0.236	1.220	0.159
031-L-475	3.959	0.709	–	0.63		1.166	0.394	0.630	0.236	0.217	0.394	0.394	0.256	–	M6	–	3.250	0.348
031-S-1100	2.598	0.709	M8	0.748		1.294	0.433	0.748	0.236	0.217	0.630	0.472	0.33	1.575	M6	0.315	1.889	0.286
031-L-1100	6.019	0.709	–	0.748		1.412	0.433	0.748	0.236	0.217	0.630	0.472	0.335	–	M6	–	5.310	0.721
031-S-2400	3.268	0.866	M10	1.125		1.459	0.633	1.00	0.236	0.217	0.866	0.709	0.413	1.969	M8	0.433	2.402	0.634
031-L-2400	7.226	0.866	–	1.125		1.696	0.633	1.00	0.236	0.217	0.866	0.709	0.413	–	M8	–	6.360	1.564

IMPORTANT: *Any clamp using a modified or custom arm that is longer or heavier than DE-STA-CO's standard arms must be derated to prevent internal damage.*

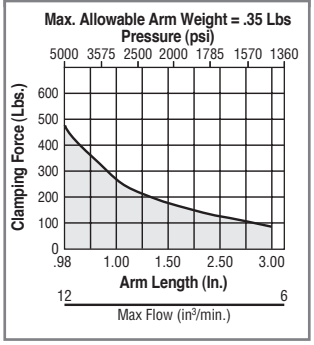
- Do not exceed the maximum speed and pressure ratings for DE-STA-CO's standard arms. For maximum hydraulic pressure and speed ratings, see the accompanying charts
- Do not use meter-out circuitry for controlling double-acting clamp speeds
- Contact DE-STA-CO if further design assistance is required



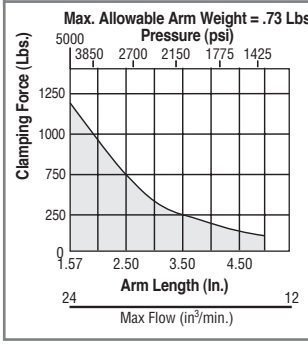
Custom Arm Mounting Dimensions for Swing/Pull Clamps

	Specifications										
Shaft Dia.	A	B	C	D	E	F	G	H	J	K	M
10MM	0.394	0.256	0.63	0.63	0.709		0.394	0.236	0.217		M6 x 1.0
16MM	0.630	0.335	0.748	0.748	0.709	1.26	0.472	0.236	0.217	0.30	M6 x 1.0
22MM	0.866	0.413	1.00	1.00	0.866		0.709	0.236	0.217		M8 x 1.25

031-S-475 • 031-L-475



031-S-1100 • 031-L-1100



031-S-2400 • 031-L-2400

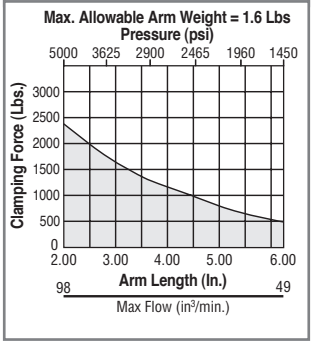


Chart Legend

Maximum Length / Pressure

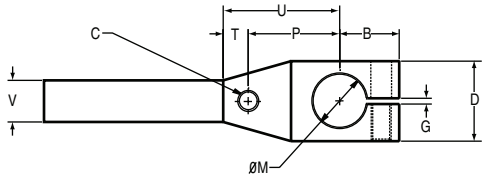
Operating Range

Clamps must operate at or below maximum arm length/pressure curve:

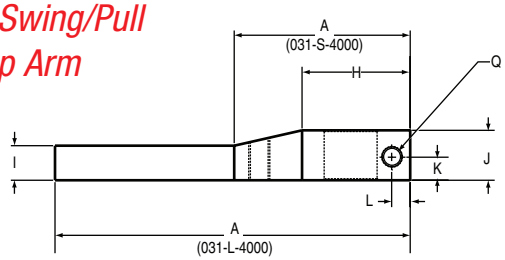
To approximate clamping force with any arm at less than maximum pressure:

FORCE = P x A x [1-(P/M x .23)]

P = Hyd. system operating pressure (PSI)
A = Clamp effective area (sq. in.)
M = Max. rated pressure of chosen arm length (PSI)



4,000 lb. Swing/Pull Clamp Arm



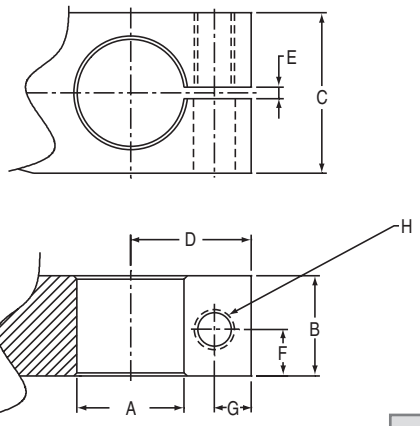
Custom built arms of any length must clamp to the swing/pull clamp's piston rod in a manner similar to the DE-STA-CO arms or some derating of the clamp will be necessary.

The design feature "K," in the chart and drawing at the bottom of this page, is recommended for all applications of custom, single arms. See the accompanying chart for design details. In applications where there is no bending stress being transferred into the piston rod (like push/pull linkages and equalizing double arms), this design detail may be eliminated. In these applications, the clamp's full capacity (referred to as "straight pull" capacity) is available.

	Specifications																
Cat no.	A	B	C	D	G	H	I	J	K	L	M	P	Q	T	U	V	Weight (lbs.)
031-S-4000	4.17	1.42	1/2-13	1.89	0.138	2.56	0.83	1.18	0.55	0.43	1.26	2.17	M12	0.58	2.75	0.98	1.80
031-L-4000	8.43	1.42	1/2-13	1.89	0.138	2.56	0.83	1.18	0.55	0.43	1.26	–	M12	–	7.01	0.98	2.80

IMPORTANT: *Any clamp using a modified or custom arm that is longer or heavier than DE-STA-CO's standard arms must be derated to prevent internal damage.*

- Do not exceed the maximum speed and pressure ratings for DE-STA-CO's standard arms
  For maximum hydraulic pressure and speed ratings, see the accompanying charts
- Do not use meter-out circuitry for controlling double-acting clamp speeds
- Contact DE-STA-CO if further design assistance is required



Custom Arm Mounting Dimensions for 4,000 lb. Swing/Pull Clamps

	Specifications							
Cat no.	A	B	C	D	E	F	G	H
32MM	1.26	1.18	1.89	1.42	0.138	0.55	0.43	M12 x 1.75

031-S-4000 • 031-L-4000

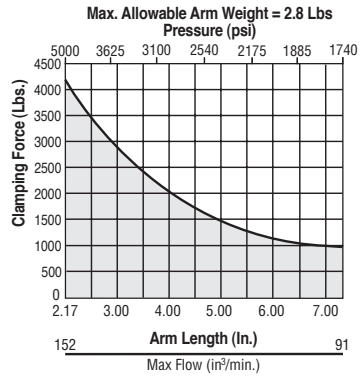


Chart Legend

Maximum Length / Pressure
Operating Range

Clamps must operate at or below maximum arm length/pressure curve:

To approximate clamping force with any arm at less than maximum pressure:

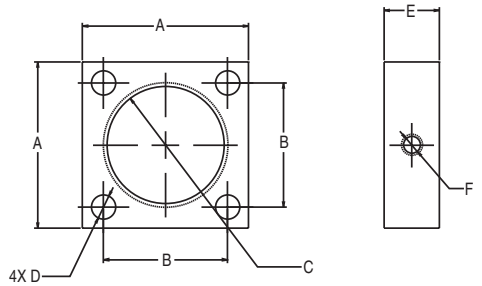
FORCE = P x A x [1-(P/M x .23)]

P = Hyd. system operating pressure (PSI)
A = Clamp effective area (sq. in.)
M = Max. rated pressure of chosen arm length (PSI)

Flange Mounting Bracket

DE-STA-CO's StrongHold ***SELECT*** flange mounting brackets allow you to secure your swing/pull clamps.

Swing clamps can also be screwed into a threaded hole and locked in position with a jam nut. Two jam nuts may also be used to secure the clamps in an unthreaded hole.



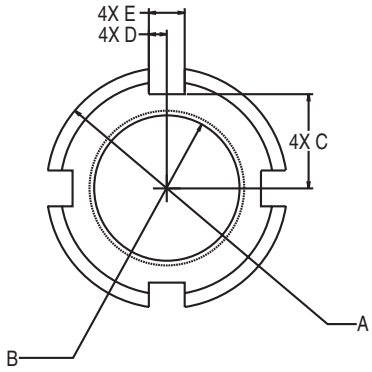
Flange Mount

	Dimensions (In Inches)					
Cat. no.	A	B	C	D	E	F
FM475	1.50	1.12	1-1/8-16UN	0.219	0.500	10-24UNC-2B
FM1100	1.75	1.34	1-3/8-18UN	0.272	0.500	10-24UNC-2B
FM2400	2.25	1.77	1-7/8-16UN	0.328	1.000	1/4-20UNC-2B
FM4000	3.26	2.17	2-1/2-16UN	0.339	1.000	1/4-20UNC-2B

NOTE: Includes locking set screw and nylon ball to protect clamp threads.

Jam Nut

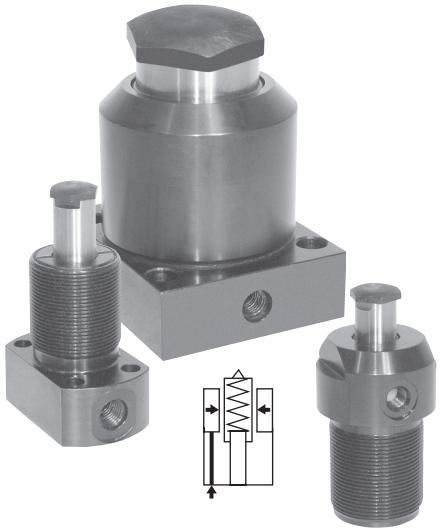
for JN Series



Jam Nuts

	Dimensions (In Inches)					
Cat. no.	A	B	C	D	E	Thickness
JN475	1.75	1-1/8-16UN	0.685	0.128	0.256	0.380
JN1100	1.88	1-3/8-18UN	0.820	0.125	0.250	0.250
JN2200	2.50	1 3/4-16UN	1.120	0.156	0.312	0.500
JN2400	2.50	1-7/8-16UN	1.060	0.187	0.374	0.500
JN4000	3.255	2-1/2-16UN	1.460	0.195	0.390	0.388
JN5000	3.38	2-5/8-20UN	1.500	0.187	0.374	0.380

Spring Adv. Work Supports – 1650-10000 lb.

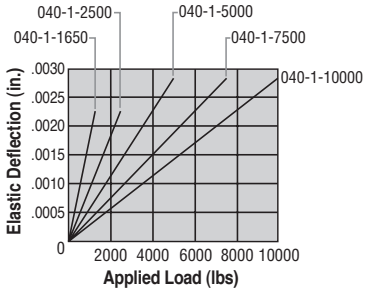


The DE-STA-CO StrongHold ***SELECT*** spring advance work supports have a spring loaded plunger which contacts the workpiece as it is loaded into the fixture. The spring keeps the plunger in contact with the work piece, allowing for variations between workpieces. To support any externally applied loads, the surrounding sleeve grips the plunger and holds it in place.

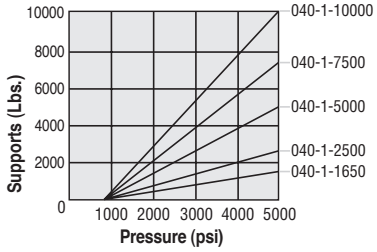
SELECT Features Include:

- Advanced seals and wipers utilize a special, highly wear-resistant construction for long cycle life and 5,000 PSI operation
- 700 PSI minimum recommended pressure
- Rigid construction limits elastic deflection under load
- High cycle-life spring design for reliable plunger return
- Advanced metal treatment with superior wear and corrosion resistance
- MRO interchange design
- 040-1-1650 threaded body model may be side or bottom plumbed
- Lower flange models may be side plumbed or bottom manifold mounted

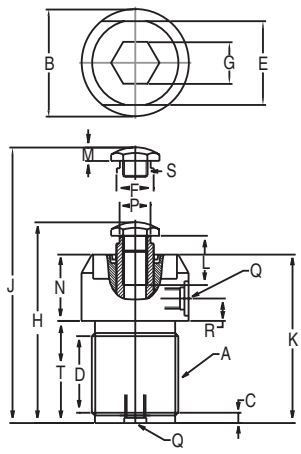
Elastic Deflection vs. Load



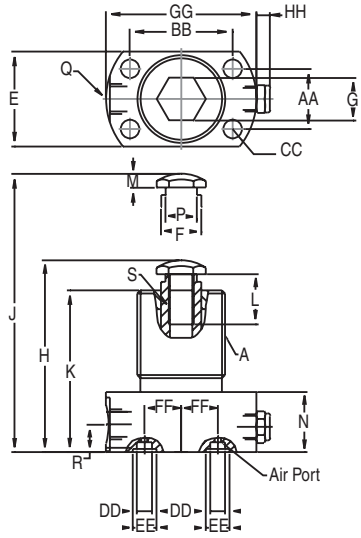
Support Force vs. Pressure



040-1-1650



040-1-2500 – 040-1-10000



Cat no.	Specifications						Approximate Forces Required To Depress Plunger (lbs.)		Dimensions (In Inches)							
	*Cap. (lbs.)	Oil Cap. (Cu. In.)	Advance System	Plunger Stroke	Mounting Configuration	Max Oil Flow in	Fully Extended	Fully Depressed	AA	BB	CC	DD	EE	FF	GG	HH
040-1-1650	1,650	0.04 in/3		0.38	Threaded Body	40	2.0	5.8	–	–	–	–	–	–	–	–
040-1-2500	2,500	0.06 in/3		0.38	Flange	60	4.0	6.0	0.94	1.62	0.283	0.23	0.37	0.57	2.38	0.28
040-1-5000	5,000	0.19 in /3	Spring	0.41	Flange	190	5.0	15.0	2.18	2.18	0.265	0.34	0.56	1.08	2.75	0.28
040-1-7500	7,500	0.24 in/3		0.53	Flange	240	8.0	29.0	2.44	2.44	0.265	0.34	0.56	1.20	3.00	0.28
040-1-10000	10,000	0.30 in/3		0.65	Flange	300	7.3	27.0	2.94	2.94	0.265	0.34	0.56	1.44	3.50	0.28

Cat no.	Dimensions (In Inches)																
	A	B	C	D	E	F	G Hex	H	J	K	L	M	N	P	Q Pressure Ports	R	S	T
040-1-1650	1-3/8-18UN	1.71	0.14	1.3	1.34	0.591	0.67	3.06	3.44	2.67	0.53	0.18	1.02	0.49	SAE-2	0.34	M10x1.5	1.65
040-1-2500	1-3/8-18UN	–	–	–	1.5	0.629	0.67	3.25	3.63	2.54	0.73	0.18	0.94	0.49	SAE-4	0.44	M10x1.5	–
040-1-5000	2-5/8-20UN	–	–	–	2.75	1.496	0.95	3.58	3.99	2.95	0.92	0.24	0.98	1	SAE-4	0.48	M20x2.5	–
040-1-7500	–	–	–	–	3	1.771	0.95	3.79	4.32	3.36	0.93	0.24	1.06	1.18	SAE-4	0.53	M20x2.5	–
040-1-10000	–	–	–	–	3.5	2.165	0.95	4.34	4.99	3.95	1.24	0.24	1.18	1.44	SAE-4	0.53	M20x2.5	–

Note: See page 15.37 for jam nuts
For additional Work Supports see Pages 15.68-15.73

Hydraulic Workholding Devices

DE-STA-CO's workholding devices include many types of hydraulic clamps that will handle most clamping applications. All of our hydraulic clamps are ideal for applications where it is necessary for the clamping arm to be moved away from the workpiece. They perform the same function as clamping cylinders, but their ability to swing or retract out of the way of cutters, plus the advantage of quick and easy part loading or unloading, makes them the perfect choice for the jobs with special workholding needs.

Swing/Pull Clamps

Both swinging and clamping functions are performed by a single actuator: as the clamp's cylinder is retracted, the rod rotates, causing the clamping arm to swing into position. Clamping then takes place as the cylinder continues to retract, pulling the arm against the workpiece.

DE-STA-CO features a family of Live Roller™ swing clamps. With this design, the swing mechanism uses a wide roller that follows a cam throughout the clamp's stroke to provide the rotation. The heat-treated roller and cam provide increased service life in the toughest applications.

DE-STA-CO offers a wide range of mounting and plumbing options. Body styles include: threaded body, block body, cartridge and manifold mount.

Single-acting and double-acting versions are available. In double-acting, there is a choice of clamping stroke lengths in some sizes.

Arms clamp securely to the piston rod to minimize deflection. Choose from a standard length arm or an easily modified long arm to best fit your application.

Edge Clamp

DE-STA-CO's edge clamp performs three functions: locating the workpiece, clamping horizontally against secondary locators, and clamping vertically against the primary locating surface. This combined horizontal and vertical clamping force can locate and secure many parts with no other clamps being needed.

Thru-Hole Hydraulic Ram

By inserting a rod through the hollow piston, these cylinders can be used to push or pull depending on the orientation of the ram. They will actuate a rod of any length or shape and are extremely effective in translating power to a remote location. Greater forces are generated in these Thru-Hole Rams because of their larger piston area.

Collet Chucks

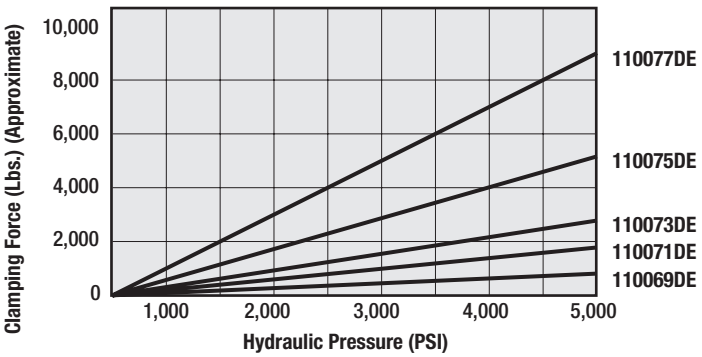
Collet Chucks are perfect for machining operations on round, square or hex stock. They are instant acting and provide positive holding (up to 5,000 lbs.) for even the most rugged machining operations. In operation, the pressurized drawbar exerts a downward force causing the collet jaws to squeeze together on the workpiece. An adjustable depth stop can be set to facilitate fast loading of shorter pieces.

DE-STA-CO's *Pull Cylinders* retract when hydraulically pressurized to exert a pulling force on clamping elements or mechanisms. For straight pull applications only, they allow the user to design a cylinder into a fixture while maintaining the replaceability and long life of a heat treated, corrosion resistant cylinder body. Designed for single-acting systems only, the cylinder's return spring is built into the piston and requires no additional fixture space.

The pull cylinders are designed for cartridge mounting in a cavity supplied by the fixture builder. The required cavity is simply a cylindrical bore with a properly deburred pressure port intersecting it, providing the fluid connection. The depth of the bore matches nominal plate thickness so the cylinder can be easily "sandwiched" between two plates if desired. Where possible, pins inserted in the back of the piston are provided. These pins are guided by holes drilled in the sub-plate and will prevent cylinder rotation when adjustments are made. A breather hole should always be provided and may be combined with the pin holes where appropriate.

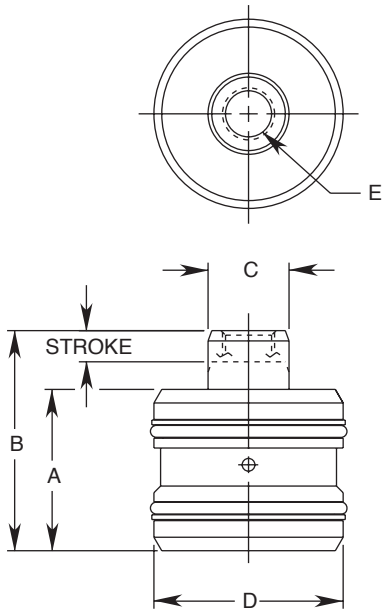
Features:

- Minimal space requirements
- 5,000 PSI max.
- Manifold mounting eliminates exposed tubing
- Plating & Power-Tech™ processes resist corrosion
- Single-acting, spring-return
- Return spring included
- Power-Tech™ treated body for long wear and corrosion resistance



Performance

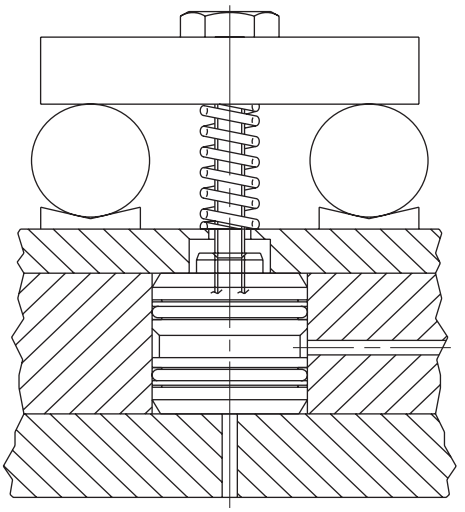
110069DE – 110077DE

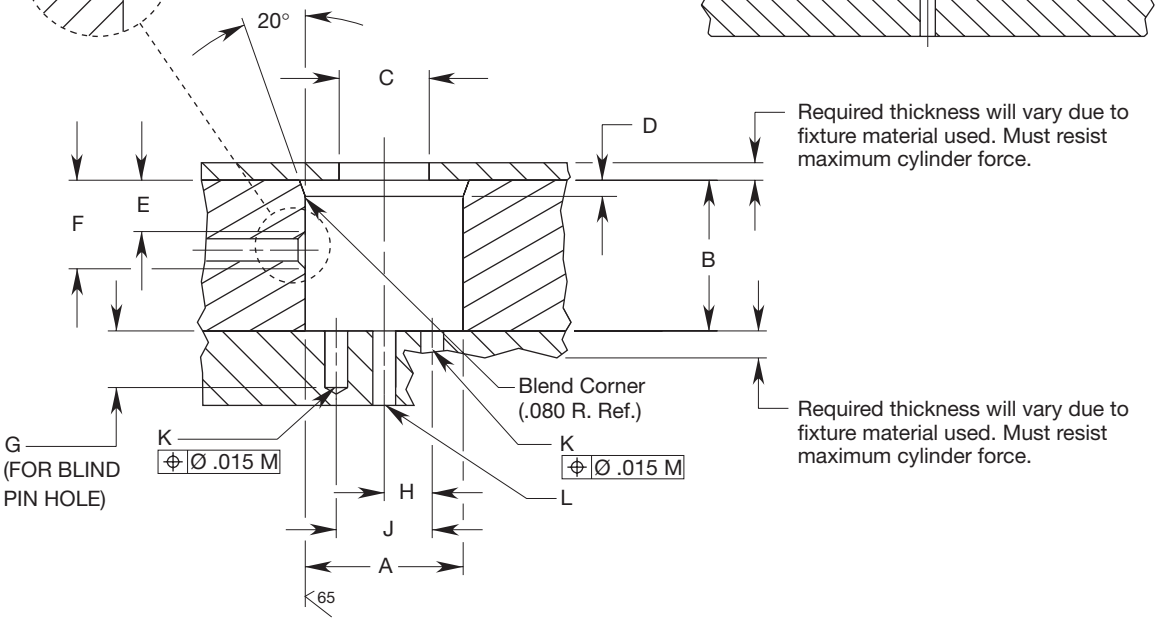


Cat no.	Specifications					Dimensions (In Inches)					
	Operating Pressure Max PSI	Force (lbs.)	Stroke (in.)	Eff. Area (Sq. in.)	Oil Cap. (Cu. in.)	A	B	C	D	E Piston Thread Size	E Piston Thread Depth
110069DE	5,000	685	0.123	0.137	0.017	1.115	1.333	0373	0.810	8-32 UNC	0.320
110071DE	5,000	1,765	0.178	0.353	0.063	1.240	1.503	0.560	1.185	¼-20 UNC	0.375
110073DE	5,000	2,685	0.178	0.537	0.096	1.240	1.595	0.560	1.309	5/16-18 UNC	0.470
110075DE	5,000	5,210	0.178	1.042	0.185	1.365	1.648	0.748	1.748	½-13 UNC	0.500
110077DE	5,000	9,010	0.288	1.802	0.519	1.490	1.978	0.873	2.123	⅝-11 UNC	0.625

Cartridge Cylinder Installation

110069 — 110077
Cavity Dimensions

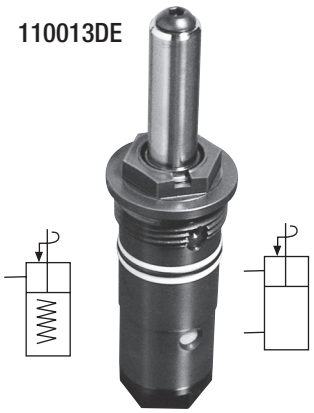




Cat no.	Cavity Dimensions (In Inches)				Oil Passage Location (In Inches)		Cavity Dimensions (In Inches)				
	A Dia.	B Cyl. Body Cavity	C Dia.	†D	E Min.	F Max.	G Min.	H	J	K dia.	*L Vent Dia. Min.
110069DE	0.812 0.815	1.120 1.130	0.387 0.577	0.125 0.145	0.475	0.728	–	–	–	–	0.125
110071DE	1.187 1.190	1.245 1.255	0.572 0.911		0.437	0.787					
110073DE	1.312 1.315	1.245 1.255	0.572 1.000		0.476	0.734					
110075DE	1.750 1.753	1.370 1.380	0.760 1.437		0.531	0.819					
110077DE	2.125 2.128	1.495 1.505	0.885 1.812		0.526	0.943	0.510	0.550	1.100	0.270 0.290	

† Chamfer to be located at end of bore "A" from which the cylinder will be assembled.

110013DE

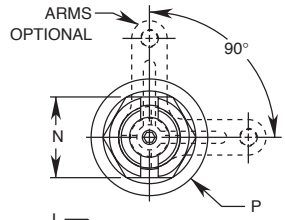


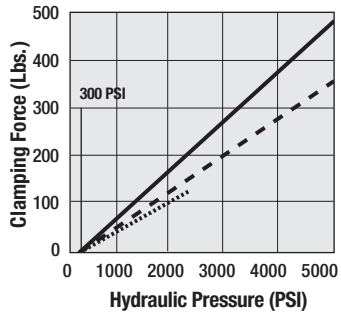
This *Cartridge Style Swing/Pull Clamp* shares all of the features of DE-STA-CO's Live Roller™ clamps. Its unique body design allows it to be manifold mounted where it will take up an absolute minimum of fixture space. Simply thread this clamp into a modified SAE O-ring port and the hydraulic connection is made for you automatically. Exposed plumbing that collect chips and large mounting flanges that take up valuable fixture space are eliminated. The mounting port can be cut with standard tooling and is simple to manufacture because the threads are at the top of the hole, not buried deep down in the bore.

Available in single-acting and double-acting versions, each with 90° left hand or right hand rotation or with guided straight pull.

Features:

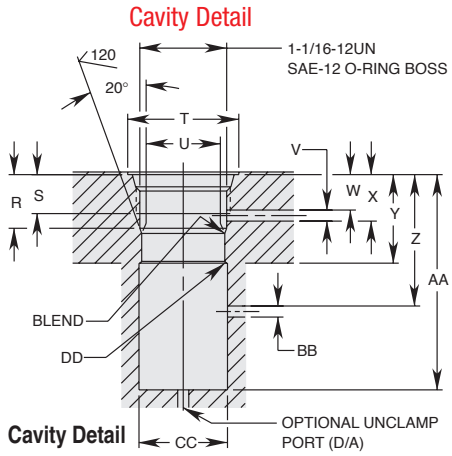
- Corrosion resistant construction, including heat-treated, chrome-plated piston rod
- Manifold mountable
- Live Roller™ swing mechanism for increased service life
- Power-Tech™ treated body and hardened cam for long wear and corrosion resistance
- Single-acting and double-acting models
- Straight pull capacity 480 lbs. at 5,000 PSI max.

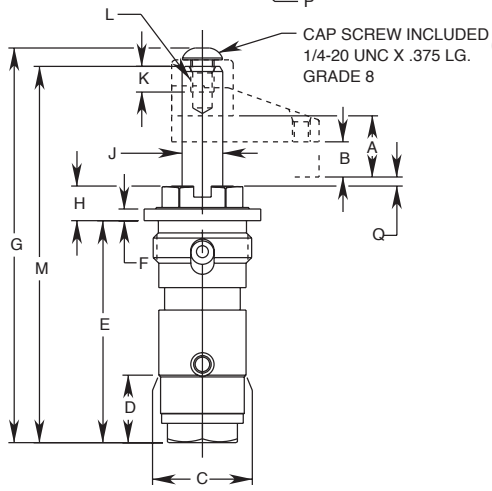




Performance

- With 500168DE (3.25" long)
- With 500167DE (1.06" long)
- Straight Pull





Cat no.	Specifications							Dimensions (In Inches)									
	Oper.	Swing Direction	*Force (lbs.)	Eff. Area (Sq. In.) Clamp	Eff. Area (Sq. In.) Unclamp	Oil Cap. (Cu. In.) Clamp	Oil Cap. (Cu. In.) Unclamp	A Total Stroke	B Clamping Strokes	C Dia.	D	E	F	G	H	††J Dia.	K Min. Thd.	L Thd Size
110013DE ▲	Single-acting	LH (Counter Clockwise)	365	0.098	–	0.065	–	0.638	0.320	0.935	0.723	2.379	0.125	4.229	0.371	0.435	0.275	¼-20 UNC
110014DE ▲		RH (Clockwise)																
110015DE ▲		Straight Pull																
110016DE ▲	Double-acting	LH (Counter Clockwise)			0.248		0.163											
110017DE ▲		RH (Clockwise)																
110018DE ▲		Straight Pull																

▲ Available upon request

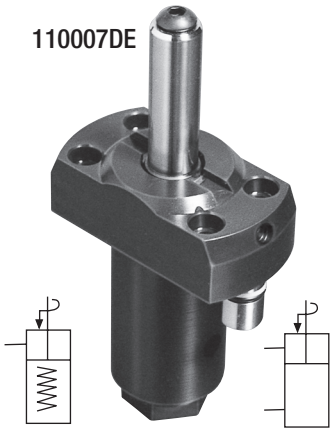
Cat no.	Dimensions (In Inches) M	N Hex.	P Dia.	Q	Mounting Dimensions (In Inches) R	S Min. Thd.	T Dia. Min.	U Dia.	V Clamp Port Dia. Min.	W Min.	X Max.	Y Min.	Z Min.	AA Min.	BB Unclamp Port Dia. Min.	CC Dia. Min.	DD Chamfer Max.
110013DE	4.032	0.875	1.250	0.096	0.569	0.440	1.255	0.937	0.125	0.400	0.569	1.000	–	2.431	†Vent	1.000	0.020
110014DE					0.616			0.940									
110015DE																	
110016DE												–	1.547		0.125		
110017DE																	
110018DE																	

NOTE: * With 1.00" arm at 5,000 PSI max. operating pressure.
† Do not pressurize - Single-acting only. Cavity must be vented.
†† See page 15.53 for custom arm mounting. See page 15.52 for maximum operating speeds and rotation options. Internal cam may be removed for an unguided straight pull. See operating instructions for additional port details.

Hyd. Swing/Pull Clamps – 365 lb.

*For New **SELECT** Swing Clamps*
See Pages 15.31-15.34

110007DE



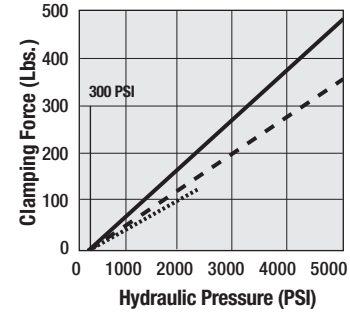
This *Manifold Mount Swing/Pull Clamp* shares all of the features of DE-STA-CO's Live Roller™ clamps. Its unique body design allows simple, no-tool hydraulic connections and eliminates fittings and tubing that disrupt coolant flow and collect chips. The optional arms clamp securely to the piston rod to reduce fatigue and deflection. Arms may be easily modified or replaced with custom arms. Special rod wiper seals and a unique drainage system channels contaminants away from the clamp.

During clamp retraction, the cylinder rod rotates 90° causing the clamping arm to swing into position. Clamping then must take place as the rod continues to retract in a straight line, pulling the arm against the workpiece.

Available 90° left hand or right hand rotation or with guided straight pull.

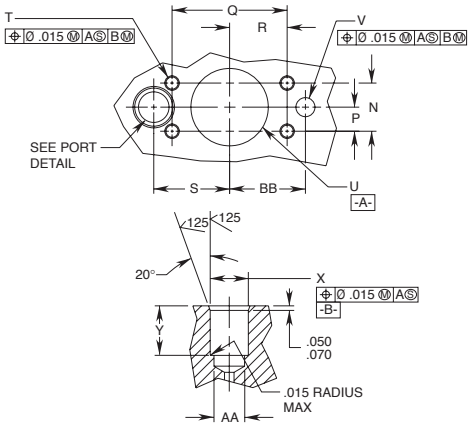
Features:

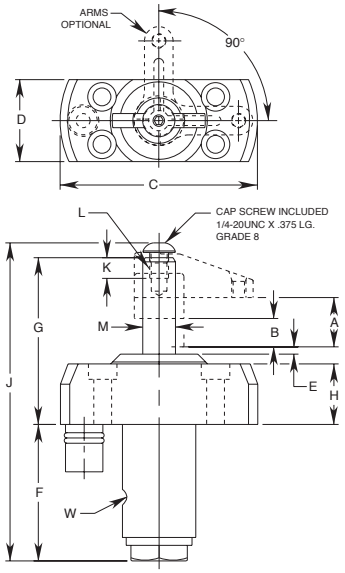
- Corrosion resistant construction, including heat-treated, chrome-plated piston rod
- Unique Live Roller™ swing mechanism for increased service life
- Power-Tech™ treated body and hardened cam for long wear and corrosion resistance
- Manifold mountable
- Single-acting
- Straight pull capacity 480 lbs. at 5,000 PSI max.



Performance

- With 500168DE (3.25" long)
- With 500167DE (1.06" long)
- Straight Pull



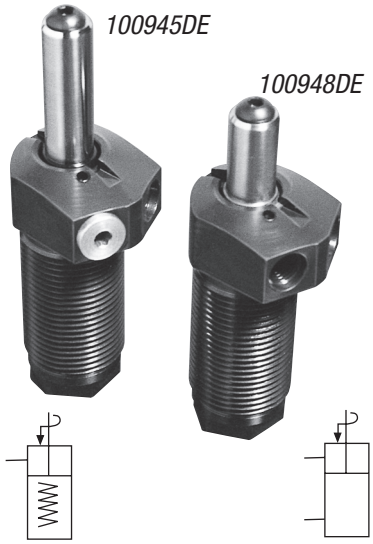


Cat no.	Oper.	Specifications: Swing Direction	Specifications: *Force (lbs.)	Specifications: Eff. Area (Sq. In.) Clamp	Specifications: Eff. Area (Sq. In.) Unclamp	Specifications: Oil Cap. (Cu. In.) Clamp	Specifications: Oil Cap. (Cu. In.) Unclamp	Dimensions (In Inches): A Total Stroke	B Clamping Strokes	C Dia.	D	E	F	G	H	J	K Min. Thd.	L Thd Size
110007DE ▲	Single-acting	LH (Counter Clockwise)	365	0.098	–	0.065	–	0.638	0.320	2.624	1.090	0.096	1.815	2.217	0.805	4.229	0.275	¼-20 UNC
110008DE ▲		RH (Clockwise)																
110009DE ▲		Straight Pull																
110010DE ▲	Double-acting	LH (Counter Clockwise)			0.248		0.163											
110011DE ▲		RH (Clockwise)																
110012DE ▲		Straight Pull																

▲ Available upon request

Cat no.	Dimensions (In Inches): M Dia.	N Mtng.	P Mtng.	Q Mtng.	R Mtng.	S Mtng	T Thd. Size	U Dia.	V	W	X Dia.	Y	AA Dia. Max.	BB Mtng.
110007DE	††.435	0.632	0.316	1.510	0.755	0.995	10-24 UNC	1.000	–	†Vent	0.500	0.640	0.481	–
110008DE														
110009DE														
110010DE								1.030	†††.250	–	0.503	0.660		0.995
110011DE														
110012DE														

NOTE: * With 1.00" arm at 5,000 PSI max. operating pressure.
† Do not pressurize - Single-acting only.
†† See page 15.53 for custom arm mounting. Internal cam may be removed for an unguided straight pull.
See page 15.52 for maximum operating speeds and rotation options.
††† Surface finish to be 63. Finish of 125 acceptable with concentric tool marks only. Finish area to be .500 DIA. min. centered on .250 DIA. port hole. See operating instructions for additional port details.



Available in both single-acting and double-acting models, the clamp's top port design allows easy access to plumbing connections. The breather plug on single-acting models may be replaced with tubing for remote venting. Contaminants are channeled away from the clamp by special rod wiper seals and a unique drainage system.

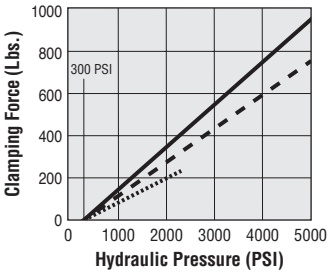
During clamp retraction, the cylinder rod rotates 90° causing the clamping arm to swing into position. Clamping then takes place as the rod continues to retract in a straight line, pulling the arm against the workpiece. The optional arms clamp securely to the piston rod to reduce fatigue and deflection. Arms may be easily modified or replaced with custom arms.

Both the single-acting and double-acting models share the same outside dimensions, making them completely interchangeable.

Available with 90° left or right hand rotation or with guided straight pull.

Features:

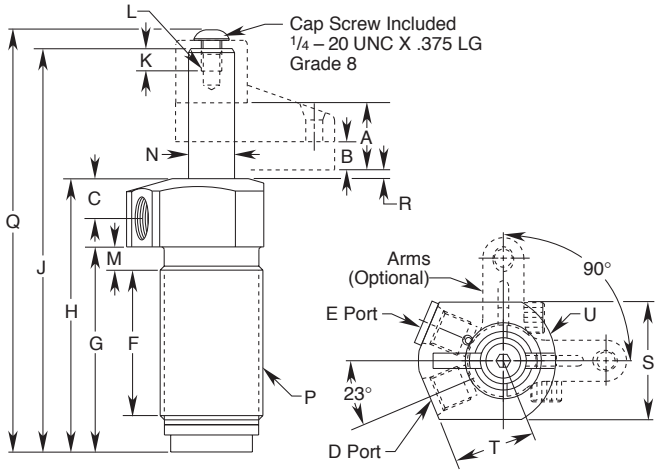
- Corrosion resistant construction, including heat-treated, chrome-plated piston rod
- Live Roller™ swing mechanism for increased service life
- Power-Tech™ treated body and hardened cam for long wear and corrosion resistance
- Single-acting and double-acting models are dimensionally interchangeable
- Straight pull capacity 950 lbs. at 5,000 PSI max.



Performance

Clamp Nos. 100945DE, 100946DE, 100947DE, 100948DE, 100949DE, 100950DE

With 500155DE Arm (4.25" long)
With 500154DE Arm (1.25" long)
Straight Pull



Cat no.	Specifications							Dimensions (In Inches)					
	Oper.	Swing Direction	*Force (lbs.)	Eff. Area (Sq. In.)		Oil Cap. (Cu. In.)		A Total Stroke	B Clamping Strokes	C	D Clamp Port	E Unclamp Port	F
				Clamp	Unclamp	Clamp	Unclamp						
100945DE	Single-acting	LH (Counter Clockwise)	750	0.195	–	0.160	–	0.818	0.345	0.492	7/16–20UNF SAE- 4	Breather Plug 7/16 – 20 UNF SAE- 4†	1.770
100946DE		RH (Clockwise)											
100947DE		Straight Pull											
100948DE	Double-acting	LH (Counter Clockwise)			0.441		0.360					7/16 – 20 UNF SAE- 4	
100949DE		RH (Clockwise)											
100950DE		Straight Pull											

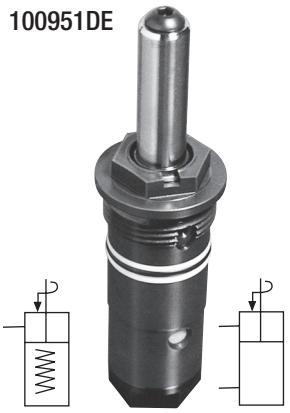
Cat no.	Dimensions (In Inches)												
	G	H	J	K Thread Min.	L Thread Size	M	††N Dia.	P Thread Size	Q	R	S	T	U Radius
100945DE 100946DE 100947DE 100948DE 100949DE 100950DE	2.497	3.327	4.912	0.275	1/4–20UNC	0.283	0.560	1 1/4–12UNF	5.139	0.108	1.428	0.995	0.823

NOTE: * With 1.25" long arm at 5,000 PSI maximum operating pressure.
† Do not pressurize – Single-acting only.
†† See page 15.53 for custom arm mounting.
Internal cam may be removed for an unguided straight pull.
See page 15.52 for maximum operating speeds.

Hyd. Swing/Pull Clamps – 750 lb.

*For New **SELECT** Swing Clamps*
See Pages 15.31-15.34

100951DE



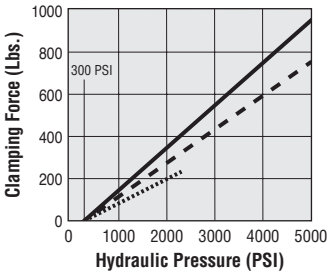
This *Cartridge Style Swing/Pull Clamp* shares all the features of DE-STA-CO's other Live Roller™ clamps. Its unique body design allows it to be manifold mounted where it will take up an absolute minimum of fixture space. Simply thread this clamp into a modified SAE O-ring port and the hydraulic connection is made for you automatically. This eliminates exposed plumbing that collects chips and large mounting flanges that take up valuable space.

The mounting port can be cut with modified standard tooling and is simple to manufacture because the threads are at the top of the hole, not buried deep down in the bore.

Available in single-acting and double-acting versions, each with 90° left hand or right hand rotation or with guided straight pull.

Features:

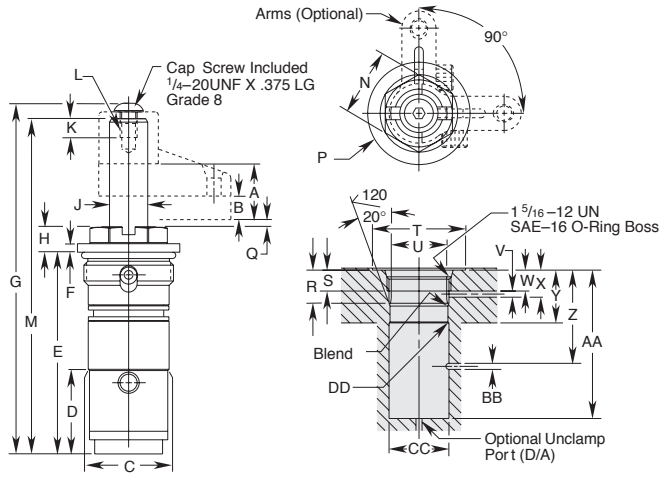
- Corrosion resistant construction, including heat-treated, chrome-plated piston rod
- Unique Live Roller™ swing mechanism for increased service life
- Power-Tech™ treated body and hardened cam for long wear and corrosion resistance
- Manifold mountable
- Single-acting and double-acting models are dimensionally interchangeable
- Straight pull capacity 950 lbs. at 5,000 PSI max.



Performance

Clamp Nos. **100951DE,100952DE, 100953DE, 100957DE, 100958DE, 100959DE**

With 500155DE Arm (4.25" long)
With 500154DE Arm (1.25" long)
Straight Pull



Cat no.	Oper.	Specifications						Dimensions (In Inches)								
		Swing Direction	*Force (lbs.)	Eff. Area (Sq. In.)		Oil Cap. (Cu. In.)		A Total Stroke	B Clamping Strokes	C Dia.	D	E	F	G	H	††J Dia.
				Clamp	Unclamp	Clamp	Unclamp									
100951DE	Single-acting	LH (Counter Clockwise)	750	0.195	–	0.160	–	0.818	0.345	1.185	1.245	2.956	0.125	5.139	0.371	0.560
100952DE		RH (Clockwise)														
100953DE		Straight Pull														
100957DE ▲	Double-acting	LH (Counter Clockwise)			0.441		0.360									
100958DE ▲		RH (Clockwise)														
100959DE ▲		Straight Pull														

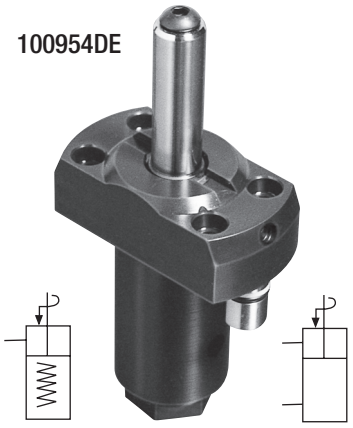
▲ Available upon request

Cat no.	Dimensions (In Inches)																		
	K Min. Thread	L Thread Size	M	N Hex.	P Dia.	Q	R	S Min. Thread	T Dia. Min.	U Dia.	V Clamp Port Dia. Min.	W Min.	X Max.	Y Min.	Z Min.	AA Min.	BB Unclamp Port Dia. Min.	CC Dia. Min.	DD Chamfer Max.
100951DE	0.275	¼–20UNC	4.912	1.000	1.500	0.108	0.665	0.430	1.560	1.187	0.125	0.430	0.604	1.063	–	3.044	†Vent	1.187	0.020
100952DE							0.695			1.190									
100953DE																			
100957DE ▲														–	1.912		0.125		
100958DE ▲																			
100959DE ▲																			

▲ Available upon request

NOTE: * With 1.25" long arm at 5,000 PSI max. operating pressure.
† Do not pressurize - Single-acting only. Cavity must be vented.
†† See page 15.53 for custom arm mounting.
Internal cam may be removed for an unguided straight pull. See operating instructions for additional port details.
See page 15.52 for maximum operating speeds.

100954DE



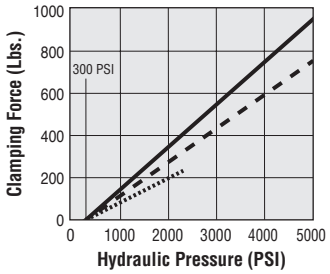
These *Manifold Mount Swing/Pull Clamps* share all of the features of DE-STA-CO's Live Roller™ clamps and are available in both single-acting and double-acting versions. Their unique body design allow simple, no-tool hydraulic connections and eliminates fittings and tubing that disrupt coolant flow and collect chips.

During clamp retraction, the cylinder rod rotates 90° causing the clamping arm to swing into position. Clamping then takes place as the rod continues to retract in a straight line, pulling the arm against the workpiece. The optional arms clamp securely to the piston rod to reduce fatigue and deflection. Arms may be easily modified or replaced with custom arms. Special rod wiper and a unique drainage system channels contaminants away from the clamp.

Available 90° left hand or right hand rotation, or with guided straight pull.

Features:

- Corrosion resistant construction, including heat-treated, chrome-plated piston rod
- Unique Live Roller™ swing mechanism for increased service life
- Power-Tech™ treated body and hardened cam for long wear and corrosion resistance
- Manifold mountable
- Single-acting and double-acting
- Straight pull capacity 950 lbs. at 5,000 PSI max.

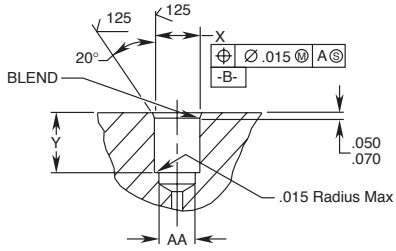


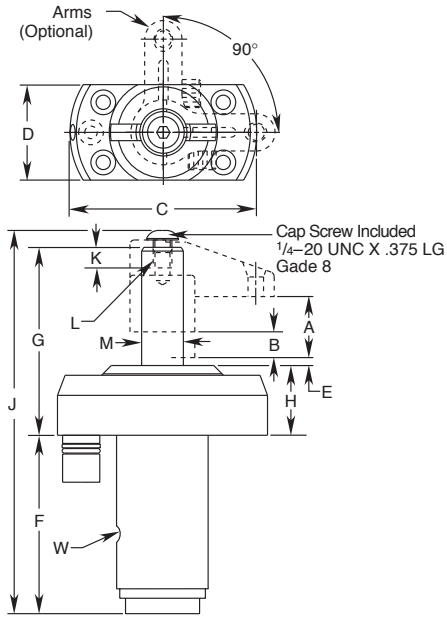
Performance

Clamp Nos. 100954DE, 100955DE, 100956DE, 100976DE, 100977DE, 100978DE

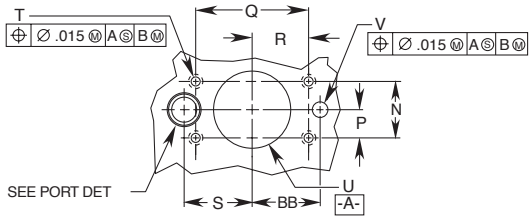
- ····· With 500155DE Arm (4.25" long)
- – – – With 500154DE Arm (1.25" long)
- ——— Straight Pull

Port Detail





Mating Hole Pattern



Cat no.	Oper.	Specifications: Swing Direction	*Force (lbs.)	Eff. Area (Sq. In.): Clamp	Eff. Area (Sq. In.): Unclamp	Oil Cap. (Cu. In.)	Dimensions (In Inches): A Total Stroke	B Clamping Strokes	C Dia.	D	E	F	G	H	J
100954DE ▲	Single-acting	LH (Counter Clockwise)	750	0.195	–	0.160	0.818	0.345	2.817	1.440	0.108	2.392	2.520	0.935	5.139
100955DE ▲		RH (Clockwise)													
100956DE ▲		Straight Pull													
100976DE ▲	Double-acting	LH (Counter Clockwise)			0.441										
100977DE ▲		RH (Clockwise)													
100978DE ▲		Straight Pull													

▲ Available upon request

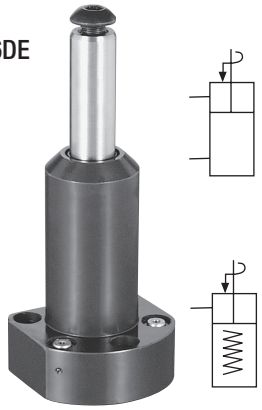
Cat no.	Dimensions (In Inches): K Min. Thread	L Thread Size	M Dia. ††	N Mounting	P Mounting	Q Mounting	R Mounting	S Mounting	T Thread Size	U Dia.	V	W	X Dia.	Y	AA Dia. Max.	BB Mounting
100954DE	0.275	¼–20UNC	0.560	0.906	0.453	1.812	0.906	1.091	10-24 UNC	1.223	–	† Vent	0.500	0.640	0.481	–
100955DE										1.253			0.503	0.660		
100956DE																
100976DE											††† .250	–				1.091
100977DE																
100978DE																

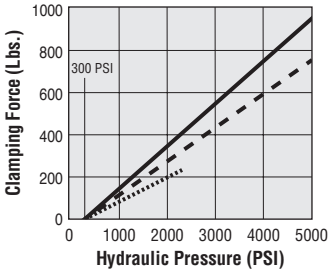
NOTE: * With 1.25" long arm at 5,000 PSI maximum operating pressure.
† Do not pressurize — Single-acting only.
†† See page 15.53 for custom arm mounting. Internal cam may be removed for an unguided straight pull
††† Surface finish to be 63. Finish of 125 acceptable with concentric tool marks only. Finish area to be .500 Dia. min. centered on .250 Dia. port hole. See operating instructions for additional details.

Hyd. Swing/Pull Clamps – 750 lb.

*For New **SELECT** Swing Clamps*
See Pages 15.31-15.34

110056DE





This *Manifold Mount Swing/Pull Clamp* shares all of the features of DE-STA-CO's Live Roller™ clamps. Its unique body design allows simple, no-tool hydraulic connections and eliminates fittings and tubing that disrupt coolant flow and collect chips. Using a simple O-ring face seal, it is designed for flat surface mounting either on top of or extending through a fixture plate.

The optional arms clamp securely to the piston rod to reduce fatigue and deflection. Arms may be easily modified or replaced with custom arms. Special rod wiper seals and a unique drainage system channels contaminants away from the clamp.

During clamp retraction, the cylinder rod rotates 90° causing the clamping arm to swing into position. Clamping then must take place as the rod continues to retract in a straight line, pulling the arm against the workpiece.

Available with 90° left hand or right hand rotation or with guided straight pull.

Features:

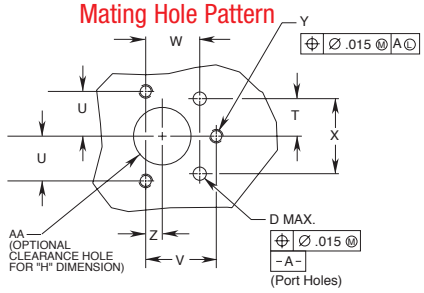
- Corrosion resistant construction, including heat-treated, chrome-plated piston rod
- Live Roller™ swing mechanism for increased service life
- Power-Tech™ treated body and hardened cam for long wear and corrosion resistance
- Manifold mountable/flange top or bottom mounting
- Single-acting and double-acting models are dimensionally interchangeable
- Straight pull capacity 950 lbs. at 5,000 PSI max.

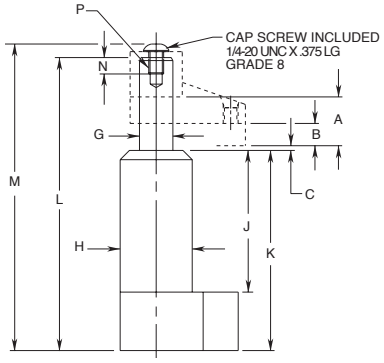
Performance

Clamp Nos. 110053DE, 110054DE, 110055DE 110056DE, 110057DE, 110058DE

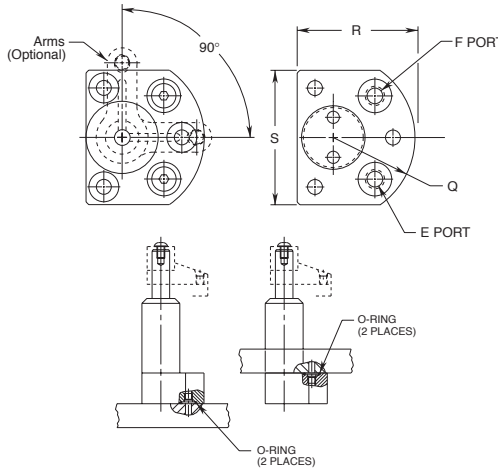
- With 500155DE Arm (4.25" long)
- With 500154DE Arm (1.25" long)
- Straight Pull

Mating Hole Pattern





Mounting Options



Cat no.	Specifications							Dimensions (In Inches)							
	Oper.	Swing Direction	*Force (lbs.)	Eff. Area (Sq. In.)		Oil Cap. (Cu. In.)		A Total Stroke	B Clamping Strokes	C	†††D Port Dia.	E Clamp Port	F Unclamp Port	††G Dia.	H Dia.
				Clamp	Unclamp	Clamp	Unclamp								
110056DE ▲	Single-acting	LH (Counter Clockwise)	750	0.195	–	0.160	–	0.818	0.345	0.108	0.309 Max.	SAE O-Ring	†Vent	0.560	1.210
110057DE ▲		RH (Clockwise)													
110058DE ▲		Straight Pull													
110053DE ▲	Double-acting	LH (Counter Clockwise)			0.441		0.360						SAE O-Ring		
110054DE ▲		RH (Clockwise)													
110055DE ▲		Straight Pull													

▲ Available upon request

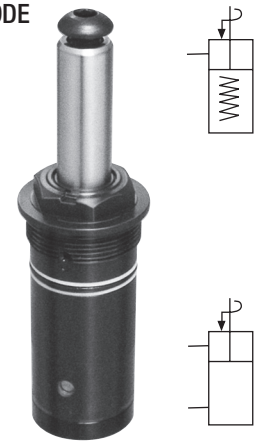
Cat no.	Dimensions (In Inches)														
	J	K	L	M	N Thread Min.	P Thread Size	Q Radius	R	S	T	U	V	W	X	Y Thread Size
110056DE ▲	2.379	3.359	4.912	5.138	0.275	¼-20 UNC	1.375	1.995	2.250	0.696	0.827	1.306	1.002	1.392	⅝-18 UNC
110057DE ▲															
110058DE ▲															
110053DE ▲															
110054DE ▲															
110055DE ▲															

▲ Available upon request

NOTE:
* With 1.25" long arm at 5,000 PSI maximum operating pressure.
† Do not pressurize - Single-acting only.
†† See page 15.53 for custom arm mounting. Internal cam may be removed for an unguided straight pull. See page 15.52 for maximum operating speeds.
††† Surface finish to be 63. Finish of 125 acceptable with concentric tool marks only. Finish area to be .525 DIA. min. centered on .309 DIA. port hole. See operating instructions for additional port details.

Hyd. Swing/Pull Clamps – 2,400 lb.

100859DE

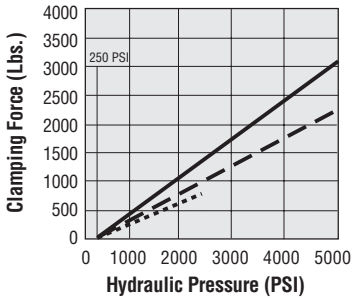


In addition to all the features of DE-STA-CO's Live Roller™ *Swing/Pull Clamps*, these clamps have a cartridge design that allows them to be manifold mounted. Simply thread this clamp into a modified SAE O-ring port and the hydraulic connection is made for you automatically. Exposed plumbing that can collect chips and take up valuable fixture space is eliminated.

The port can be cut with standard tooling and is simple to manufacture because the threads are at the top of the hole, not buried down in the bore. This design allows these clamps to work in fixture plates as thin as 1¼" thick.

Features:

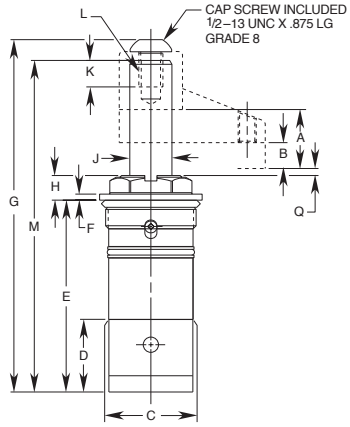
- Cartridge design eliminates exposed tubing and saves space
- Single-acting or double-acting
- Heat-treated, chrome-plated piston rod
- Live Roller™ swing mechanism for increased service life
- Power-Tech™ treated body and hardened cam for long wear and corrosion resistance
- Clamping arms are adjustable within a full 360°
- Heavy duty, corrosion resistant return spring (single-acting)
- Uses standard SAE port tooling
- Straight pull capacity 3,144 lbs. at 5,000 PSI max

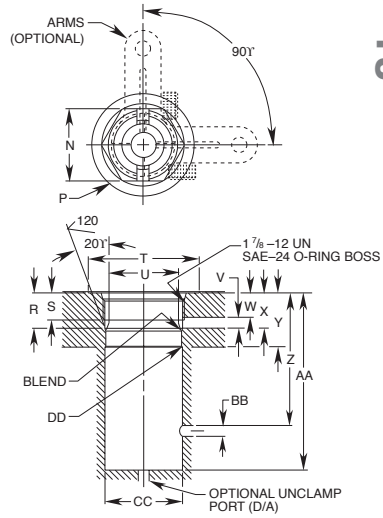


Performance

Clamp Nos. 100859DE, 100860DE, 100868DE, 100960DE, 100961DE, 100962DE

- With 500151DE Arm (6.38" long)
- With 500150DE Arm (2.00" long)
- Straight Pull





Cat no.	Oper.	Specifications: Swing Direction	*Force (lbs.)	Eff. Area (Sq. In.): Clamp	Eff. Area (Sq. In.): Unclamp	Oil Cap. (Cu. In.): Clamp	Oil Cap. (Cu. In.): Unclamp	Dimensions (In Inches): A Total Stroke	B Clamping Strokes	C Dia.	D	E	F	G	H	††J Dia.
100859DE ▲	Single-acting	LH (Counter Clockwise)	2,400	0.626	–	0.740	–	1.267	0.490	1.747	1.506	3.976	0.150	7.311	0.510	0.875
100860DE ▲		RH (Clockwise)														
100868DE		Straight Pull														
100960DE ▲	Double-acting	LH (Counter Clockwise)			1.227		1.460									
100961DE ▲		RH (Clockwise)														
100962DE ▲		Straight Pull														

▲ Available upon request

Cat no.	Dimensions (In Inches): K Min. Thread	L Thread Size	M	N Hex.	P Dia.	Q	R	S Min. Thread	T Dia. Min.	U Dia.	V Clamp Port Dia. Min.	W Min.	X Max.	Y Min.	Z Min.	AA Min.	BB Unclamp Port Dia. Min.	CC Dia. Min.	DD Chamfer Max.
100859DE ▲	0.550	½–13UNC	6.871	1.750	2.125	0.104	0.801 0.831	0.560	2.185	1.750 1.753	0.125	0.562	0.812	1.250	–	4.031	†Vent	1.750	0.020
100860DE ▲																			
100868DE																			
100960DE ▲														–	3.006		0.125		
100961DE ▲																			
100962DE ▲																			

▲ Available upon request

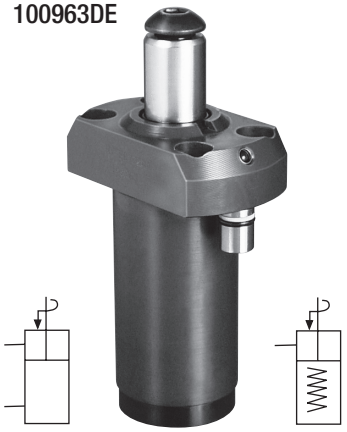
NOTE: * With 2.00" long arm at 5,000 PSI max. operating pressure.
† Do not pressurize - Single-acting only. Cavity must be vented.
†† See page 15.53 for custom arm mounting.

See page 15.52 for maximum operating speeds and rotation options.
Internal cam may be removed for an unguided straight pull.
See operating instructions for additional port details.

Hyd. Swing/Pull Clamps – 2,400 lb.

*For New **SELECT** Swing Clamps*
See Pages 15.31-15.34

100963DE



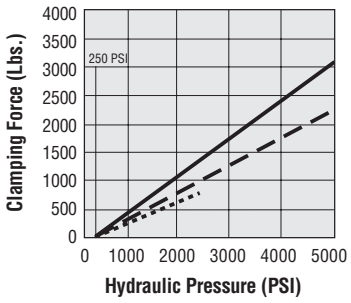
These *Swing/Pull Clamps* have all of the features of DE-STA-CO's Live Roller™ design and they are manifold mountable. During clamp retraction, the cylinder rod rotates 90° causing the clamping arm to swing into position. Clamping then takes place as the rod continues to retract in a straight line, pulling the arm against the workpiece.

The optional arm clamps securely to the piston rod to reduce fatigue and deflection. Arms may be easily modified or replaced with custom arms. Special rod wiper seals and drainage system channels contaminants away from the clamp.

Available with 90° left or right hand rotation. 30, 45 and 60 degree rotations are also available (see page 15.44).

Features:

- Corrosion resistant construction, featuring heat-treated, chrome-plated piston rod
- Single-acting or double-acting models
- Live Roller™ swing mechanism for increased service life
- Power-Tech™ treated body and hardened cam for long wear and corrosion resistance
- Straight pull capacity 3,144 lbs. at 5,000 PSI max

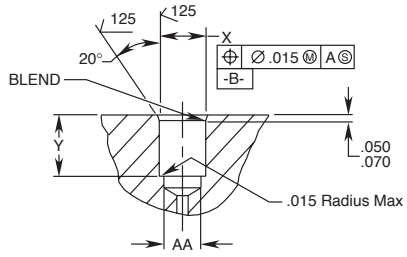


Performance

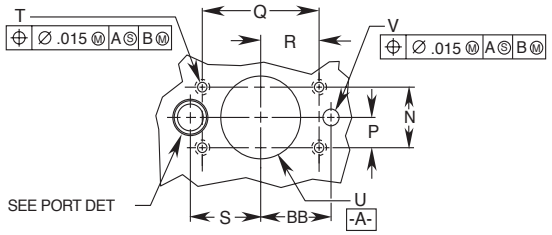
Clamp Nos. 100895DE, 100896DE, 100897DE, 100963DE, 100964DE, 100965DE

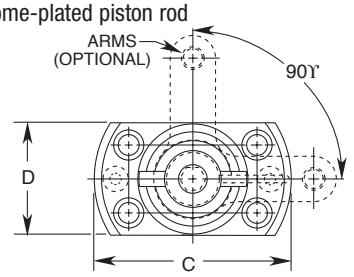
- ----- With 500151DE Arm (6.38" long)
- – – – With 500150DE Arm (2.00" long)
- ——— Straight Pull

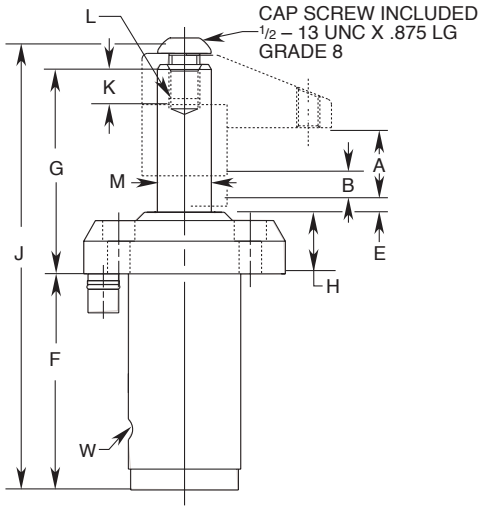
Port Detail



Mating Hole Pattern







Cat no.	Oper.	Specifications: Swing Direction	*Force (lbs.)	Eff. Area (Sq. In.): Clamp	Eff. Area (Sq. In.): Unclamp	Oil Cap. (Cu. In.): Clamp	Oil Cap. (Cu. In.): Unclamp	Dimensions (In Inches): A Total Stroke	B Clamping Strokes	C Dia.	D	E	F	G	H	J
100985DE	Single-acting	LH (Counter Clockwise)	2,400	0.626	–	0.740	–	1.267	0.490	3.257	1.860	0.104	**3.491**	3.380	0.995	7.311
100896DE		RH (Clockwise)														
100897DE		Straight Pull														
100963DE ▲	Double-acting	LH (Counter Clockwise)			1.227		1.460									
100964DE ▲		RH (Clockwise)														
100965DE ▲		Straight Pull														

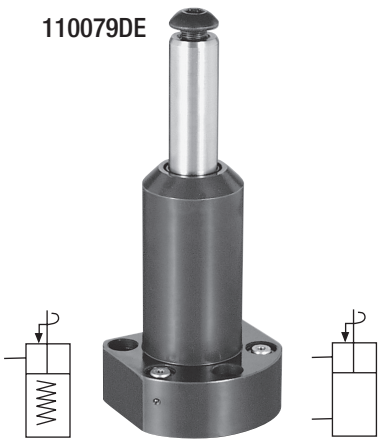
▲ Available upon request

Cat no.	Dimensions (In Inches): K Thread Min.	L Thread Size	†† M Dia.	N Mounting	P Mounting	Q Mounting	R Mounting	S Mounting	T Thread Size	U Dia.	V Unclamp Port Dia. Max.	W	X Dia.	Y	AA Dia. Max.	BB Mounting
100895DE	0.550	½-13 UNC	0.875	1.125	0.562	2.125	1.062	1.311	5/16-18 UNC	1.840	–	†Vent	0.500	0.640	0.481	–
100896DE										1.870			0.503	0.660		
100897DE																
100963DE ▲											††† .250	–				1.311
100964DE ▲																
100965DE ▲																

▲ Available upon request

NOTE: * With 2.00" long arm at 5,000 PSI max. operating pressure.
† Do not pressurize - Single-acting only.
†† See page 15.53 for custom arm mounting.
Internal cam may be removed for an unguided straight pull.
See page 15.52 for maximum operating speeds and rotation options.
††† Surface finish to be 63. Finish of 125 acceptable with concentric tool marks only.
Finish area to be .500 DIA. min. centered on .250 DIA. port hole.
See operating instructions for additional port details.

Hyd. Swing/Pull Clamps – 2,400 lb.



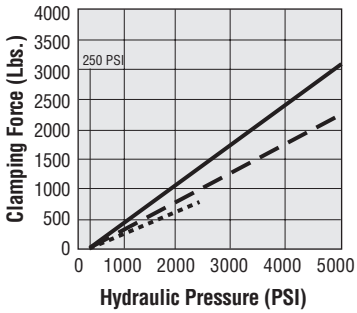
This *Manifold Mount Swing/Pull Clamp* shares all of the features of DE-STA-CO's Live Roller™ clamps. Its unique body design allows simple, no-tool hydraulic connections and eliminates fittings and tubing that disrupt coolant flow and collect chips. Using a simple O-ring face seal, it is designed for flat surface mounting either on top of or extending through a fixture plate.

The optional arms clamp securely to the piston rod to reduce fatigue and deflection. Arms may be easily modified or replaced with custom arms. During clamp retraction, the cylinder rod rotates 90° causing the clamping arm to swing into position. Clamping then must take place as the rod continues to retract in a straight line, pulling the arm against the workpiece.

Available 90° left hand or right hand rotation or with guided straight pull.

Features:

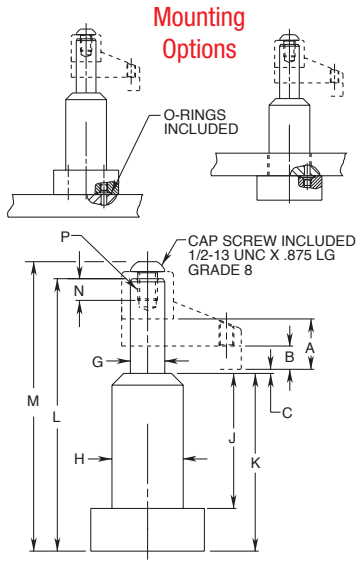
- Corrosion resistant construction, featuring heat-treated, chrome-plated piston rod
- Single-acting or double-acting models
- Live Roller™ swing mechanism for increased service life
- Power-Tech™ treated body and hardened cam for long wear and corrosion resistance
- Manifold mountable/flange top or bottom mounting
- Single-acting and double-acting models are dimensionally interchangeable
- Straight pull capacity 3,144 lbs. at 5,000 PSI max

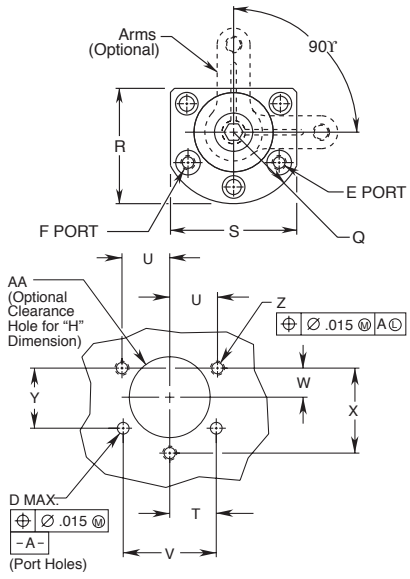


Performance

Clamp Nos. 110079DE, 110080DE, 110081DE, 110082DE, 110083DE, 110084DE

- With 500151DE Arm (6.38" long)
- With 500150DE Arm (2.00" long)
- Straight Pull





Cat no.	Oper.	Specifications: Swing Direction	*Force (lbs.)	Eff. Area (Sq. In.) Clamp	Eff. Area (Sq. In.) Unclamp	Oil Cap. (Cu. In.) Clamp	Oil Cap. (Cu. In.) Unclamp	Dimensions (In Inches): A Total Stroke	B Clamping Strokes	C Dia.	D	E	F	G	H
110079DE	Single-acting	LH (Counter Clockwise)	2,400	0.626	–	0.740	–	1.267	0.490	0.104	0.309 Max.	SAE O-Ring	†Vent	0.875	1.807
110080DE	Single-acting	RH (Clockwise)	2,400	0.626	–	0.740	–	1.267	0.490	0.104	0.309 Max.	SAE O-Ring	†Vent	0.875	1.807
110081DE	Single-acting	Straight Pull	2,400	0.626	–	0.740	–	1.267	0.490	0.104	0.309 Max.	SAE O-Ring	†Vent	0.875	1.807
110082DE	Double-acting	LH (Counter Clockwise)	2,400	0.626	1.227	0.740	1.460	1.267	0.490	0.104	0.309 Max.	SAE O-Ring	SAE O-Ring	0.875	1.807
110083DE	Double-acting	RH (Clockwise)	2,400	0.626	1.227	0.740	1.460	1.267	0.490	0.104	0.309 Max.	SAE O-Ring	SAE O-Ring	0.875	1.807
110084DE	Double-acting	Straight Pull	2,400	0.626	1.227	0.740	1.460	1.267	0.490	0.104	0.309 Max.	SAE O-Ring	SAE O-Ring	0.875	1.807

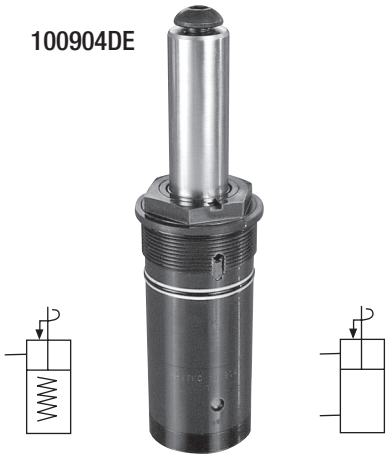
Cat no.	Dimensions (In Inches): J	K	L	M	N Thread Min.	Mounting Dimensions (In Inches): *P Thread Size	Q Radius	R	S	T	U	V	W	X	Y	Z Thread Size	AA Dia.
100904DE	3.419	4.504	6.905	7.335	0.550	½-13 UNC	1.630	2.630	2.880	1.024	1.082	2.048	0.625	1.875	1.342	⅝-18 UNC	1.835 1.850
100905DE	3.419	4.504	6.905	7.335	0.550	½-13 UNC	1.630	2.630	2.880	1.024	1.082	2.048	0.625	1.875	1.342	⅝-18 UNC	1.835 1.850
100906DE	3.419	4.504	6.905	7.335	0.550	½-13 UNC	1.630	2.630	2.880	1.024	1.082	2.048	0.625	1.875	1.342	⅝-18 UNC	1.835 1.850
100988DE	3.419	4.504	6.905	7.335	0.550	½-13 UNC	1.630	2.630	2.880	1.024	1.082	2.048	0.625	1.875	1.342	⅝-18 UNC	1.835 1.850
100989DE	3.419	4.504	6.905	7.335	0.550	½-13 UNC	1.630	2.630	2.880	1.024	1.082	2.048	0.625	1.875	1.342	⅝-18 UNC	1.835 1.850
100990DE	3.419	4.504	6.905	7.335	0.550	½-13 UNC	1.630	2.630	2.880	1.024	1.082	2.048	0.625	1.875	1.342	⅝-18 UNC	1.835 1.850

NOTE: * With 2.00" long arm at 5,000 PSI max. operating pressure.
† Do not pressurize - Single-acting only.
†† See page 15.53 for custom arm mounting.
Internal cam may be removed for an unguided straight pull.
See page 15.52 for maximum operating speeds and rotation options.
††† Surface finish to be 63. Finish of 125 acceptable with concentric tool marks only.
Finish area to be .525 DIA. min. centered on .309 DIA. port hole.
See operating instructions for additional port details.

Hyd. Swing/Pull Clamps – 4,500 lb.

*For New **SELECT** Swing Clamps*
See Pages 15.31-15.34

100904DE



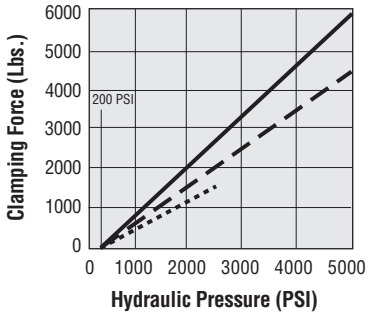
This *Cartridge Style Swing/Pull Clamp* shares all of the features of DE-STA-CO's Live Roller™ clamps. It's unique body design allows it to be manifold mounted where it will take up an absolute minimum of fixture space. Simply thread this clamp into a corrosion-resistant modified SAE O-ring port and the hydraulic connection is made for you automatically. Exposed plumbing that collect chips and large mounting flanges that take up valuable fixture space are eliminated.

The port can be cut with standard tooling and is simple to manufacture because the threads are at the top of the hole, not buried down in the bore. This design allows these clamps to be installed in fixture plates as thin as 1.584" thick.

Available with 90° left or right hand rotation or with guided straight pull.

Features:

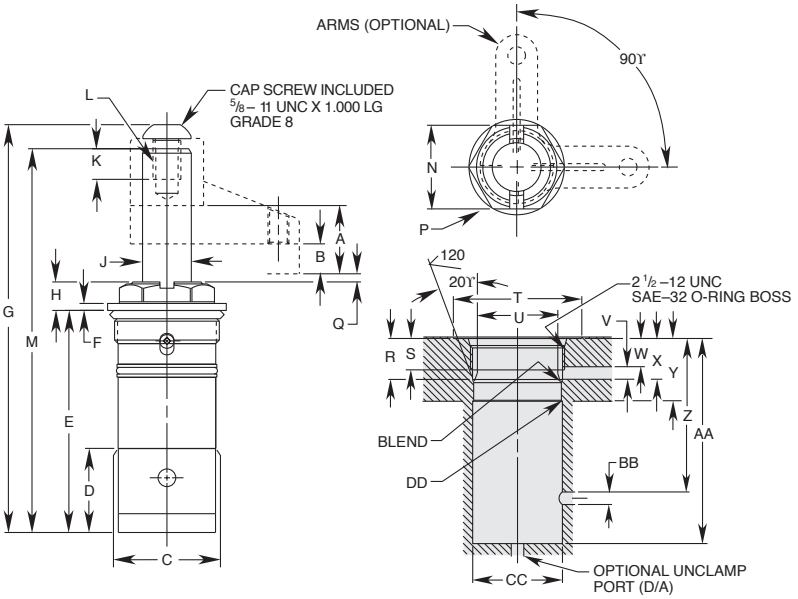
- Corrosion resistant construction, featuring heat-treated, chrome-plated piston rod
- Single-acting or double-acting models
- Live Roller™ swing mechanism for increased service life
- Power-Tech™ treated body and hardened cam for long wear and corrosion resistance
- Straight pull capacity 5,900 lbs. at 5,000 PSI max



Performance

Clamp Nos. 100904DE, 100905DE, 100906DE

- ----- With 500153DE Arm (7.00" long)
- - - - With 500152DE Arm (2.50" long)
- ——— Straight Pull



Cat no.	Oper.	Specifications: Swing Direction	*Force (lbs.)	Eff. Area (Sq. In.): Clamp	Eff. Area (Sq. In.): Unclamp	Oil Cap. (Cu. In.): Clamp	Oil Cap. (Cu. In.): Unclamp	Dimensions (In Inches): A Total Stroke	B Clamping Strokes	C Dia.	D	E	F	G	H	††J Dia.	K Thd Size
100904DE	Single-acting	LH (Counter Clockwise)	4,500	1.178	–	1.914	–	1.625	0.600	2.372	2.162	5.340	0.160	9.856	0.540	1.248	0.740
100905DE		RH (Clockwise)															
100906DE		Straight Pull															
100988DE	Double-acting	LH (Counter Clockwise)			2.405		3.908										
100989DE		RH (Clockwise)															
100990DE		Straight Pull															

Cat no.	Dimensions (In Inches): L	M	N	P	Q	Mounting Dimensions (In Inches): R	S Min. Thread	T Dia. Min.	U Dia.	V Clamp Port Dia. Min.	W Min.	X Max.	Y Min.	Z Min.	† AA Min.	BB Unclamp Port Dia. Min.	CC Dia. Min.	DD Chamfer Max.
100904DE	⅝-11UNC	9.265	2.125	2.750	0.330	1.136 1.166	0.870	2.810	2.375 2.378	0.125	0.870	1.136	1.584	–	5.378	*Vent	2.374	0.020
100905DE																		
100906DE																		
100988DE													–	4.138		0.125		
100989DE																		
100990DE																		

NOTE: * With 2.50" long arm at 5,000 PSI max. operating pressure.
† Cavity must be vented.
†† See page 15.53 for custom arm mounting.
Internal cam may be removed for an unguided straight pull. See operating instructions for additional port details.
See page 15.52 for maximum operating speeds.

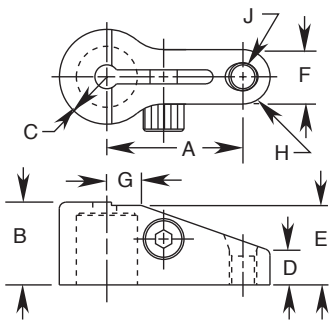
Hyd. Swing/Pull Clamp Arms

DE-STA-CO offers both short and long arms for each series of Live Roller™ **Swing/Pull Clamps**. In each case, the short arm (often referred to as the "standard" arm) is designed to be used at pressures up to the clamp's maximum rating of 5,000 PSI. The long arms are designed to be used as is, or easily modified for your applications that require a longer reach. When using the long arms, maximum hydraulic pressure and flow must be reduced. See the accompanying charts. Do not use meter-out circuitry for controlling double-acting clamp speeds. See page 15.97 for metering valves.

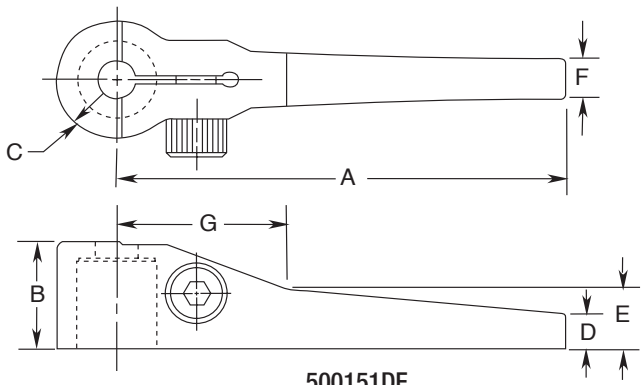
Contact your DE-STA-CO representative if further design assistance is required.

Swing/Pull Clamp Arms

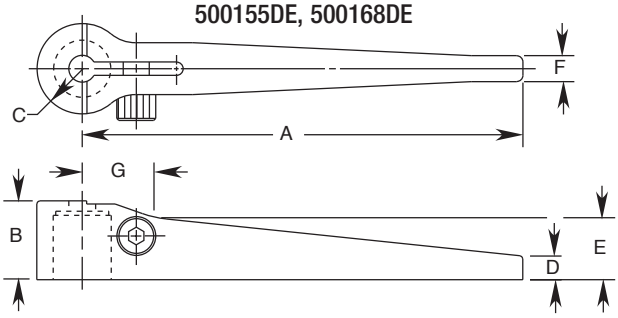
500150DE, 500152DE, 500154DE, 500167DE



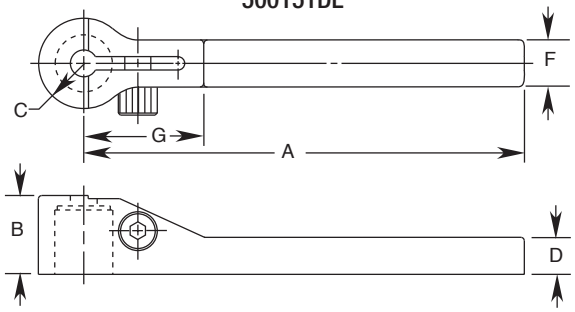
500153DE



500155DE, 500168DE



500151DE



Cat. no.	Specifications				Dimensions (In Inches)										
	Clamp Rating (lbs.)	Clamp Force with Arm (Max. lbs.)	Operating Pressure (Max. PSI)	Max. flow Rate (Cu. In./Min.)	Max. Clamping Speed (Sec.)	Weight (Oz.)	A	B	C	D	E	F	G	H	J
500167DE	365	365	5,000	15	0.3	1	1.060	0.600	0.330	0.234	0.575	0.380	0.275	0.190	10-24 UNC
500168DE		*125	*2,450	8	0.5	2	3.250			0.171		0.225	0.937	–	–
500154DE	750	750	5,000	25	0.4	2	1.250	0.760	0.435	0.314	0.730	0.500	0.319	0.250	¼-20 UNC
500155DE		*220	*2,150	12	0.8	4	4.250			0.228	0.598	0.250	0.694	–	–
500150DE	2,400	2,400	5,000	100	0.5	8	2.000	1.200	0.688	0.475	1.140	0.750	0.540	0.375	⅜-16 UNC
500151DE		*720	2,350	50	1	17	6.375			0.615	–		2.000	–	–
500152DE	4,500	4,500	5,000	250	0.5	25	2.500	1.700	0.930	0.750	1.650	1.250	0.743	0.625	½-13 UNC
500153DE		*1.540	*2,500	125	1	33	6.964			0.559	0.973	0.650	2.500	–	–

* Maximum values at supplied lengths. If arm is shortened, see charts on page 15.52.

Cat. no.	Specifications			
	Rotation Angle Degrees	Rotation Direction	Clamp Capacity (lbs.)	Clamping Stroke
350912DE	30	Right Hand	2,400	0.500
350195DE		Left Hand		
350913DE	45	Right Hand		
350916DE		Left Hand		
350914DE	60	Right Hand		
350917DE		Left Hand		

* With 2.00" long arm at 5,000 PSI max. operating pressure.

Rotation Options

DE-STA-CO's 2,400 lbs. capacity, .500" clamping stroke Swing/Pull clamps can be converted to a 30, 45, or 60 degree swing by exchanging the internal cam. Order the appropriate cam from the table to the left.

All of DE-STA-CO's 2,400 lbs. capacity, .500" clamping stroke Swing/Pull clamps are also available from the factory with 30, 45, and 60 degree swing options. Contact DE-STA-CO for ordering information.

Swing/Pull Clamp Performance

Chart Legend

Maximum Length / Pressure

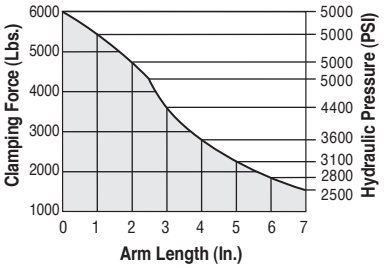
Operating Range

Clamps must operate at or below maximum arm length/pressure curve:

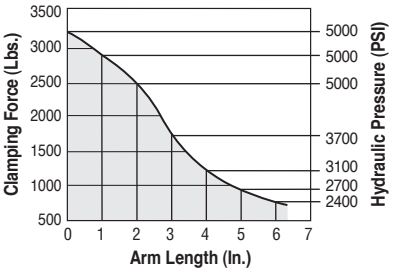
To approximate clamping force with any arm at less than maximum pressure:

FORCE = P x A x [1-(P/M x .23)]

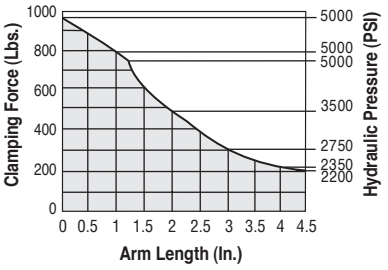
P = Hyd. system operating pressure (PSI)
A = Clamp effective area (sq. in.)
M = Max. rated pressure of chosen arm length (PSI)



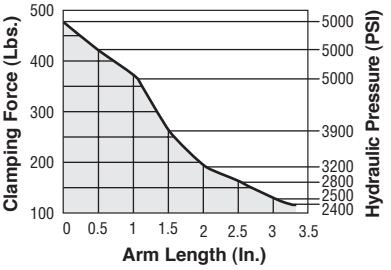
Clamp Performance
2½", 4,500 Lbs. Capacity Swing/Pull Clamps



Clamp Performance
1⅞", 2,400 Lbs. Capacity Swing/Pull Clamps

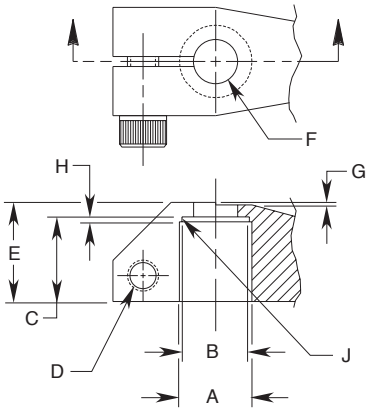


Clamp Performance
1¼", 750 Lbs. Capacity Swing/Pull Clamps



Clamp Performance
1 1/16", 365 Lbs. Capacity Swing Pull Clamps

Custom Arm Mounting Dimensions for Swing/Pull Clamps



Custom built arms of any length must clamp to the swing/pull clamp's piston rod in a manner similar to the DE-STA-CO arms or some derating of the clamp will be necessary. The design feature allowing the arm to be clamped to the piston rod is recommended for all applications of single and double arms. See the accompanying chart for design details. In applications where there is no bending stress being transferred into the piston rod (like push/pull linkages and equalizing double arms), this design detail may be eliminated. In these applications, the clamp's full capacity (referred to as "straight pull" capacity) is available.

IMPORTANT:

Any clamp using a modified or custom arm that is longer or heavier than DE-STA-CO's standard arms must be derated to prevent internal damage.

- Do not exceed the maximum speed and pressure ratings for DE-STA-CO's standard arms For maximum hydraulic pressure and speed ratings, see the accompanying charts
- Do not use meter-out circuitry for controlling double-acting clamp speeds
- Contact DE-STA-CO if further design assistance is required

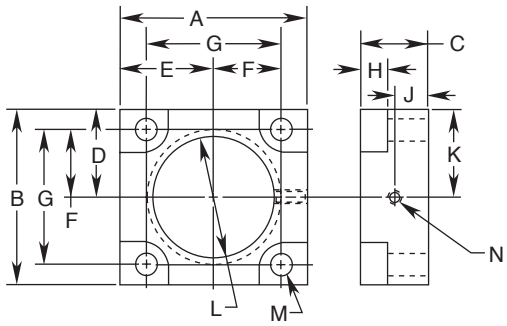
Swing/Pull Clamp Custom Arm Mounting Dimensions

Specifications	Dimensions (In Inches)									
*Clamp Rating (lbs.)	Standard Arm Cat. no.	A Dia.	B Dia.	C	**D Thread Size	E	F Dia.	G	H Max.	J Radius
365	500167DE	0.437 0.439	0.415 0.439	0.520 0.540	¼-20 UNC	0.600	0.270	0.025	0.020	0.005 0.020
750	500154DE	0.562 0.564	0.540 0.564	0.650 0.670		0.760		0.030		
2,400	500150DE	0.875 0.878	0.853 0.878	1.030 1.010	⅜-16 UNC	1.200	0.534	0.060	0.060	
4,500	500152DE	1.250 1.253	1.228 1.253	1.420 1.440	⅝-18 UNF	1.700	0.659	0.050	0.050	

NOTE: * See charts for capacity and maximum pressure at desired arm length.
** Torque must be sufficient to secure arm to piston rod.

DE-STA-CO's flange mounting brackets allow you to secure your swing/pull clamps in two ways. You may use the set screw and nylon thread protector ball (supplied), or simply lock the clamp using an optional jam nut.

Flange Mounting Bracket

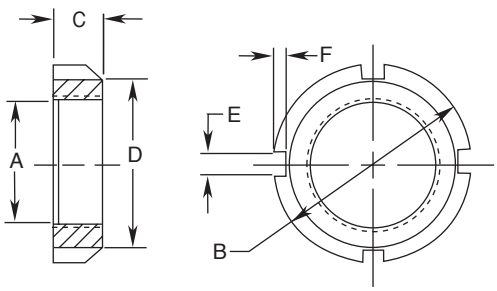


Flange Mounting Brackets

Cat. no.	Dimensions (In Inches)												
	A	B	C	D	E	F	G	H	J	K	L Thread Size	M Dia.	N Thread Size
100979DE	1.593	1.500	0.500	0.750	0.750	0.560	1.120	0.200	0.250	0.750	1⅛-16 UNC	0.222	¼-20 UNC
100127DE	1.875	1.750		0.875	0.938	0.703	1.406			0.875	1¼-12 UNF	0.219	

NOTE: Includes locking set screw and nylon ball to protect clamp threads.

Jam Nut

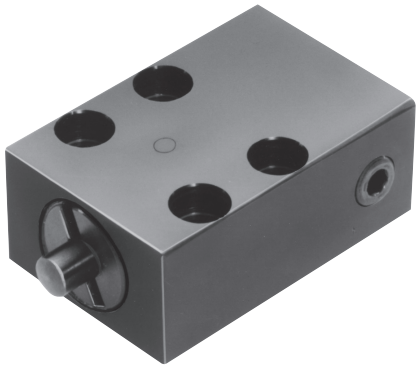


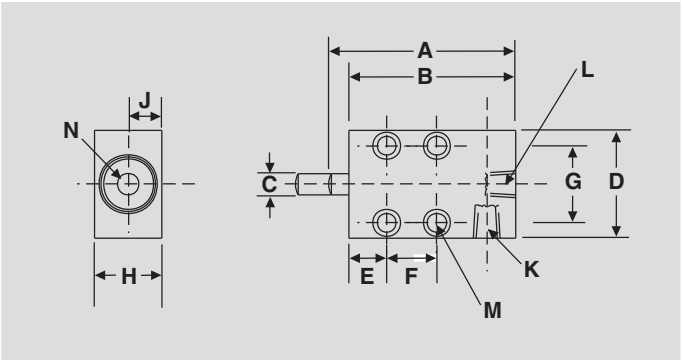
Jam Nuts

Cat. no.	Dimensions (In Inches)					
	A Thread Size	B Dia.	C	D	E	F
100980DE	1⅛-16 UN	1.500	0.310	–	0.240	0.100
100916DE	1¼-12 UNF	2.000	0.500	1.688	0.250	0.138
100910DE	1¼-16 UN					
100912DE	2¼-16 UN	3.250	0.625	2.875	0.312	0.169

Hydraulic Cylinder

Block Style Hydraulic Cylinder





Model no.	Dimensions (In Inches)												
	A	B	C	D	E	F	G	H	J	K	L	M	N
70250 (Single-acting)	2.81	2.50	0.31	1.63	0.56	0.75	1.16	1.00	0.50	1/8 NPT	1/8 NPT	0.25	–
70260 (Double-acting)	3.13	2.88	0.50	2.00	0.25	1.25	1.50	1.25	0.63	1/8 NPT (2)	1/8 NPT (2)	0.25	5/16-18

Model no.	Stroke	Force at 3,000 PSIG Extend	Force at 3,000 PSIG Retract	Effective Area Clamping	Effective Area Unclamping	Oil Displacement
70250	0.50	1,325 lbs.	–	0.44	–	0.221 cu. in.
70260	1.00	1,325 lbs.	763 lbs.	0.44	0.24 Retract 0.25 cu. in.	Extend 0.45 cu. in.

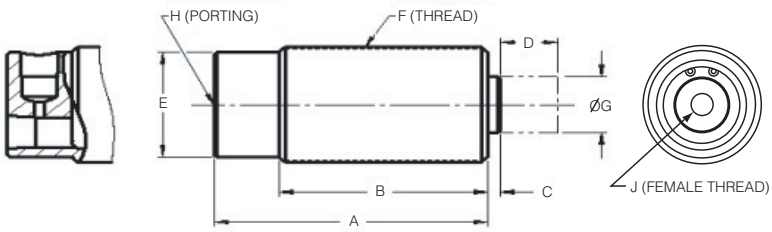
Models 010-110-XXX, 010-111-XXX, 010-112-XXX

The single-action, spring-return hydraulic power cylinders are small pistons that can be used singly or combined. They offer tremendous force in a small, easily mounted package that can be used in any attitude and requires only a single inlet port. They are often used grouped together by a common manifold to provide as much force as needed for the operation. For a relatively small volume of oil, they provide exceptional exerting force, and are generally the best choice if stroke lengths can be kept short.

Double-acting units offer the additional feature of high "pull" force when the piston rod is retracted. The rod end is drilled and tapped. Care should be taken when locating double-acting threaded-body units since the piston rod is .06" eccentric to the body (Model 70240 only).

Features:

- Threaded body for easy mounting
- Hardened piston and rod
- Axial and radial porting on most models
- Single-acting for simple plumbing
- Accessories available for easy mounting
- Wide variety of sizes and strokes
- Available in metric or inch sizes (Metric on special request)
- Pressure capacity up to 5,000 PSIG, provided piston does not bottom out
- Double-acting available with threaded body
- Small size permits "low profile" workholding block-type body
- Single-acting available with block-type body



Ports in the 1 5/16 thru 2½ dia. sized threaded cylinders are furnished with a radial port as well as an axial port.

Model no.	Replaces Model	Dimensions (In Inches) A	B	C	D	E	F	G	H	J
010-110-400	70201	1.53	1.38	0.19	0.22	0.41 Hex	1/2-20	0.15	1/16 NPT	–
010-110-501	70206	2.09	1.81	0.22	0.31	0.56 Hex	3/4-16	0.22	1/8 NPT	–
010-110-702	70210	2.56	2.25	0.31	0.50	0.75 Hex	1-12	0.24	1/8 NPT	–
010-111-002	70215	2.63	2.00	0.13	0.50	ø1.19	1 5/16-16	0.64	(2) 1/8 NPT	1/4-20
010-111-004	70218	3.63	3.00	0.12	1.00	ø1.19	1 5/16-16	0.64	(2) 1/8 NPT	1/4-20
010-111-502	70220	2.88	2.31	0.13	0.50	ø1.75	1 7/8-16	1.00	(2) 1/8 NPT	5/16-18
010-111-504	70221	4.50	3.94	0.19	1.00	ø1.75	1 7/8-16	1.00	(2) 1/8 NPT	5/16-18
010-112-004	70230	4.13	3.50	0.13	1.00	ø2.38	2 1/2-16	1.50	(2) 1/8 NPT	5/16-18
70240 (Double-acting)	–	4.25	3.00	0.44	1.50	1.77	1 7/8-16	0.75	(2) 1/8 NPT Bottom Only	3/8-16
70270 (Double-acting)	–	4.84	3.63	0.38	1.50	2.41	2 1/2-16	1.25	(2) 1/8 NPT Bottom Only	1/2-20

See pages 15.58-15.59 for Threaded Cylinders – SAE Ports

Note: See page 15.8 for application information.

Threaded Cylinders – NPT Ports

Model no.	NPT Ports	Threaded Body	Stoke	Force at 3,000 PSIG	Oil Displacement	Effective Area For Clamping	Effective Area for Unclamping
010-110-400	1/16	1/2-20	0.22	279 lbs.	0.020 cu. in.	0.09	–
010-110-501	1/8	3/4-16	0.31	588 lbs.	0.061 cu. in.	0.20	–
010-110-702	1/8	1-12	0.50	1,326 lbs.	0.221 cu. in.	0.44	–
010-111-002	1/8	1 5/16-16	0.50	2,355 lbs.	0.392 cu. in.	0.78	–
010-111-004	1/8	1 5/16-16	1.00	2,355 lbs.	0.785 cu. in.	0.78	–
010-111-502	1/8	1 7/8-16	0.50	5,301 lbs.	0.883 cu. in.	1.77	–
010-111-504	1/4	1 7/8-16	1.00	5,301 lbs.	1.769 cu. in.	1.77	–
040-112-004	1/8	2 1/2-16	1.00	9,423 lbs.	3.141 cu. in.	3.14	–
70240 (Double-acting)	(2) 1/8 (Bottom Only)	1 7/8-16	1.50	Extend 3,681 lbs. Retract 2,355 lbs.	Extend 1.841 cu in. Retract 1.177 cu. in.	1.23	0.78
70270 (Double-acting)	(2) 1/8 (Bottom Only)	2 1/2-16	1.50	Extend 7,216 lbs. Retract 3,534 lbs.	Extend 3.607 cu. in. Retract 1.767 cu. in.	2.40	1.18

Mounting Blocks		Jam Nuts	
Used on Model no.	Model no.	Model no. Furnished	Optional
010-110-400	–	702012	–
010-110-501	–	702062	–
010-110-702	–	702102	–
010-111-002	–	–	70975
010-111-004	–	–	70975
010-111-502	FM2400	–	JN2400
010-111-504	FM2400	–	JN2400
010-112-004	FM4000	–	JN4000
70240	FM2400	–	JN2400
70270	FM4000	–	JN4000

Flange Mount

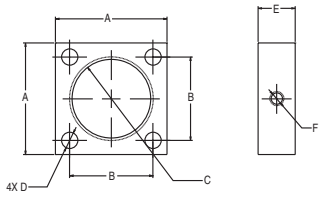
	Dimensions (In Inches)					
Cat. no.	A	B	C	D	E	F
FM2400	2.25	1.77	1-7/8-16UN	0.328	1.000	1/4-20UNC-2B
FM4000	3.26	2.17	2-1/2-16UN	0.339	1.000	1/4-20UNC-2B

NOTE: Includes locking set screw and nylon ball to protect clamp threads.

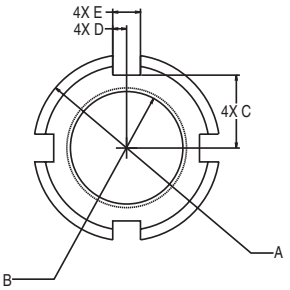
Jam Nuts

	Dimensions (In Inches)					
Cat. no.	A	B	C	D	E	Thickness
JN2400	2.50	1-7/8-16UN	1.060	0.187	0.374	0.500
JN4000	3.255	2-1/2-16UN	1.460	0.195	0.390	0.388

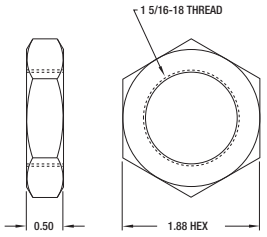
Flange Mounting Bracket



Jam Nut JN Series



Jam Nut Model 70975



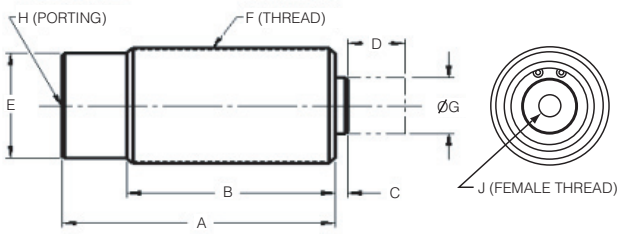
See pages 15.58-15.59 for Threaded Cylinders – SAE Ports

Models 010-210-XXX, 010-211-XXX, 010-212-XXX

The single-action, spring-return hydraulic power cylinders are small pistons that can be used singly or combined. They offer tremendous force in a small, easily mounted package that can be used in any attitude and requires only a single inlet port. They are often used grouped together by a common manifold to provide as much force as needed for the operation. For a relatively small volume of oil, they provide exceptional exerting force, and are generally the best choice if stroke lengths can be kept short.

Features:

- Threaded body for easy mounting
- Small size permits “low profile” workholding
- Accessories available for easy mounting
- Available in metric or inch sizes (Metric on special request)
- Hardened piston and rod
- Single-acting for simple plumbing
- Wide variety of sizes and strokes
- Pressure capacity up to 5,000 PSIG, provided piston does not bottom out



Model no.	Dimensions (In Inches)								
	A	B	C	D	E	F	G	H	J
010-210-400	1.66	1.41	0.19	0.22	0.44 Hex	1/2-20	0.15	SAE #2	–
010-210-501	2.25	1.97	0.22	0.31	0.62 Hex	3/4-16	0.22	SAE #4	–
010-210-702	2.56	2.31	0.31	0.50	0.75 Hex	1-12	0.24	SAE #4	–
010-211-002	2.63	2.25	0.13	0.50	1.00 Hex	1 5/16-16	0.64	SAE #4	1/4-20
010-211-004	3.63	3.25	0.12	1.00	1.00 Hex	1 5/16-16	0.64	SAE #4	1/4-20
010-211-502	2.94	2.57	0.13	0.50	1.50 Hex	1 7/8-16	1.00	SAE #4	5/16-18
010-211-504	4.59	4.22	0.14	1.00	1.50 Hex	1 7/8-16	1.00	SAE #4	5/16-18
010-212-004	4.13	3.76	0.13	1.00	2.00 Hex	2 1/2-16	1.50	SAE #4	5/16-18

See pages 15.56-15.57 for Threaded Cylinders – NPT Ports

Threaded Cylinders – SAE Ports

Model no.	SAE Ports	Threaded Body	Stoke	Force at 3,000 PSIG	Oil Displacement	Effective Area For Clamping
010-210-400	#2	1/2-20	0.22	279 lbs.	0.024 cu. in.	0.110
010-210-501	#4	3/4-16	0.31	588 lbs.	0.061 cu. in.	0.196
010-210-702	#4	1-12	0.50	1,326 lbs.	0.221 cu. in.	0.442
010-211-002	#4	1 5/16-16	0.50	2,355 lbs.	0.393 cu. in.	0.785
010-211-004	#4	1 5/16-16	1.00	2,355 lbs.	0.785 cu. in.	0.785
010-211-502	#4	1 7/8-16	0.50	5,301 lbs.	0.884 cu. in.	1.767
010-211-504	#4	1 7/8-16	1.00	5,301 lbs.	1.767 cu. in.	1.767
010-212-004	#4	2 1/2-16	1.00	9,423 lbs.	3.142 cu. in.	3.142

Mounting Blocks		Jam Nuts	
Used on Model no.	Model no.	Model no. Furnished	Optional
010-110-400	–	702012	–
010-110-501	–	702062	–
010-110-702	–	702102	–
010-111-002	–	–	70975
010-111-004	–	–	70975
010-111-502	FM2400	–	JN2400
010-111-504	FM2400	–	JN2400
010-112-004	FM4000	–	JN4000

Flange Mount

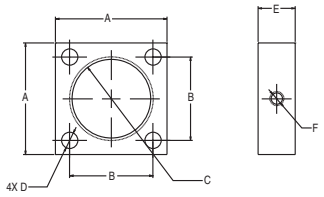
	Dimensions (In Inches)					
Cat. no.	A	B	C	D	E	F
FM2400	2.25	1.77	1-7/8-16UN	0.328	1.000	1/4-20UNC-2B
FM4000	3.26	2.17	2-1/2-16UN	0.339	1.000	1/4-20UNC-2B

NOTE: Includes locking set screw and nylon ball to protect clamp threads.

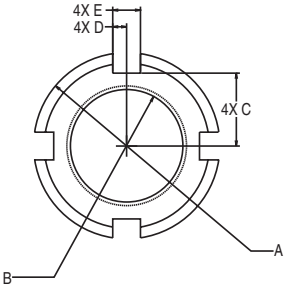
Jam Nuts

	Dimensions (In Inches)					
Cat. no.	A	B	C	D	E	Thickness
JN2400	2.50	1-7/8-16UN	1.060	0.187	0.374	0.500
JN4000	3.255	2-1/2-16UN	1.460	0.195	0.390	0.388

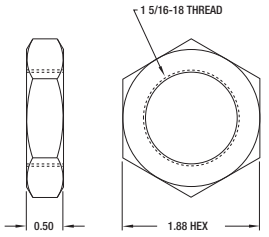
Flange Mounting Bracket



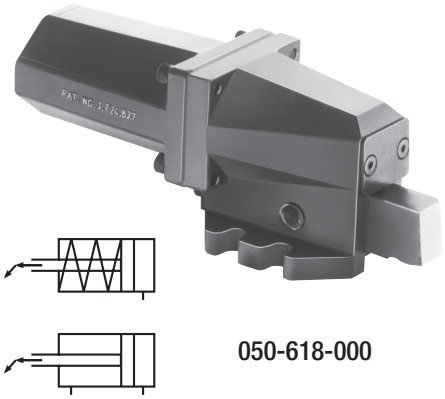
Jam Nut JN Series



Jam Nut Model 70975



See pages 15.56-15.57 for Threaded Cylinders – NPT Ports



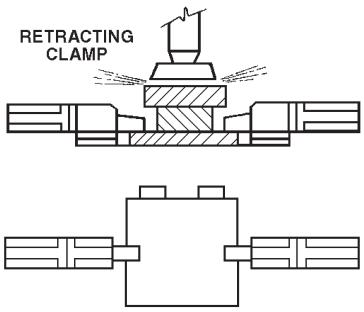
050-618-000

One or more **Retracting Clamps** can bring inexpensive, automated clamping to any machine production line or job shop. These self-contained units can be used over and over again. By choice of valving, they can be actuated simultaneously or sequentially in time to machine operations.

These units feature a clamping arm that retracts to clear the working area for fast part loading and unloading. When actuated, the clamping arm extends approximately 1" out from the front of the clamp before it moves down through ¼" clamping stroke (automatically compensating for part variation). A spring-loaded blade scrapes debris from the top surface of the arm as it retreats.

Features:

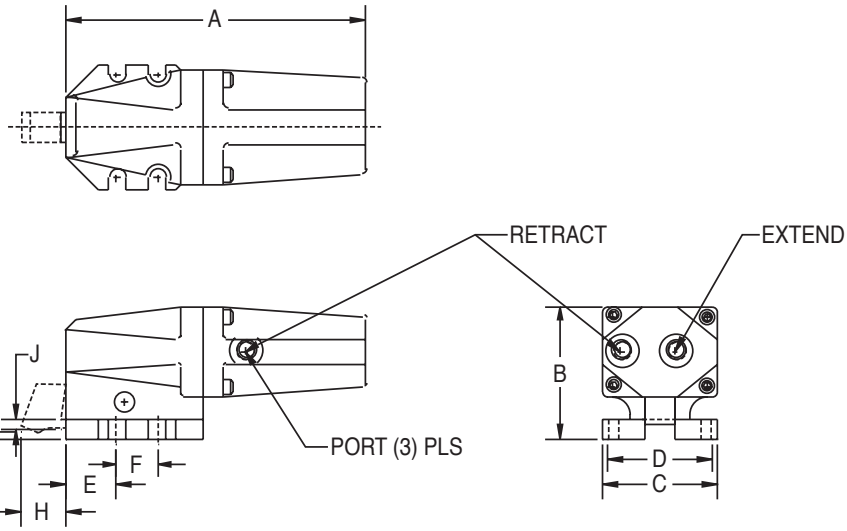
- Advances out and clamps down
- Self-adjusting for part variation
- Releases and retracts automatically
- Self-contained – just plumb the hydraulic hose
- Can be mounted directly to the machine table
- Available in single-acting or double-acting models



Model no.	Dimensions A	B	C	D	E	F	G	Travel H	Clamping Range J
050-618-000	7.44	3.31	3.13	2.56	1.25	1.00	0.19	1.00	0.25
050-628-000	7.44	3.31	3.13	2.56	1.25	1.00	0.19	1.00	0.25

NOTE: See below for application information.

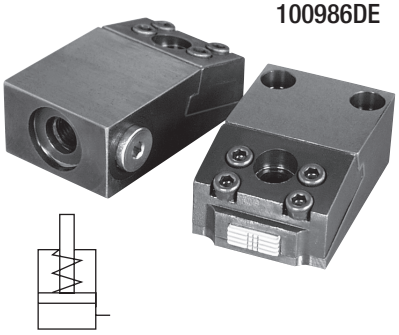
Model no.	Exerting Force at 3000 PSIG	Maximum Oil Pressure	Oil Displacement Extend/ Retract	Port	Action
050-618-000	2,400 lbs.	3,500 PSIG	1.81 cu. in.	SAE #4	Single-acting
050-628-000	2,400 lbs.	3,500 PSIG	1.81/1.44 cu. in.	SAE #4(2)	Double-acting



Edge Clamps

100863DE

100986DE



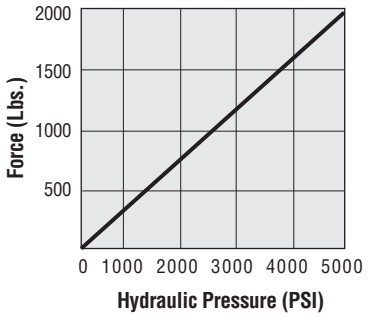
DE-STA-CO's *Edge Clamps* perform three functions: locating the workpiece, clamping horizontally against secondary locators, and clamping vertically against the primary locating surface. This combined horizontal and vertical clamping force can locate and secure many parts with no other clamps being needed.

These clamps are extremely compact relative to their clamping force and are available in either conventionally or manifold mounted versions. At only 1" tall, their low profile design allows them to remain below most workpieces for unrestricted machining access to a part's top surface.

The 100986DE clamp is compactly designed for manifold mounting. The 100863DE clamp has three pressure ports for convenient installation and easy chaining of multiple clamps. A generous .188" stroke compensates for workpiece variations, and includes removable mounting/ locating bushing.

Features:

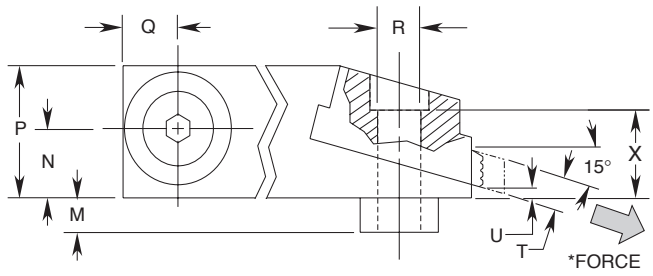
- 15° clamping angle
- Hardened, serrated, plated gripper
- Single-acting
- Hardened, tool steel piston
- Three pressure ports (100863DE)
- Compact design
- Dual, zinc plated return springs
- Conventional and manifold mount versions



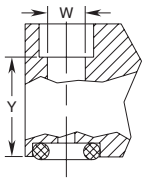
Performance

Clamp No. 100863DE, 100986DE

100863DE, 100986DE

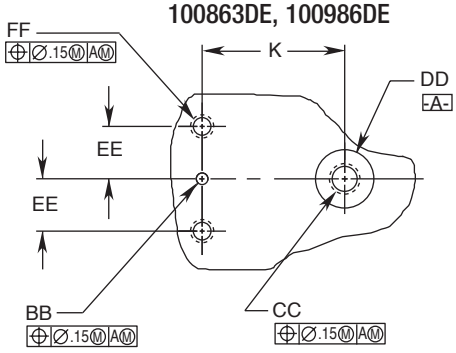


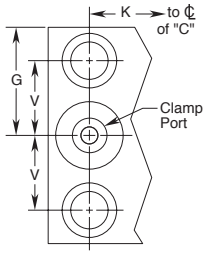
100986DE

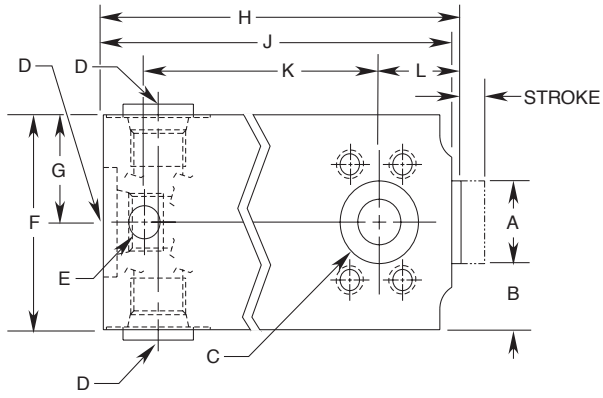


Mating Hole Pattern

100863DE, 100986DE







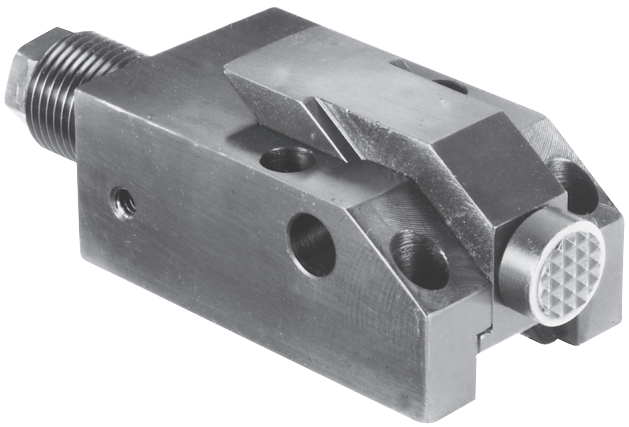
Cat. no.	Specifications				Dimensions (In Inches)											
	*Force (lbs.)	Stroke (in.)	Eff. Area (Sq. In.)	Oil Cap. (Cu. In.)	A	B	C Dia.	D Thread Size	E Dia.	E Depth	F	G	H	J	K	L	M
100863DE	2,000	0.188	0.422	0.080	0.625	0.500	0.624 0.621	7/16-20 UNF SAE-4	0.250	0.175	1.625	0.812	2.856	2.780	1.875	0.653	0.240
100986DE								–	–	–			2.490	2.414	1.530		

Cat. no.	Dimensions (In Inches)																
	N	P	Q	R Dia.	T	U	V	W	X	Y	BB Dia. Port	BB Dia. Locator	CC Thread Size	DD Dia	DD Depth	EE	FF Thread Size
100863DE	0.525	1.000	0.483	0.344	0.250	0.090	–	–	0.750	–	–	‡ .250	†† 5/16-18 UNC	0.626	0.250	–	–
100986DE	–		–				0.562	0.285		0.750	†.121 .135	–				0.562	††† 1/4-20 UNC

NOTE: * Based on 5,000 PSI max. operating pressure
† Surface finish to be 63. Concentric tool marks only. Finish area to be .500 Ø min. centered on .135 Ø max. hole.
†† .312 min thread engagement required.
††† .250 min thread engagement required.
‡ Optional locating hardware not included

Edge Clamp

Model 70626

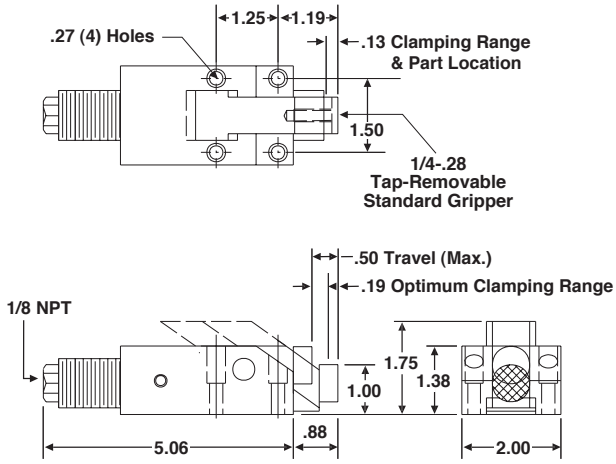


Hydraulic Edge Clamps offer fast part load/unload in drilling, milling, planing, grinding and other surfacing operations on either CNC or Bridgeport-type machines.

These low profile clamps simultaneously apply horizontal and vertical clamping force against the sides of a workpiece, effectively allowing cutter access to an entire top surface. Maximum horizontal force ranges up to 1,520 lbs. and vertical force is up to 1,220 lbs.

Features:

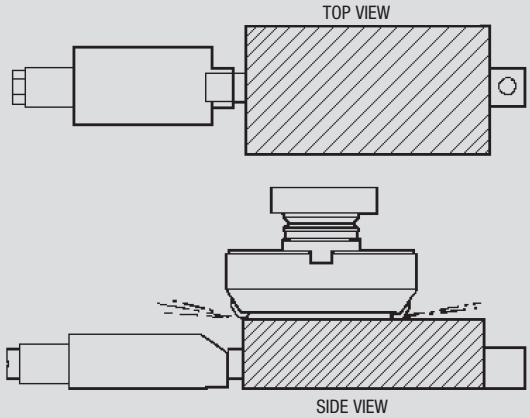
- Highly-compact design
- Positive spring return and replaceable grippers
- Powered using shop air with an air/hydraulic booster



	Clamp Force at 5/16" Horizontal Stroke	
Hydraulic Pressure	Horizontal	Vertical
500 PSIG	190 lbs.	170 lbs.
1,000 PSIG	390 lbs.	350 lbs.
1,500 PSIG	620 lbs.	520 lbs.
2,000 PSIG	850 lbs.	700 lbs.
2,500 PSIG	1,060 lbs.	870 lbs.
3,000 PSIG	1,300 lbs.	1,050 lbs.
3,500 PSIG	1,520 lbs.	1,220 lbs.

Specifications:

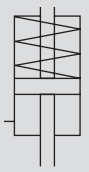
Maximum Operating Pressure (Hydraulic)	3500 PSIG
Minimum Operating Pressure (Hydraulic)	500 PSIG
Displacement	.139 in.^{3}
Piston Effective Area	.442 in.^{2}
Horizontal Stroke (includes .13" clamping range)	.31 in.
Associated Vertical Travel at Horizontal Stroke	.22 in.



Thru-Hole Hydraulic Ram

By inserting a rod through the hollow piston, these cylinders can be used to push or pull depending on the orientation of the ram. They will actuate a rod of any length or shape and are extremely effective in translating power to a remote location. Greater forces are generated in these thru-hole rams because of their larger piston area.

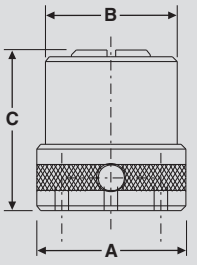
Symbol



Features:

- Larger piston diameter for greater clamping forces
- Hardened steel piston and rod
- Single-acting for simple plumbing
- Optional threaded inserts
- Optional mounting plate (permits mounting ram with a single cap screw)

Model no.	RAM I.D.*	Port	Stoke	Oil Displacement	Force at 3,000 PSIG	Dimensions		
						A	B	C
021-011-011DE	0.38	1/8 NPT	0.38	0.547 cu. in.	4,380 lbs.	2.13	1.88	2.25
021-012-021DE	0.50	1/4 NPT	0.50	1.35 cu. in.	8,100 lbs.	3.00	2.63	2.88
021-013-031DE	0.63	1/4 NPT	0.63	2.51 cu. in.	12,066 lbs.	3.25	3.00	3.63
020-011-011DE	0.38	SAE #2	0.38	0.547 cu. in.	4,380 lbs.	2.13	1.88	2.25
020-012-021DE	0.50	SAE #4	0.50	1.35 cu. in.	8,100 lbs.	3.00	2.63	2.88
020-013-031DE	0.63	SAE #4	0.63	2.51 cu. in.	12,066 lbs.	3.25	3.00	3.63



* Clearance for rod or bolt of given dimension.

Maximum input pressure 3,500 PSIG.

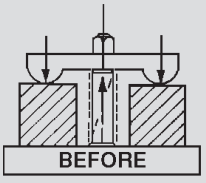
Accessories

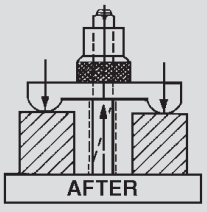
All size thru-hole rams are supplied with a thru-hole insert threaded into the top. Optional threaded inserts, inch or metric, are also available.

RAM no.	Thru- Hole Insert (Supplied)
021-011-011DE, 020-011-011DE	705384
021-012-021DE, 020-012-021DE	705512
021-013-031DE, 020-013-031DE	705634

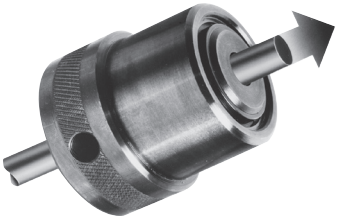
To determine how much force is needed to replace a manual clamp, use this chart as a guide

Loads Trasmitted by Various Diameter Screws		
Bolt Size	Wrench Length	F-Lbs. (Average)
1/4 UNF	4.00	2,400 lbs.
1/4 UNF	4.00	1,920 lbs.
3/8 UNF	5.75	3,000 lbs.
3/8 UNF	5.75	2,920 lbs.
1/2 UNF	8.00	4,200 lbs.
1/2 UNF	8.00	3,640 lbs.
5/8 UNF	9.00	5,600 lbs.
5/8 UNF	9.00	5,600 lbs.
3/4 UNF	9.00	4,800 lbs.
3/4 UNF	11.00	4,200 lbs.
7/8 UNF	12.00	5,400 lbs.





A thru-hole ram easily converts a manual strap clamp into an automatic hydraulic powered clamp. Usually a longer bolt is the only part needed to make this conversion.



Calculation of Forces Using Straps and Levers

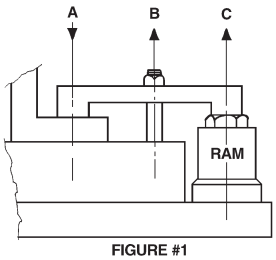


FIGURE #1

Figure #1
When the distance AB is equal to the distance BC the force upward from Model 020-011-011DE Ram "C" is equal to the downward force "A" on the part.

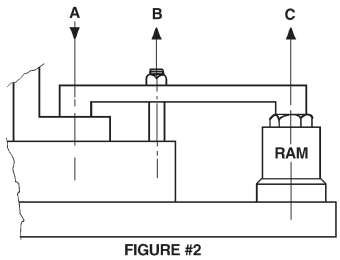


FIGURE #2

Figure #2
The downward force "A" is equal to the upward force "C" times a ratio of the distance BC:AB.

Example:

AB = 2", BC = 4", Force "C" = 1,000 lbs.

$$\text{Force "A"} = \text{Force "C"} \times \frac{BC}{AB}$$

$$\text{"A"} = 1{,}000 \text{ lbs.} \times \frac{4}{2}$$

"A" = 2,000 lbs.

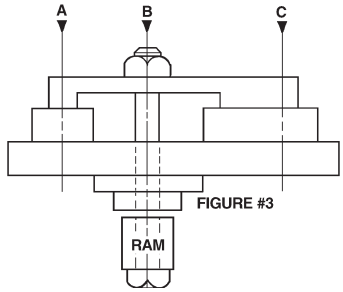


Figure #3
When Force "B" from Model 020-011-011DE Hollow Bore is divided between "A" & "C", the forces at "A" & "C" are in inverse ratio to the distance AB & BC respectively.

$$\text{Force "A"} = \text{Force "B"} \times \frac{BC}{AB}$$

$$\text{Force "C"} = \text{Force "B"} \times \frac{AB}{AC}$$

Example:

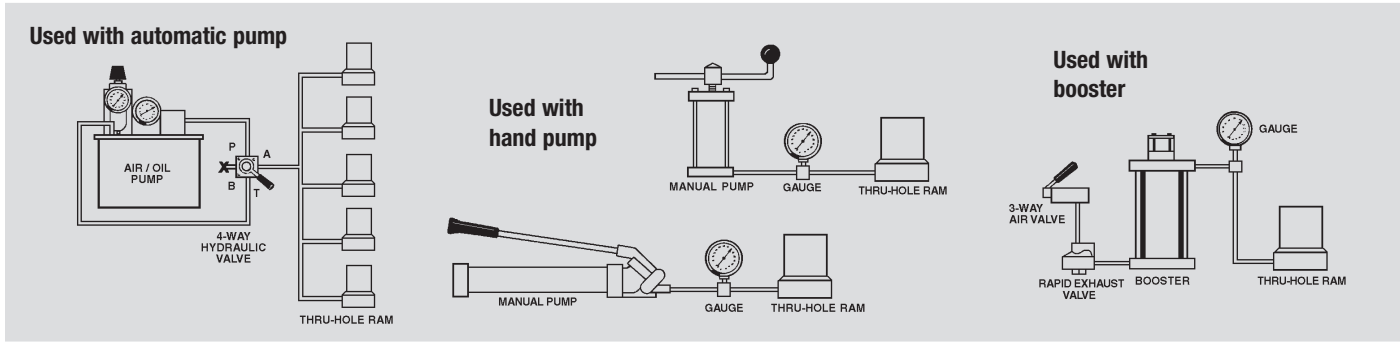
AB = 2", BC = 4," Force "B" = 1,000 lbs.

$$\text{Force "A"} = 1{,}000 \text{ lbs.} \times \frac{4}{6} = 666.7 \text{ lbs.}$$

$$\text{Force "C"} = 1{,}000 \text{ lbs.} \times \frac{2}{6} = 333.3 \text{ lbs.}$$

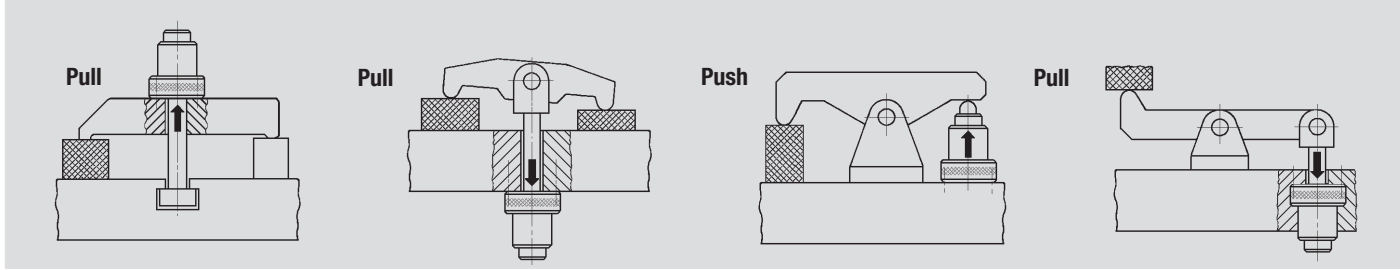
Power Sources

Thru-hole Rams can be powered by automatic pumps, hand pumps, boosters or existing machine hydraulics.



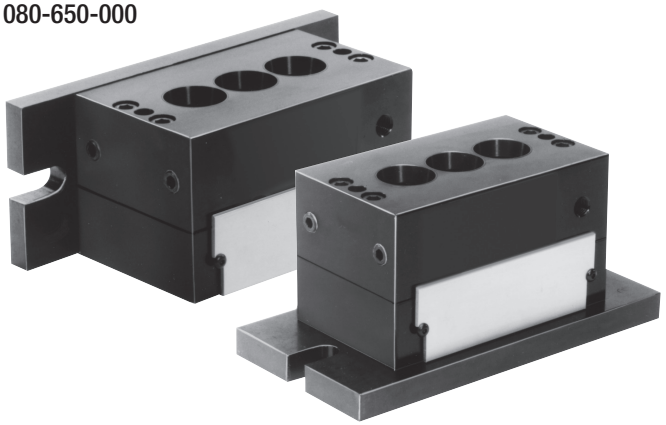
Multiple Uses

Thru-hole Rams can be used to push or pull depending on the position of the ram.

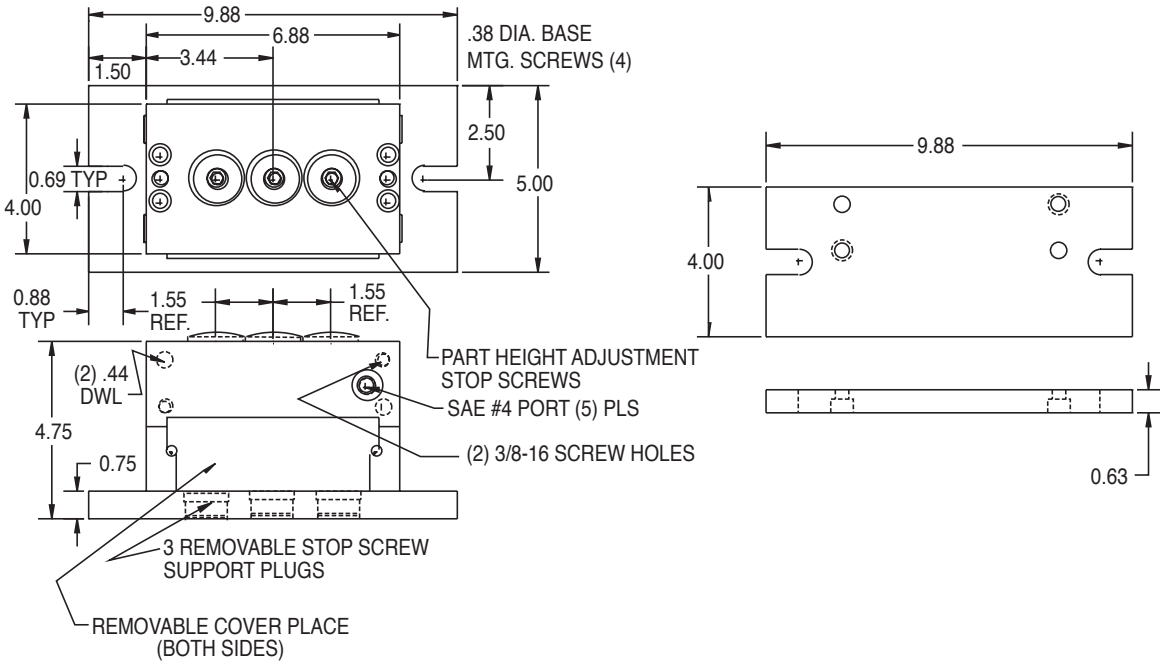


Collet Chucks – Triple Cavity

080-650-000

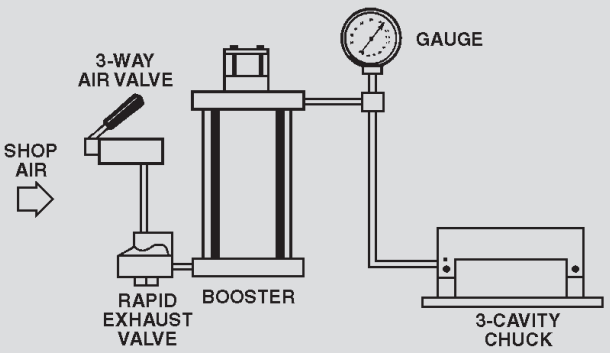


Triple Cavity Collet Chuck Specifications:	
Drawbar Downward Force	1,000 lbs. per 1,000 PSI input
Oil Displacement	0.24 cu. in.
Weight	20 lbs.
Max. Operating Pressure	5,000 PSI
Exerting Force	2,900 lbs. per cavity
Designed for standard 5C Collets (not included with unit).	



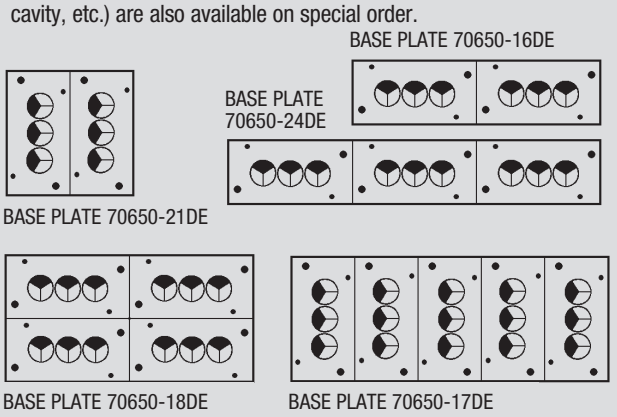
Collet Chuck Power Sources

Since collet chucks require very little hydraulic oil for operation, a booster is an excellent power supply.



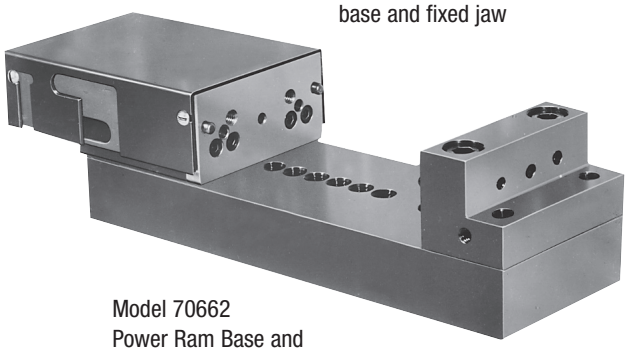
Collet Chuck Modular Design

The Model 080-650-000DE is designed so that two or more may be ganged together, on a special base plate, for multiple-piece machining operation in groups of six, twelve, etc. The only limitation is the size of the machine table. Other configurations (e.g., four cavity, etc.) are also available on special order.



Models 70660, 70661, 70662

Model 70660
Vise Complete with
base and fixed jaw



Model 70662
Power Ram Base and
fixed jaw only

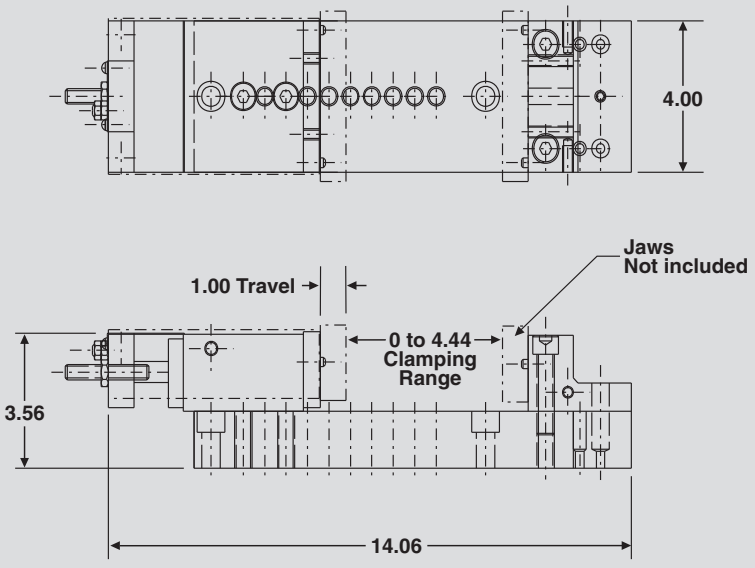
Model 70661
Power Ram
Power Head only
with Swarf Cover

Operable from any hydraulic power source up to 4,000 PSIG, the DE-STA-CO Hydraulics System Power Vise offers high clamping forces with precise and rapid action. Extremely compact, the Model 70660 vise can be used as a self-contained machinist's vise on the machine bed or workbench. With fixed jaw, it becomes a custom made vise to suit your own jaw length requirements.

- The double piston vise has a full one inch power stroke for quick and easy loading and unloading
- Precision ground, hard chrome finished piston-rods running in micro-finished bores
- Low friction U-cup seals with back-up rings for fast return.
- Easily adjusted, stroke-limiting screws (power and return) are located at the rear of the power head

Specifications:

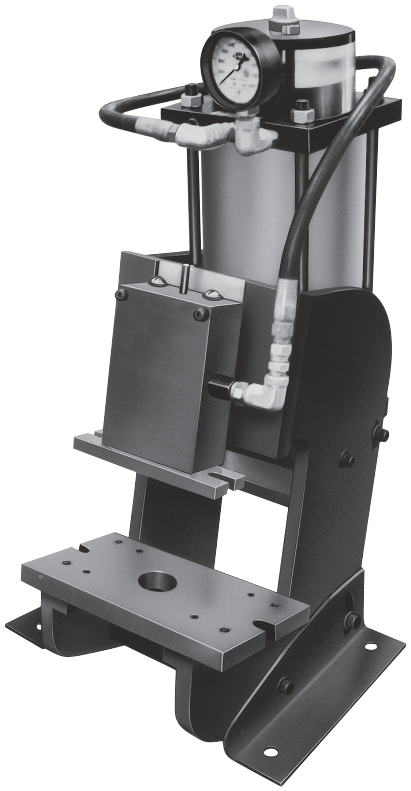
Displacement 2.209 cu. in.
Force = 2.209 x PSIG Input (Oil)
Max. oil pressure 4000 PSIG
Stroke = 0 to 1"
Weight
70660 32 lbs., 8 oz.
70661 10 lbs., 8 oz.
70662 22 lbs.



Note: See page 15.8 for application information.

Press

Model 70750



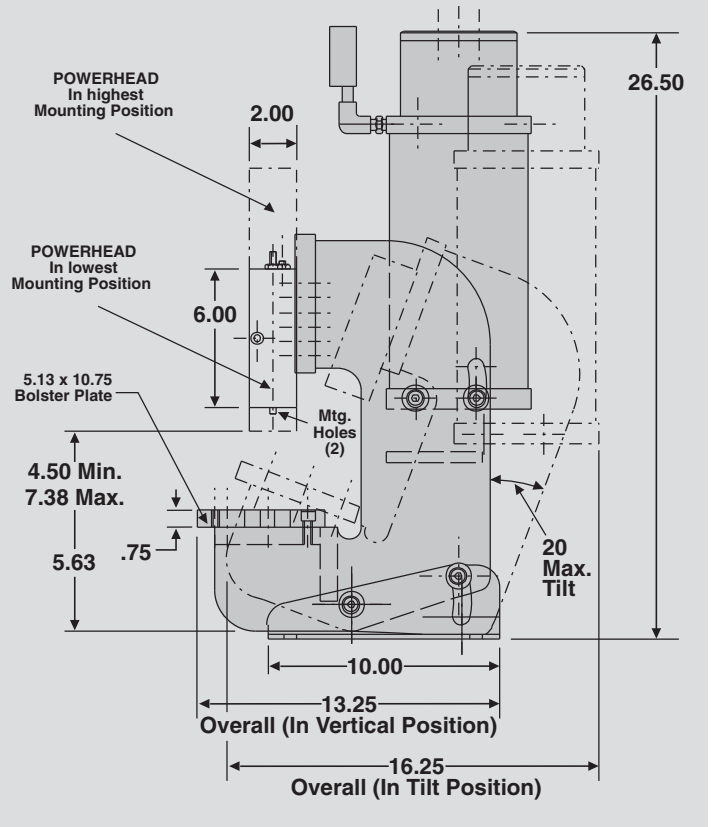
Every small workshop can produce pressed parts or insert bushings with the DE-STA-CO Hydraulic Press. This press provides 4 and one-half tons of exerting force from ordinary shop line air pressure. The sturdy press includes all hydraulic connections – no additional hydraulic power source is required. The Hydraulic Press power is provided by a power booster (Model 70104), which converts normal air pressure to high pressure hydraulic power. The main hydraulic power ram is a moveable power head (Model 70661).

The extremely compact ram offers high ram force with precision and fast action. The double piston ram has a full one inch power stroke for quick and easy loading and unloading. It has precision ground, hard chrome finished piston rods running in micro-finished bores. The press has easily adjusted stroke-limiting screws (power and return) which are located at the top of the ram. The ram head can be positioned from $4\frac{1}{2}$" to $7\frac{3}{8}$" above the bolster plate (press bed). Attached to the ram head is a machined steel ram mounting plate with machined mounting holes to facilitate attaching dies.

A tilt base permits the entire press to be inclined up to 20º. Tilting the press can speed up the ejection of scrap or the work piece in blanking operations. The bolster plate has a pre-machined hole for rapid ejection of slugs produced in piercing operations.

Specifications:

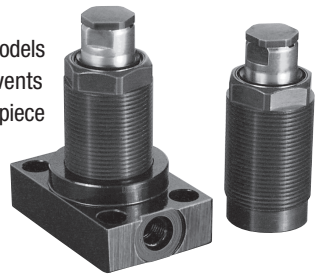
Displacement	2.209 cu. in.
Weight	123 lbs.
Max. input air pressure	120 PSIG
Air inlet (PSIG) x 71.59 = Force	
Power Ratio = 1:71.59	
e.g., If inlet air pressure = 100 PSIG	
then ram force = 100 x 71.59 or 7,159 lbs. force	



Typical Applications:

- Blanking of steel, brass or aluminum parts
- Piercing template, pilot or locator holes
- Forming small pieces
- Stamping extremely small items
- Bending pins and steel strips for automotive parts
- Inserting standard bearings or bushings
- Removal of bearings or bushings
- Piercing or notching of electronic circuit boards
- Testing for fatigue in formed parts
- Drawing small cups or other forms
- Shearing small strip or coil metals
- Marking identification numbers in metal parts
- Embossing logos in plastic, leather or metal
- Crimping pipe and tube ends
- Connecting chain linkages

DE-STA-CO offers two designs of work supports: block style and threaded body style. Both styles have the features that give them numerous advantages over typical makeshift supporting methods. Fixturing is faster, more accurate, and more consistent because shimming and screw jacks are totally unnecessary. Any manual intervention is completely eliminated.



All of DE-STA-CO's work support models provide the stability that prevents deflection and vibration of the workpiece during machining. Automatically adjusting to varying sizes or locations of the workpiece, they can also be used as adjustable rest pads under clamps.

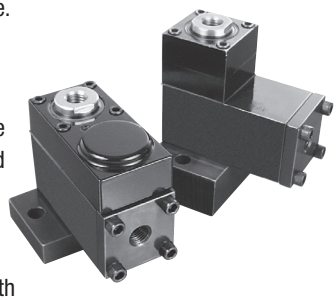
All DE-STA-CO work supports are rated at 5,000 PSI maximum. Minimum pressures vary by style. A work support is typically used with a sequence valve in the hydraulic system, although it is not always required.

When used to prevent vibration/deflection of the workpiece, the clamps in the system are usually actuated first to position the part. The work support is then sequenced to lock the plunger in place.

When used as a support under a clamp, the work support must be actuated first to lock its plunger in position. The clamps are then sequenced to secure the workpiece.

Block Style Work Supports

Spring and Air Advance



The block style work supports use a built-in hydraulic cylinder and internal mechanisms to lock the plunger that contacts the workpiece. They are particularly well-suited to applications with lower hydraulic pressures. A 500 PSI minimum system pressure will yield consistent supporting. The spring advance versions feature a unique diaphragm breather system to allow the plunger to be cycled in and out without changing the work support's internal pressure. This means that when the plunger extends, a vacuum will not be developed internally, so there is no tendency for coolant or contaminant's to be drawn inside.

Threaded Body Work Supports

Fluid, Spring and Air Advance

These work supports also use a plunger that extends to contact the workpiece. To support any externally supplied loads, the sleeve surrounding the plunger grips the plunger and holds it, regardless of where it is in its stroke. Extremely close manufacturing tolerances hold the plunger perpendicular to the workpiece and eliminate inaccuracies due to plunger movement during lock-up. Made of 100% corrosion resistant materials, this accuracy is easily maintained throughout the life of the work support.

This simple, co-axial design minimizes the number of moving parts and makes these work supports very compact. They are easily threaded into your fixture or can be surface mounted using the available base.

Filtered breathers, where required, keep solid contaminants out of the work support. No external breather lines are necessary.

Fluid Advance/Single-acting

This fluid advanced work support allows the plunger to be retracted out of the way during workpiece load/unload operations. With no hydraulic pressure applied, a spring retracts the plunger into the work support body. The work support provides its own internal sequencing of a piston which raises the plunger until it contacts the workpiece. Maximum flow rates must be observed to ensure proper sequencing. A spring between the piston and the plunger limits the workpiece contact force. The full force generated by this piston cannot be transmitted to the plunger.

As pressure builds, the automatic sequencing action causes the sleeve to grip the plunger and provide the locking action.

A typical operating sequence is as follows:

1. Plunger normally retracted by spring
2. Hydraulic pressure extends small cylinder causing spring loaded plunger to advance
3. When plunger contacts the workpiece, the spring begins to compress as the cylinder continues to extend
4. When the cylinder reaches the end of its stroke, pressure builds high enough to cause the sleeve to grip the plunger
5. Removal of hydraulic pressure releases the sleeves grip on the plunger and an internal return spring retracts the plunger away from the workpiece

Spring Advance/Single-acting

Spring advance work supports are the simplest version of hydraulic work supports. As the workpiece is loaded into the fixture, the plunger contacts it, and the weight of the workpiece or the design of the fixture holds the plunger depressed until the work support is hydraulically locked. Typical operation includes:

1. Plunger normally extended by spring
2. Workpiece forces plunger down to supporting position
3. Hydraulic pressure locks plunger
4. Removal of hydraulic pressure releases plunger

Air Advance/Single-acting

Air advance work supports may be specified where:

1. The workpiece is loaded from the side and the extended plunger from a spring advance work support would be in the way
2. The workpiece is not heavy enough to depress a spring advance work support plunger
3. The plunger contact force must be precisely adjusted and controlled. Adjusting the air supply pressure will vary the workpiece contact force
4. Fine contaminants or heavy coolant floods are present, and especially during work support actuation

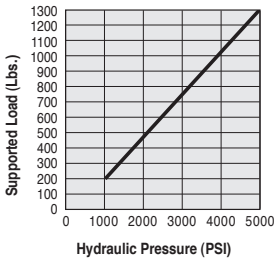
A typical operating sequence is as follows:

1. Plunger normally retracted by spring
2. Air pressure applied under plunger overcomes retracting spring force and extends plunger to workpiece
3. Hydraulic pressure is then sequenced to lock plunger
4. Air and hydraulic pressure must both be removed for plunger retraction

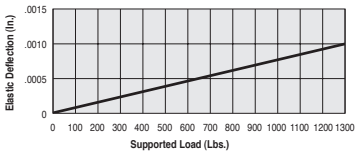
As an added benefit of air advance work supports, pressurized air in the work support body prevents coolant or other contaminants from entering, eliminating the need for breathers, diaphragms, etc.

Fluid Adv. Work Supports – 1,300 lb.

*For New **SELECT** Work Supports*
See Pages 15.38



Avg. Performance
100872DE,100873DE, 110122DE



Avg. Performance
100872DE, 100873DE, 110122DE

DE-STA-CO's *Fluid Advance Work Supports* have a spring-loaded plunger which hydraulically extends to contact the workpiece. To support any externally applied loads, the sleeve surrounding the plunger grips the plunger and holds it in place.

Fluid Advance Work Supports allow the plunger to be retracted out of the way during workpiece load/unload operations. The work support provides its own internal sequencing of a piston which gently raises the plunger until it contacts the workpiece. A spring between the piston and the plunger limits the workpiece contact force.

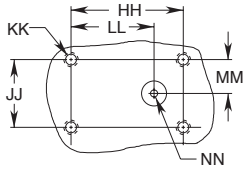
The 100872DE's threaded body may be compactly manifold mounted in your fixture or choose the 100873DE which includes the100872DE work support and a mounting base for installation on a flat surface for conventionally plumbed circuits. Both feature fully corrosion resistant construction.

Extremely close manufacturing tolerances hold the plunger perpendicular to the workpiece and eliminates inaccuracies due to plunger movement during lock-up. After lock-up, the plunger is absolutely rigid and limits elastic deflection to .00007" per 100 lbs. of load. For base only, order number 500035DE.

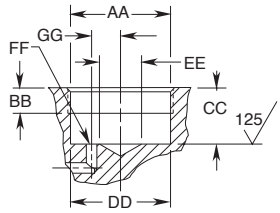
Features:

- 1,300 lbs. capacity at 5,000 PSI max.
- Manifold or conventional base mounting
- Fully corrosion resistant construction
- Filtered breather/rest button
- 1,000 PSI minimum recommended pressure

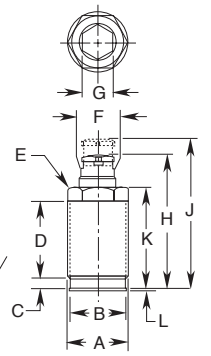
Mating Hole Pattern



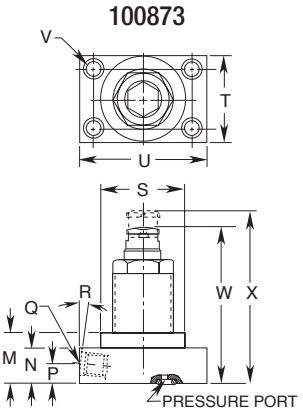
Manifold Mount Detail



100872



100873



Cat. no.	Specifications *Cap. (lbs.)	Oil Cap. (Cu. In.)	Max. Flow Rate (Cu. In./Min.)	Advance System	Mounting Configurations	Dimensions (In Inches) A	†B Seal Dia.	C	D	E Hex.	F Dia.	G Dia.	Operating Range H	Operating Range J
100872DE	1,300	0.04	47	Fluid	Cartridge Manifold	1¼-16 UN	1.171	0.334	1.531	1.125	0.735	0.688	2.850	3.162
100873DE					Base Conventional		–	–	–				–	–
110122DE					Base Manifold									

Cat. no.	Dimensions (In Inches) K	L Seal	M	N	P	Q Pressue Port Thd. Size	R Port Angle	††S Dia.	T	U	V Dia.	Operating Range X Retracted	Operating Range Y Advanced
100872DE	2.180	0.40	–	–	–	–	–	–	–	–	–	–	–
100873DE	–	–	1.000	0.700	0.385	⅞-20 UNF SAE-4	5°	1.688	1.750	2.562	0.281	3.162	3.474
110122DE					–	–	–						

Cat. no.	Mounting Dimensions (In Inches) AA Thd. Size	BB Min. Thd.	CC	DD Dia.	EE Drill Point Dia. Max.	FF Dia.	GG Max.	HH	JJ	KK Thd. Size	LL	MM	NN Pressure Port Dia. Max.
100872DE	1¼-16 UN	0.300	0.655 0.675	1.182 1.196	0.500	0.121 0.135	0.343	–	–	–	–	–	–
100873DE	–	–	–	–	–	–	–	1.968	1.188	¼-20 UNC			
110122DE											1.456	0.594	†††.126

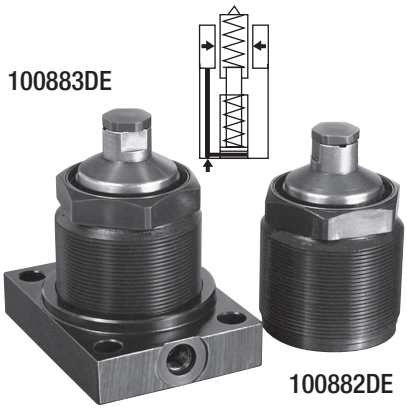
Fluid Advance Work Support

Cat. no.	Approximate Forces Required To Depress Plunger (lbs.) Fully Extended	Fully Depressed
100872DE 100873DE	2.3	2.9

NOTE: *Based on 5,000 PSI max. operating pressure.
For optional jam nut see page 15.57.
For additional flow control valves see page 15.97.
For optional accessories see page 15.73.

† Seal included.
†† 1.768 dia. min. clearance required.
††† Surface finish to be 63. Finish of 125 acceptable with concentric tool marks only. Finish area to be .438 dia. min. centered on .126 dia. port hole. See operating instructions for additional details.

100883DE



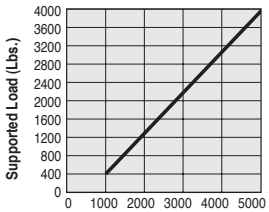
100882DE

DE-STA-CO's *Fluid Advance Work Supports* have a spring-loaded plunger which hydraulically extends to contact the workpiece. To support any externally applied loads, the sleeve surrounding the plunger grips the plunger and holds it in place.

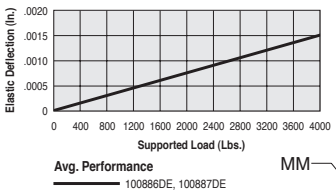
Fluid Advance Work Supports allow the plunger to be retracted out of the way during workpiece load/unload operations. The work support provides its own internal sequencing of a piston which gently raises the plunger until it contacts the workpiece. A spring between the piston and the plunger limits the workpiece contact force.

The 100882DE's threaded body may be compactly manifold mounted in your fixture or choose the 100883DE which includes the 100882DE work support and a mounting base for installation on a flat surface for conventionally plumbed circuits.

Extremely close manufacturing tolerances hold the plunger perpendicular to the workpiece and eliminate inaccuracies due to plunger movement during lock-up. After lock-up, the plunger is absolutely rigid and limits elastic deflection to .00004" per 100 lbs. of load. For base only, order number 500028DE.



Avg. Performance
100886DE, 100887DE

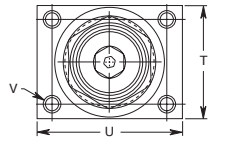


Avg. Performance
100886DE, 100887DE

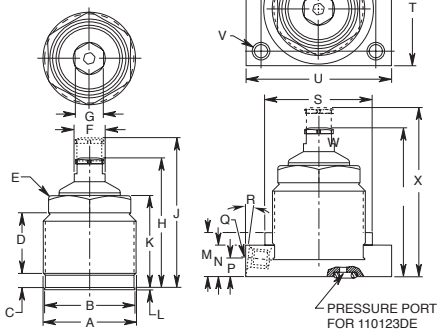
Features:

- 4,000 lbs. capacity @ 5,000 PSI max.
- Manifold or conventional base mounting
- Small, filtered breather/rest button to accommodate intricate workpieces
- Fully corrosion resistant construction
- 1,000 PSI minimum recommended pressure

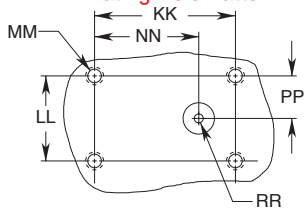
100883DE

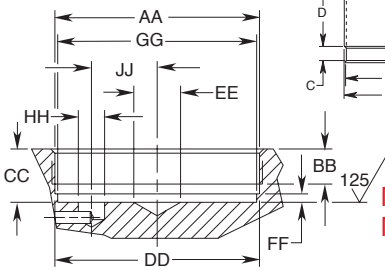


100882DE



Mating Hole Pattern





Manifold Mount Detail

Cat. no.	Specifications *Cap. (lbs.)	Oil Cap. (Cu. In.)	Max. Flow Rate (Cu. In./Min.)	Advance System	Mounting Configurations	Dimensions (In Inches) A	†B Seal Dia.	C	D	E Hex.	F Dia.	G Dia.	Operating Range H	Operating Range J	K
100882DE ▲	4,000	0.12	10	Fluid	Cartridge Manifold	2¼-16 UN	2.140	0.250	1.625	2.000	0.735	0.688	3.265	3.765	2.312
100883DE ▲					Base Conventional		–	–	–				–	–	–
110123DE ▲					Base Manifold										

▲ Available upon request

Cat. no.	Dimensions (In Inches) L Seal	M	N	P	Q Pressue Port Thd. Size	R Port Angle	††S Dia.	T	U	V Dia.	Operating Range X Retracted	Operating Range Y Advanced
100882DE ▲	0.40	–	–	–	–	–	–	–	–	–	–	–
100883DE ▲	–	0.945	0.735	0.420	7/16-20 UNF SAE-4	5°	2.688	2.750	3.562	0.281	3.680	4.180
110123DE ▲				–	–	–						

▲ Available upon request

Fluid Advance Work Support

Cat. no.	Approximate Forces Required To Depress Plunger (lbs.) Fully Extended	Fully Depressed
100882DE 100883DE	4	8

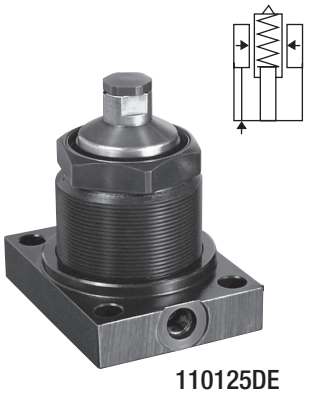
Cat. no.	Mounting Dimensions (In Inches) AA Thd. Size	BB Min. Thd.	CC	DD Dia.	EE Drill Point Max.	FF	GG Dia.	HH Dia.	JJ Max.	KK	LL	MM Thd. Size	NN	PP	RR Pressure Port Dia. Max.
100882DE ▲	2¼-16 UN	0.380	0.560 0.580	2.182 2.196	0.500	0.080 0.100	2.145 22.155	0.121 0.293	0.700	–	–	–	–	–	–
100883DE ▲	–	–	–	–	–	–	–	–	–	2.843	2.063	¼-20 UNC			
110123DE ▲													2.122	1.032	†††.126

▲ Available upon request

NOTE: * Based on 5,000 PSI max. operating pressure
For optional jam nut see page 15.57
For additional flow control valves see page 15.97.
For optional accessories see page 15.73.
† Seal included.
†† 2.768 dia. min. clearance required.
††† Surface finish to be 63. Finish of 125 acceptable with concentric tool marks only. Finish area to be .438 dia. min. centered on .126 dia. port hole. See operating instructions for additional port details.

Spring Adv. Work Supports – 4,000 lb.

*For New **SELECT** Work Supports*
See Pages 15.38



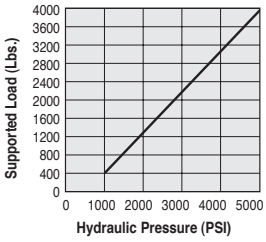
110125DE

DE-STA-CO's *Spring Advance Work Supports* have a spring-loaded plunger which contacts the workpiece as it is loaded into the fixture. The spring keeps the plunger in contact with the workpiece, allowing for variations between workpieces. To support any externally applied loads, the sleeve surrounding the plunger grips the plunger and holds it in place.

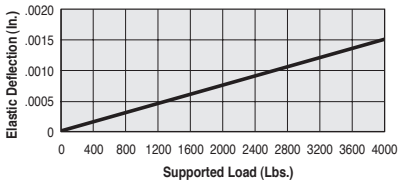
Extremely close manufacturing tolerances hold the plunger perpendicular to the workpiece and eliminate inaccuracies due to plunger movement during lock-up. After lock-up, the plunger is absolutely rigid and limits elastic deflection to .00004" per 100 lbs. of load. For base only, order number 500028DE.

Features:

- 4,000 lbs. capacity at 5,000 PSI max.
- Manifold or conventional base mounting
- Small, filtered breather/rest button to accommodate intricate workpieces
- Fully corrosion resistant construction
- 1,000 PSI minimum recommended pressure

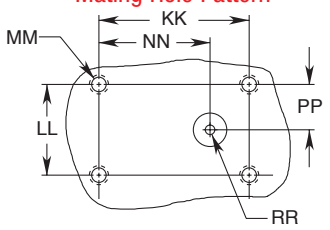


Avg. Performance
110125DE

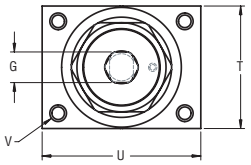


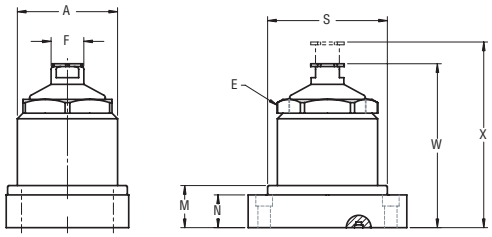
Avg. Performance
110125DE

Mating Hole Pattern



Manifold Mount Detail





Cat. no.	Specifications				Dimensions (In Inches)			
	*Cap. (lbs.)	Oil Cap. (Cu. In.)	Advance System	Mounting Configuration	A	E Hex	F Dia.	G Hex
110125DE	4,000	0.02	Spring	Base Manifold	2¼-16 UN	2.00	0.735	0.688

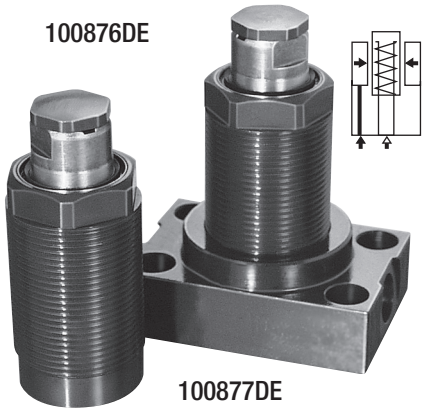
Cat. no.	M	N	††S Dia.	T	U	V Dia.	Operating Range	
							W Retracted	X Advanced
110125DE	0.945	0.735	2.688	2.750	3.562	0.281	3.680	4.180

Cat. no.	KK	LL	MM Thd. Size	NN	PP	RR Pressure Port Dia. Max.
110125DE	2..843	2.063	¼-20 UNC	2.122	1.032	†††.126

NOTE: * Based on 5,000 PSI max. operating pressure
For optional jam nut see page 15.57.
For additional flow control valves see page 15.97.
For optional accessories see page 15.73.

† Seal included.
†† 2.768 dia. min. clearance required.

††† Surface finish to be 63. Finish of 125 acceptable with concentric tool marks only. Finish area to be .438 dia. min. centered on .126 dia. port hole. See operating instructions for additional port details.



DE-STA-CO's *Air Advance Work Supports* have a spring return plunger which uses air pressure to extend it to contact the workpiece. To support any externally applied loads, the sleeve surrounding the plunger grips the plunger and holds it in place.

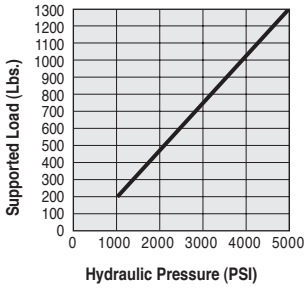
Air Advance Work supports allow the plunger to be retracted out of the way during workpiece load/unload operations. Applying air pressure to the work support gently raises the plunger until it contacts the workpiece. Adjusting the air pressure will vary the plunger contact force. The air pressure within the work support also serves to keep contaminants out.

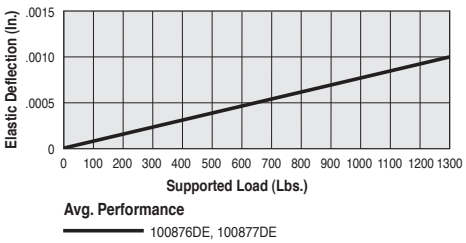
The 100876DE threaded body may be compactly manifold mounted in your fixture or choose the 100877DE which includes the 100876DE work support and a mounting base for installation on a flat surface for conventionally plumbed circuits. Both feature fully corrosion resistant construction.

Extremely close manufacturing tolerances hold the plunger perpendicular to the workpiece and eliminates inaccuracies due to plunger movement during lock-up. After lock-up, the plunger is absolutely rigid and limits elastic deflection to .00007" per 100 lbs. of load. For base only, order number 500036DE.

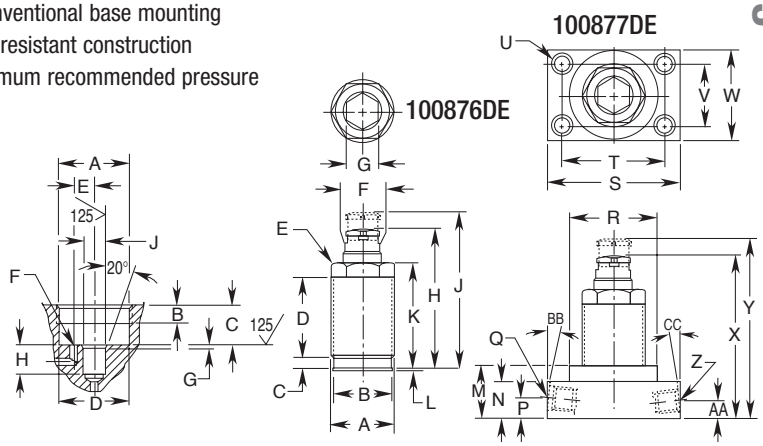
Features:

- 1,300 lbs. capacity at 5,000 PSI max.
- Manifold or conventional base mounting
- Fully corrosion resistant construction
- 1,000 PSI minimum recommended pressure





Manifold Mount Detail



Cat. no.	Specifications				Dimensions (In Inches)									
	*Cap. (lbs.)	Oil Cap. (Cu. In.)	Advance System	Mounting	A Thread Size	††B Seal Dia.	C	D	E Hex	F Dia.	G Hex	Operating Range H Retracted	Operating Range J Advanced	K
100876DE	1,300	0.01	Air	Manifold	1¼-16 UN	1.171	0.334	1.531	1.125	0.735	0.688	2.850	3.162	2.180
100877DE ▲		0.01	Air	Base				4.250				–	–	

▲ Available upon request

Cat. no.	Dimensions (In Inches)																
	L Seal	M	N	P	Q Thread Size	†R Dia.	S	T	U Dia.	V	W	Operating Range X Retracted	Operating Range Y Advanced	Z Thread Size	AA	BB Port Angle	CC Port Angle
100876DE	0.040	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
100877DE ▲		1.000	0.700	0.385	7/16-20 UNF SAE-4	1.688	2.562	1.968	0.281	1.188	1.750	3.162	3.474	⅛ NPTF	0.330	5°	5°

▲ Available upon request

NOTE: * Based on 5,000 PSI max. operating pressure. (Optional: Jam nut - pg. 51)
See page 15.73 for optional accessories.

† 1.768 dia. min. clearance required.
†† Seal Included.

Manifold Mount Detail

Cat. no.	Cavity Dimensions A Thread Size	B Min. Thread	C	D Dia.	Fluid Passage Dimensions E	F Dia.	†Air Passage Dimensions G	H	J Dia.
100876DE	1¼-16UN	0.300	0.665 0.675	1.182 1.196	0.343	0.121 0.135	0.060	0.380 0.400	0.375 0.377

† Connector bushing supplied but not shown.

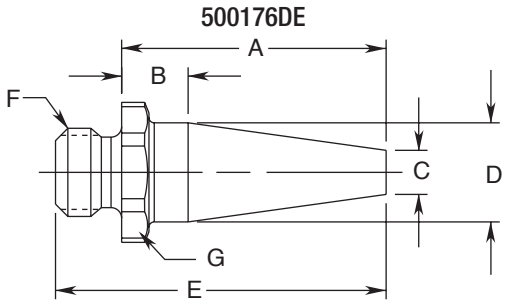
Air Advance Work Supports

Cat. no.	Approximate Plunger Extension Force *Air Pressure (PSI)	Force (lbs.)
100876DE 100877DE	15	1.4
	20**	3.7
	30	5.9

NOTE: * Min. air press. 15 PSI, max. air press. 30 PSI
** Minor air leakage may occur at or above this pressure.

Work Support Accessories

*For New **SELECT** Work Supports*
See Pages 15.38



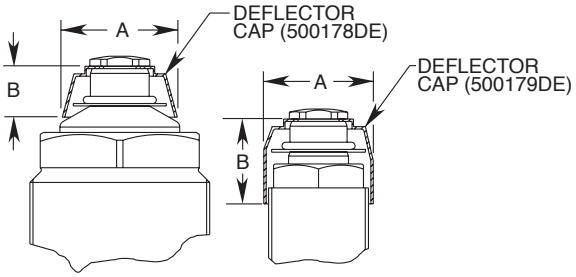
Cat. no.	Dimensions (In Inches)						
	A	B	C Dia.	D Dia.	E	F Thd. Size	G Hex
500176DE	1.500	0.376	0.250	0.562	1.875	½-20 UNF	0.688

Rest Button

This *Rest Button* is designed to extend the reach of all DE-STA-CO threaded body work supports. All of DE-STA-CO's fluid-advanced and air-advanced threaded body work supports must be able to "breathe" air for proper operation. Proper filtration as it breathes is also critical for maximum service life. This button contains the same filtered breather port as the standard rest button. It is easily modified above the hex to fit your exact requirements. Its tapered design minimizes weight and off-center loading.

- Fits 1,300 and 4,000 lb. work supports
- Built-in filter element
- Provides 1.375" additional reach beyond standard button
- Easily modified for your application

Additional end effectors will add weight and may affect performance. If neither the standard nor the optional 500176DE rest buttons are appropriate for your application, contact DE-STA-CO for more design information.



Cat. no.	Dimensions (In Inches)	
	A	B
500178DE	1.435	0.635
500179DE	1.410	1.060

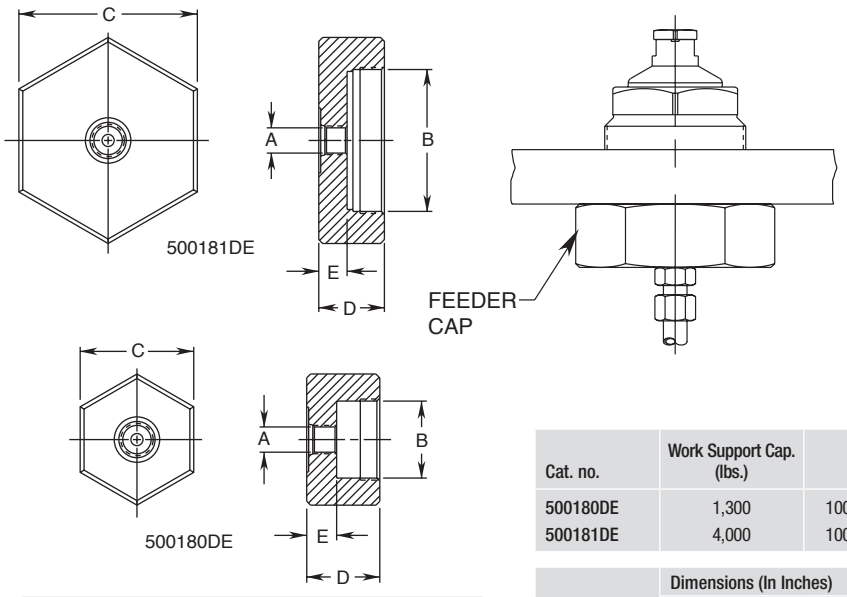
Coolant Deflector Caps

These *Coolant Deflector Caps* are designed to reduced exposure of the work support's breather/filter to coolant and contaminants. They are designed for applications where the work support is actuated either during or soon after exposure to coolant floods. Used in conjunction with careful aiming of coolant jets, they can prevent the breather port from filling with coolant that is later drawn inside the work support as it is actuated.

The caps are assembled between the work support plunger and the rest button and serve as an "umbrella" for the breather port, which increases the height of the assembled work support by .030".

The caps are designed for vertical-up and horizontal applications where coolant jets are not directly aimed at the gap between the cap and work support plunger.

These caps are not appropriate for submerged or vertical-down applications.



Feeder Caps

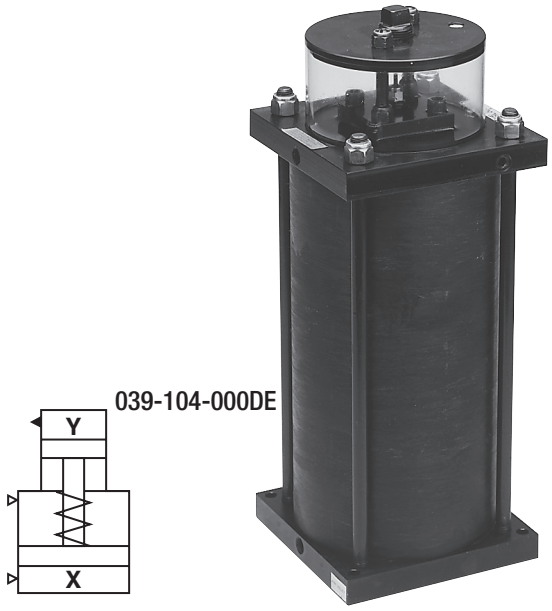
These *Feeder Caps* are designed to allow bulkhead mounting of DE-STA-CO's fluid-advanced and spring-advanced threaded body work supports. Bulkhead mounting allows the work support to be mounted in a threaded hole in a plate.

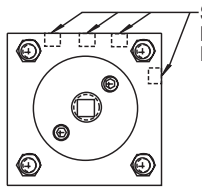
The feeder cap connects the work support to the hydraulic system via a SAE #4 port. The feeder cap saves space over the standard base and provides a connection at the end of the work support.

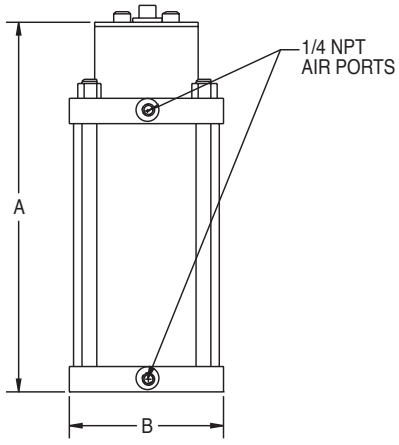
The work support should be locked to the bulkhead plate using a jam nut, or by the feeder cap itself.

Cat. no.	Work Support Cap. (lbs.)	Use With
500180DE	1,300	100872DE, 100874DE
500181DE	4,000	100882DE, 100884DE

Model no.	Dimensions (In Inches)				
	A	B	C Hex.	D	E
050-618-000	7/16-20 UNF SAE-4	1¼-16	1.750	1.125	0.460
050-628-000	7/16-20 UNF SAE-4	2¼-16	2.750	1.010	0.435







The DE-STA-CO *Air/Hydraulic Power Booster* converts normal shop-line air pressure to high-pressure hydraulic power. The six models available provide oil displacements ranging from 1 cubic inch to 12 cubic inch per stroke.

With the system filled, the volume of oil required to actuate a cylinder or pressure point is only equal to the cubic content of the piston displacement. The small booster, producing 1 cu. in. of usable oil per stroke, can operate 50 of the tiny 1/2-20 pressure points a full .22 max. stroke, and even more when strokes are kept to a minimum.

Features:

- Built-in manifold
- Complete automatic bleeding with each return stroke
- Automatic relief of system overcharge
- Automatic bleeding feature eliminates pre-filling
- Large volume visible oil reservoir automatically replenishes the system with reserve oil capacity
- Corrosion and wear-resistant materials
- Wear rings on hydraulic piston tube
- Unique self-centering air piston assures long life
- Increases hydraulic pressure to 3,000 PSIG from 100 PSIG air-line pressure
- All models supplied with SAE hydraulic ports
- NPT hydraulic ports available on request

Model no.	Press Ratio	Displacement Per Stroke	Nominal Reservoir Capacity	Weight	Dimensions		Ports
					A	B (Square)	
039-101-000DE	33.87:1	1 cu. in.	10.4 cu. in.	9 lbs.	10.88	4.50	SAE #2
039-104-000DE	32.41:1	4 cu. in.	42 cu. in.	23 lbs.	16.38	6.50	SAE #4
039-108-000DE	30.97:1	8 cu. in.	96 cu. in.	43 lbs., 8 oz.	18.00	8.50	SAE #4
039-109-000DE	45.38:1	5 cu. in.	96 cu. in.	43 lbs.	18.00	8.50	SAE #4
(100 PSIG max. input air pressure)							

Note: Special High Temperature Seals available for applications where Viton Seals are required. Order as H/T option.

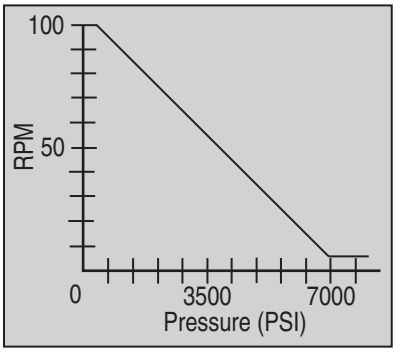
Rotary Unions

050-02

The new DE-STA-CO StrongHold Rotary Unions offer exceptional reliability and capacity. The three available sizes cover most standard applications for index table, rotary indexer, rotating pallet changer and other similar applications. The Rotary Unions standard seals are suitable for hydraulic, pneumatic and vacuum applications. Special designs, such as different numbers of ports or alternative port threads and hollow shaft or electrical slip ring, are available upon request. Consult factory for details.

Features:

- 2, 4 and 6 passage models – 050-02, 050-04, 050-06
- Hydraulic, pneumatic or vacuum service
- Standard SAE porting, consult factory for NPT or BSPP
- Direct retro-fit
- Leak-Free design
- Deep groove sealed ball bearings
- Bearings sealed from environment
- O-ring energized impregnated Teflon seals
- Carbon steel construction
- Plated with Black Oxide
- Shafts hardened and ground on centers
- Connections can be made axially or radially



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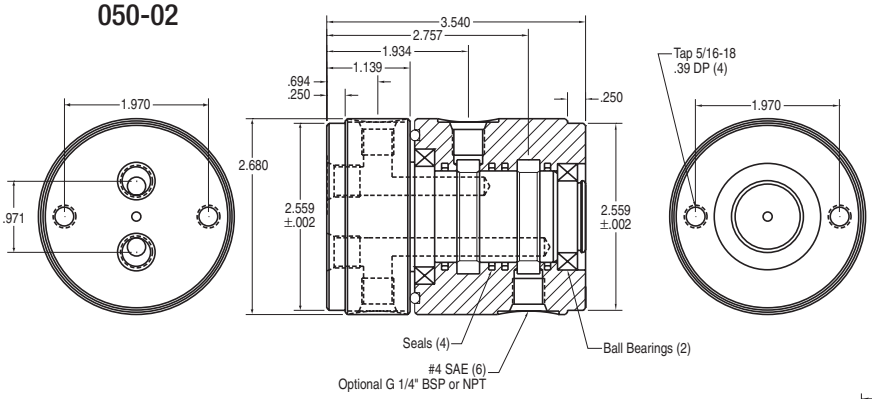
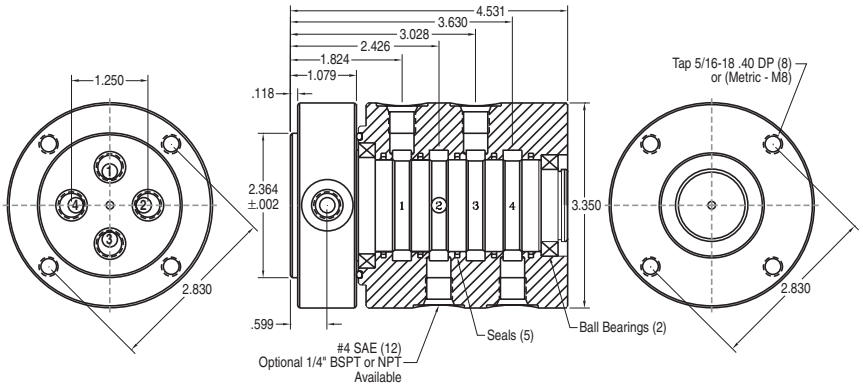
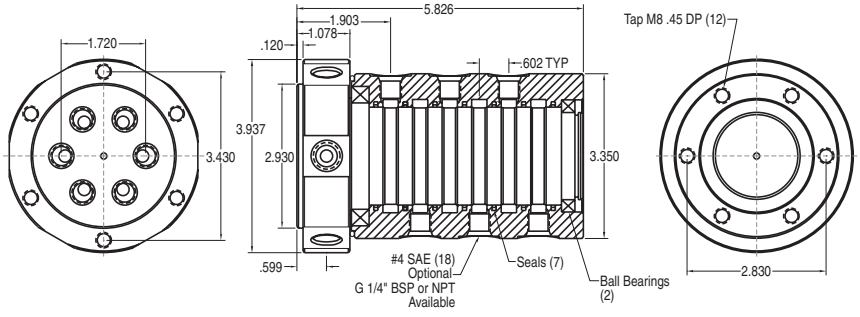


050-04



050-06



Torque Specifications

Model	Torque
050-02	15 in/lbs.
050-04	55 in/lbs.
050-06	70 in/lbs.

DE-STA-CO power workholding systems use constant pressure or demand-type power sources. This means that the power source continuously supplies pressure to the circuit control valves for instantaneous response when the valves are shifted. The power source then automatically starts to maintain system pressure, but when the demand is met, shuts off to conserve energy and prevent heat build-up.

DE-STA-CO offers two basic hydraulic pump types – electric and air powered – plus an air-powered booster. DE-STA-CO also has a line of control valves for use with these pumps. The valves have virtually zero leakage and are ideally suited for constant pressure hydraulic workholding systems. *Note that valves with internal leakage, such as spool valves, are not appropriate for use with DE-STA-CO pumps and pallet valve systems.*

Electric/Hydraulic Pumps

All of DE-STA-CO's *Electric/Hydraulic Pumps* are two-stage, continuous pressure (demand) pumps that contain all the necessary controls and circuitry for powering any single-acting or double-acting, continuous pressure workholding system. They contain a pressure switch and pressure regulator, and each is infinitely adjustable throughout the operating pressure range of 1,000 to 5,000 PSI. An internal safety relief valve prevents possible damage from exceeding the maximum rated pressure.

The first stage provides high flow at low pressure to rapidly extend clamps and cylinders. The second stage piston pump builds and maintains pressure in the system at a preset level.

The pump's electrical controls include a RUN/JOG switch. When the pump is started in the RUN mode, it automatically starts and runs any time the pressure switch indicates the need for oil. When pressure builds to the switch setting, the pump stops until the next demand for oil lowers the pressure, causing the switch to start the pump again. The pump continues to cycle in this manner without operator intervention.

In the JOG mode, useful for set up and special applications, the pump will run only when the operator activates and holds the start switch. When released, the pump will stop immediately. If the pump builds pressure to the pressure switch setting, it will also stop. The pump cannot be forced to run after the pressure switch setting has been reached in either the RUN or the JOG mode.

Pumps having thermal overload protection have an integral "electrical shut-down" circuit which prevents the pump from restarting without manual intervention after either thermal overload or electrical service interruption.

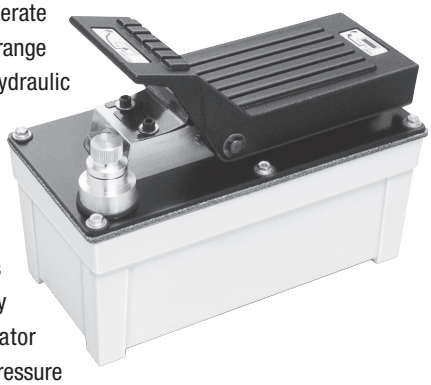
Motor electrical specifications are listed for each pump. For voltages and frequencies not listed, contact DE-STA-CO for more information.

Air/Hydraulic Pumps

DE-STA-CO's *Air/Hydraulic Pumps* are all continuous pressure, reciprocating, stall-type pumps – air pressure is simply converted to hydraulic pressure. Operated by any compressed air source, these single-stage reciprocating pumps save energy by stalling when pressure is developed, and require no energy use to maintain system pressure.

Pumps of this type typically have much more usable oil capacity than ordinary boosters. Boosters stop after only one stroke, and if pressure is not built by the end of the stroke, or if any leakage is present, system pressure will not be maintained. DE-STA-CO air/hydraulic pumps will maintain pressure levels because they continue to reciprocate until pressure develops. Once pressure is developed, the pump stalls and maintains consistent system pressure. If additional flow is necessary for maintaining pressure, the pump will again reciprocate any time the end of its stroke is reached.

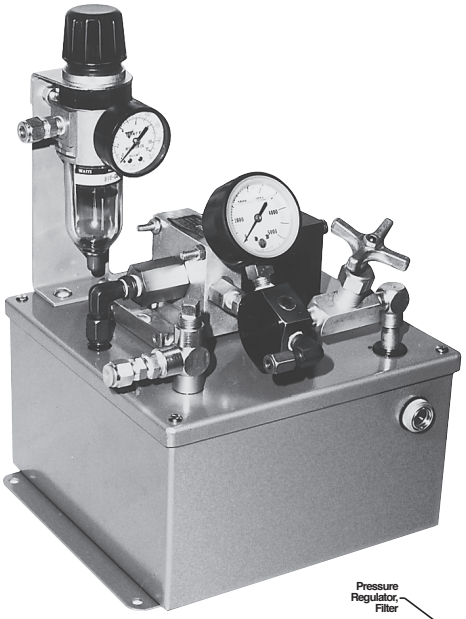
These pumps all operate within an air pressure range of 40-125 PSI. Hydraulic operating pressures range from 1,150-5,000 PSI.

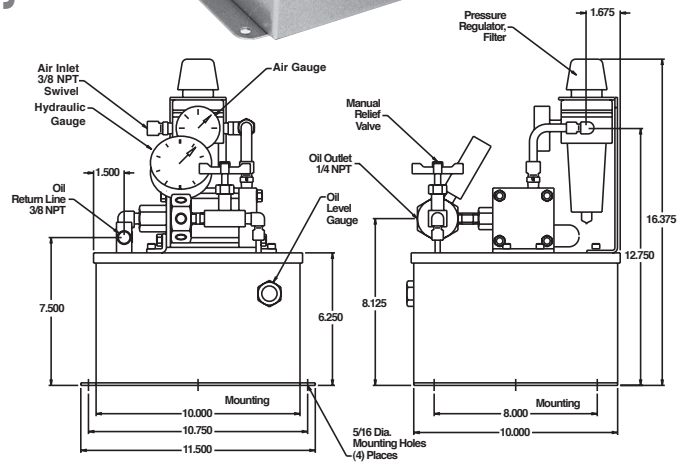


Selected DE-STA-CO air/hydraulic pumps come with an air supply filter/lubricator/regulator for making hydraulic pressure adjustments.

Pump / Reservoir

Model 70150





Air-operated Model 70150 Hydraulic Pump/Reservoir provides fluid output pressure to 4,500 PSIG from regular shop air line.

This unit is a completely self-contained air-operated hydraulic pressure source for portable or permanent installation. It operates economically on ordinary shop line air pressure from 40 to 125 PSIG and delivers high-pressure oil, up to 4,500 PSIG, for operating single or multiple hydraulic clamping devices.

This "off-the-shelf" hydraulic power package is perfect for use in confined areas. The entire one-piece unit can be mounted on a bench, under a bench, beneath a machine table, or anywhere convenient and requires only a single air input connection. The unit can also be centrally located to serve several work stations. The oil displacement and pressure available are charted using various system pressures.

The "continuous pumping" feature ensures the desired pressure and automatically compensates for any leakage in the system. Since no electricity is required, the DE-STA-CO Hydraulics System Pump/ Reservoir is particularly well suited for use in hazardous locations. It can be ordered with special seals for use with non-combustible hydraulic fluids. Extra care has been taken to achieve a quiet running unit. When measured at three feet, the noise level is only 85 dBA.

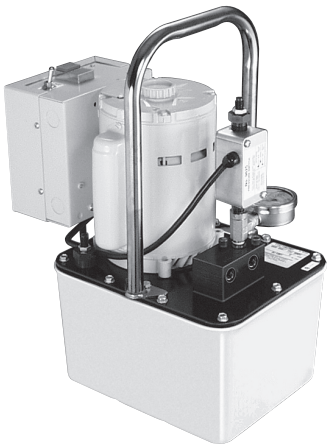
Features:

- Lightweight & compact
- Low initial cost & maintenance
- Automatically holds desired pressure-compensates for leaks

Performance Data

Air Drive Pressure PSIG	OUTPUT FLOW – IN^3 / MIN. / INLET AIR VOLUME – CFM / OUTPUT PRESSURE – PSIG										
	0	500	1000	1500	2000	2250	2500	3000	3500	4000	4500
40	128 / 10	95 / 9	50 / 6								
60	138	114 / 14	85 / 13	58 / 10							
70	140 / 15	120 / 15	97 / 15	73 / 13	45 / 11	30 / 6					
80	142 / 17	123 / 17	104 / 16	84 / 15	62 / 13	52 / 11	40 / 8				
90	144 / 18	126 / 18	110 / 18	92 / 17	74 / 16	65 / 15	55 / 14	30 / 8			
100	146 / 20	128 / 20	113 / 20	98 / 20	83 / 19	75 / 18	67 / 17	50 / 19	20 / 7		
125	150 / 22	132 / 22	120 / 22	108 / 22	95 / 22	90 / 21	81 / 20	68 / 18	55 / 15	36 / 11	12 / 5

Note: See page15.8 for application information.



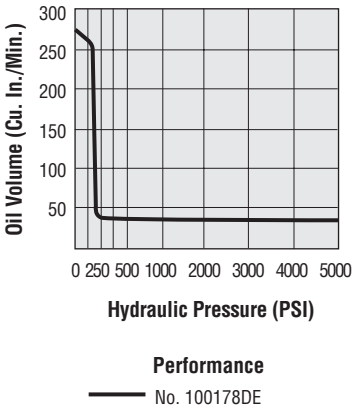
100178DE

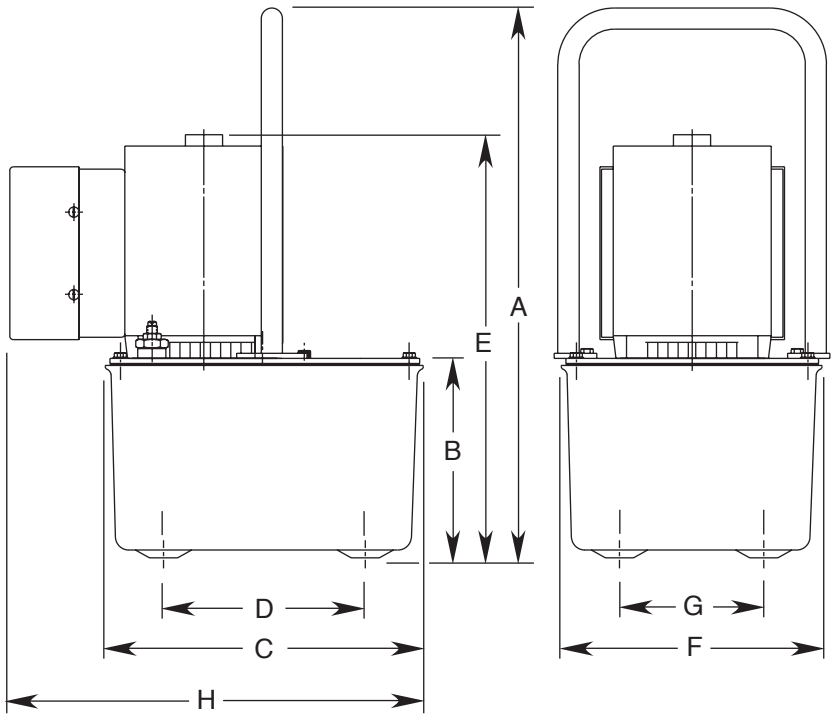
This two-stage, *Continuous Pressure (demand) Pump* contains all the necessary controls and circuitry for powering single-acting or double-acting continuous pressure workholding systems.

It has a pressure switch and pressure regulator, both infinitely adjustable throughout the operating pressure range of 1,000 to 5,000 PSI. An internal safety relief valve prevents damage from exceeding the maximum rated pressure. It is an economical gerotor/radial piston pump designed for remote mounted valves only. The pump is shipped with 1.5 gallons of oil.

Features:

- Drip proof induction motor
- CSA approved
- Filtered filler/breather cap
- Liquid-filled gauge
- Carrying handle
- Thermal overload protection
- 2-gallon, high density polyethylene reservoir
- 33 cu. in./min. oil flow at max. pressure
- 295 cu. in. usable oil





Cat. no.	Specifications			Dimensions (In Inches)							
	Electric Motor	Supply Voltage	Noise Level @ Idle/Max. Press. (dBA)	A	B	C	D	E	F	G	H
100178DE	½ hp; 3,450 rpm; 115/230 VAC	115 VAC	67/81	19.875	7.000	11.375	7.125	14.875	9.250	5.125	14.875
100178-230DE	10/5 amps max.; 60 Hz; single phase	230 VAC									

NOTE: Mounting screws included (¼-10 x .875 Lg.).

Electric/Hydraulic Pump

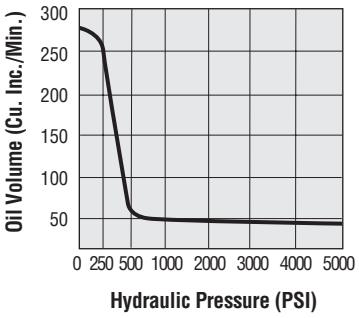
100186DE

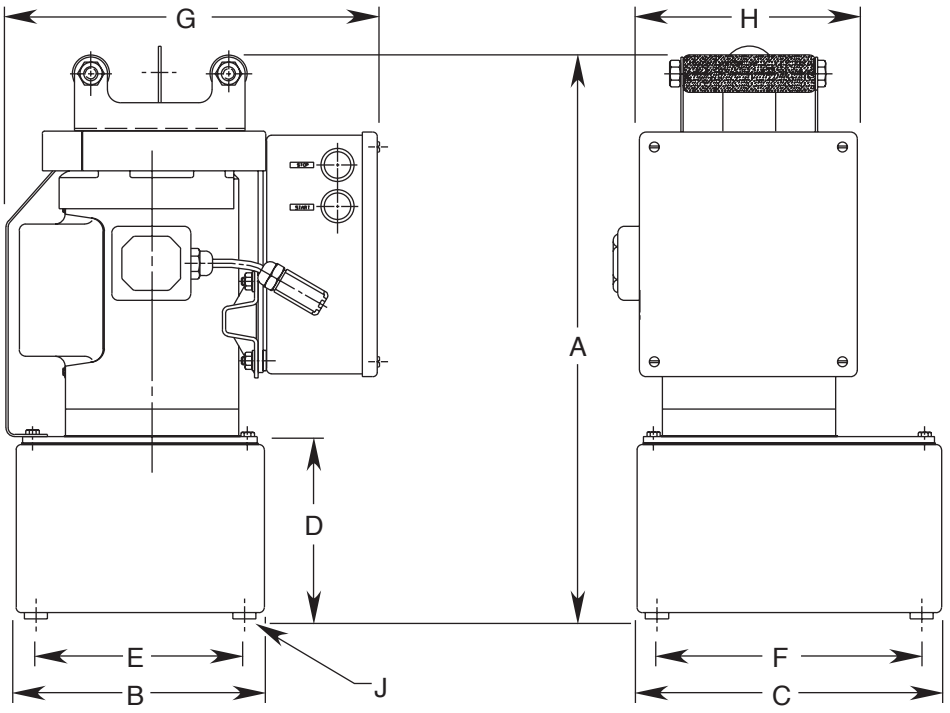
These *Electric/Hydraulic Pumps* are two-stage, continuous pressure (demand) pumps that contain all the necessary controls and circuitry for powering any single-acting or double-acting continuous pressure workholding system. They have a pressure switch and an external pressure regulator, both infinitely adjustable throughout the operating pressure range of 1,000 to 5,000 PSI. An internal safety relief valve prevents damage from exceeding the maximum rated pressure.

They are gerotor/axial piston pumps with a totally enclosed fan cooled (TEFC) induction motor, and shipped with two gallons of hydraulic oil.

Features:

- NEMA 12 electrical enclosure and controls
- CSA approved
- Drip/chip cover
- Liquid-filled gauge
- Dual carrying handles
- Thermal overload protection
- 2.5-gallon metal reservoir
- 44 cu. in./min. oil flow at max. pressure
- 590 cu. in. usable oil
- SAE #4 outlet manifold ports





Cat. no.	Specifications			Dimensions (In Inches)								
	Electric Motor	Supply Voltage	Noise Level @ Idle/Max. Press. (dBA)	A	B	C	D	E	F	G	H	J Thread Size
100186DE*	1 hp; 1,725 rpm; 115/230 VAC; 16/8 amps max.; 60 Hz; single phase	115 VAC	70	21.375	9.500	11.500	6.500	8.000	10.000	14.125	9.500	½-20 UNF
100186-230DE		230 VAC										

100179DE

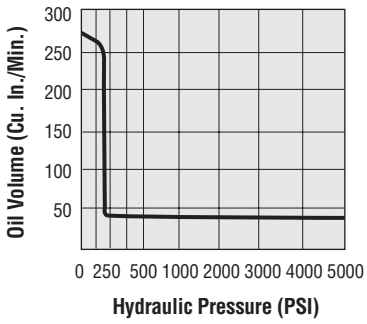
This *Manual Pallet Coupling Pump* has been designed specifically for use with manual pallet valve 110050DE and 110051DE.

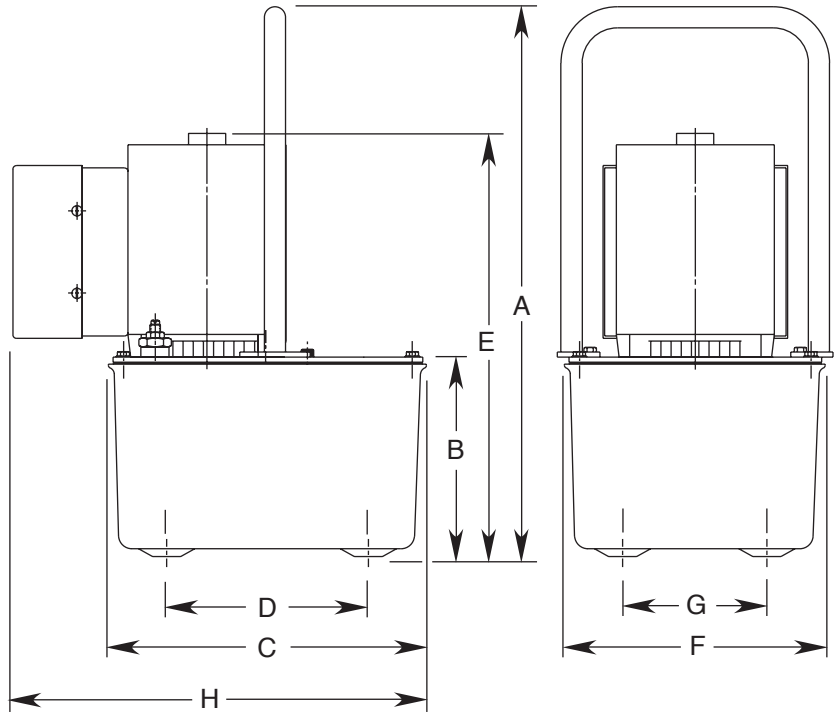
To clamp the pallet, simply start the pump using the remote hand switch. It runs until its pressure setting is reached, then stops automatically and drops pressure, then the hose may be disconnected.

Controlled by a pressure switch and external pressure regulator, this pump is adjustable from 1,000 to 5,000 PSI. An internal relief valve is preset at 5,000 PSI. It has thermal overload protection and integral "electrical shut-down" to prevent unintentional restarting after electrical service interruption or thermal overload. The pump is shipped with one gallon of oil.

Features:

- Drip proof induction motor
- Motor-mounted electrical enclosure
- 2-gallon plastic reservoir
- Liquid-filled gauge
- Filtered, pressure/vacuum relief fill cap
- External pressure switch and regulator
- Carrying handle
- SAE #6 Outlet Manifold Ports
- 295 cu. in. usable oil
- Includes No. 100908DE female coupler (1/4" NPT thread size)
- CSA approved
- Max. flow 33 cu. in./min. at max. pressure.

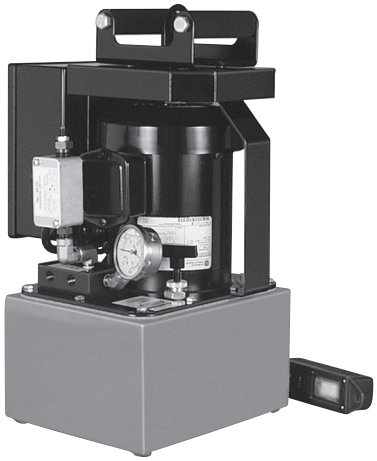




Cat. no.	Specifications			Dimensions (In Inches)							
	Electric Motor	Supply Voltage	Noise Level @ Idle/Max. Press. (dBA)	A	B	C	D	E	F	G	H
100179DE	½ hp; 3,450 rpm 115 VAC; 10 amps max.; 60 Hz; single phase	115 VAC	67/81	19.875	7.000	11.375	7.125	14.875	9.250	5.125	14.875
100179-230DE	½ hp; 3,450 rpm 230 VAC; 5 amps max.; 60 Hz; single phase	230 VAC									

NOTE: Mounting screws included (1/4-10 x .875 Lg.).

Manual Pallet Coupling Pump



100888DE

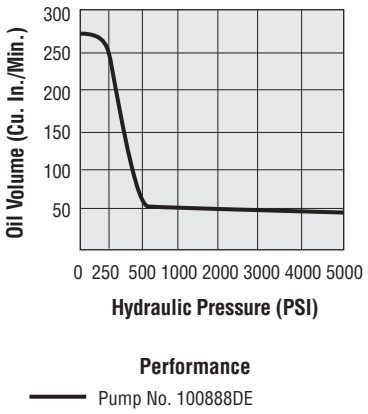
DE-STA-CO's one-horsepower, totally enclosed-fan cooled *Induction Motor Pump*, is outfitted to operate DE-STA-CO's single-acting manual pallet valves.

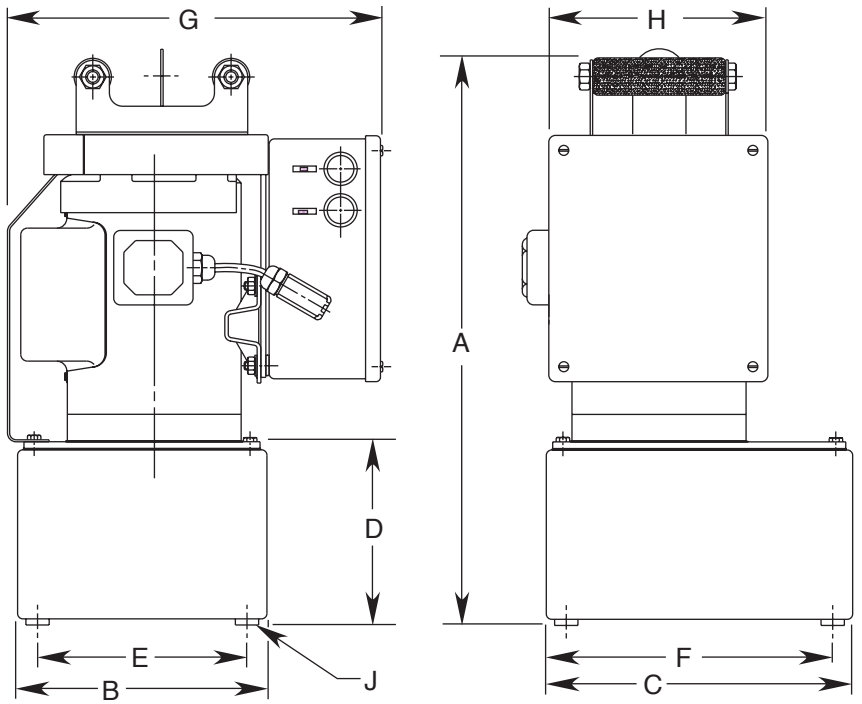
To pressurize the clamping components on the pallet, simply start the pump using the remote hand switch. It runs until its pressure setting is reached, then stops automatically and drops pressure. The coupler and hose may now be easily disconnected and later reconnected.

The output of this gerotor/axial piston pump is controlled by a pressure switch and externally adjustable pressure regulator, both adjustable from 1,000 to 5,000 PSI. It is shipped with a coupler and 2 gallons of hydraulic oil. Order a hose to fit your application separately.

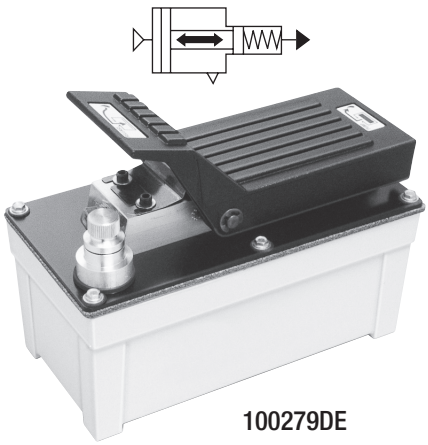
Features:

- NEMA 12 electrical enclosure and controls
- CSA approved
- Drip/chip cover
- Liquid filled gauge
- Dual carrying handles
- Thermal overload protection
- 2.5-gallon metal reservoir
- 44 cu. in./min. oil flow at max. pressure
- 590 cu. in. usable oil
- TEFC motor
- Filtered filler/breather cap
- Includes 100908DE female hydraulic coupler (1/4" NPT thread size)





Cat. no.	Specifications			Dimensions (In Inches)								
	Electric Motor	Supply Voltage	Noise Level @ Idle/Max. Press. (dBA)	A	B	C	D	E	F	G	H	J Thread Size
100888DE*	1 hp; 1,725 rpm; 115/230 VAC; 16/8 amps max.; 60 Hz; single phase	115 VAC	70	21.375	9.500	11.500	6.500	8.000	10.000	14.125	9.500	½-20 UNF
100888-230DE		230 VAC										



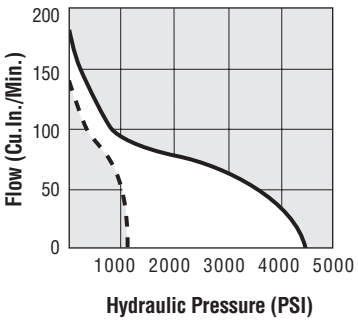
100279DE

Designed specifically for use with manual pallet valves, this *Single-Stage Pump* includes a 5 ft. hose and special female coupler (100908DE) to mate with our manual pallet valves.

Operation is simple: connect the coupler and release the pallet valve. Change the workpiece, then press the foot pedal to start the pump and clamp the piece. Rocking the pedal forward releases pressure in the coupler while the pallet valve maintains pressure at the pallet. At this point, the coupler and hose may be disconnected.

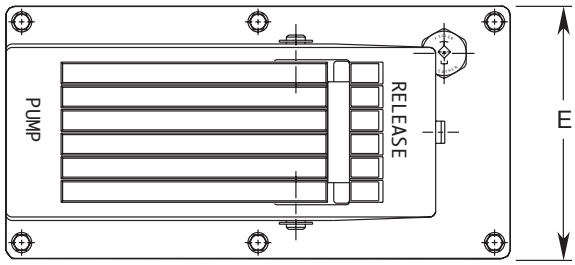
Features:

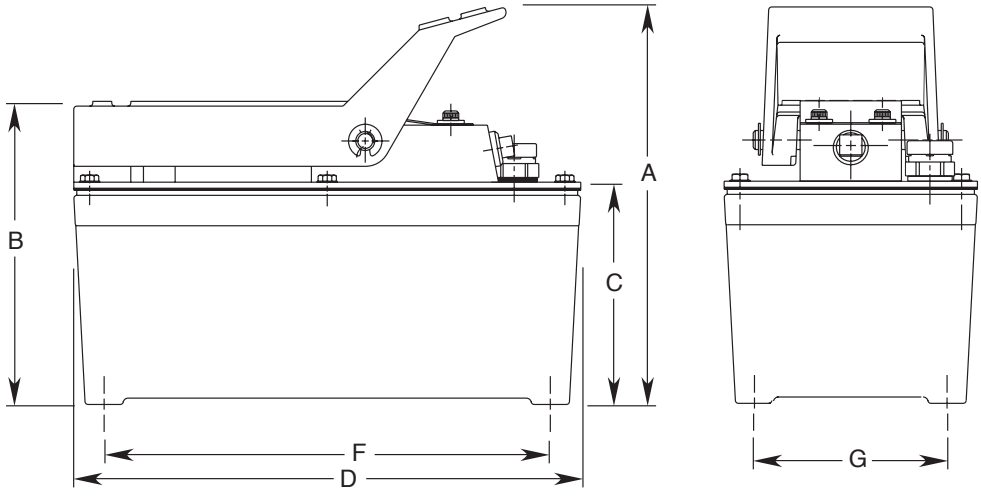
- Filtered filler/breather cap with dipstick
- 105 cu. in. metal reservoir
- SAE #6 outlet
- 1/4" NPTF air inlet port
- Shipped with hydraulic oil
- Foot treadle control allows "hands free" operation
- Operating Pressure Range (nominal):
  - 4,475 PSI max. @ 125 PSI air, max.
  - 1,150 PSI min. @ 40 PSI air, min.
- 98 cu. in. usable oil



Performance

No. 100279DE
125 psi Air Pressure
40 psi Air Pressure

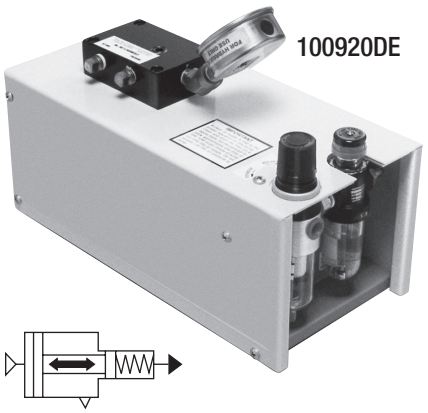




Model no.	Dimensions (In Inches)						
	A	B	C	D	E	F	G
100279DE	7.750	5.875	4.250	10.000	5.000	9.000	4.000

NOTE: This pump is not for use in normal "constant pressure" applications. Requires filtered, regulated, lubricated air supply. Air requirements: 20 CFM (max.) at low hydraulic pressure decreasing to 0 CFM when pump stalls.

Air/Hydraulic Pump

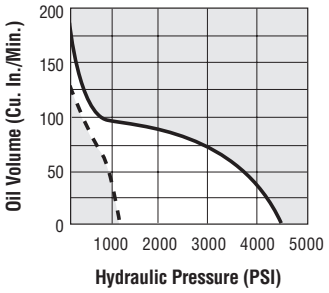


100920DE

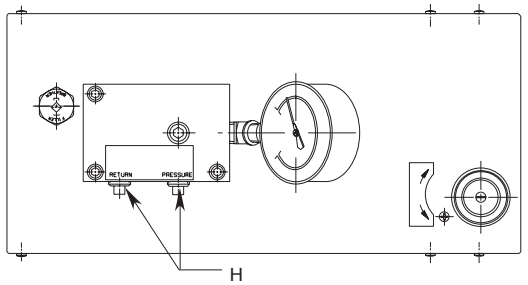
DE-STA-CO's *Single-Stage Pumps* are continuous pressure, reciprocating, stall-type pumps – air pressure is simply converted to hydraulic pressure. Operated by any compressed air source, these pumps save energy by stalling when pressure is developed, and require no energy use to maintain system pressure. Consult factory for pump-mounted valves.

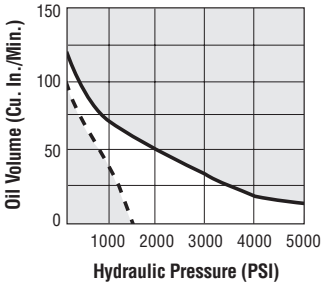
Features:

- 105 cu. in., high-density polyethylene reservoir
- Filtered fill cap with dipstick
- Liquid filled gauge
- SAE #4
- 1/4" NPTF air inlet port
- 98 cu. in usable oil
- Shipped filled with oil
- Operating Pressure Range (nominal):
  - **100920DE** – 5,000 PSI @ 110 PSI air, max. 1,500 PSI @ 40 PSI air, min. .375 dia. piston size
  - **100190DE** – 4,475 PSI @ 125 PSI air, max. 1,150 PSI @ 40 PSI air, min. .437 dia. piston size

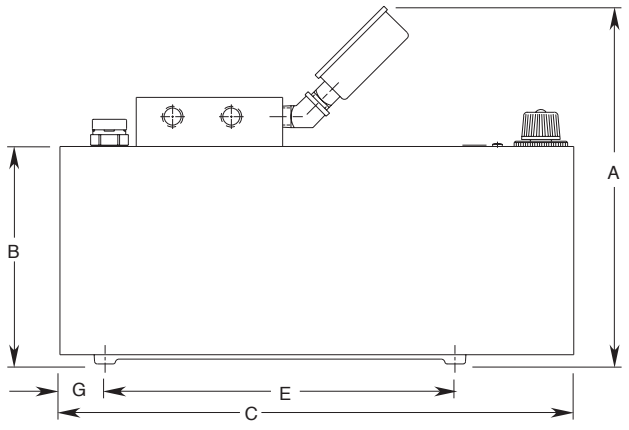


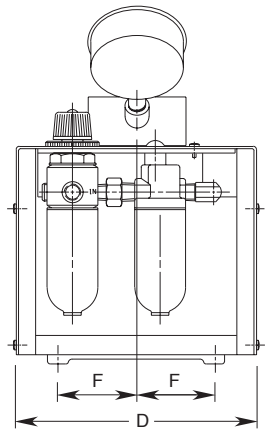
Performance
No. 100190DE
40 psi Air Pressure
125 psi Air Pressure





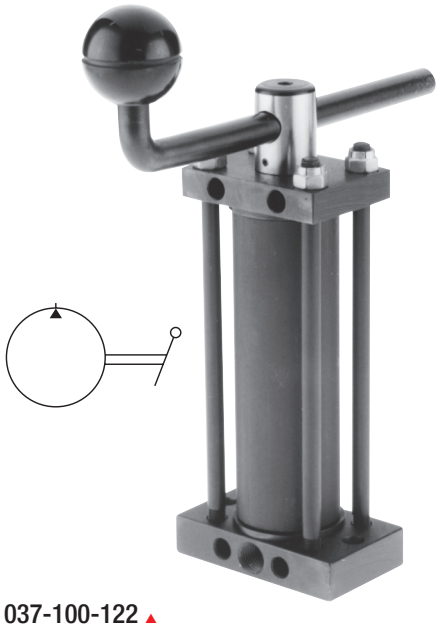
Performance
No. 100920 DE
40 psi Air Pressure
110 psi Air Pressure





Cat. no.	Specifications			Dimensions (In Inches)							
	Piston Dia.	Operating Pressure Range @ 125 PSI Air Max.	Operating Pressure Range @ 40 PSI Air Min.	A	B	C	D	E	F	G	H Ports
100920DE	0.375	*	1,500	9.500	5.500	13.062	6.125	9.000	2.000	1.250	¼ NPTF
100190DE	0.437	4,475	1,150								

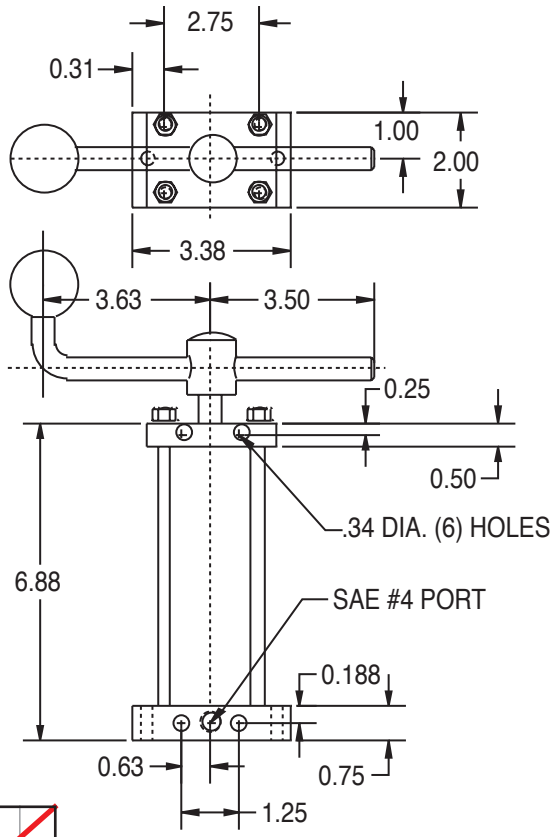
NOTE: Mounting screws included (9-15 x 1.000 Lg.).
AIR REQUIREMENTS: 20 CFM (max.) at low hydraulic pressure decreasing to 0 CFM when pump stalls.
* Air pressure higher than 110 PSI will cause the pump to exceed its 5,000 PSI maximum rating. The internal relief valve will open to protect the pump and the circuit, but the pump will continue to reciprocate rather than stall. This will cause unnecessary wear, noise, heat and air usage.

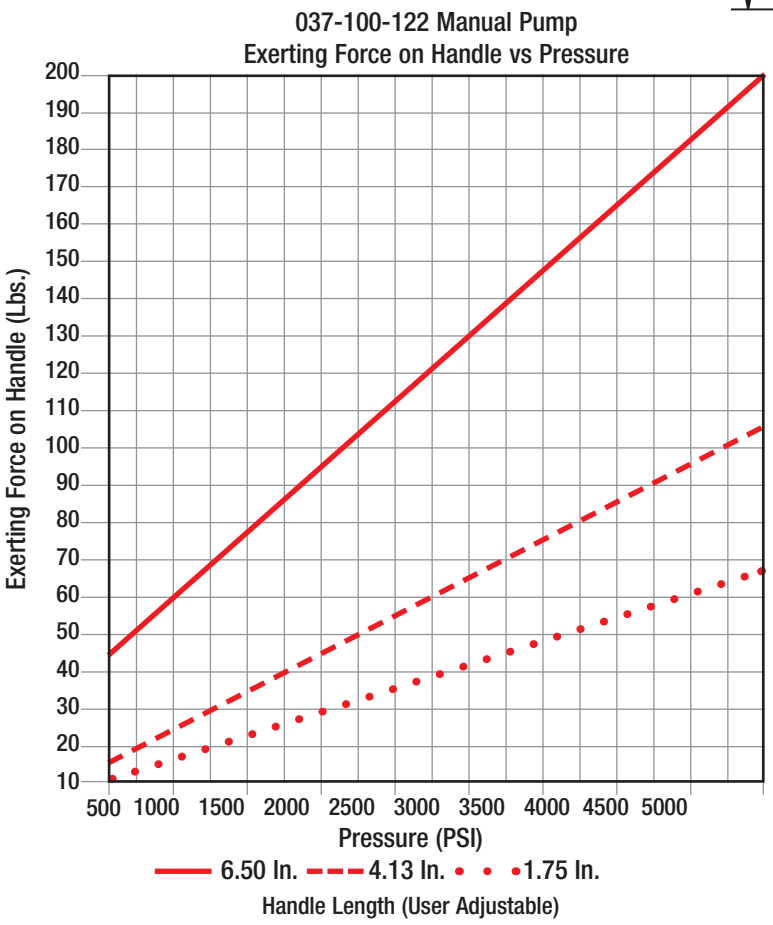


037-100-122 ▲

▲ Available upon request

This versatile *Screw Pump* can produce up to 3,500 PSIG oil pressure. Reservoir capacity is 6.18 cu. in. Two vertical holes in the base and horizontal holes in the top and base, permit mounting in any convenient attitude. The sliding handle allows maximum leverage.





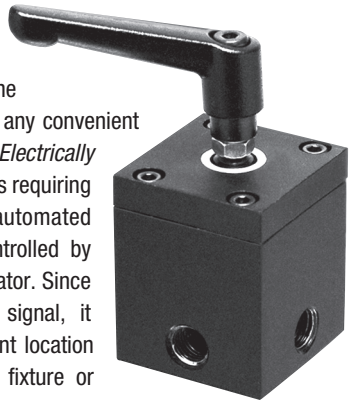
Resulting Hydraulic Pressure (PSI)	Distance Force Applied (Measured from Center Axis of Pump A)		
	6.50 in.	4.13 in.	1.75 in,
500	10	14	43
1,000	17	25	60
1,500	24	35	77
2,000	30	45	94
2,500	36	54	111
3,000	42	65	128
3,500	49	75	145
4,000	55	85	162
4,500	61	95	179
5,000	67	105	196
	Force Required (lbs.)		

Control Valves

DE-STA-CO has a line of *Control Valves* designed and manufactured so precisely that there is virtually zero leakage, making them ideal for constant pressure hydraulic workholding systems. *Valves with internal leakage (such as spool valves) are not appropriate for use with DE-STA-CO pumps and pallet valve systems.*

Directional Control Valves

Available in many versions, each of these valves is capable of operating double- or single-acting spring return systems. Mounting configurations available are remote mounted and manifold mounted, with manual operation.



Manually *Operated Valves* are used in applications where the valves can be mounted near the operator on the fixture, pump, or any convenient location at the workstation. The *Electrically Operated Valve* is ideal for systems requiring push-button simplicity or automated systems where the valve is controlled by machine logic instead of the operator. Since it's controlled by an electrical signal, it can be mounted in any convenient location and need not take up valuable fixture or workstation space.

All Remote Mounted Directional Control Valves are installed by the pump or pressure port (labeled "P") to the pressure source and the return or tank port (labeled "T") to the return line. The outlets or work ports (labeled "A" and "B") are connected to the component or system to be controlled.

In single-acting systems, the valves are used as three-way valves. One port, A or B, is plugged and the other is connected to a single-acting actuator or system. In one handle position, the port to the actuator will be pressurized and the plugged port open to the reservoir. In the other handle position, the actuator will retract because that port is open to the reservoir. This pressurizes the remaining port, but since it's plugged, the pump will build pressure and shut off.

In double-acting systems, these valves act as four-way valves: ports A and B are connected to a double-acting actuator or system. In handle position A, port A is pressurized and port B is open to the reservoir. Handle position B pressurizes port B and port A is open to the reservoir. Shifting the valve will cause the actuator to alternately extend and retract.

Carefully review check valve requirements on each product selected.

Pressure Control Valves

Two types are available for specialized workholding systems – sequence and pressure reducing. Both are available in manifold and conventionally mounted styles.

Pressure Sequence Valves control the order of events within a hydraulic system by directing pressure into two circuits in a pressure-controlled sequence. For example, this allows clamps to be actuated before work supports are locked.

Initially, the valve is closed. Oil flows to the primary circuit until pressure reaches the valve setting. The valve then opens to deliver oil to the secondary circuit while holding pressure on the primary circuit.

Once secondary and primary pressures are equal, the pressure increases uniformly in both circuits.

This valve is installed by connecting the pressure port (labeled "P") to a tee in the portion of the circuit to be actuated first. The part of the circuit to be sequenced later is connected to the outlet port (labeled "A"). The vent port must be open to atmosphere for proper operation.

Pressure Reducing Valves are designed to reduce the maximum pressure in a portion of a hydraulic circuit – the need for a separate power source for each pressure level is eliminated. The valve is open from the inlet to the outlet until a pre-selected pressure is reached, at which point the valve closes to limit pressure in the secondary circuit. Valve seats and poppets are precision ground, assuring virtually zero leakage and eliminating the need for a case drain line.

This valve is connected "in line" with the circuit requiring the reduced pressure. The inlet or pressure port (labeled "P") is on the high pressure side. The outlet or reduced pressure port (labeled "A") is connected to the lower pressure circuit. The drain or tank port (labeled "T") is connected to the power source return line if necessary. Ordinary pressure limiting valves close when their pressure setting is reached. Once closed, it will not re-open until system pressure is released. Even minor leakage in the system can not be made up. DE-STA-CO's pressure reducing valve uses a balanced poppet design which will re-open any time flow downstream is required.

Flow Control Valves

The types of flow control valves available from DE-STA-CO are pilot operated check valve and needle-type flow restrictor valves.

DE-STA-CO's *Pilot Operated Check Valve* offers a unique poppet seal design making it ideal for pallet applications or other specialized control circuits where zero leakage is essential. It can be used in any application where pressure must be maintained in a portion of a circuit until a separate pilot signal opens the valve and allows free flow in the reverse direction.

When the port labeled "INLET" is pressurized, hydraulic fluid can flow freely into the valve, leaving through the port labeled "OUTLET." Pressurized fluid at the outlet port cannot flow back into the valve unless the port labeled "PILOT" is pressurized to open the valve allowing reverse flow.

Needle Valves are multiple-turn flow restrictor valves which provide finely adjustable flow control for components or circuits requiring reduced flow rates. They are also used in some non-critical sequencing applications where restriction in part of a circuit will tend to cause the actuators in the remainder of the circuit to operate first.

Needle valves are available that a) restrict flow in both directions, or b) restrict flow in one direction through the use of an internal free-flow check valve.

Valves without the free-flow check are typically used in a part of a circuit where there is flow in only one direction. They can also be used in double-acting circuits where restriction is desirable in both directions.

Valves with the reverse free-flow check are most effectively used in single-acting circuits where the actuation speed must be reduced without affecting the system return time.

100969DE

DE-STA-CO's three-way/four-way, two-position directional *Control Valves* are ideal for workholding applications. Their zero-leakage design is the right choice for constant pressure applications. Their smaller size allows you to maximize usable fixture space.

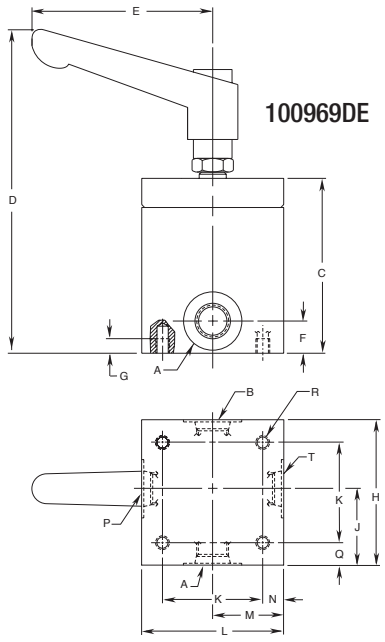
To improve operator ergonomics, you can instantly position the control lever in any of 24 positions without tools. Finer adjustments are possible by loosening a locknut. Internal stops and detents along with a shaft wiper seal provide excellent contamination resistance.

Built without check valves, these directional valves are intended only for systems with one valve per hydraulic pressure source.

For multiple valve applications install appropriate pressure ("P") and tank ("T") port check valves (page 15.87) or use our 100971DE directional valve with 100974DE check valve subplate. Ported subplates 100972DE can be added as appropriate.

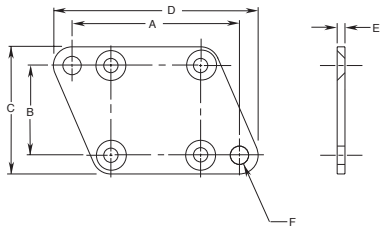
Features:

- Three-way/four-way, 2-position, detented
- Single-acting or double-acting systems
- Manually operated, 90º swing
- 1,500 PSI max. return line pressure
- Remote mounted, SAE ports
- Infinite handle adjustment
- 5,000 PSI max.
- Shaft wiper excludes contaminants
- Optional mounting bracket (500175DE)
- Single valve applications



100969DE

500175DE



Cat. no.	Dimensions (In Inches)																
	"A" Port	"B" Port	C	D	E Rad.	F	G Min. Thread	H	J	K	L	M	N	"P"	Q	R Thread Size	"T" Port
100969DE	7/16 - 20 UNF SAE-4	7/16 - 20UNF SAE-4	2.400	4.444	2.480	0.442	0.375	2.000	0.947	1.375	1.948	0.974	0.287	7/16-20 UNF SAE-4	0.313	10-24 UNC	7/16-20 UNF SAE-4

Cat. no.	Dimensions (In Inches)					
	A	B	C	D	E	F Dia.
100969DE	2.565	1.375	1.948	3.138	0.119	0.281

NOTE: #10-24 UNC x .375 Lg. flat head screws (4) included.

Check Valves

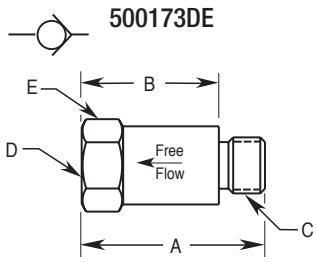
500173DE

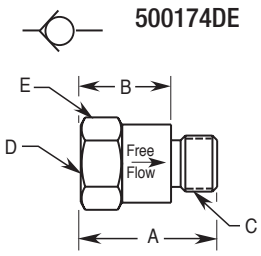
500174DE

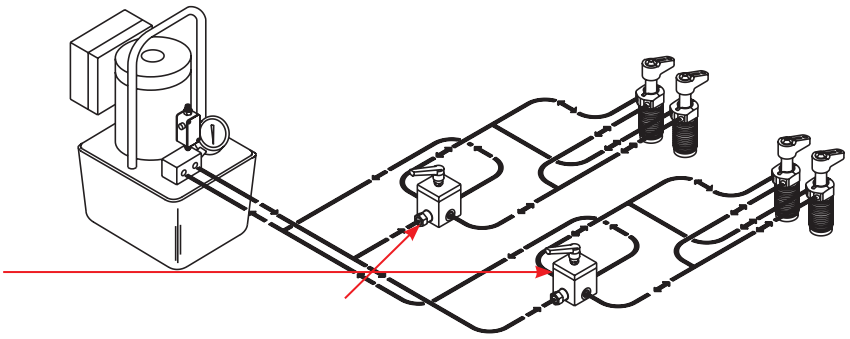
The SAE-4 (part number 500173DE) "T" port *Check Valve* is recommended on single-acting circuits where there is more than one directional valve per power source. These check valves are ideal for use in circuits where return line pressure fluctuations may affect released clamps.

Use this anytime a return line pressure spike could cause unclamped actuators to move and affect operator safety. They are designed specifically for DE-STA-CO's No. 100969DE **Directional Control Valves**.

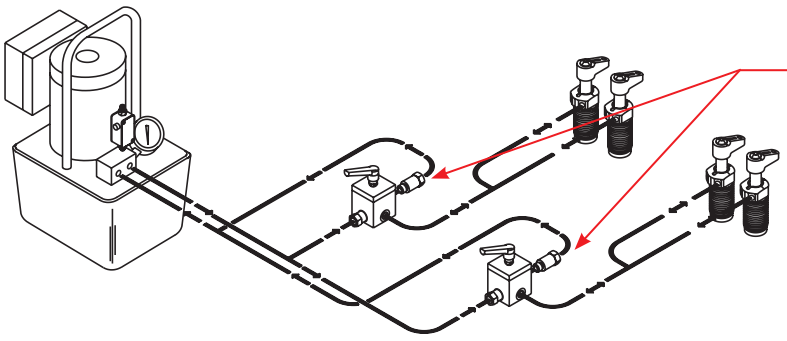
The SAE-4 (500174DE) "P" port check valve is required on all single-acting or double-acting circuits where there is more than one directional valve per power source. These check valves prevent power source pressure fluctuations from affecting the pressure in clamped circuits. Without this check valve, shifting the directional control valve in one circuit will cause a temporary loss of clamping pressure in the other circuit.







"P" Port Check Valve
(500172DE, 500174DE)



"T" Port Check Valve
(500173DE)

Cat. no.	Specifications			Dimensions (In Inches)				
	Check Valve Location	Cracking Pressure (PSI)	Use With Directional Valve No.	A	B	C Thread Size	D Thread Size	E Hex
500173DE	Outlet	2	100969	1.431	1.071	7/16-20UNF SAE-4	7/16-20UNF SAE-4	0.625
500174DE	Inlet			1.065	0.705			

100971DE

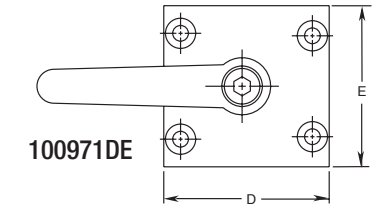
Similar to DE-STA-CO's 100969DE, this three-way/four-way, two-position directional *Control Valve* is ideal for manifold mounting on your fixture. The valve's zero-leakage design is the right choice for constant pressure applications. Its smaller size allows you to maximize usable fixture space.

This valve is designed with a standard ANSI, D03 mounting and port configuration. The control lever can be placed in any of 24 positions without tools. Infinite adjustments are possible by loosening a locknut. Internal stops and detents along with a shaft wiper seal provide excellent contamination resistance.

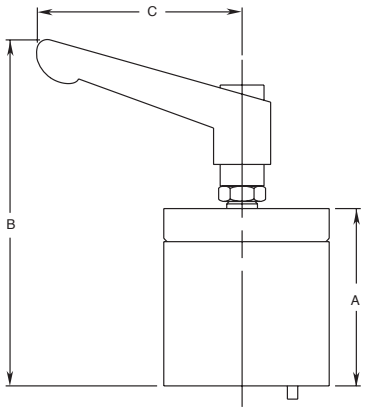
Built without check valves, this valve is intended *only* for systems with one valve per hydraulic pressure source. For multiple valve applications, simply add the 100974DE check valve sub-plate. Ported subplates 100972DE can also be added as appropriate.

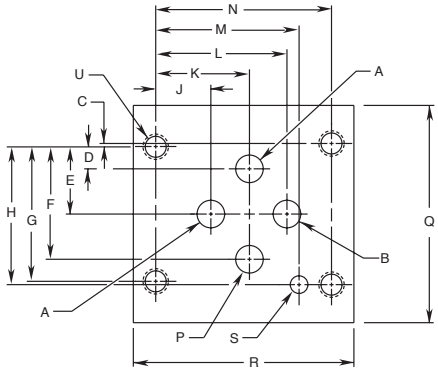
Features:

- Three-way/four-way, 2-position, detented
- ANSI, D03 mounting configuration
- Single-acting or double-acting systems
- Manually operated, 90 deg. swing
- 1,500 PSI max. return line pressure
- Optional SAE ported subplates
- 5,000 PSI max.
- Shaft wiper excludes contaminants
- Optional check-valve subplate



100971DE

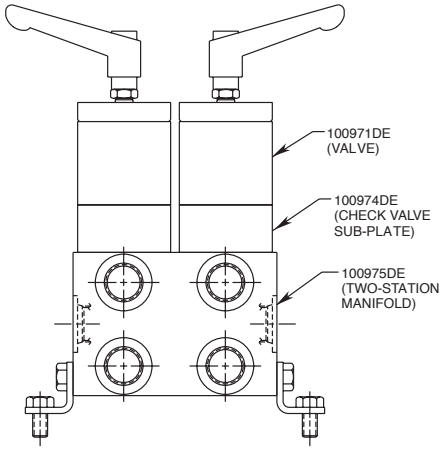


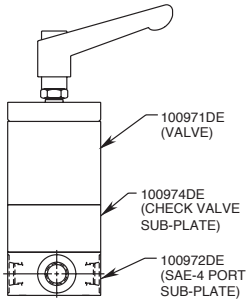


D03 Manifold Mounting Surface

Cat. no.	Dimensions (In Inches)				
	A	B	C Rad.	D	E
100971DE	2.144	4.187	2.480	2.000	1.948

#10-24UNC X 2.25 Lg. Mounting screws (4) Included.





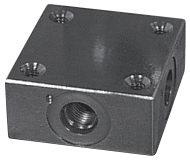
See page 15.89 for sub-plates.

D03 Mounting Pattern	Dimensions (In Inches)																		
	"A" Port Dia. Max	"B" Port Dia. Max	C	D	E	F	G	H	J	K	L	M	N	"P" Port Dia. Max.	Q Min.	R Min.	S Dia.	"T" Port Dia. Max.	††U Thread Size
	0.250	0.250	0.030	0.200	0.610	1.020	1.220	1.250	0.500	0.850	1.190	1.300	1.594	0.250	1.970	2.00	0.160	0.250	10-24 UNC

NOTE: † Location hole to be .160 deep min.
†† Minimum thread depth .200

Control Valve Accessories

100972DE



100974DE

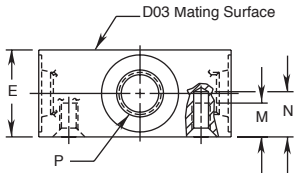
Single-Station Sub-Plates 100972DE

For use with the 100971DE directional control valve and 100974DE check valve sub-plate. These assemblies will provide conventionally ported, remote mounted, directional control valves for use in multiple valve systems. These sub-plates may also be used with the 100971DE directional control valve only in single valve systems. (For single valve applications, consider using valves 100969DE.) Optional mounting bracket (No. 500175DE) is available (see page 15.86).

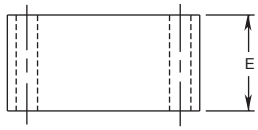
Check Valve Sub-Plate 100974DE

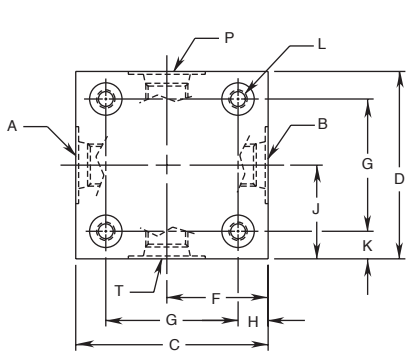
Use this in directional control valve in applications requiring inlet and outlet checks. (Ports P and T) When two or more valves are connected to the same pressure source, these check valves prevent pressure fluctuations in one system from affecting the other. Without this check valve sub-plate, the shifting of one valve in a system can cause the loss of clamping pressure in another. This check valve sub-plate uses the same D03 mounting configuration as our 100971DE directional control valve. It is simply placed underneath the valve. Mounting screws are included.

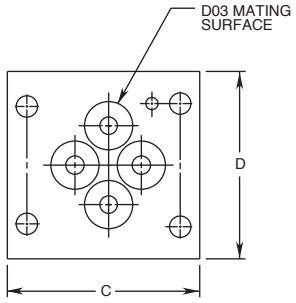
100972DE



100974DE

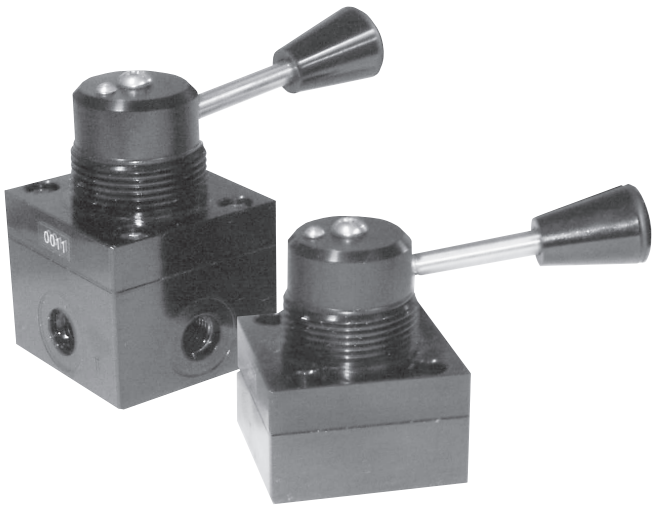






Cat. no.	Dimensions (In Inches)														
	"A" Port	"B" Port	C	D	E	F	G Mtng.	H Mtng.	J	K Mfng.	L Thread Size	M Min. Thread	N	"P" Port	"T" Port
100972DE	7/16-20 UNF SAE-4	7/16-20 UNF SAE-4	2.00	1.948	0.904	0.947	1.375	0.313	0.974	0.287	10-24 UNC	0.260	0.452	7/16-20 UNF SAE-4	7/16-20 UNF SAE-4
100974DE†	–	–			0.997	–	–	–	–	–	–	–	–	–	–

NOTE: † 100974 Check Valve includes (4) #10-24 UNC x 3.25 Lg. Mounting Screws.

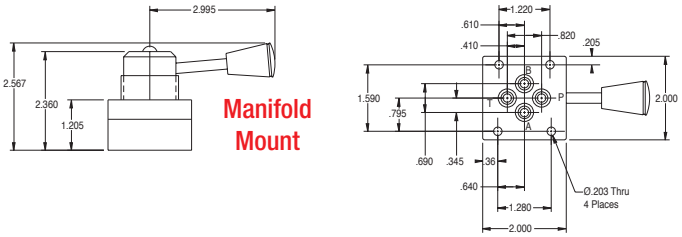


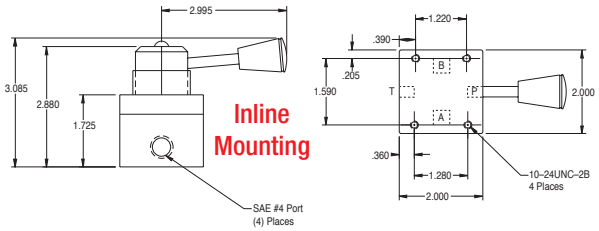
The DE-STA-CO *DCV Series Valves* are constructed of heat-treated alloy steel and aluminum components. They are compact, lightweight (12 oz.) and shift easily even under maximum pressure. The valves have extremely low leakage, less than one (1) drop per two (2) minutes at rated pressure.

The -7 configuration manipulator provides a special four-way flow pattern, which is ideal for double-acting pallet valve applications. In the neutral position, P is blocked and A and B are connected to tank.

Features:

- Available in 3,000 PSI and 6,000 PSI pressure rating
- CV factor for 1/8" NPT and -4 SAE is .26, and .29 for 1/4 NPT and -6 SAE
- Temperature range of -65°F to +160°F
- Manifold mounting conforms to 200 D01 mounting pattern (for panel mounting, the hole should be 1 13/32" dia. with a maximum thickness of 5/16"
- High strength mounting bolts are included with the manifold mount version valve





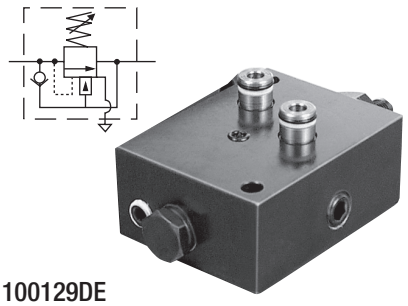
Control Valve Order Information

DCV	-	2	-	0	-	4	-	3	-	N	-	0
Directional Control Valve Family		Pressure Rating 1 – 3,000 PSI 2 – 6,000 PSI		Port Location 0 – Manifold 1 – Side 2 – Bottom		Flow Configuration 2 – 2 Way 3 – 3 Way 4 – 4 Way Closed 5 – 4 Way Tandem 6 – 4 Way Tandem 7 – Manipulator		Port Size 1 – 1/8" NPT 2 – 1/4" NPT 3 – 4 SAE 4 – 6 SAE 5 – 6 Manifold		Seals N – Nitrile V – Viton E – EPR		Panel Mounting O = No P = Yes

Note:

If you need to configure valve producs from this page please contact technical services at (888) DESTACO (337-8226) or email tech1@destaco.com

Pressure Sequence Control Valve



100129DE

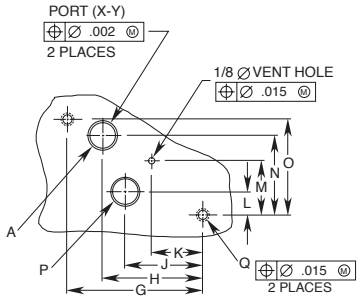
Sequence Valves Control the order of events within a hydraulic system by directing pressure to the two circuits in a pressure-controlled sequence. For example, this allows clamps to be actuated before work supports are locked.

Initially, the valve is closed. Oil flows to the primary circuit until pressure reaches the valve setting. The valve then opens to deliver oil to the secondary circuit while holding pressure on the primary circuit. Once secondary and primary pressures are equal, the pressure increases uniformly in both circuits. There is no reduction of pressure available to either circuit.

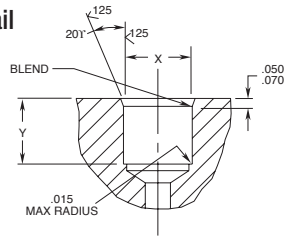
Features:

- Sequence pressure range is adjustable from 0 to 4,000 PSI
- Usable with hydraulic systems operating up to 5,000 PSI
- Will not reduce pressure to the secondary circuit
- Minimum operation pressure should be 120% of sequence pressure setting
- Internal check valve allows free flow in reverse direction
- Maximum flow rate 5 gpm
- Suitable for single-acting and double-acting circuits
- SAE or manifold mounting

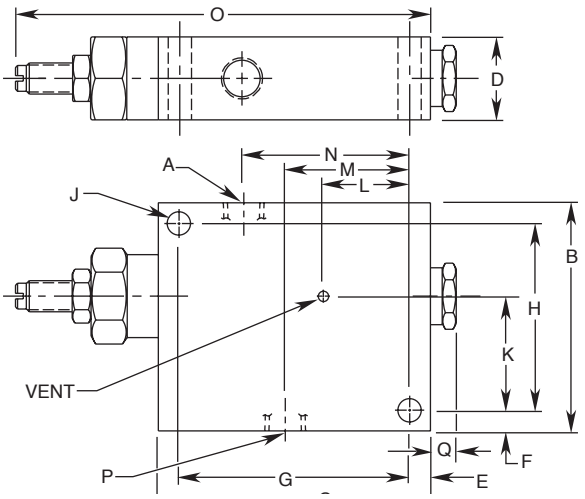
Mating Hole Pattern



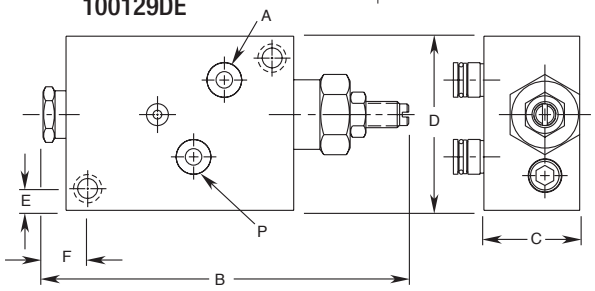
Port Detail

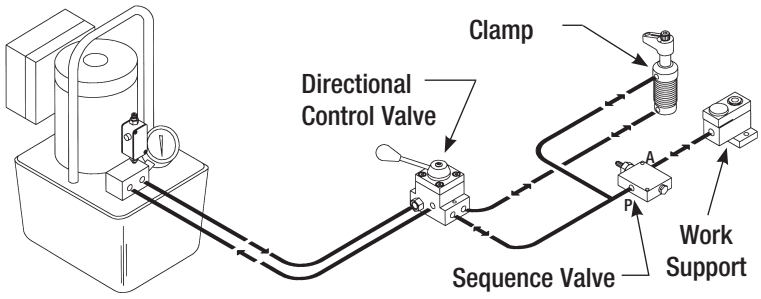


100943DE



100129DE

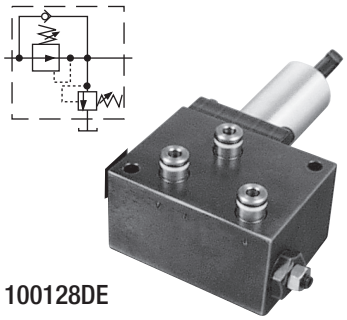




Cat. no.	Dimensions (In Inches)																
	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q Thread Size	X	Y
100129DE	*	5.250	1.375	2.500	0.312	0.625	2.645	1.960	1.520	1.000	0.456	1.063	1.560	1.875	*	¼-20 UNC	0.500 0.503	0.515 0.535

NOTE: *See Port Detail drawing for Ports A and P.

Cat. no.	Dimensions (In Inches)															
	"A" Port	B	C	D	E	F	G	H	J Dia.	K	L	M	N	O	"P" Port	Q
100943DE	7/16-20UNF SAE-4	2.750	3.281	1.000	0.250	0.250	2.781	2.250	0.281	1.375	1.040	1.500	2.000	5.000	7/16-20UNF SAE-4	0.312



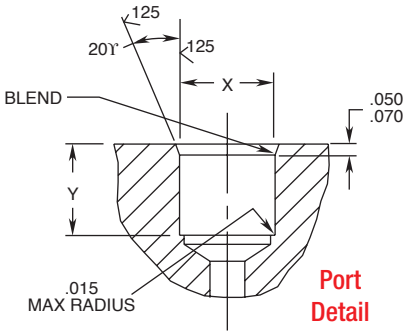
100128DE

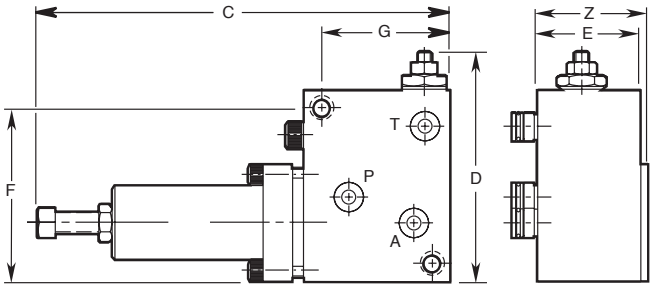
Pressure Reducing Valves are designed to reduce the maximum pressure in a portion of a hydraulic circuit – the valve is open from the inlet to the outlet until a pre-selected pressure is reached, at which point the valve closes to limit pressure in the secondary circuit. The need for a separate power source for each pressure level is eliminated.

Valve seats and poppets are precision ground, assuring virtually zero leakage and eliminating the need for a case drain line. The drain port (T) is used only during set up of the internal safety relief valve. This adjustable relief valve can be set to just above the reduced pressure setting so it will open only if contamination or another malfunction prevents the pressure reducing valve from closing, causing the outlet pressure to rise above the relief valve setting. The drain port should never be plugged, although it is seldom permanently plumbed into the circuit.

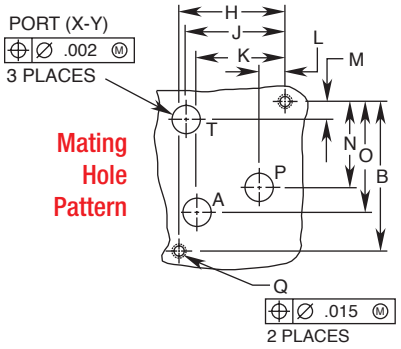
Features:

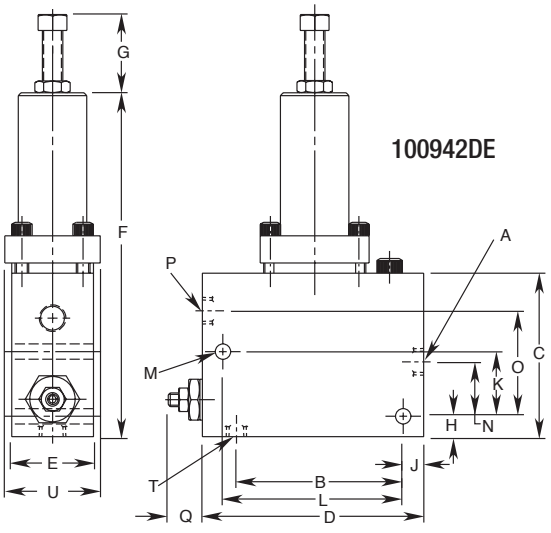
- Valves are adjustable from 1,000 to 5,000 PSI outlet pressure
- Internal check valve allows free flow in reverse direction
- Maximum flow rate at 5 gpm
- SAE or manifold mount
- Automatically reopens to replenish lost pressure



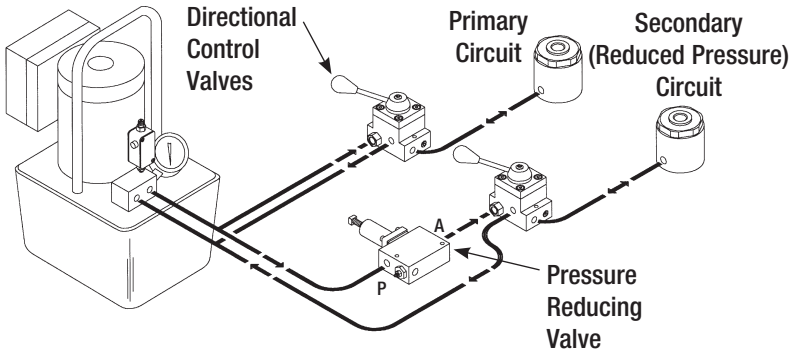


100128DE





100942DE

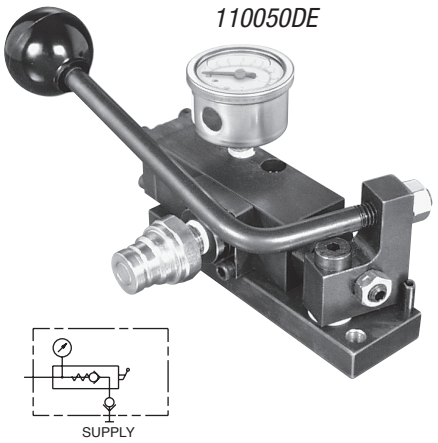


Cat. no.	Dimensions (In Inches)																		
	"A" Port	B	C	D	E	F	G	H	J	K	L	M Dia.	N	O	"P" Port	Q	"T" Port	U
100942DE	7/16-20UNF SAE-4	3.062	3.000	4.062	1.750	6.312	1.438	0.375	0.375	1.188	3.312	0.281	1.000	1.938	7/16-20UNF SAE-4	0.625	7/16-20UNF SAE-4	1.820

Cat. no.	Dimensions (In Inches)																	
	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q Thread Size	X Dia.	Y	Z
100128DE	*	2.645	7.00	4.00	1.875	2.960	2.188	1.875	1.750	1.560	0.456	0.316	1.520	1.960	*	¼-20 UNC	0.500 0.503	0.515 0.535	1.875

NOTE: *See Port Detail drawing for Ports A, P and T.

Manual Pallet Valve



DE-STA-CO's *Manual Pallet Valve* allows the hydraulic pressure source to be disconnected from the pallet after the fixture has been clamped, allowing flexible machining center applications to realize the advantages of hydraulic workholding.

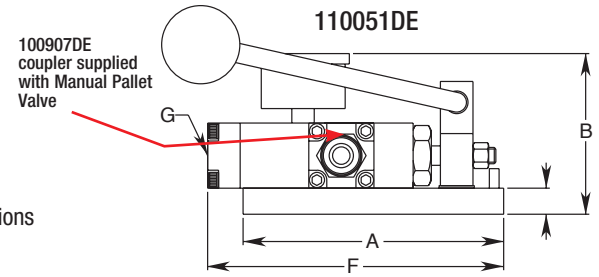
This valve is smaller and takes up less fixture space. Ten micron filters in both the inlet and outlet ports protect the valve from contaminants. Its self-closing feature saves the operator time and effort. Versions are available for conventional plumbing or select the manifold mount model.

For an easy no-drip connection, our male half coupler (100907DE) is included. DE-STA-CO pumps designed for use with this valve come with the mating coupler half. A self-locking feature helps prevent accidental release of the valve when the coupler is not connected. Intended for single-acting systems only. See page 15.10 (App. I) and page 15.10 (App. J) for double-acting system applications.

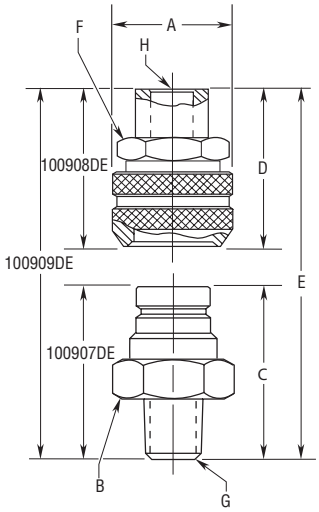
Features:

- Single-acting
- Minimal space requirements
- 5,000 PSI maximum
- Inlet and outlet filtration
- Liquid filled pressure gauge
- Self-closing operation
- SAE and manifold mount versions
- Coupler protective cap

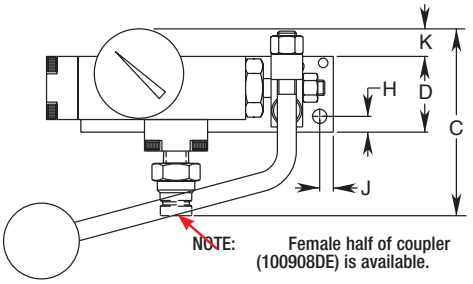
110051DE



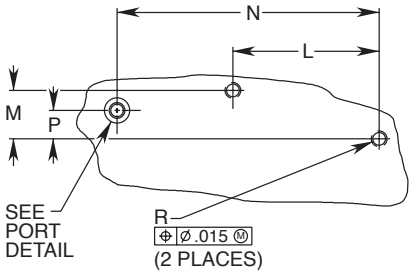
100908DE – Mating Half,
100909DE – Both Halves



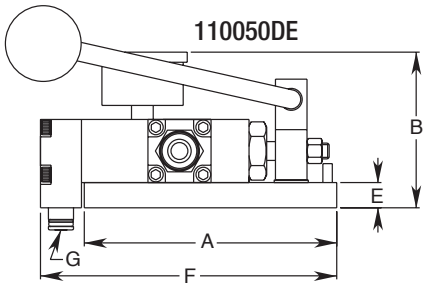
110050DE, 110051DE

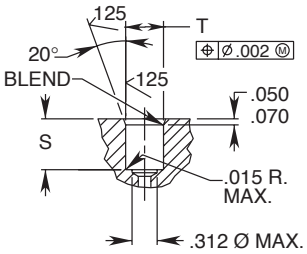


110050DE, 110051DE Mating Hole Pattern



110050DE

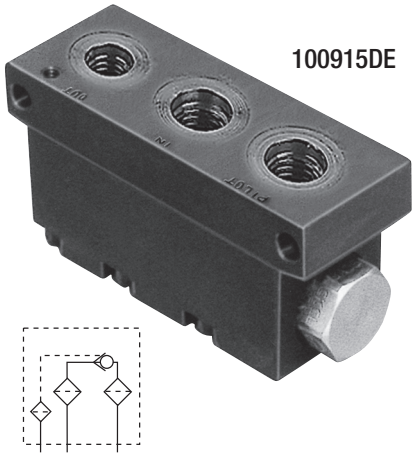




Port Detail

Cat. no.	Dimensions (In Inches) A	B	C	D	E	F	G Outlet Port	H	J	K	L	M	N	P	R	S	T Dia.
100915DE	5.000	3.083	3.700	1.500	0.500	5.868	Manifold Mount	0.312	0.270	0.545	2.595	0.960	5.191	0.564	¼-20 UNC	0.485 0.505	0.500 0.503
110051DE						5.680	7/16-20 UNF SAE-4						–	–		–	–

Cat. no.	Dimensions (In Inches) A	B	C	D	E	F	G Outlet Port	H	J	K	L
100907DE	–	1.000	1.720	–	–	–	¼ NPTF	–			
100908DE	1.060	–	–	1.790	–	1.00	–	¼ NPTF	–	–	–
100909DE		1.000	1.720		2.970		¼ NPTF				



100915DE

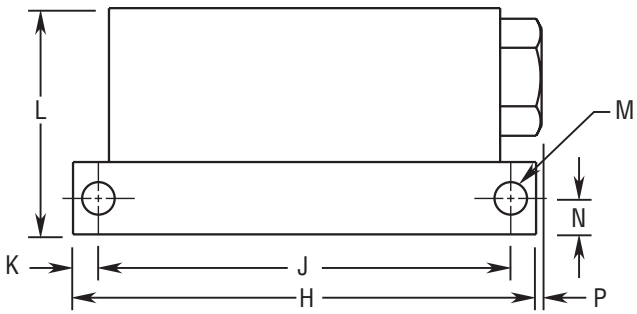
These *Pilot Operated Check Valves* offer a unique poppet seal design making them ideal for pallet applications or other specialized control circuits where zero leakage is essential. They can be used in any application where pressure must be maintained in a portion of a circuit until a separate pilot signal opens the valve and allows free flow in the reverse direction.

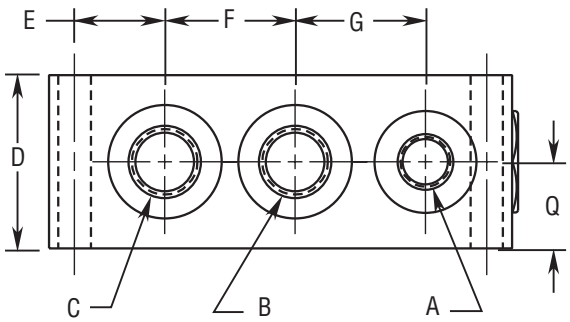
The pilot pressure required to release the valves is approximately one third of the pressure being released. The pilot piston is sealed to prevent pilot flow through the valve.

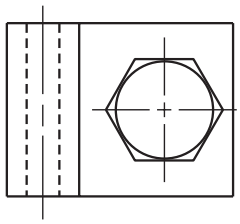
These valves are used with StrongHold's double-acting manual pallet valve (see page 15.93 for manipulator configuration). The replaceable filter elements protect the check valve and your other system components from contamination. No disassembly of circuit plumbing is required to service the filters or the check valve cartridge. An additional filter is recommended for protection of the return side of double-acting clamping circuits.

Features:

- Replaceable, cartridge design valve
- Filters in all three ports protect the check valve and downstream components
- Filters are replaceable without disassembly of plumbing
- SAE O-rings ports
- 10 micron (25 micron absolute) filtration level
- Specially reinforced filter elements resist fatigue from pressure spikes
- 5,000 PSI maximum



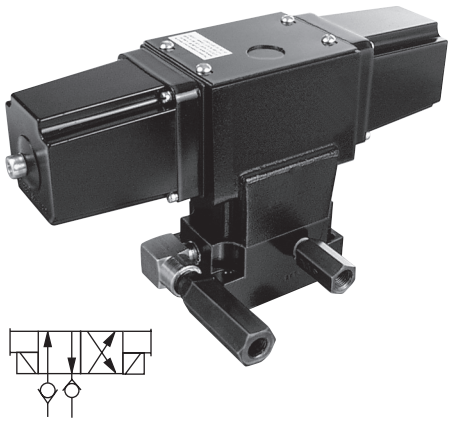




Cat. no.	Specifications		Dimensions (In Inches)						
	Maximum Flow (GPM)	System/ Pilot Pressure Ratio	A Pilot Port	B Inlet Port	C Outlet Port	D	E	F	G
100915DE	5	3:1	SAE-4 7/16-20 UNF	SAE-6 9/16-18 UNF	SAE-6 9/16-18 UNF	1.500	0.781	1.125	1.125

Cat. no.	Dimensions (In Inches)							
	H	J	K	L	M Dia.	N	P	Q
100915DE	4.000	3.562	0.219	1.955	0.281	0.312	0.050	0.750

Remote Mounted Solenoid Valves

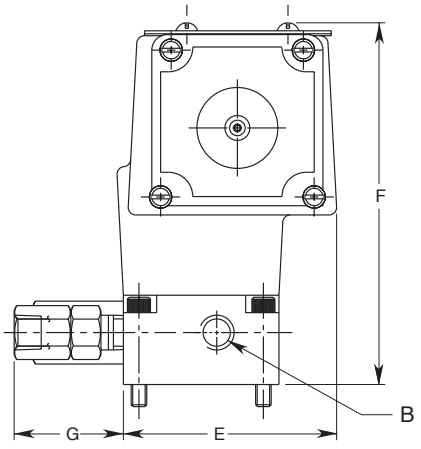


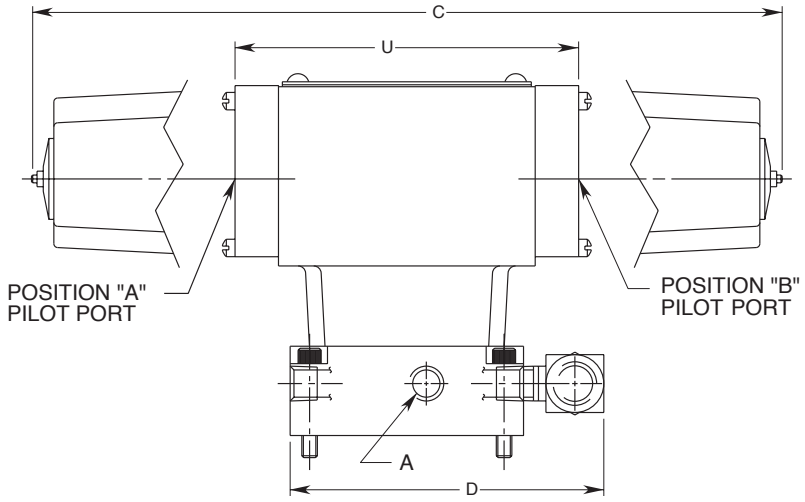
The DE-STA-CO *Remote Mounted Valve Control* is designed for applications where the valve can be mounted remotely from the pump and where electrical operation is required.

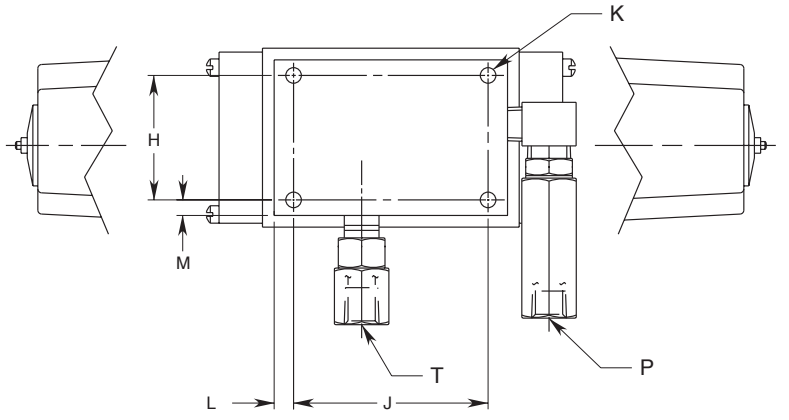
Detented action needs only a momentary signal to shift valve positions. Electrical power interruption won't cause the valve to shift and release clamping pressure or pressurize the system unexpectedly.

Features:

- 3-way/4-way, 2-position, detented
- Electrically operated; continuous duty rated
- Remote mounted
- Single- or double-acting systems
- 5,000 PSI max.; 1,000 PSI max. return line pressure
- 5 gpm max.
- Includes mounting hardware: ¼-20 UNC X 1.5" cap screws (4)
- Tank port check valve included to prevent return line back pressure from actuating released single-acting components, or causing pressure fluctuations in double-acting systems







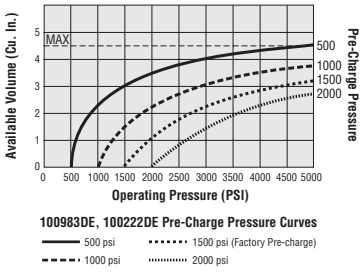
Cat. no.	Specifications Actuation	Dimensions (In Inches) "A" Port	"B" Port	Position A Pilot Port	Position B Pilot Port	C	D	E	F	G	H	J	K Dia.	L	M	"P" Port	"T" Port	U
9612DE	115 VAC, 50/60 Hz 5.3 Amps inrush, .6 Amps holding	¼ NPTF	¼ NPTF	–	–	12.062	5.000	3.375	5.812	2.500	2.000	3.125	0.281	0.312	0.250	¼ NPTF	¼ NPTF	–
9573DE	24 VAC, 50/60 Hz 25.4 Amps inrush, 2.8 Amps holding																	
9574DE	230 VAC, 50/60 Hz 2.8 Amps inrush, .31 Amps holding																	
9611DE	50 PSI min./150 PSI max. air pressure			¼ NPTF	¼ NPTF	–												6.125

Accumulators are designed to store a small supply of pressurized oil, making them ideal for palletized machining workholding systems or any other system where supply pressure is disconnected temporarily. They are nitrogen charged, piston type accumulators allowing them to be mounted in any orientation. This type of accumulator has a wider operating range at any one charge pressure than any other type of accumulator. Depending on the application, they can be used at any pressure from 0-5,000 PSI. Charge pressure is factory set at 1,500 PSI and can be increased up to 2,000 PSI. In general, a lower charge pressure will provide more total oil but a higher charge pressure will give more usable oil at a given allowable pressure drop.

Refer to the performance charts to determine the best charge pressure for each application. Accumulators come in two sizes (2 & 5 cu. in.) and are available in conventional mount and manifold mount.

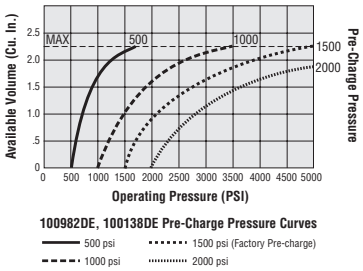
Features:

- Two sizes: 2 and 5 cu. in.
- Conventional or manifold mount
- Precharged to 1,500 PSI
- Concealed charging valve
- SAE "O" ring fitting with ¼" NPT female adapter/restrictor valve (100222DE, 100138DE)
- Optional charging tool 500149DE available



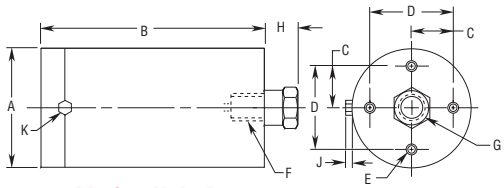
100983DE, 100222DE Pre-Charge Pressure Curves

500 psi — 1500 psi (Factory Pre-charge)
1000 psi — 2000 psi

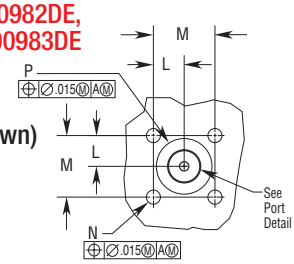


100982DE, 100138DE Pre-Charge Pressure Curves

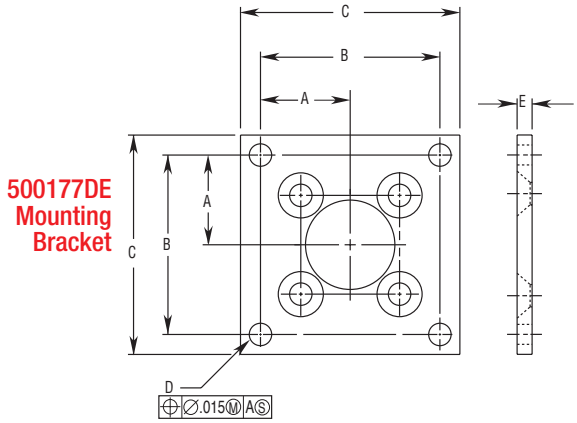
500 psi — 1500 psi (Factory Pre-charge)
1000 psi — 2000 psi



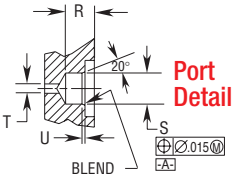
Mating Hole Pattern
100982DE,
100983DE



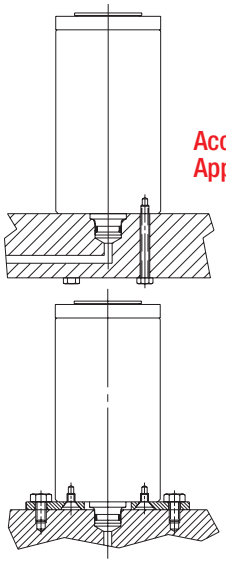
100222DE, 100138DE (shown)



500177DE
Mounting
Bracket



Port
Detail



Accumulator
Applications

Cat. no.	Dimensions (In Inches)				
	A	B	C	D Dia.	E
500177DE	1.125	2.250	2.750	0.285	0.188

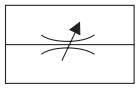
Cat. no.	Specifications		Dimensions (In Inches)										
	Mounting Configuration	Volume (Cu. In.)	A	B	C	D	E Thread		F Thread Size	G Thread Size	H	J	K Hex.
							Size	Depth					
100138DE	Conventional	2	2.500	4.810	0.875	1.750	10-32 UNF	0.200	⅜-18UNF SAE-6	¼ NPT	0.698	0.100	0.250
100222DE		5		5.680									
100982DE	Manifold	2		4.810						–	0.509		
100983DE		5		5.680									

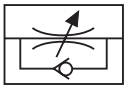
Cat. no.	Mounting Option	Dimensions (In Inches)								
		L	M	N	P		R Min.	S Dia.	T Dia. Min.	U
					Dia.	Depth				
100982DE 100983DE	With 500177DE	1.125	2.250	¼-20UNC	–	–	0.375	0.625 0.627	0.188	0.050 0.070
100982DE 100983DE	Without 500177DE	0.619	1.238	0.280 0.287	1.120 1.150	0.183 0.193	0.563			
100138DE 100222DE	Without 500177DE					Thru	–	–	–	–

Needle Valves

253605DE

15068DE





15068DE

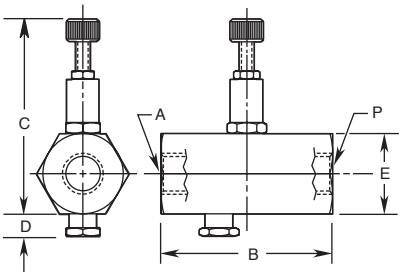
DE-STA-CO's *Needle Valves* are multiple-turn flow restrictor valves which provide finely adjustable flow control for components or circuits requiring reduced flow rates. They are also used in some non-critical sequencing applications where restriction in part of a circuit will tend to cause the actuators in the remainder of the circuit to operate first.

Needle valve No. 15068DE has a reverse free-flow check valve built-in to allow unrestricted flow in one direction.

Needle valve No. 253605DE restricts flow in both directions.

Features:

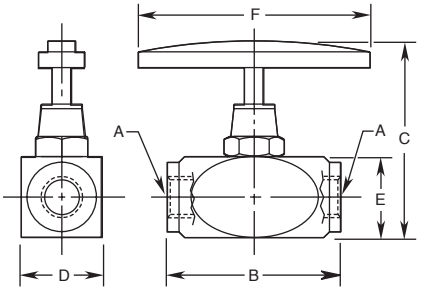
- Corrosion resistant construction
- 5,000 PSI maximum



Cat. no.	Dimensions (In Inches)					
	A Port	B	C Max.	D	E Hex.	P Port
15068DE	¼ NPTF	2.375	2.125	0.312	0.875	¼ NPTF

Cat. no.	Dimensions (In Inches)					
	A Port	B	C Max.	D	E Hex.	P Port
253605DE	¼ NPTF	1.875	2.781	0.875	0.875	2.500

253605DE



Valves

Model **70908**

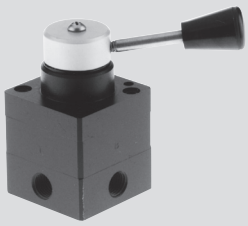
3-way Hand Operated
Valve (Pneumatic)
1/4 NPT

Model **70909**

3-way Foot Operated
Valve (Pneumatic)
1/4 NPT

Model **70914**

Rapid Exhaust Valve
(Pneumatic)
3/8 NPT



Model **70911**

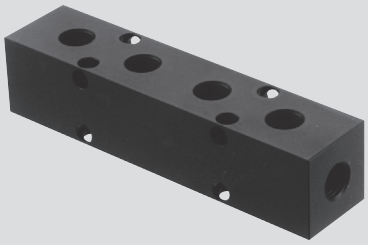
4-way Hand Operated
Valve (Hydraulic)
1/4 NPT

Filter-Regulator-Lubricator (FRL)

Model **70905**

Filter-Regulator – Lubricator (FRL)
3/8 NPT

Manifolds



Model **70903**

Manifold (in-line) –
Six-Ported
1/4 NPT

Muffler

Model **70916**

Muffler
3/8 NPT

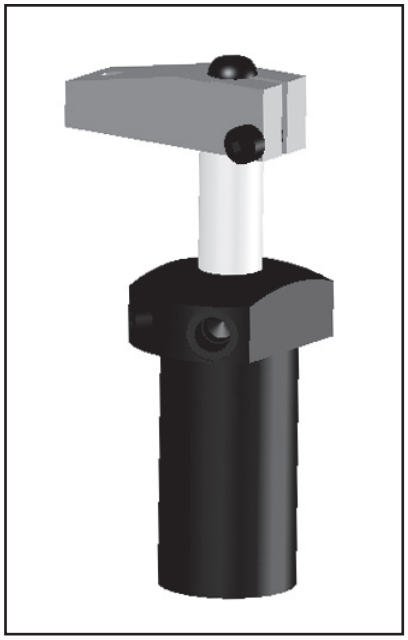
Gauge

Model **70925**

Gauge – Hydraulic
0-5,000 PSIG
1/4 NPT

NOTE: Accessory designs are subject to change.
Actual appearance may differ from that
shown in photograph.

3D CAD Library and Configurator



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All DE-STA-CO products are thoroughly inspected and tested. We fully guarantee all materials and workmanship to be free of defects. Any product that is found to be defective in design, material or workmanship in the course of its normal use will be promptly replaced.

This Warranty does not apply to any product where the failure is a result of misapplication or abuse, nor is there any Warranty expressed or implied as to the merchantability or fitness for a particular purpose of the product and any warranty is limited to the above express warranty.

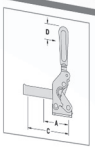
The Warranty is null and void if the product is repaired, modified or altered in any way.

DE-STA-CO is not liable for labor, special, direct, incidental or consequential damages and under no circumstances any charges in excess of the invoice amount of the product proven to be defective.

Notes

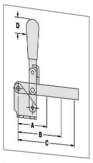
Holding Capacity Charts

Vertical Clamps



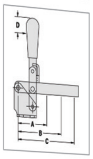
2002, 2007, 2010 Series

Model no.	Dim. (℄ to ℄, in Inches) Base Pivot to Spindle Loc. A	Spindle Loc. C	Max. Mechanical Advantage (M.A.) at Spindle Loc. A	Spindle Loc. C	Max. Holding Capacity [lbs.] at Spindle Loc. A	Spindle Loc. C	Force Applied to Handle at D
2002-U	1.45	2.65	11.1:1	5.1:1	600	295	0.50
2007-U	1.95	3.92	10.01	5.3:1	1000	470	1.25
2010-U	2.44	4.88	13.01	6.01	1400	720	1.00



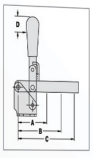
201 Series

Model no.	Dim. (℄ to ℄, in Inches) Base Pivot to Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Max. Mechanical Advantage (M.A.) at Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Max. Holding Capacity [lbs.] at Spindle Loc. A	Spindle Loc. B	Spin Loc.
201	1.063	–	1.75	9:1	–	6:1	100	–	5
201-SS	1.063	–	1.75	9:1	–	6:1	125	–	6
201-TSS	1.063	–	1.75	9:1	–	4:1	125	–	6



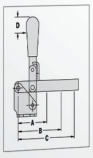
202 Series

Model no.	Dim. (℄ to ℄, in Inches) Base Pivot to Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Max. Mechanical Advantage (M.A.) at Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Max. Holding Capacity [lbs.] at Spindle Loc. A	Spindle Loc. B	Spin Loc.
202	–	–	1.875	–	–	8:1	–	–	20
202-SS	–	–	1.875	–	–	8:1	–	–	25
202-T	–	–	1.875	–	–	6:1	–	–	20
202-U	1.25	1.75	2.25	10:1	7:1	5:1	200	140	11
202-UL	1.25	1.75	2.88	10:1	7:1	4:1	200	170	12
202-USS	1.25	1.75	2.25	10:1	7:1	5:1	250	170	13
202-TU	1.25	1.75	2.25	11:1	8:1	7:1	200	140	11



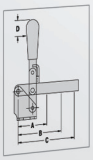
207 Series

Model no.	Dim. (℄ to ℄, in Inches) Base Pivot to Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Max. Mechanical Advantage (M.A.) at Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Max. Holding Capacity [lbs.] at Spindle Loc. A	Spindle Loc. B	Spin Loc.
207-SO	2.875	–	3.75	8:1	–	6:1	500	–	35
207-UO	2.0	2.875	3.75	10:1	8:1	6:1	375	275	22
207-USS	2.0	2.875	3.75	10:1	8:1	6:1	450	310	24
207-TS	2.875	–	3.75	4:1	–	3:1	500	–	35
207-TU	2.0	2.875	3.75	6:1	5:1	3:1	375	275	22
207-TL	2.875	–	5.0	4:1	–	3:1	500	–	28
207-TUL	2.0	–	5.0	5:1	–	3:1	375	–	15
207-LO	2.875	–	5.0	8:1	–	5:1	500	–	28
207-ULO	2.0	–	5.0	7:1	–	4:1	375	–	15



207 Series World Clamp

Model no.	Dim. (℄ to ℄, in Inches) Base Pivot to Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Max. Mechanical Advantage (M.A.) at Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Max. Holding Capacity [lbs.] at Spindle Loc. A	Spindle Loc. B	Spin Loc.
207-S	2.875	–	3.75	8:1	–	6:1	500	–	35
207-U	2.0	2.875	3.75	6:1	8:1	6:1	375	275	22
207-L	2.875	–	5.0	5:1	–	5:1	500	–	28
207-UL	2.0	–	5.0	4:1	–	4:1	375	–	15



210 Series

Model no.	Dim. (℄ to ℄, in Inches) Base Pivot to Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Max. Mechanical Advantage (M.A.) at Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Max. Holding Capacity [lbs.] at Spindle Loc. A	Spindle Loc. B	Spin Loc.
210-S	3.625	–	5.25	11:1	–	9:1	750	–	50
210-TS	3.625	–	5.25	5:1	–	3:1	750	–	50
210-U	2.375	3.625	4.875	14:1	9:1	7:1	600	390	29
210-TU	2.375	3.625	4.875	11:1	7:1	5:1	600	390	29
210-USS	2.375	3.625	4.875	14:1	9:1	7:1	750	490	36

Subject to technical modifications without notice

16.1

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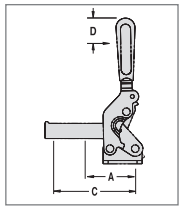
16.5

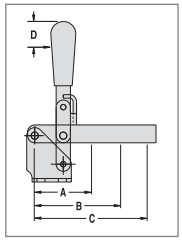
Subject to technical modifications without notice DE-STA-CO

Vertical Clamps



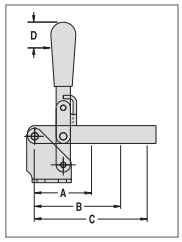
2002, 2007, 2010 Series

Model no.	Dim. (℄ to ℄, in Inches) Base Pivot to		Max. Mechanical Advantage (M.A.) at		Max. Holding Capacity [lbs.] at		Force Applied to Handle at D
	Spindle Loc. A	Spindle Loc. C	Spindle Loc. A	Spindle Loc. C	Spindle Loc. A	Spindle Loc. C	
2002-U	1.45	2.65	11.1:1	5.1:1	600	295	0.50
2007-U	1.95	3.92	10:01	5.3:1	1000	470	1.25
2010-U	2.44	4.88	13:01	6:01	1400	720	1.00



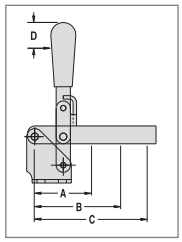
201 Series

Model no.	Dim. (℄ to ℄, in Inches) Base Pivot to			Max. Mechanical Advantage (M.A.) at			Max. Holding Capacity [lbs.] at			Force Applied to Handle at D
	Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	
201	1.063	–	1.75	9:1	–	6:1	100	–	55	0.500
201-SS	1.063	–	1.75	9:1	–	6:1	125	–	60	0.500
201-TSS	1.063	–	1.75	9:1	–	4:1	125	–	60	0.500



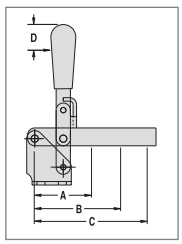
202 Series

Model no.	Dim. (℄ to ℄, in Inches) Base Pivot to			Max. Mechanical Advantage (M.A.) at			Max. Holding Capacity [lbs.] at			Force Applied to Handle at D
	Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	
202	–	–	1.875	–	–	8:1	–	–	200	0.375
202-SS	–	–	1.875	–	–	8:1	–	–	250	0.375
202-T	–	–	1.875	–	–	6:1	–	–	200	0.1875
202-U	1.25	1.75	2.25	10:1	7:1	5:1	200	140	110	0.375
202-UL	1.25	1.75	2.88	10:1	7:1	4:1	200	170	125	0.375
202-USS	1.25	1.75	2.25	10:1	7:1	5:1	250	170	130	0.375
202-TU	1.25	1.75	2.25	11:1	8:1	7:1	200	140	110	0.1875



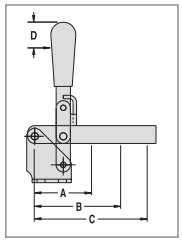
207 Series

Model no.	Dim. (℄ to ℄, in Inches) Base Pivot to			Max. Mechanical Advantage (M.A.) at			Max. Holding Capacity [lbs.] at			Force Applied to Handle at D
	Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	
207-SO	2.875	–	3.75	8:1	–	6:1	500	–	350	0.375
207-UO	2.0	2.875	3.75	10:1	8:1	6:1	375	275	225	0.375
207-USS	2.0	2.875	3.75	10:1	8:1	6:1	450	310	240	0.375
207-TS	2.875	–	3.75	4:1	–	3:1	500	–	350	0.125
207-TU	2.0	2.875	3.75	6:1	5:1	3:1	375	275	225	0.125
207-TL	2.875	–	5.0	4:1	–	3:1	500	–	260	0.125
207-TUL	2.0	–	5.0	5:1	–	3:1	375	–	150	0.125
207-LO	2.875	–	5.0	8:1	–	5:1	500	–	260	0.375
207-ULO	2.0	–	5.0	7:1	–	4:1	375	–	150	0.375



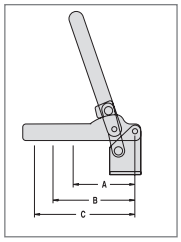
207 Series World Clamp

Model no.	Dim. (℄ to ℄, in Inches) Base Pivot to			Max. Mechanical Advantage (M.A.) at			Max. Holding Capacity [lbs.] at		
	Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Spindle Loc. A	Spindle Loc. B	Spindle Loc. C
207-S	2.875	–	3.75	8:1	–	6:1	500	–	350
207-U	2.0	2.875	3.75	6:1	8:1	6:1	375	275	225
207-L	2.875	–	5.0	5:1	–	5:1	500	–	260
207-UL	2.0	–	5.0	4:1	–	4:1	375	–	150



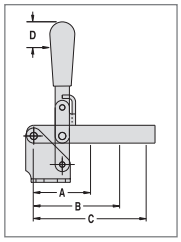
210 Series

Model no.	Dim. (℄ to ℄, in Inches) Base Pivot to			Max. Mechanical Advantage (M.A.) at			Max. Holding Capacity [lbs.] at			Force Applied to Handle at D
	Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	
210-S	3.625	–	5.25	11:1	–	9:1	750	–	500	0.625
210-TS	3.625	-	5.25	5:1	–	3:1	750	–	500	0.125
210-U	2.375	3.625	4.875	14:1	9:1	7:1	600	390	290	0.625
210-TU	2.375	3.625	4.875	11:1	7:1	5:1	600	390	290	0.125
210-USS	2.375	3.625	4.875	14:1	9:1	7:1	750	490	360	0.625



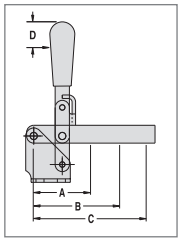
219, 229 Models

Model no.	Dim. (℄ to ℄, in Inches) Base Pivot to			Max. Mechanical Advantage (M.A.) at			Max. Holding Capacity [lbs.] at		
	Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Spindle Loc. A	Spindle Loc. B	Spindle Loc. C
219	2.75	4.0	5.0	8.8:1	5.8:1	4.7:1	350	240	190
229	3.0	4.523	6.125	7:1	5:1	3:1	1000	675	500



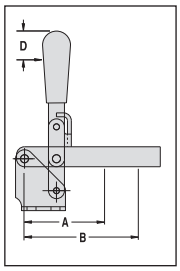
518 Model

Model no.	Dim. (℄ to ℄, in Inches) Base Pivot to			Max. Mechanical Advantage (M.A.) at			Max. Holding Capacity [lbs.] at			Force Applied to Handle at D
	Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	
518	2.5	3.25	4.0	14:1	13:1	11:1	500	380	310	0.750



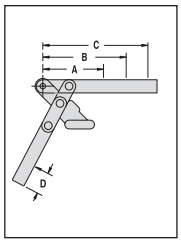
247, 267 Series

Model no.	Dim. (℄ to ℄, in Inches) Base Pivot to			Max. Mechanical Advantage (M.A.) at			Max. Holding Capacity [lbs.] at			Force Applied to Handle at D
	Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	
247-S	4.563	6.125	7.0	10:1	6:1	5:1	1000	740	650	0.831
247-U	3.0	4.523	6.125	12:1	10:1	6:1	1000	650	480	0.831
267-U	4.0	6.0	8.0	18:1	12:1	8:1	1200	800	600	0.875
267-S	6.0	8.0	8.75	12:1	8:1	8:1	1200	900	820	0.875



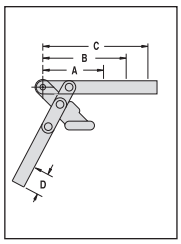
548, 578, 588 Series

Model no.	Dim. (℄ to ℄, in Inches) Base Pivot to		Max. Mechanical Advantage (M.A.) at		Max. Holding Capacity [lbs.] at		Force Applied to Handle at D
	Spindle Loc. A	Spindle Loc. B	Spindle Loc. A	Spindle Loc. B	Spindle Loc. A	Spindle Loc. B	
548	3.5	6.0	4.5:1	3.4:1	2500	1500	0.500
578	4.5	7.0	7.6:1	4.2:1	4000	2500	0.500
588	5.0	8.0	5.7:1	4.5:1	6000	3750	0.500



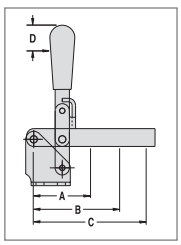
317 Series

Model no.	Dim. (℄ to ℄, in Inches) Base Pivot to			Max. Mechanical Advantage (M.A.) at			Max. Holding Capacity [lbs.] at			Force Applied to Handle at D
	Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	
317-U	2.0	2.875	3.75	17:1	11:1	8:1	375	260	200	0.500
317-S	2.5	3.75	5.0	13:1	8:1	5:1	375	250	190	0.500



527 Series

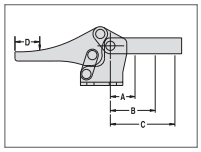
Model no.	Dim. (℄ to ℄, in Inches) Base Pivot to			Max. Mechanical Advantage (M.A.) at			Max. Holding Capacity [lbs.] at			Force Applied to Handle at D
	Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	
527	3.5	4.75	6.0	23:1	16:1	12:1	1000	730	580	0.500



528 Series

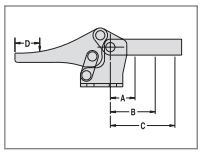
Model no.	Dim. (℄ to ℄, in Inches) Base Pivot to			Max. Mechanical Advantage (M.A.) at			Max. Holding Capacity [lbs.] at			Force Applied to Handle at D
	Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	
528	3.5	4.75	6.0	23:1	16:1	12:1	1000	730	580	–

Horizontal Clamps



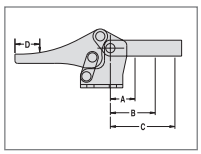
205 Series

Model no.	Dim. (℄ to ℄, in Inches) Base Pivot to Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Max. Mechanical Advantage (M.A.) at Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Max. Holding Capacity [lbs.] at Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Force Applied to Handle at D
205-S	–	–	0.875	–	–	4:1	–	–	60	0.312
205-SSS	–	–	0.875	–	–	4:1	–	–	75	0.312
205-SR/SL	–	–	0.875	–	–	4:1	–	–	60	0.312
205-U	0.438	–	0.813	9:1	–	5:1	60	–	50	0.312
205-USS	0.438	–	0.813	9:1	–	5:1	75	–	65	0.312
205-UR/UL	0.438	–	0.813	9:1	–	5:1	60	–	50	0.312



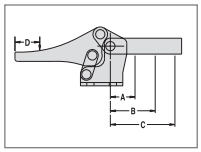
206-SS Series

Model no.	Dim. (℄ to ℄, in Inches) Base Pivot to Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Max. Mechanical Advantage (M.A.) at Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Max. Holding Capacity [lbs.] at Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Force Applied to Handle at D
206-SS	0.563	–	1.063	5:1	–	3:1	100	–	50	0.375
206-HSS	0.563	–	1.063	5:1	–	3:1	100	–	50	0.375



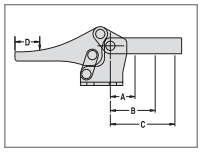
215 Series

Model no.	Dim. (℄ to ℄, in Inches) Base Pivot to Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Max. Mechanical Advantage (M.A.) at Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Max. Holding Capacity [lbs.] at Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Force Applied to Handle at D
215-S	1.625	–	2.875	6:1	–	4:1	200	–	110	0.312
215-U	1.0	1.625	2.25	9:1	6:1	4:1	200	120	80	0.312
215-USS	1.0	1.625	2.25	9:1	6:1	4:1	250	150	110	0.312



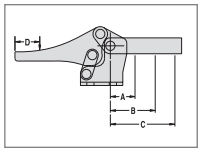
225 Series

Model no.	Dim. (℄ to ℄, in Inches) Base Pivot to Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Max. Mechanical Advantage (M.A.) at Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Max. Holding Capacity [lbs.] at Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Force Applied to Handle at D
225-U	1.25	1.875	2.5	12:1	7:1	5:1	500	330	250	0.438
225-USS	1.25	1.875	2.5	12:1	7:1	5:1	600	400	300	0.438



235 Series

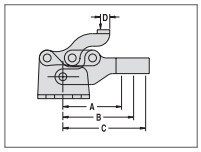
Model no.	Dim. (℄ to ℄, in Inches) Base Pivot to Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Max. Mechanical Advantage (M.A.) at Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Max. Holding Capacity [lbs.] at Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Force Applied to Handle at D
235-U	1.75	2.938	4.125	9:1	7:1	5:1	750	450	300	0.500
235-USS	1.75	2.938	4.125	9:1	7:1	5:1	850	500	360	0.500



213, 217, 227, 237, 245 Series

Model no.	Dim. (℄ to ℄, in Inches) Base Pivot to Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Max. Mechanical Advantage (M.A.) at Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Max. Holding Capacity [lbs.] at Spindle Loc. A	Spindle Loc. B	Spindle Loc. C	Force Applied to Handle at D
213-U	0.75	1.188	1.625	7:1	5:1	3:1	150	95	70	0.250
213-USS	0.75	1.188	1.625	7:1	5:1	3:1	150	95	70	0.250
217-U	1.125	1.875	2.625	7:1	4:1	3:1	200	120	80	0.500
217-USS	1.125	1.875	2.625	7:1	4:1	3:1	250	150	100	0.500
227-U	1.25	2.0	2.75	8:1	5:1	3:1	500	310	225	0.500
227-USS	1.25	2.0	2.75	8:1	5:1	3:1	600	375	270	0.500
237-U	1.75	3.125	4.5	6:1	3:1	2:1	750	420	290	0.500
237-USS	1.75	3.125	4.5	6:1	3:1	2:1	850	475	330	0.500
245-S	2.75	3.375	6.0	10:1	6:1	4:1	1000	625	450	0.500
245-U	2.0	3.5	5.0	11:1	6:1	5:1	1000	570	400	0.500

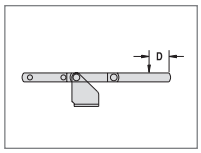
Horizontal Clamps



305, 307, 309 Series

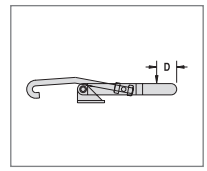
Model no.	Dim. (℄ to ℄, in Inches) Base Pivot to Spindle Loc. A	Dim. (℄ to ℄, in Inches) Base Pivot to Spindle Loc. B	Dim. (℄ to ℄, in Inches) Base Pivot to Spindle Loc. C	Max. Mechanical Advantage (M.A.) at Spindle Loc. A	Max. Mechanical Advantage (M.A.) at Spindle Loc. B	Max. Mechanical Advantage (M.A.) at Spindle Loc. C	Max. Holding Capacity [lbs.] at Spindle Loc. A	Max. Holding Capacity [lbs.] at Spindle Loc. B	Max. Holding Capacity [lbs.] at Spindle Loc. C	Force Applied to Handle at D
305-U	1.375	–	1.875	3:1	–	2:1	150	–	110	0.125
305-USS	1.375	–	1.875	3:1	–	2:1	200	–	150	0.125
307-U	1.875	2.188	2.5	3:1	2:5	2:1	350	300	260	0.188
307-USS	1.875	2.188	2.5	3:1	2:5	2:1	350	300	260	0.188
309-U	2.5	3.0	3.5	4:1	3:1	2:1	750	625	530	0.3125
309-USS	2.5	3.0	3.5	4:1	3:1	2:1	750	625	530	0.3125

Latch Clamps



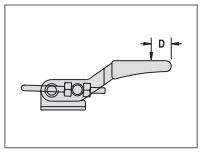
301, 311 Series

Model no.	Max. Mechanical Advantage (M.A.)	Force Applied to Handle at D
301	29:1	0.500
301-SS	29:1	0.500
311	31:1	0.500



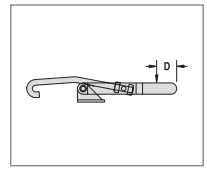
330 Series

Model no.	Max. Mechanical Advantage (M.A.)	Force Applied to Handle at D
330	17:1	0.250
330-SS	17:1	0.250



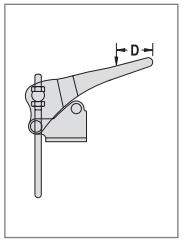
323, 331, 341 Series

Model no.	Max. Mechanical Advantage (M.A.)	Force Applied to Handle at D
323	27:1	0.250
323-SS	27:1	0.250
331	32:1	0.250
331-SS	32:1	0.250
341	29:1	0.250
341-SS	29:1	0.250



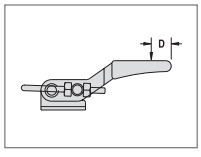
351, 371, 381 Series

Model no.	Max. Mechanical Advantage (M.A.)	Force Applied to Handle at D
351	21:1	0.375
351-SS	21:1	0.375
371	36:1	0.750
371-SS	36:1	0.750
381	37:1	0.750
381-SS	37:1	0.750



324, 334, 344, 374 Series

Model no.	Max. Mechanical Advantage (M.A.)	Force Applied to Handle at D
324	31:1	0.250
324-SS	31:1	0.250
334	31:1	0.250
334-SS	31:1	0.250
344	45:1	0.250
344-SS	45:1	0.250
374	36:1	0.750



375, 375-B, 385, 385-L Series

Model no.	Max. Mechanical Advantage (M.A.)	Force Applied to Handle at D
375	44:1	0.750

Ordering no. index

Ordering no. index

Ordering no. index

Ordering no. index

Ordering no. index

Ordering no. index

Notes

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Notes

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2121 Cole Street, Birmingham, MI, 48009
Tel: (248) 594-5600, FAX: (248) 644-3929
Toll Free Tel: (888) DESTACO, Toll Free Fax: (800) 682-9686
Internet: www.destaco.com, Email: cust.serv@destaco.com

CustomQuick™ WORKSHEET

COMPANY INFORMATION

DATE: _____

END USER NAME: _____
ATTENTION: _____
REFERENCE: _____
PHONE: _____ EXT.: _____ FAX: _____ EMAIL: _____
ADDRESS: _____
CITY: _____ STATE: _____ ZIP: _____

DISTRIBUTOR NAME: _____
ATTENTION: _____ REFERENCE: _____
PHONE: _____ EXT.: _____ FAX: _____ EMAIL: _____
ADDRESS: _____
CITY: _____ STATE: _____ ZIP: _____

MODIFICATION INFORMATION

BASE MODEL: _____
DESCRIPTION OF MODIFICATION: _____
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DESCRIPTION OF APPLICATION/ENVIRONMENT: _____
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MATERIAL TYPE: _____
ESTIMATED QUANTITY: _____
REQUIRED DATE: _____

(Please make sketch if possible.):

ACTION TAKEN: _____
SPECIAL PART # ASSIGNED: _____ BY: _____ RELEASE DATE: _____

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ESTIMATED QUANTITY: _____
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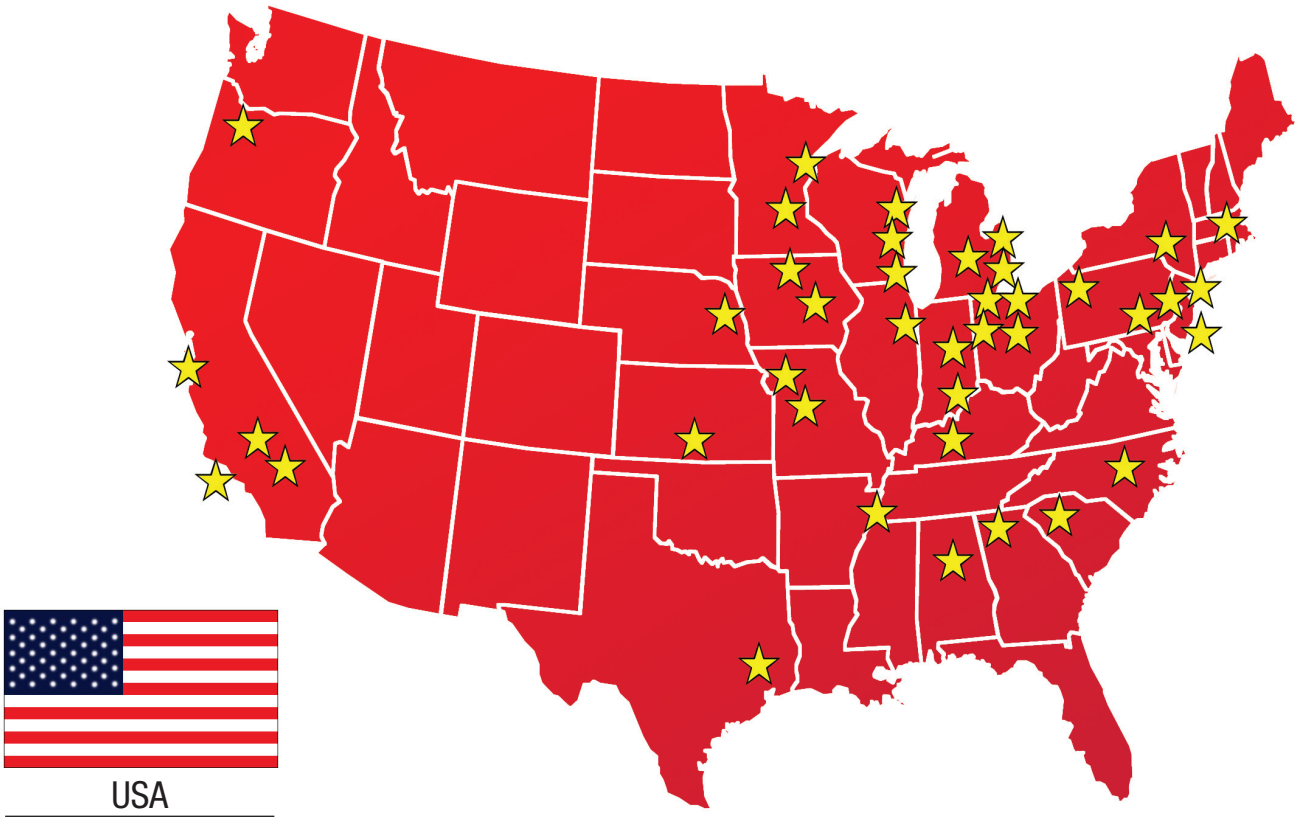
(Please make sketch if possible.):

ACTION TAKEN: _____
SPECIAL PART # ASSIGNED: _____ BY: _____ RELEASE DATE: _____

DE-STA-CO XPRESS
Products and Partners



USA

XPRESS PRODUCTS:

201-U	202	202-U	205-S	205-U	207-S	207-UL	207-U	210-U
213-U	215-U	217-U	225-U	227-U	235-U	247-U	305-U	307-U
323	331	341	351	601	602	603	604	605
607	630	802	807-L	807-UL	810-U	812		

PARTNERS (as of 12|05)

Ameritool, Inc.	AL, Huntsville	800-624-3680	DECO Tool Supply, Inc.	MO, Lee's Summit	816-524-6939
Wayco Sales, Inc.	CA, Bell Gardens	562-927-3469	Kinequip, Inc.	NC, Charlotte	704-597-2111
Tool & Abrasive Sply, Inc.	CA, Los Angeles	323-589-9171	Fuchs Machinery	NE, Omaha	402-731-1991
All American Products	CA, San Fernando	800-423-2431	M.J. Vail Co.	NJ, Hillsborough	800-526-6003
Norman Wright Co.	CA, San Francisco	800-925-2677	Wayne Tool & Supply	NJ, Kearney	201-998-7200
Pearse-Pearson	CT, Bloomfield	860-242-7777	Manson Tool & Supply, Inc.	NY, Thornwood	914-769-7056
Ziegler Tools, Inc.	GA, Atlanta	404-346-5666	Jergens Industrial Supply	OH, Cleveland	216-486-2100
Iowa Midland Supply	IA, Cedar Rapids	319-366-3555	Walter Cavender Co.	OH, Dayton	937-837-2643
DECO Tool Supply, Inc.	IA, Davenport	563-386-5970	Midwest Die Supply	OH, Toledo	419-729-7141
Flodyne/Hydradyne	IL, Hanover Park	630-563-3600	IDG – Cincinnati	OH, West Chester	513-942-9100
Zenger's Industrial Supply	IL, Melrose Park	800-660-8665	General Tool & Supply	OR, Portland	503-226-3411
Quality Mill Supply	IN, Franklin	317-346-1000	Palm Abrasive & Tool	OR, Portland	503-238-3800
Finch Automation	IN, Indianapolis	317-328-5777	Savillle & Company	PA, Pittsburgh	412-731-6401
DECO Tool Supply, Inc.	KS, Wichita	316-262-4485	Austin/Thomas Hardware	PA, Reading	610-921-3558
Dixie Industrial Supply	KY, Lexington	800-422-2616	John M. Rowe, Inc.	PA, Schaefferstown	717-949-6597
Geisler Company	MI, Redford	864-503-3366	Lewis Supply Company	TN, Memphis	901-525-6871
H & P Technologies	MI, Warren	586-758-0100	Rex Supply Company	TX, Houston	713-222-2251
Pneumatic Technology	MI, Warren	586-758-7638	Nelson Sales	WI, New Berlin	262-971-1717
Machine Tool Supply	MN, Eagan	651-452-4400	Badger Mill Supply	WI, Oshkosh	920-235-0011
Applied Products, Inc.	MN, Minneapolis	952-933-2224	Waukesha Industrial Supply	WI, Waukesha	800-678-8960
Austin Hardware	MO, Lee's Summit	816-358-5200			

DE-STA-CO XPRESS

Products and Partners

CANADA

PARTNERS (as of 12|05)

Wainbee	BC, Richmond	604-278-4288
Century Tools & Machinery Ltd.	ON, Mississauga	905-795-1999
Wainbee	ON, Mississauga	888-924-6233
Wolseley Industrial Products	ON, Old Castle	519-737-7888
Windsor Factory Supply, Inc.	ON, Windsor	519-966-2202
Excel Distributeur Industriel	PQ, Granby	450-375-1771
Wainbee	PQ, Pointe Claire	514-697-8810
LAFCO	PQ, Montreal	800-363-2956
LAFCO	PQ, Ville de Quebec	866-948-8556

MEXICO

PARTNERS (as of 12|05)

Total Automation Controls	CH, Chihuahua	614-411-0497
Cesehsa, S.A. de C.V.	MX, Toluca	722-211-5701

XPRESS PRODUCTS:

201-U	202	202-U	205-S	205-U	207-S	207-UL	207-U	210-U
213-U	215-U	217-U	225-U	227-U	235-U	247-U	305-U	307-U
323	331	341	351	601	602	603	604	605
607	630	802	807-L	807-UL	810-U	812		

DE-STA-CO *XPRESS* . . . The fastest delivery system of toggle clamps for your workholding applications!

DE-STA-CO Industries most popular clamp models are now available faster than ever before through a unique partnership with our distributor network. Contact your XPRESS partner for more of the world's original (and still the best) toggle clamp technology.

If You're Using Something Else . . . It's Time to Step Into the 21st Century!

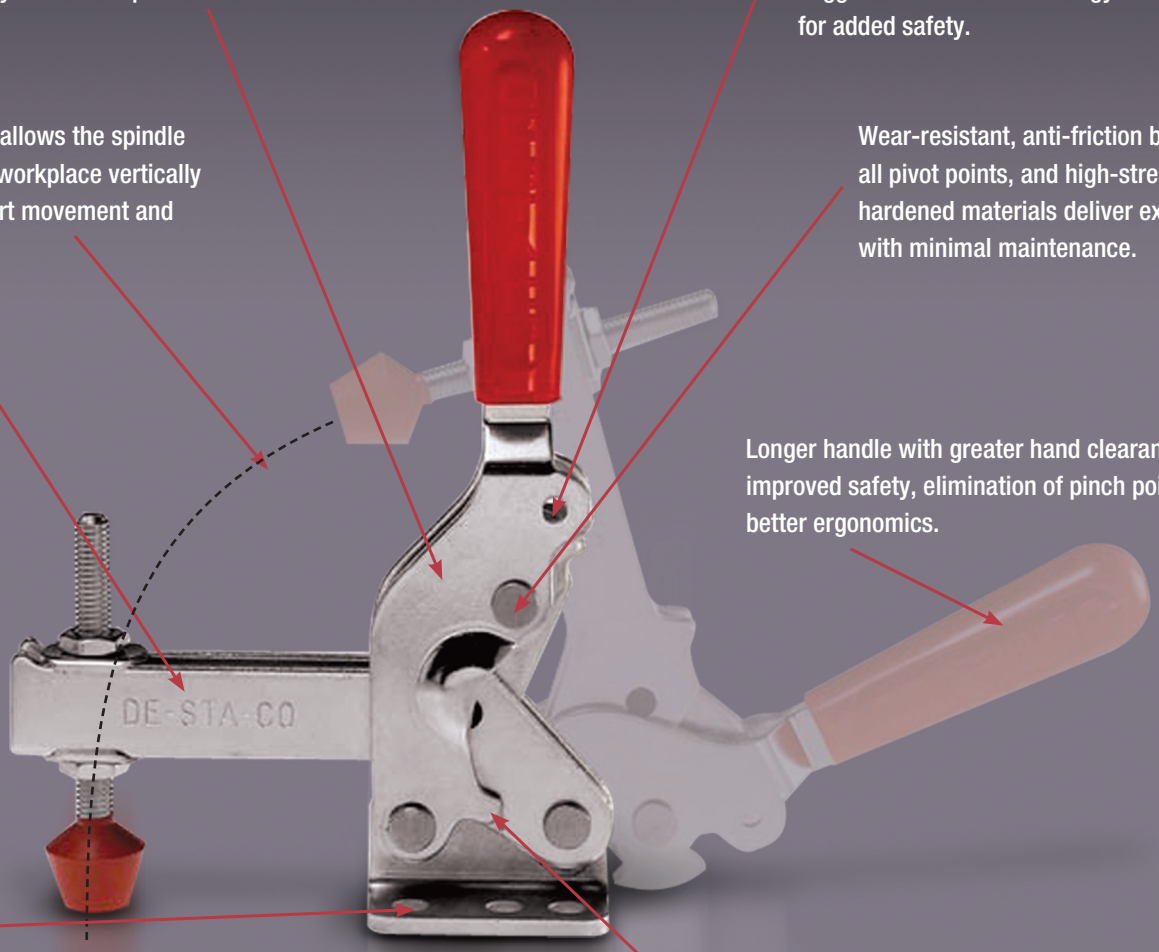
Lean, compact design conserves valuable space, while delivering 2 – 3 times the clamping capacity in the same physical envelope.

Re-designed handle can accommodate DE-STA-CO Toggle-Lock Plus™ technology for added safety.

Unique design allows the spindle to contact the workplace vertically to minimize part movement and marring.

Wear-resistant, anti-friction bushings at all pivot points, and high-strength work-hardened materials deliver extended life with minimal maintenance.

Longer clamping arm completely clears workpiece for easy loading and unloading.



Longer handle with greater hand clearance for improved safety, elimination of pinch points and better ergonomics.

Additional mounting holes on 2002 & 2007 match legacy products for easy swapping.

Stop-point located near base for enhanced durability.

Model no.	Holding Capacity	DE-STA-CO Legacy vs. New Generation
202-U	200 lbs.	Stayed ahead of competition by changing to "World Clamp" design in 2003 with longer handle, bar guides and robust handle.
2002-U	600 lbs.	**3 X LEGACY CAPACITY** (Lean design can be used in place of 207-U).
207-UO	375 lbs.	The Original Design.
2007-U	1,000 lbs.	**2-2/3 X LEGACY CAPACITY** (Lean design can be used in place of 247-U).
210-U	600 lbs.	Went to "World Clamp" design in 2003 with bar guide and robust hand stops.
2010-U	1,400 lbs.	**2-1/3 X LEGACY CAPACITY** (Lean design can be used in place of 247-U).

About DE-STA-CO

DE-STA-CO, a Dover Company, was founded in 1915. In 1936 the company designed and manufactured the first manual toggle clamp.

Innovations, quality and acquisitions have made DE-STA-CO the worldwide leader in the design, manufacture and support of clamping, gripping, transferring and robotic tooling solutions for workplace and flexible automation needs.

The family of brands has enabled DE-STA-CO to establish leading productivity improvement and cost-reduction manufacturing solutions for our customers using the breadth of products and value-added services we offer.

Our customer base covers a wide range of industries requiring a global customer service network offering consistent solutions and program support. With over 85 years of experience, DE-STA-CO brings a quality philosophy unsurpassed by its counterparts.

DE-STA-CO Lean Initiative

The DE-STA-CO family of companies is committed to being a lean resource for its customers, providing ways to eliminate waste in manufacturing processes through the use of optimal clamping and automation solutions that eliminate bottlenecks.

DE-STA-CO's wide range of products allows the company to offer its customers an Automation Continuum™ providing solutions that increase profitability and efficiency, while reducing waste.

Product Warranty

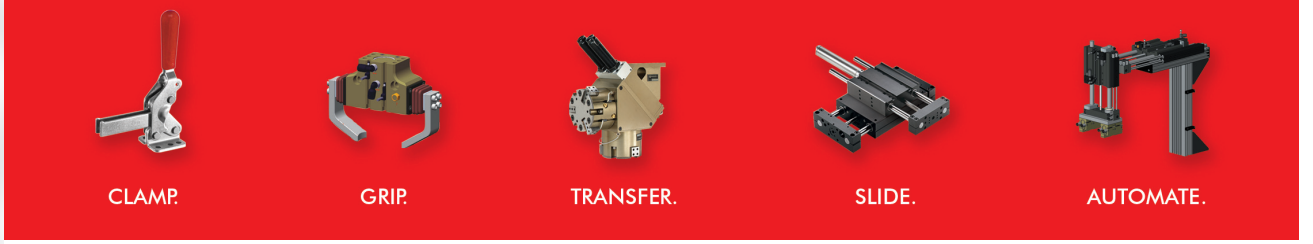
All DE-STA-CO Industrial Products are thoroughly inspected and tested. We fully guarantee all materials and workmanship to be free of defects. Any product that is found to be defective in design, material or workmanship in the course of its normal use will be promptly replaced.

This Warranty does not apply to any product where the failure is a result of misapplication or abuse, nor is there any Warranty expressed or implied as to the merchantability or fitness for a particular purpose of the product and any warranty is limited to the above express warranty.

This Warranty is null and void if the product is repaired, modified or altered in any way.

DE-STA-CO is not liable for labor, special, direct, incidental, or consequential damages and under no circumstances any charges in excess of the invoice amount of the product proven to be defective.

So Many Possibilities. One Company.



DE-STA-CO

A DOVER COMPANY

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DGS09/06:WS_06:Rev09/06 10K