

# CLAMPS

Hytec'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 actuator 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 the 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.

Hytec 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. Swings of 0° (straight pull) and 90° (both right and left hand) are available. 30°, 45° and 60° rotations are available in some sizes.

Hytec offers a wide range of mounting and plumbing options. Body styles include: threaded body, cartridge and manifold mount. With the threaded body, double-acting options, choose from top and bottom ports or both ports at the top in the 2,400 lb. capacity clamps.

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.

Rotation is specified by looking "down" at the piston rod end of the clamp. Clockwise rotation is designated as right hand rotation and counter-clockwise, left hand.

## Swing Clamps

Two separate actuators are used to perform the clamping function. First, a cylinder is used to swing the clamping arm 90° into position over the workpiece. Then a second cylinder is sequenced to pivot the clamping arm into contact with the workpiece and hold it in place.

An internal sequence valve controls and coordinates both the swinging and clamping actions. When hydraulic pressure is applied to the advance port, a piston causes the

## Retract Clamps

Very similar in operation to the swing clamps, with the exception of having the clamping arm move out toward the workpiece in a straight line rather than rotating 90°, making them ideal for applications where the shape of the fixture or part does not allow room for the clamp to swing.

An internal sequence valve controls and coordinates the retracting and clamping actions. When hydraulic pressure is applied to the advance port, a piston causes the clamping arm to extend into the clamped position. As pressure increases above 450 psi the sequence valve opens, causing the clamping piston to extend, which in turn causes the clamping arm to pivot and clamp the workpiece.

When pressure is released, the single-acting clamping cylinder's return spring retracts the clamping cylinder. At the same time, a return spring moves the clamping arm back to its un-clamped position. The retract mechanism is single- or double-acting and can be assisted with hydraulic or shop air pressure to return the clamping arm.

## Edge Clamp

Hytec'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.

## Die Clamp

Originally designed for die clamping, this clamp's unique mounting arrangement allows it to be used in a variety of workholding applications too. Just use a riser block the same thickness as the workpiece.



clamping arm to swing into the clamped position. As pressure goes above 450 psi, the sequence valve opens, causing the clamping piston to extend, which causes the clamping arm to pivot and clamp the workpiece.

When pressure is released, the single-acting clamping cylinder's return spring retracts the clamping cylinder. At the same time, a return spring in the swing mechanism moves the clamping arm back to its unclamped position. The swing mechanism is single- or double-acting, and can be assisted with hydraulic or shop air pressure to return the clamping arm.



# Hytec's Live-Roller Swing Clamp Design

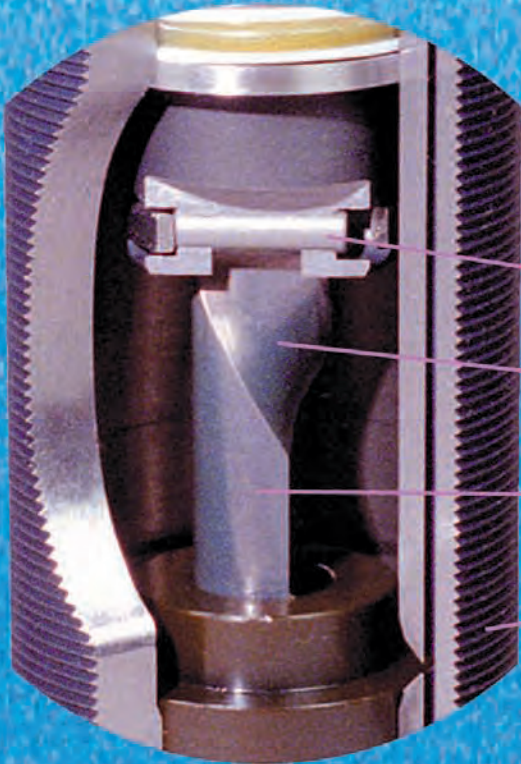
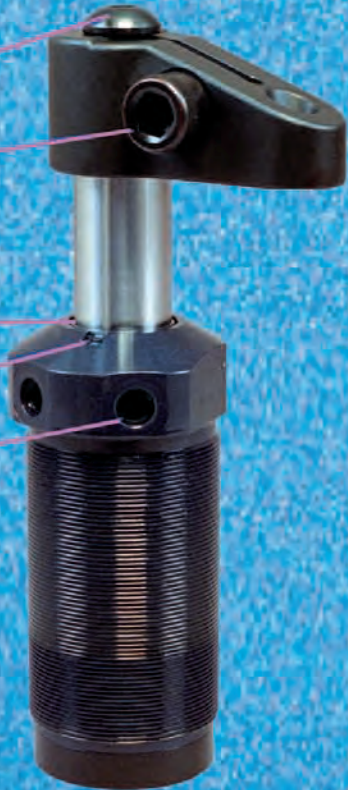
LOW PROFILE, BUTTON HEAD CAP SCREW  
ALLOWS EASIER ASSEMBLY AND DISASSEMBLY

ARM CLAMPS TO PISTON ROD  
MINIMIZES DEFLECTION

RECESSED WIPER SEAL  
RESISTS CONTAMINATION

DRAIN CHANNELS  
CHANNELS CONTAMINANTS AWAY FROM SEAL

TOP PORT DESIGN  
SIMPLIFIES PLUMBING AND VENTING



UNIQUE "LIVE-ROLLER" DESIGN  
ABSORBS LOAD OVER ENTIRE LENGTH

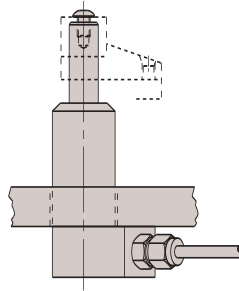
MULTIPLE ROTATION OPTIONS  
ADDS DESIGN VERSATILITY

HEAT TREATED CAM  
INCREASES STRENGTH

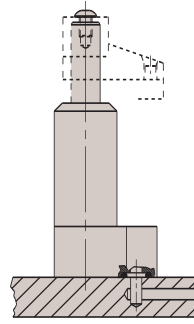
100% CORROSION RESISTANT  
INCREASES UPTIME



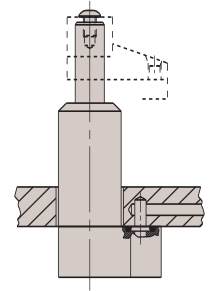
Hytec swing clamps are available in numerous mounting and porting configurations. Here are just a few examples of ways to include these clamps into your fixture designs.



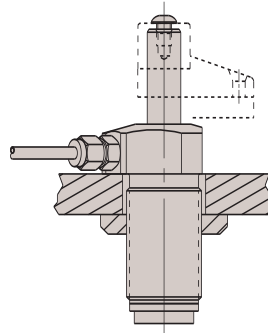
Lower Flange  
Conventional Plumb



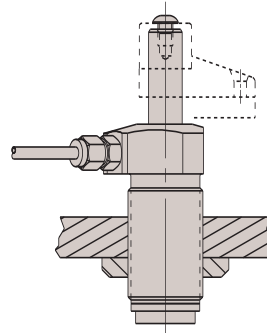
Lower Flange  
Manifold Mount



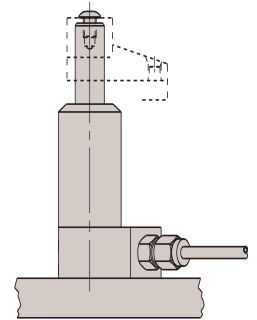
Lower Flange  
Manifold Mount



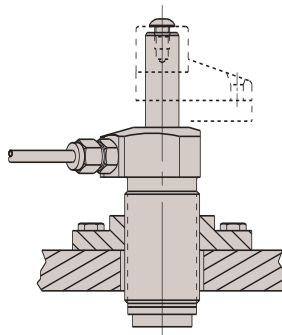
Threaded Body  
with Jam Nut



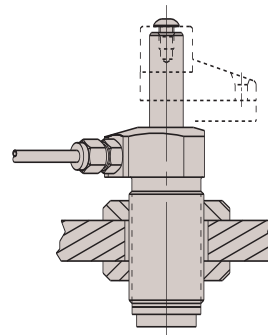
Threaded Body  
with Jam Nut



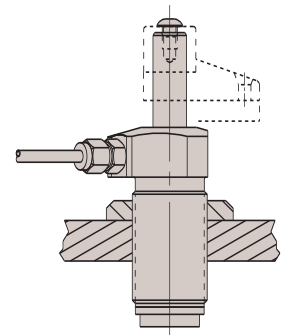
Lower Flange  
Conventional Plumb



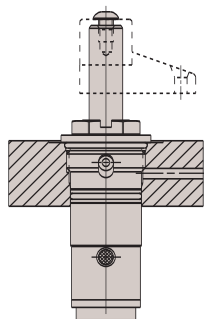
Threaded Body  
With Mounting Bracket



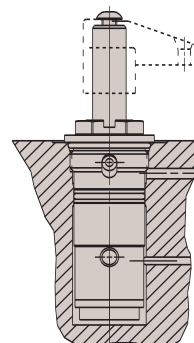
Threaded Body  
With Jam Nut



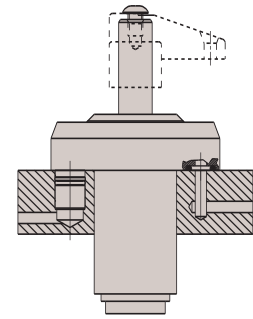
Threaded Body  
With Jam Nut



Cartridge Style  
Single Acting



Cartridge Style  
Double Acting



Upper Flange  
Double Acting

# Swing/Pull Clamps - Threaded Body Style - 365 lbs.



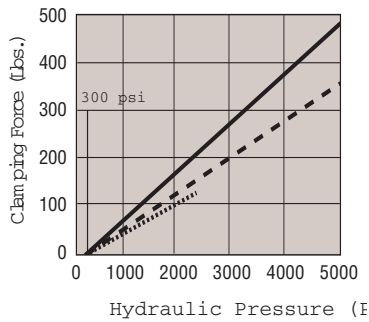
Swing/Pull Clamps - Threaded Body Style - 365 lbs.



### Features:

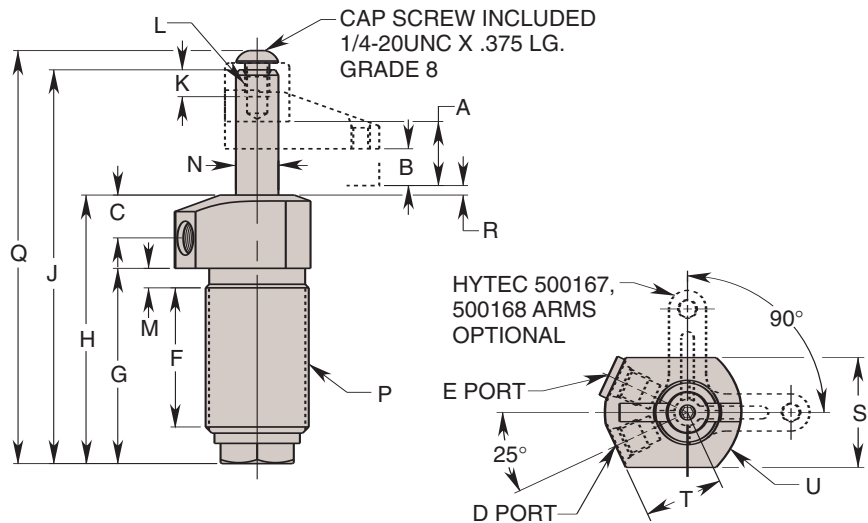
- Full thread provides wide range of precise height adjustment
- Simple installation/removal
- "Live Roller" design provides industry's most reliable swing/pull mechanism
  - Piston/Cam combination provides solid path for clamping action
  - Typical ball and groove mechanism has higher potential for clogging and for damage from mis-aligned work pieces
- Available in single and double acting versions
- Special rod wiper seal protects internal clamp components

- Unique drainage system channels contaminants away from clamp
- Corrosion resistant construction
- 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
- 5,000 psi max.
- Straight pull capacity 480 lbs. at 5,000 psi max.



### Performance

- ..... With Hytec No. 500168 (3.25" long)
- - - With Hytec No. 500167 (1.06" 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	D Clamp Port	E Unclamp Port
110001	Single-Acting	LH (Counter Clockwise)	365	.098	.065	.638	.320	.480	5/16-24 UNF SAE-2	Breather Plug †5/16-24 UNF SAE-2
110002		RH (Clockwise)								
110003		Straight Pull								
110004	Double-Acting	LH (Counter Clockwise)	365	.248	.163	.638	.320	.480	5/16-24 UNF SAE-2	Breather Plug †5/16-24 UNF SAE-2
110005		RH (Clockwise)								
110006		Straight Pull								

Cat. No.	Dimensions (In Inches)													
	F	G	H	J	K Thread Min.	L Thread Size	M	††N Dia.	P Thread Size	Q	R	S	T	U Radius
110001	1.418	2.000	2.750	4.032	.275	1/4-20 UNC	.200	.435	1 1/16-16 UN	4.229	.096	1.126	.810	.750
110002														
110003														
110004														
110005														
110006														
110126									1 1/16-16 UN	4.229	.096	1.186	.810	.750
110127														
110128														
110129														
110130														
110131														
110131														

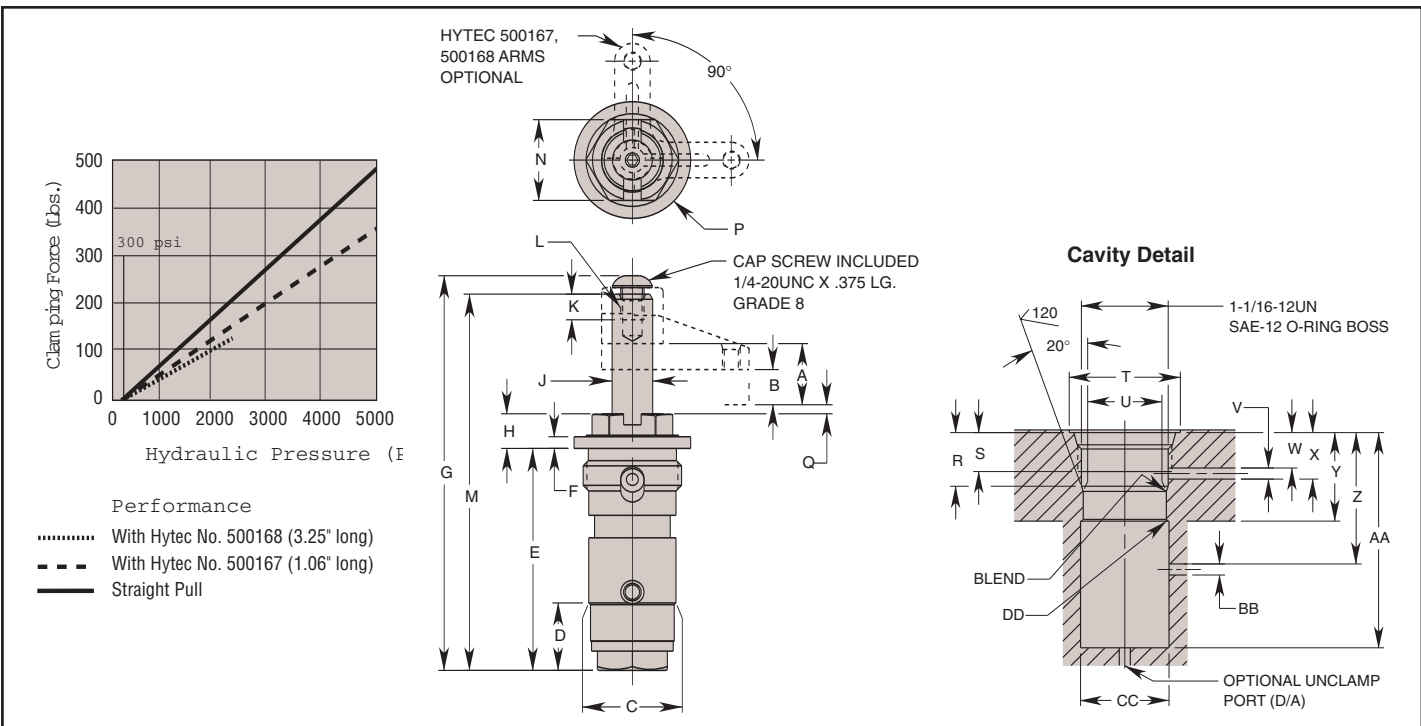
**Note:** \* With 1" arm at 5,000 psi max. operating pressure. Internal cam may be removed for an unguided straight pull. See page 58 for maximum operating speeds and rotation options.  
 † Do not pressurize - single acting only.  
 †† See page 59 for custom arm mounting.



**Features**

- Small footprint minimizes acreage on fixture
- Low profile reduces overall fixture height
- Manifold mounting eliminates exposed plumbing, reducing chip build-up on fixture
- "Live Roller" design provides industry's most reliable swing/pull mechanism
  - o Piston/Cam combination provides solid path for clamping action
  - o Typical ball and groove mechanism has higher potential for clogging and for damage from mis-aligned work pieces
- Simple cavity design enables faster fixture building
- Available in single and double acting versions

- Special rod wiper seal protects internal clamp components
- Unique drainage system channels contaminants away from clamp
- Corrosion resistant construction
- Heat treated, chrome plated piston rod
- Manifold mountable
- Unique "Live Roller" swing mechanism for increased service life
- Power-Tech™ heat 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.



Cat. No.	Oper.	Specifications				Dimensions (In Inches)											
		Swing Direction	*Force (Lbs.)	Eff. Area (Sq. In.)		Oil Cap. (Cu. In.)		A Total Stroke	B Clamping Stroke	C Dia.	D	E	F	G	H	††J Dia.	K Min. Thd.
110013	Single-Acting	LH (Counter Clockwise)	365	.098	—	.065	.638	.320	.935	.723	2.379	.125	4.229	.371	.435	.275	1/20 UNC
110014		RH (Clockwise)															
110015		Straight Pull															
110016	Double-Acting	LH (Counter Clockwise)	365	.248	.163	.638	.320	.935	.723	2.379	.125	4.229	.371	.435	.275	1/20 UNC	
110017		RH (Clockwise)															
110018		Straight Pull															

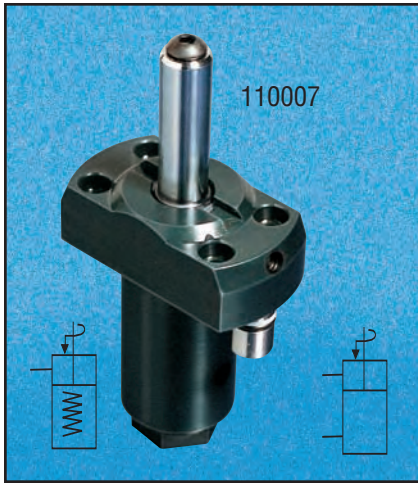
Cat. No.	Dimensions (In Inches)				Mounting Dimensions (In Inches)													
	M	N Hex	P Dia.	Q	R	S Min. Thd.	T Dia. Min.	U Dia.	V Clamp Port Dia. Min.	W Min.	X Max.	Y Min.	Z Min.	AA Min.	BB Unclamp Port Dia. Min.	CC Dia. Min.	DD Chamfer Max.	
110013	4.032	.875	1.250	.096	.596	.440	1.255	.937	.125	.400	.596	1.000	—	2.431	.125	1.000	.020	
110014																		
110015																		†Vent
110016																		
110017																		
110018																		

**Note:** \* With 1.00" arm at 5,000 psi max. operating pressure.  
 † Do not pressurize - single acting only. Cavity must be vented.  
 †† See page 59 for custom arm mounting. See page 58 for maximum operating speeds and rotation options.  
 Internal cam may be removed for an unguided straight pull. See operating instructions for additional port details.

# Swing/Pull Clamp - Manifold Mount - Upper Flange Style - 365lbs.



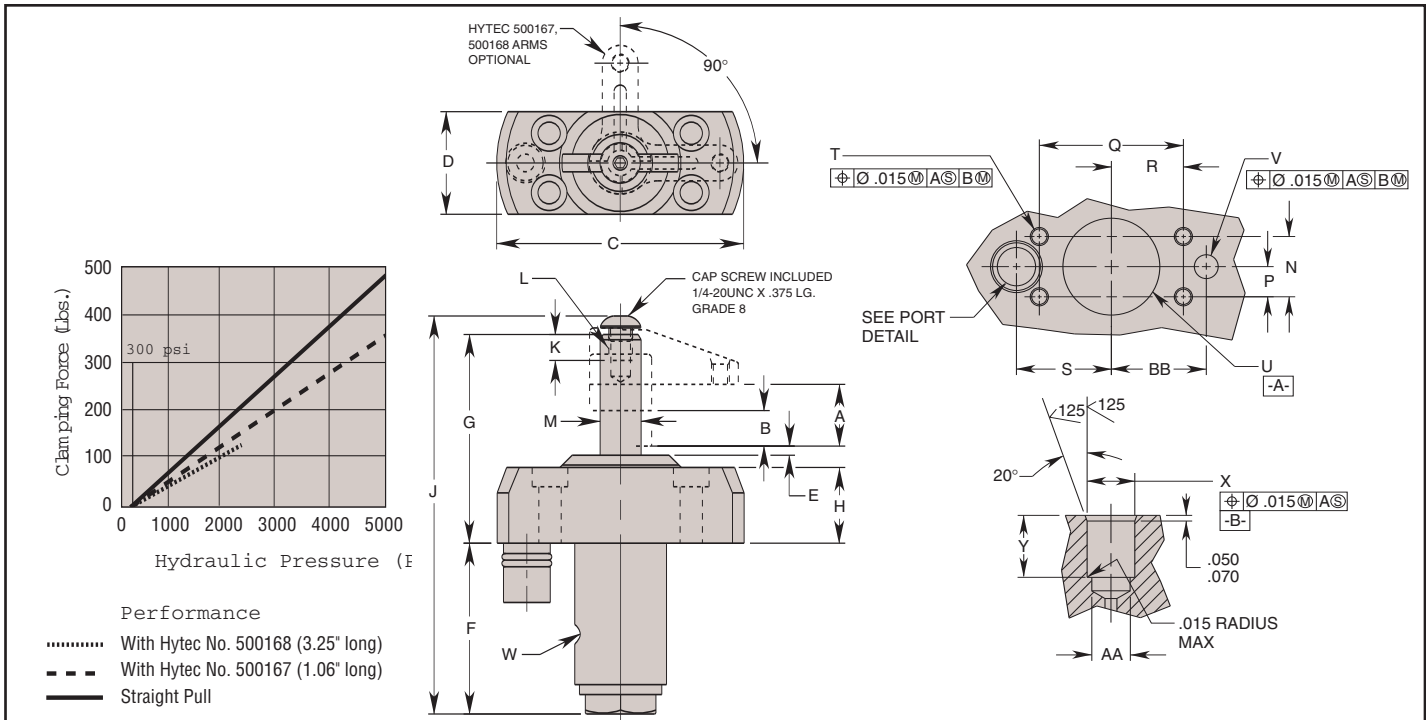
Swing/Pull Clamp - Manifold Mount - Upper Flange Style - 365 lbs.



### Features

- Unique connector bushing provides positive mating with fixture, reducing the potential for leakage or weeping.
- Simple cavity design eliminates need for threaded holes in mating surfaces
- Manifold design eliminates external plumbing and reduces fixture height
- "Live Roller" design provides industry's most reliable swing/pull mechanism
  - o Piston/Cam combination provides solid path for clamping action
  - o Typical ball and groove mechanism has higher potential for clogging and for damage from mis-aligned work pieces
- Available in single and double acting versions

- Special rod wiper seal protects internal clamp components
- Unique drainage system channels contaminants away from clamp
- Corrosion resistant construction
- Heat treated, chrome plated piston rod
- Manifold mountable
- Unique "Live Roller" swing mechanism for increased service life
- Power-Tech™ heat treated body and hardened cam for long wear and corrosion resistance
- Single- and double-acting models are dimensionally interchangeable
- Straight pull capacity 480 lbs. at 5,000 psi max.



Cat. No.	Oper.	Specifications				Dimensions (In Inches)											
		Swing Direction	*Force (Lbs.)	Eff. Area (Sq. In.)		Oil Cap. (Cu. In.)		A Total Stroke	B Clamping Stroke	C Dia.	D	E	F	G	H	J	K Min. Thd.
110007	Single-Acting	LH (Counter Clockwise)	365	.098	—	.065	.638	.320	2.624	1.090	.096	1.815	2.217	.805	4.229	.275	1/4-20 UNC
110008		RH (Clockwise)															
110009		Straight Pull															
110010	Double-Acting	LH (Counter Clockwise)	365	.098	.248	.163	.638	.320	2.624	1.090	.096	1.815	2.217	.805	4.229	.275	1/4-20 UNC
110011		RH (Clockwise)															
110012		Straight Pull															

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.	
110007	††.435	.632	.316	1.510	.755	.995	10-24 UNC	1.000	1.030	—	†Vent	.500	.640	.481	.995
110008															
110009															
110010															
110011															
110012															

**Note:** \* With 1.00" arm at 5,000 psi max. operating pressure.  
 † Do not pressurize - single acting only.  
 †† See page 59 for custom arm mounting.  
 Internal cam may be removed for an unguided straight pull.

See page 58 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.

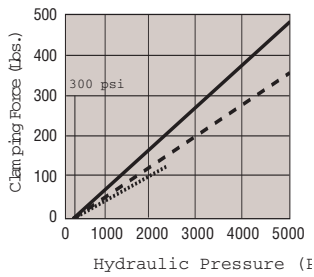
110144



**Features**

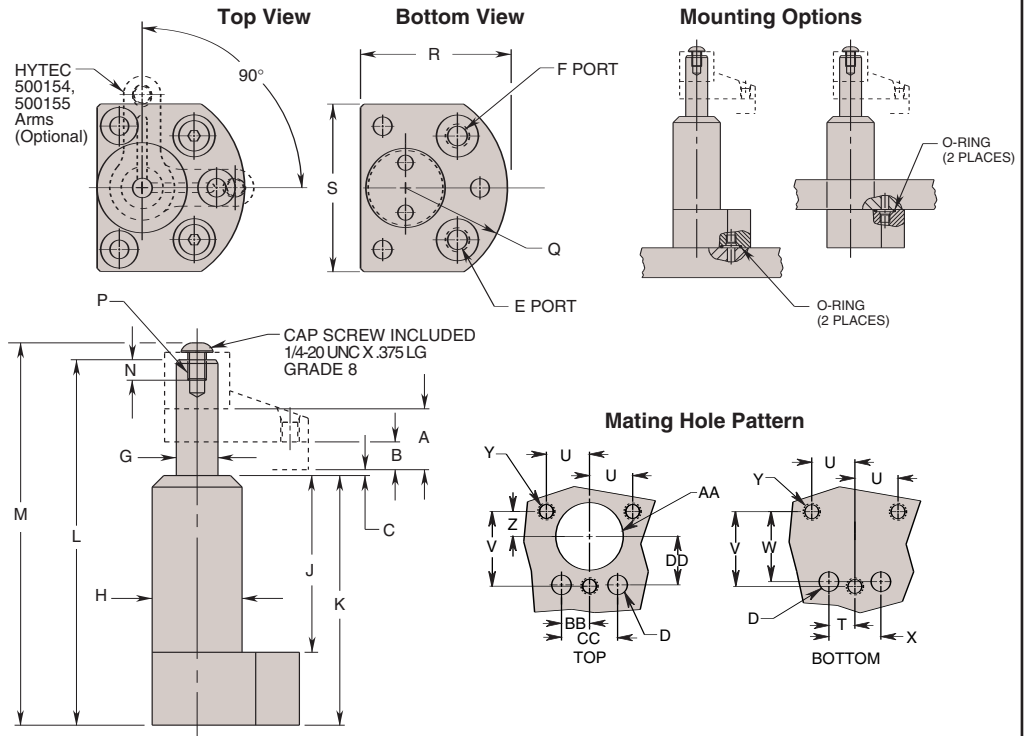
- Manifold design eliminates external plumbing and reduces fixture height
- “Live Roller” design provides industry’s most reliable swing/pull mechanism
  - o Piston/Cam combination provides solid path for clamping action
  - o Typical ball and groove mechanism has higher potential for clogging and for damage from mis-aligned work pieces
- Available in single and double acting versions
- Special rod wiper seal protects internal clamp components
- Unique drainage system channels

- contaminants away from clamp
- Corrosion resistant construction
- Heat treated, chrome plated piston rod
- Manifold mountable
- Unique “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 480 lbs. at 5,000 psi max.
- Flange top or bottom mounting



**Performance**

- ..... With Hytec No. 500168 (3.25" long)
- With Hytec No. 500167 (1.06" 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 Stroke	C	†††D Port Dia.	E Clamp Port	F Unclamp Port	††G Dia.	H Dia.									
				Clamp	Unclamp	Clamp	Unclamp																	
110144	Single-Acting	LH (Counterclockwise)	365	.098	—	.065	.638	.320	.096	.309 Max.	5/16-24 UNF SAE-2	Breather Plug †5/16-24 UNF SAE-2	.435	1.070										
110145		RH (Clockwise)																						
110146		Straight Pull																						
110147	Double-Acting	LH (Counterclockwise)													.248	.163	.638	.320	.096	.309 Max.	5/16-24 UNF SAE-2	5/16-24 UNF SAE-2	.435	1.070
110148		RH (Clockwise)																						
110149		Straight Pull																						

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	Z	AA Dia.	BB	CC	DD
110144	1.800	2.780	4.045	4.302	.275	5/16-24 UNC	1.250	1.870	1.770	.412	.684	1.185	1.110	.824	10-24 UNC	.395	1.095	.445	.890	.770
110145																				
110146																				
110147																				
110148																				

**NOTE:** \* With 1.00" long arm at 5,000 psi maximum operating pressure. ††† 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.  
 † Do not pressurize - single-acting only.  
 †† See page 59 of H05 for custom arm mounting. Internal cam may be removed for an unguided straight pull. See page 58 of H05 for maximum operating speeds.

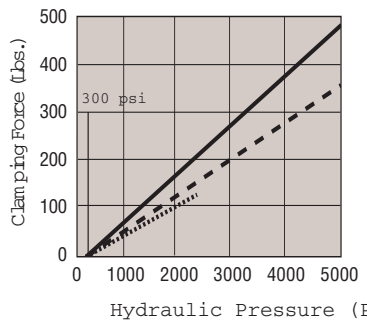
# Swing/Pull Clamp - Surface Mount - Externally Plumbed - Lower Flange Style - 365 lbs.



### Features

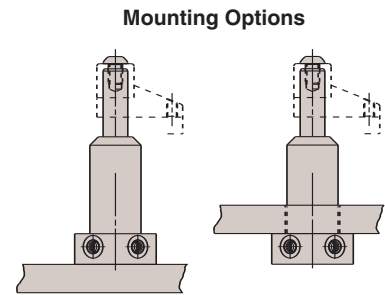
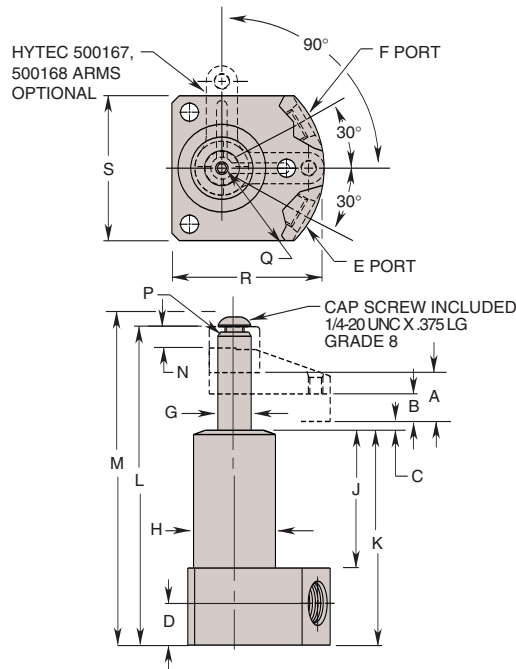
- External plumbing eliminates need to gun drill additional ports in fixture
- Can be inserted from above or below fixture plate
  - o Top mounting provides extra height to accommodate large work pieces
  - o Top mounting does not require drilling of large fixture hole

- Special rod wiper seal protects internal clamp components
- Corrosion resistant construction
- Heat treated, chrome plated piston rod
- Power-Tech® treated body and hardened cam for long wear and corrosion resistance

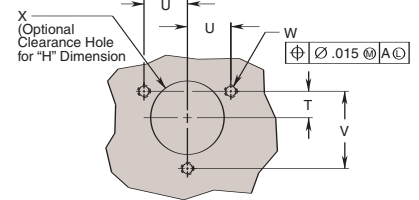


### Performance

- ..... With HYTEC No. 500168 (3.25" long)
- With HYTEC No. 500167 (1.06" long)
- Straight Pull



### Mating Hole Pattern



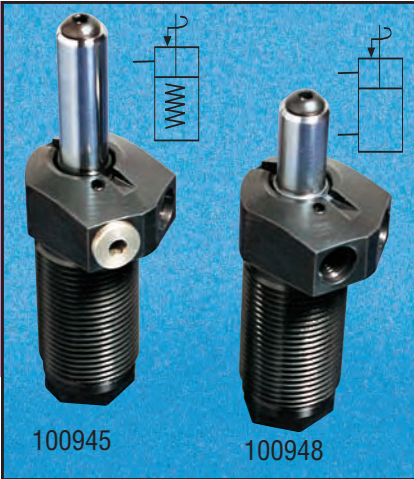
Cat. No.	Specifications							Dimensions (In Inches)						
	Oper.	Swing Direction	*Force (Lbs.)	Eff. Area (Sq. In.)	Oil Cap. (Cu. In.)	A Total Stroke	B Clamping Stroke	C	D	E Clamp Port	F Unclamp Port	††G Dia.	H Dia.	
110150	Single-Acting	LH (Counterclockwise)	365	.098	.065	.638	.320	.096	.540	1/8-20 UNF SAE-4	Breather Plug 1/8-20 UNF †SAE-4	.435	1.070	
110151		RH (Clockwise)												
110152		Straight Pull												
110153	Double-Acting	LH (Counterclockwise)	.248	.163	.638	.320	.096	.540	1/8-20 UNF SAE-4	1/8-20 UNF SAE-4	.435	1.070		
110154		RH (Clockwise)												
110155		Straight Pull												

Cat. No.	Dimensions (In Inches)													
	J	K	L	M	N Thread Min.	P Thread Size	Q Radius	R	S	T	U	V	W Thread Size	X Dia.
110150	1.800	2.780	4.045	4.302	.275	1/4-20 UNC	1.250	1.870	1.770	.395	.684	1.185	10-24 UNC	1.095 1.125
110151														
110152														
110153														
110154														
110155														

NOTE: \* With 1.00" long arm at 5,000 psi max. operating pressure.  
 † Do not pressurize - single-acting only.  
 †† See page 59 of H05 for custom arm mounting.

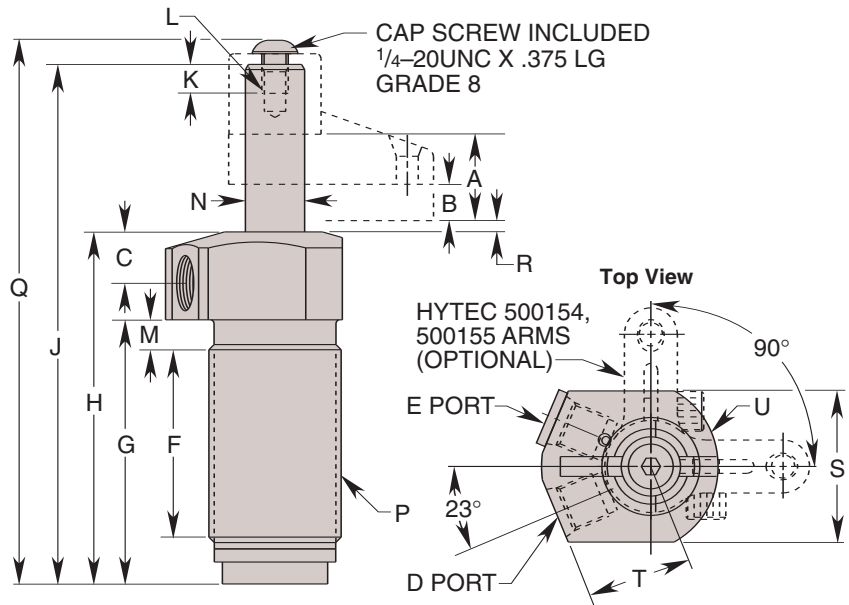
Internal cam may be removed for an unguided straight pull.  
 See page 58 of H05 for maximum operating speeds and rotation options.





**Features:**

- Full thread provides wide range of precise height adjustment
- Simple installation/removal
- “Live Roller” design provides industry’s most reliable swing/pull mechanism
  - o Piston/Cam combination provides solid path for clamping action
  - o Typical ball and groove mechanism has higher potential for clogging and for damage from mis-aligned work pieces
- Available in single and double acting versions
- Special rod wiper seal protects internal clamp components
- Unique drainage system channels contaminants away from clamp
- Corrosion resistant construction
- 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
- Single and double acting models are dimensionally interchangeable
- Straight pull cap. 950 lbs. at 5,000 psi max (without arms).



Cat. No.	Specifications					Dimensions (In Inches)							
	Oper.	Swing Direction	*Force (Lbs.)	Eff. Area (Sq. In.)		Oil Cap. (Cu. In.)		A Total Stroke	B Clamping Stroke	C	D Clamp Port	E Unclamp Port	F
				Clamp	Unclamp	Clamp	Unclamp						
100945	Single-Acting	Left Hand (Counter Clockwise)	750	.195	-	.160	.818	.345	.492	7/16-20UNF SAE-4	Breather Plug 7/16-20UNF SAE-4†	1.770	
100946		Right Hand (Clockwise)											
100947		Straight Pull											
100948	Double-Acting	Left Hand (Counter Clockwise)	750	.195	.441	.360	.818	.345	.492	7/16-20UNF SAE-4	Breather Plug 7/16-20UNF SAE-4†	1.770	
100949		Right Hand (Clockwise)											
100950		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
100945													
100946													
100947													
100948	2.497	3.327	4.912	.275	1/4-20UNC	.283	.560	1 1/4-12UNF	5.139	.108	1.428	.995	.823
100949													
100950													

**NOTE:** \* With 1.25" long arm at 5,000 psi maximum operating pressure.  
 † Do not pressurize – single-acting only.  
 †† See page 59 for custom arm mounting.  
 Internal cam may be removed for an unguided straight pull.  
 See page 58 for maximum operating speeds.

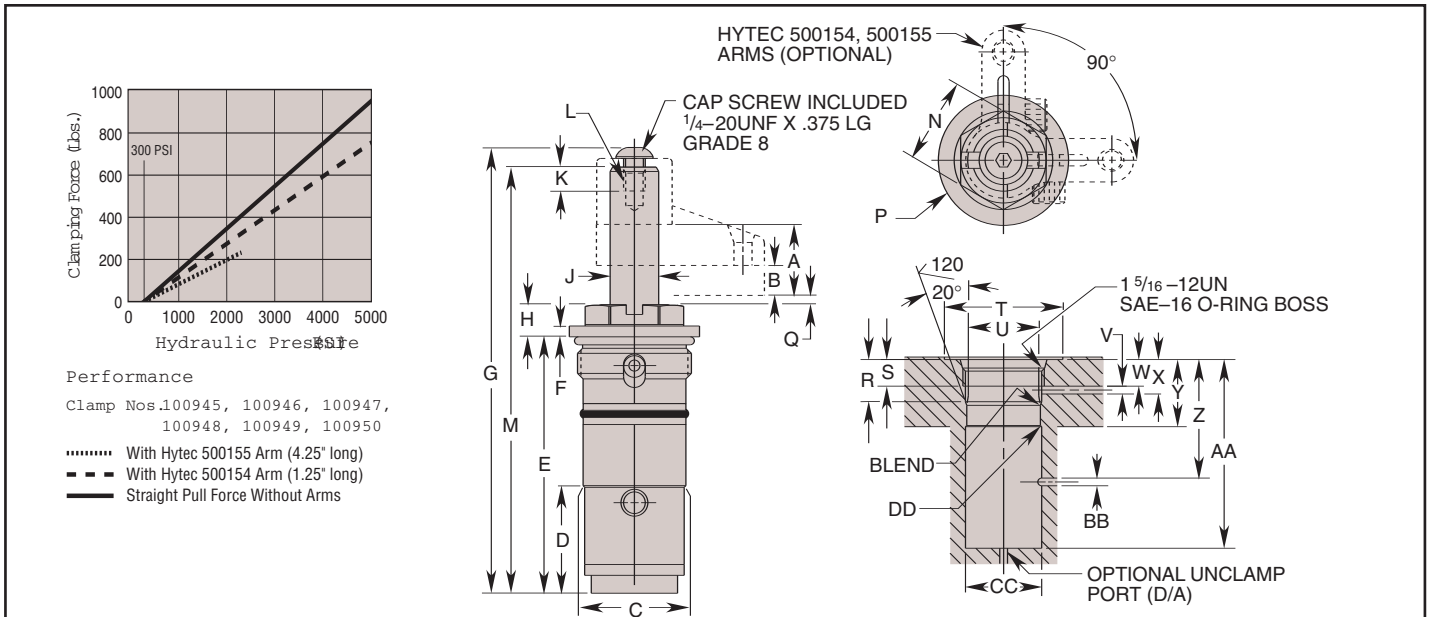
# Swing/Pull Clamps - Cartridge Style - 750 lbs.



### Features:

- Small footprint minimizes acreage on fixture
- Low profile reduces overall fixture height
- Manifold mounting eliminates exposed plumbing, reducing chip build-up on fixture
- "Live Roller" design provides industry's most reliable swing/pull mechanism
  - o Piston/Cam combination provides solid path for clamping action
  - o Typical ball and groove mechanism has higher potential for clogging and for damage from mis-aligned work pieces
- Simple cavity design enables faster fixture building
- Available in single and double acting versions

- Special rod wiper seal protects internal clamp components
- Unique drainage system channels contaminants away from clamp
- Corrosion resistant construction
- Heat treated, chrome plated piston rod
- Manifold mountable
- Unique "Live Roller" swing mechanism for increased service life
- Power-Tech™ treated body and hardened cam for long wear and corrosion resistance
- Single and double-acting models are dimensionally interchangeable.
- Straight pull capacity 950 lbs. at 5,000 psi maximum



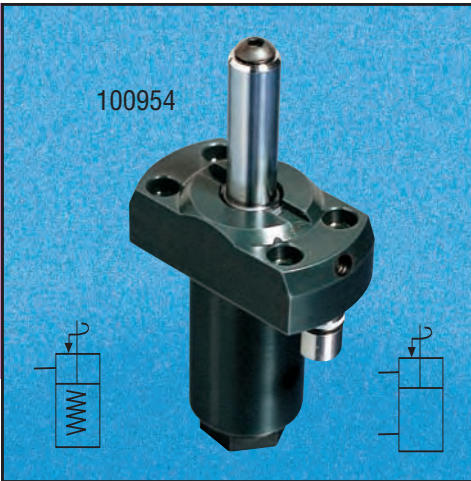
Cat. No.	Oper.	Specifications						Dimensions (In Inches)									
		Swing Direction	*Force (Lbs.)	Eff. Area (Sq. In.)		Oil Cap. (Cu. In.)		A Total Stroke	B Clamping Stroke	C Dia.	D	E	F	G	H	†J Dia.	
				Clamp	Unclamp	Clamp	Unclamp										
100951	Single-Acting	Left Hand (Counter Clockwise)	750	.195	-	.160	.818	.345	1.185	1.245	2.956	.125	5.139	.371	.560		
100952		Right Hand (Clockwise)															
100953		Straight Pull															
100957	Double-Acting	Left Hand (Counter Clockwise)	750	.195	.441	.360	.818	.345	1.185	1.245	2.956	.125	5.139	.371	.560		
100958		Right Hand (Clockwise)															
100959		Straight Pull															

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.	
100951	.275	1/4-20UNC	4.912	1.000	1.500	.108	.665	.430	1.560	1.187	.125	.430	.604	-	1.912	3.044	.125	1.187	.020	
100952																				†Vent
100953																				
100957																				
100958																				
100959																				

**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 59 for custom arm mounting.  
 Internal cam may be removed for an unguided straight pull. See operating instructions for additional port details.  
 See page 58 for maximum operating speeds.

# SPX HYTEC® Swing/Pull Clamp - Manifold Mount - Upper Flange Style - 750lbs.

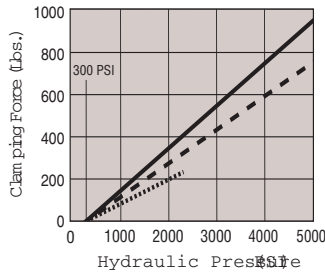
Swing/Pull Clamp - Manifold Mount - Upper Flange Style - 750 lbs.



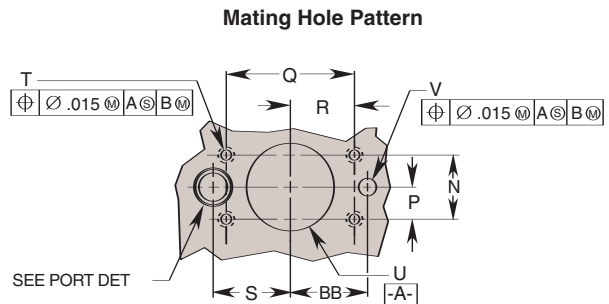
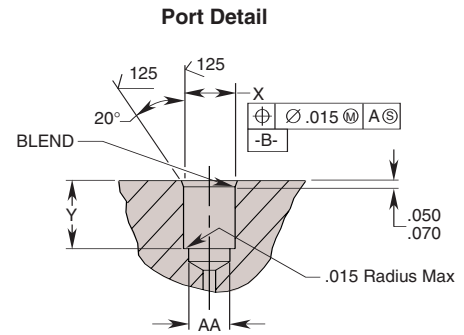
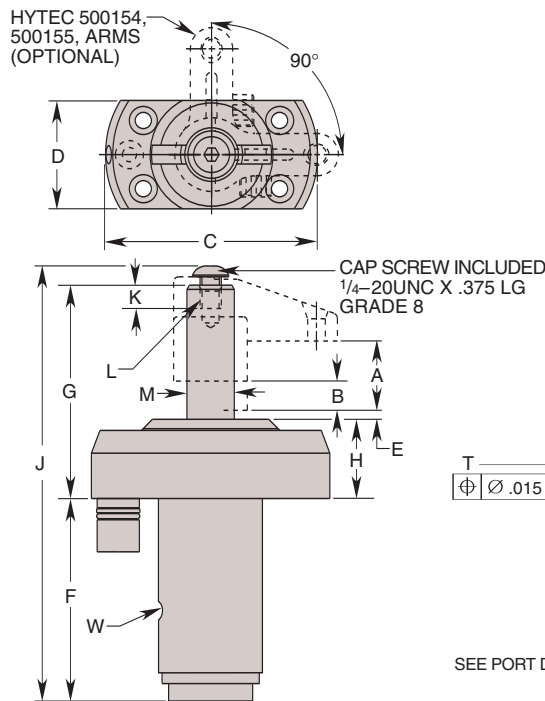
### Features

- Unique connector bushing provides positive mating with fixture, reducing the potential for leakage or weeping.
- Simple cavity design eliminates need for threaded holes in mating surfaces
- Manifold design eliminates external plumbing and reduces fixture height
- "Live Roller" design provides industry's most reliable swing/pull mechanism
  - o Piston/Cam combination provides solid path for clamping action
  - o Typical ball and groove mechanism has higher potential for clogging and for damage from mis-aligned work pieces

- Available in single and double acting versions
- Special rod wiper seal protects internal clamp components
- Unique drainage system channels contaminants away from clamp
- Corrosion resistant construction
- Heat treated, chrome plated piston rod
- Manifold mountable
- Unique "Live Roller" swing mechanism for increased service life
- Power-Tech™ treated body and hardened cam for long wear and corrosion resistance
- Single- or double-acting
- Straight pull capacity 950 lbs. at 5,000 psi maximum



**Performance**  
 Clamp Nos. 100954, 100955, 100956, 100976, 100977, 100978  
 ..... With Hytec 500155 Arm (4.25' long)  
 - - - - With Hytec 500154 Arm (1.25' long)  
 ——— Straight Pull



Cat. No.	Oper.	Specifications				Dimensions (In Inches)									
		Swing Direction	*Force (Lbs.)	Eff. Area (Sq.In.) Clamp    Unclamp	Oil Cap. (Cu. In.)	A Total Stroke	B Clamping Stroke	C Dia.	D	E	F	G	H	J	
100954	Single-Acting	Left Hand (Counter Clockwise)	750	.195	.160	.818	.345	2.817	1.440	.108	2.392	2.520	.935	5.139	
100955		Right Hand (Clockwise)													
100956		Straight Pull													
100976	Double-Acting	Left Hand (Counter Clockwise)	750	.441	.160	.818	.345	2.817	1.440	.108	2.392	2.520	.935	5.139	
100977		Right Hand (Clockwise)													
100978		Straight Pull													

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	W	X Dia.	Y	AA Dia. Max.	BB Mounting			
100954	.275	1/4-20 UNC	.560	.906	.453	1.812	.906	1.091	10-24 UNC	1.223	1.253	-	† Vent	.500	.640	.481	-		
100955												††.250	-					.503	.660
100956																			
100976																			
100977																			
100978												1.091							

**NOTE:** \* With 1.25" long arm at 5,000 psi maximum operating pressure.  
 † Do not pressurize - single-acting only.  
 †† See page 59 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.

# Swing/Pull Clamp - Manifold Mount - Lower Flange Style - 750 lbs.



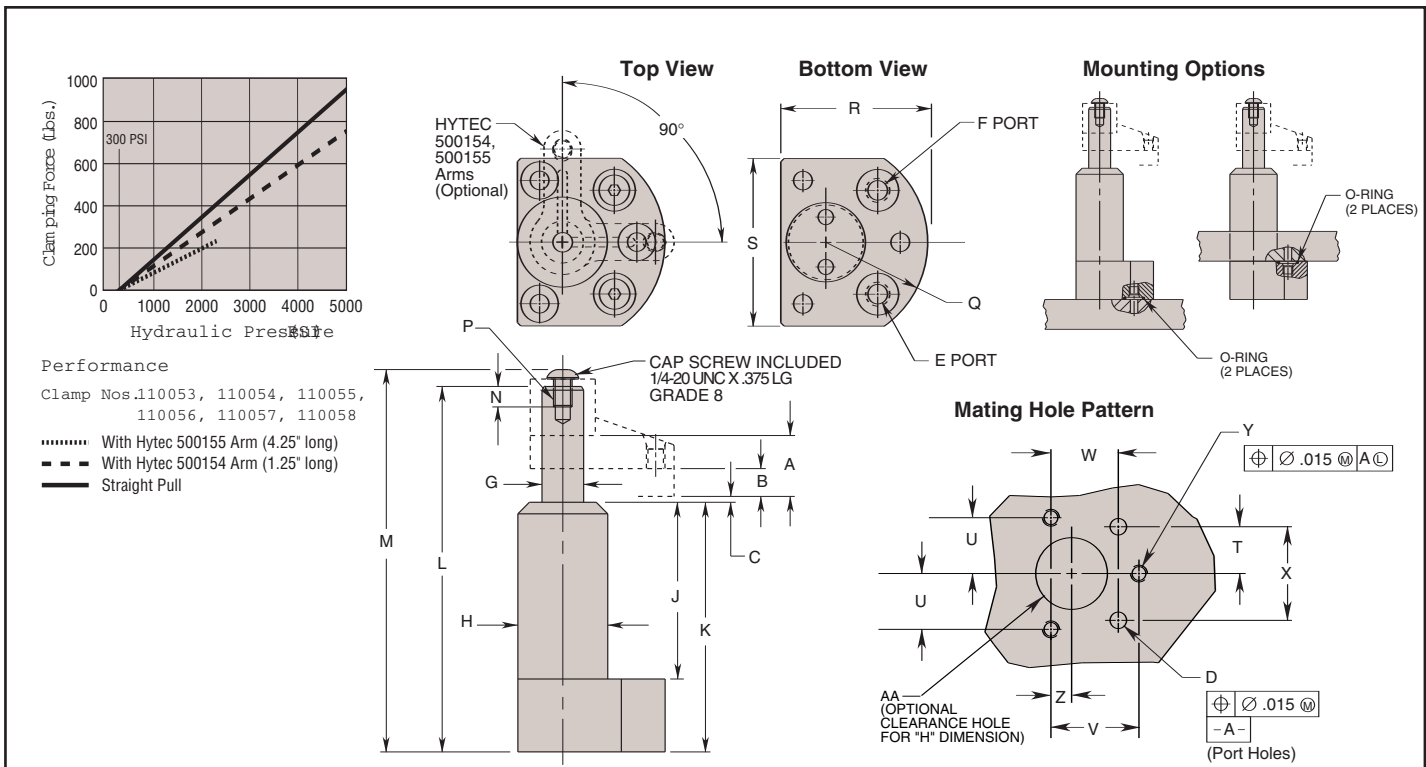
Swing/Pull Clamp - Manifold Mount - Lower Flange Style - 750 lbs.



### Features

- Manifold design eliminates external plumbing and reduces fixture height
- "Live Roller" design provides industry's most reliable swing/pull mechanism
  - Piston/Cam combination provides solid path for clamping action
  - Typical ball and groove mechanism has higher potential for clogging and for damage from mis-aligned work pieces
- Available in single and double acting versions
- Special rod wiper seal protects internal clamp components
- Unique drainage system channels

- contaminants away from clamp
- Corrosion resistant construction
- Heat treated, chrome plated piston rod
- Manifold mountable
- Unique "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.
- Flange top or bottom mounting



Cat. No.	Specifications							Dimensions (In Inches)							
	Oper.	Swing Direction	*Force (Lbs.)	Eff. Area (Sq. In.)		Oil Cap. (Cu. In.)		A Total Stroke	B Clamping Stroke	C	†††D Port Dia.	E Clamp Port	F Unclamp Port	††G Dia.	H Dia.
				Clamp	Unclamp	Clamp	Unclamp								
110056	Single-Acting	LH (Counterclockwise)	750	.195	—	.160	.818	.345	.108	.309 Max.	SAE O-Ring	†Vent	.560	1.210	
110057		RH (Clockwise)													
110058		Straight Pull													
110053	Double-Acting	LH (Counterclockwise)	750	.441	.360	.818	.345	.108	.309 Max.	SAE O-Ring	†Vent	.560	1.210		
110054		RH (Clockwise)													
110055		Straight Pull													

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	Z	AA Dia.
110056																	
110057																	
110058	2.379	3.359	4.912	5.138	.275	1/4-20 UNC	1.375	1.995	2.250	.696	.827	1.306	1.002	1.392	1/4-20 UNC	.306	1.235
110053																	1.255
110054																	
110055																	

**NOTE:** \* With 1.25" long arm at 5,000 psi maximum operating pressure. ††† 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.

† Do not pressurize - single-acting only.

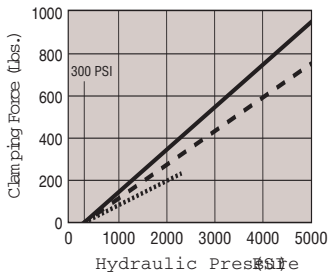
†† See page 59 for custom arm mounting. Internal cam may be removed for an unguided straight pull. See page 58 for maximum operating speeds.



**Features**

- External plumbing eliminates need to gun drill additional ports in fixture
- Can be inserted from above or below fixture plate
  - o Top mounting provides extra height to accommodate large work pieces
  - o Top mounting does not require drilling of large fixture hole
- Special rod wiper seal protects internal clamp components
- Corrosion resistant construction
- Heat treated, chrome plated piston rod
- Unique "Live Roller" swing mechanism for increased service life

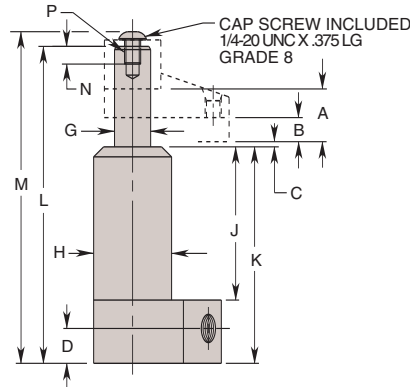
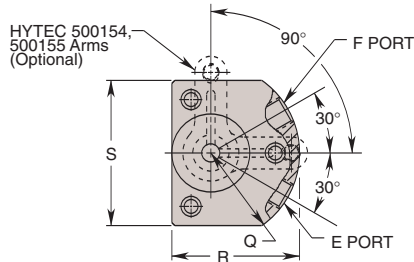
- Power-Tech® treated body and hardened cam for long wear and corrosion resistance
- Single-acting and double-acting models are dimensionally interchangeable
- Straight pull capacity 950 lbs. at 5,000 psi max.



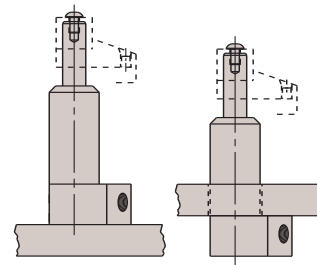
**Performance**

Clamp Nos. 110110, 110111, 110112, 110113, 110114, 110115

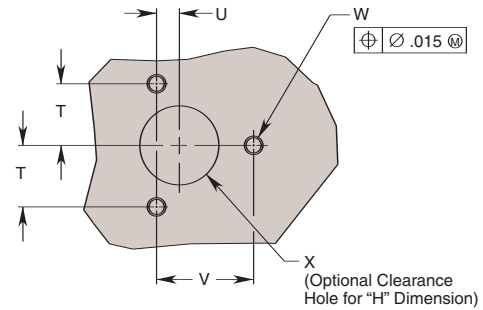
- With Hytec 500155 Arm (4.25" long)
- With Hytec 500154 Arm (1.25" long)
- Straight Pull



**Mounting Options**



**Mating Hole Pattern**



Cat. No.	Specifications						Dimensions (In Inches)							
	Oper.	Swing Direction	*Force (Lbs.)	Eff. Area (Sq. In.)		Oil Cap. (Cu. In.)		A Total Stroke	B Clamping Stroke	C	D	E Clamp Port	F Unclamp Port	
110110	Single-Acting	LH (Counterclockwise)	750	.195	—	.160	.818	.345	.108	.540	3/16-20 UNF SAE-4	†Breather Plug 3/16-20 UNF SAE-4		
110111		RH (Clockwise)												
110112		Straight Pull												
110113	Double-Acting	LH (Counterclockwise)											.441	.360
110114		RH (Clockwise)												
110115		Straight Pull												

Cat. No.	Dimensions (In Inches)															
	††G Dia.	H Dia.	J	K	L	M	N Thread Min.	P Thread Size	Q Radius	R	S	T	U	V	W Thread Size	X Dia.
110110																
110111																
110112	.560	1.210	2.379	3.359	4.912	5.138	.275	1/4-20 UNC	1.375	1.995	2.250	.827	.306	1.306	3/16-20 UNC	1.235
110113																1.255
110114																
110115																

**NOTE:** \* With 1.25" long arm at 5,000 psi maximum operating pressure.  
 † Do not pressurize - single-acting only.  
 †† See page 59 for custom arm mounting.

Internal cam may be removed for an unguided straight pull.  
 See page 58 for maximum operating speeds.

# Swing/Pull Clamps - Threaded Body Style - 1200 lbs.

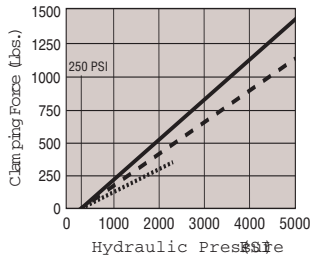


Swing/Pull Clamps - Threaded Body Style - 1200 lbs.

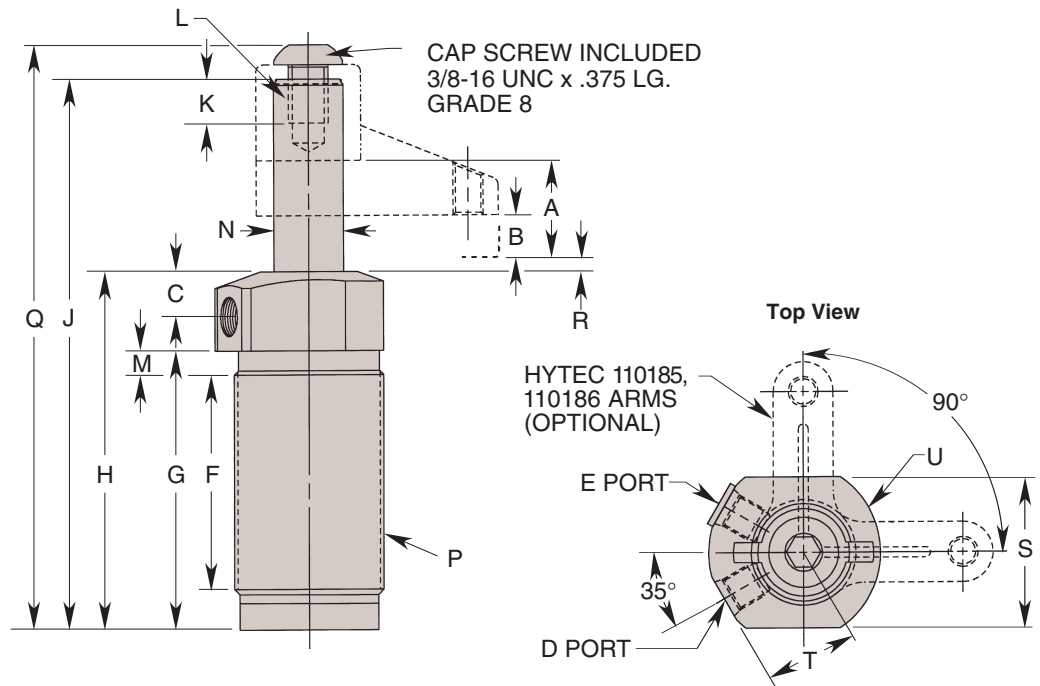


### Features:

- Full thread provides wide range of precise height adjustment
- Simple installation/removal
- "Live Roller" design provides industry's most reliable swing/pull mechanism
  - Piston/Cam combination provides solid path for clamping action
  - Typical ball and groove mechanism has higher potential for clogging and for damage from mis-aligned work pieces
- Available in single and double acting versions
- Special rod wiper seal protects internal clamp components
- Unique drainage system channels contaminants away from clamp
- Corrosion resistant construction
- 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
- Straight pull capacity 1,472 lbs. at 5,000 psi max



**Performance**  
 Clamp Nos. 110173, 110174, 110175, 110176, 110177, 110178  
 ..... With Hytec 110186 Arm (5.375" long)  
 - - - - With Hytec 110185 Arm (1.50" long)  
 ——— Straight Pull Force Without Arms



Cat. No.	Specifications						Dimensions (In Inches)						
	Oper.	Swing Direction	*Force (Lbs.)	Eff. Area (Sq. In.)		Oil Cap. (Cu. In.)		A Total Stroke	B Clamping Stroke	C	D Clamp Port	E Unclamp Port	F
				Clamp	Unclamp	Clamp	Unclamp						
110173	Single-Acting	Left Hand (Counter Clockwise)	1,200	.294	-	-	.873	.336	.632	7/16-20UNF SAE-4	Breather Plug 7/16-20UNF SAE-4†	1.937	
110174		Right Hand (Clockwise)											
110175		Straight Pull											
110176	Double-Acting	Left Hand (Counter Clockwise)	1,200	.294	.601	.530	.873	.336	.632	7/16-20UNF SAE-4	Breather Plug 7/16-20UNF SAE-4†	1.937	
110177		Right Hand (Clockwise)											
110178		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
110173	2.525	3.625	5.310	.275	3/8-16UNC	.225	.625	1-1/2-16UNF	5.610	.104	1.500	1.050	.940
110174													
110175													
110176													
110177													
110178													

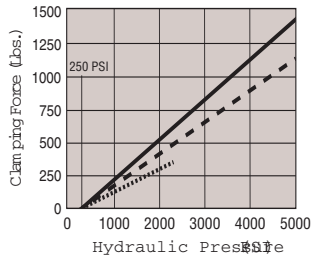
**NOTE:** † Do not pressurize - single-acting only. \*With 1.5" arm at 5,000 psi max. operating pressure. Internal cam may be removed for an unguided straight pull. See page 58 for maximum operating speeds and rotation options.  
 †† See page 59 for custom arm mounting.



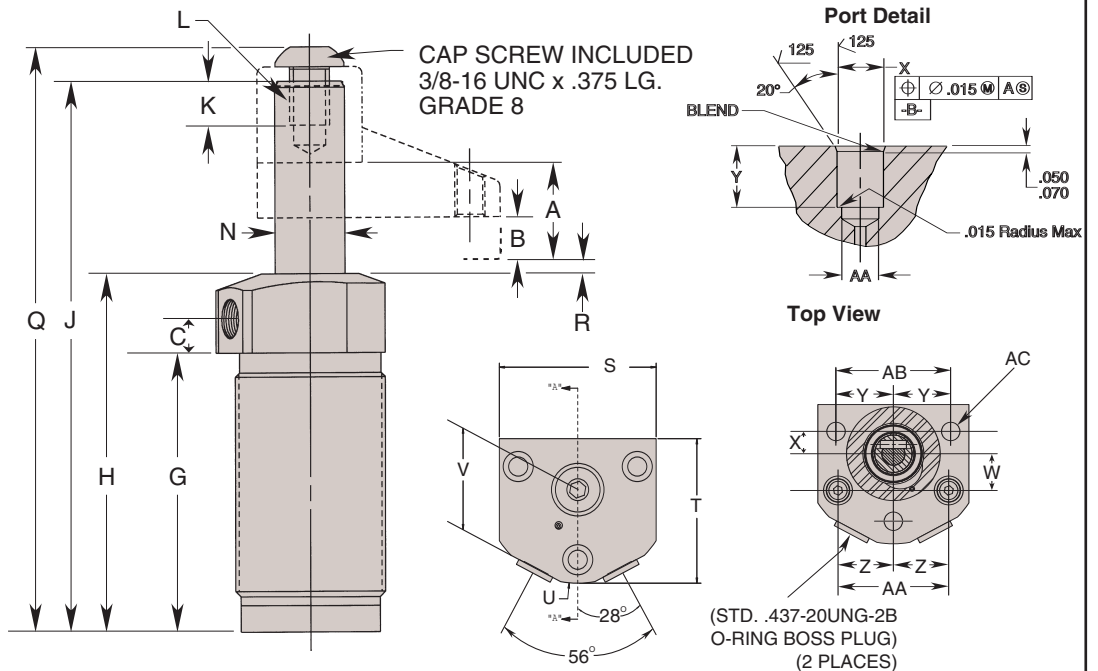
### Features

- Unique connector bushing provides positive mating with fixture, reducing the potential for leakage or weeping.
- Simple cavity design eliminates need for threaded holes in mating surfaces
- Manifold design eliminates external plumbing and reduces fixture height
- "Live Roller" design provides industry's most reliable swing/pull mechanism
  - o Piston/Cam combination provides solid path for clamping action
  - o Typical ball and groove mechanism has higher potential for clogging and for damage from mis-aligned work pieces

- Available in single and double acting versions
- Special rod wiper seal protects internal clamp components
- Unique drainage system channels contaminants away from clamp
- Corrosion resistant construction
- 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
- Straight pull capacity 1,472 lbs. at 5,000 psi max



**Performance**  
 Clamp Nos. 110191, 110192, 110193, 110194, 110195, 110196  
 ..... With Hytec 110186 Arm (5.375" long)  
 - - - - With Hytec 110185 Arm (1.50" long)  
 ——— Straight Pull Force Without Arms



Cat. No.	Specifications						Dimensions (In Inches)					
	Oper.	Swing Direction	*Force (Lbs.)	Eff. Area (Sq. In.)		Oil Cap. (Cu. In.)		A Total Stroke	B Clamping Stroke	C	D Clamp Port	E Unclamp Port
				Clamp	Unclamp	Clamp	Unclamp					
110191	Single-Acting	Left Hand (Counter Clockwise)	1,200	.294	-	.260	.873	.336	.441	7/16-20UNF SAE-4	Breather Plug 7/16-20UNF SAE-4†	
110192		Right Hand (Clockwise)										
110193		Straight Pull										
110194	Double-Acting	Left Hand (Counter Clockwise)	1,200	.601	.530	.873	.336	.441	7/16-20UNF SAE-4	7/16-20UNF SAE-4		
110195		Right Hand (Clockwise)										
110196		Straight Pull										

Cat. No.	Dimensions (In Inches)																		
	G	H	J	K Thread Min.	L Thread Size	N Dia. ††	Q	R	S	T	U Radius	V	W	X	Y	Z	AA	AB	AC
110191	2.550	3.625	5.310	.275	3/8-16UNC	.625	5.610	.104	2.305	2.125	1.375	1.302	.560	.340	.875	.845	1.690	1.750	.283
110192																			
110193																			
110194																			
110195																			
110196																			

**NOTE:** † Do not pressurize - single-acting only. \*With 1.5" arm at 5,000 psi max. operating pressure. Internal cam may be removed for an unguided straight pull. See page 58 for maximum operating speeds and rotation options.  
 †† See page 59 for custom arm mounting.

# Swing/Pull Clamp - Surface Mount - Manifold Mount - Lower Flange Style - 1200 lbs.



Swing/Pull Clamp - Surface Mount - Manifold Mount - Lower Flange Style - 1200 lbs.

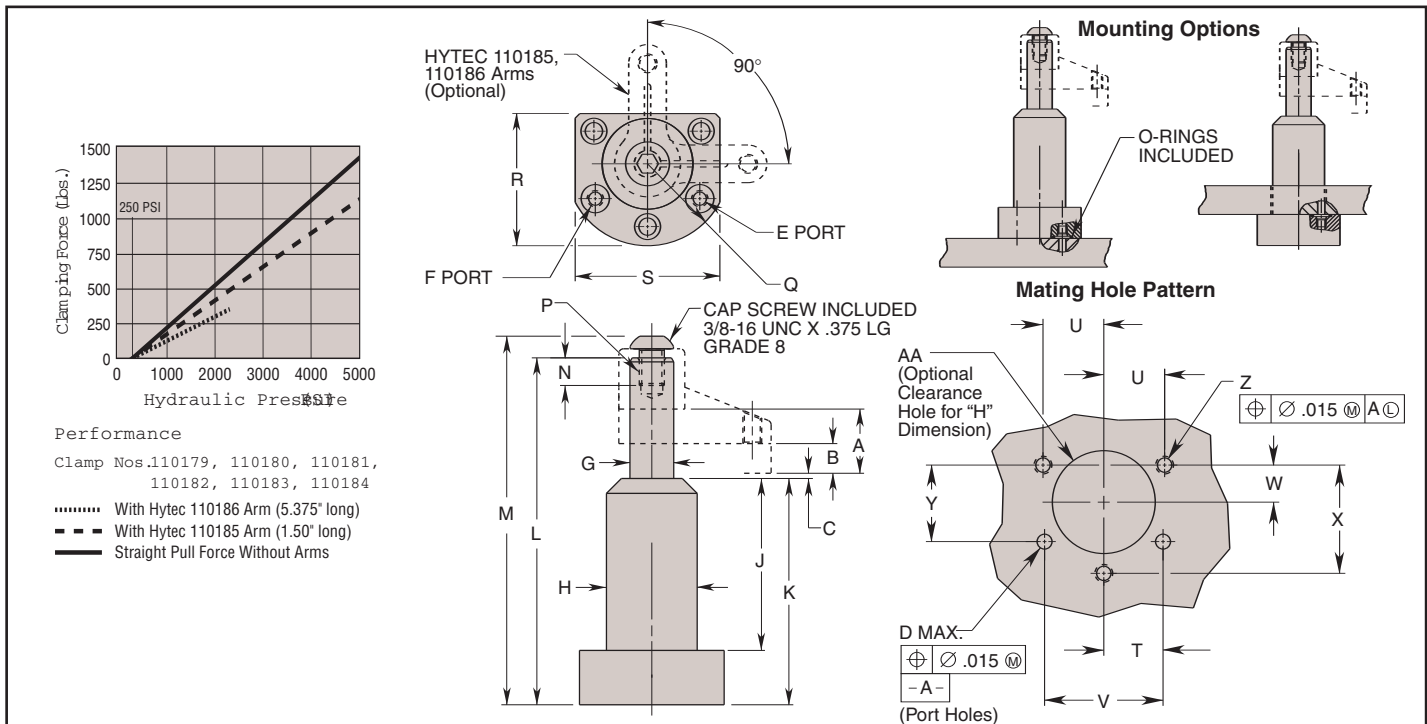


### Features

- Simple cavity design eliminates need for threaded holes in mating surfaces
- Manifold design eliminates external plumbing and reduces fixture height
- "Live Roller" design provides industry's most reliable swing/pull mechanism
  - Piston/Cam combination provides solid path for clamping action
  - Typical ball and groove mechanism has higher potential for clogging and for damage from mis-aligned work pieces
- Available in single and double acting versions
- Special rod wiper seal protects internal

### clamp components

- Unique drainage system channels contaminants away from clamp
- Corrosion resistant construction
- Heat treated, chrome plated piston rod
- Manifold mountable
- Unique "Live Roller" swing mechanism for increased service life
- Power-Tech™ treated body and hardened cam for long wear and corrosion resistance
- Single- and double-acting models are dimensionally interchangeable
- Straight pull cap. 1,472 lbs. at 5,000 psi max.
- Flange top or bottom mounting



Cat. No.	Specifications						Dimensions (In Inches)							
	Oper.	Swing Direction	*Force (Lbs.)	Eff. Area (Sq. In.)	Oil Cap. (Cu. In.)		A Total Stroke	B Clamping Stroke	C	††D Port Dia.	E Clamp Port	F Unclamp Port	††G Dia.	H Dia.
110179	Single-Acting	LH (Counter Clockwise)	1,200	.294	.260	.873	.336	.104	.130 Max.	SAE O-Ring	†Vent	.625	1.43	
110180		RH (Clockwise)												
110181		Straight Pull												
110182	Double-Acting	LH (Counter Clockwise)	.601	.530	.873	.336	.104	.130 Max.	SAE O-Ring	SAE O-Ring	.625	1.43		
110183		RH (Clockwise)												
110184		Straight Pull												

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	Z Thread Size	AA Dia.
110179																	
110180																	
110181	3.419	4.504	5.310	5.610	.375	3/8-16 UNC	1.375	2.125	2.310	.845	.875	1.690	.344	1.032	.906	1/4-20 UNC	1.466
110182																	1.486
110183																	
110184																	

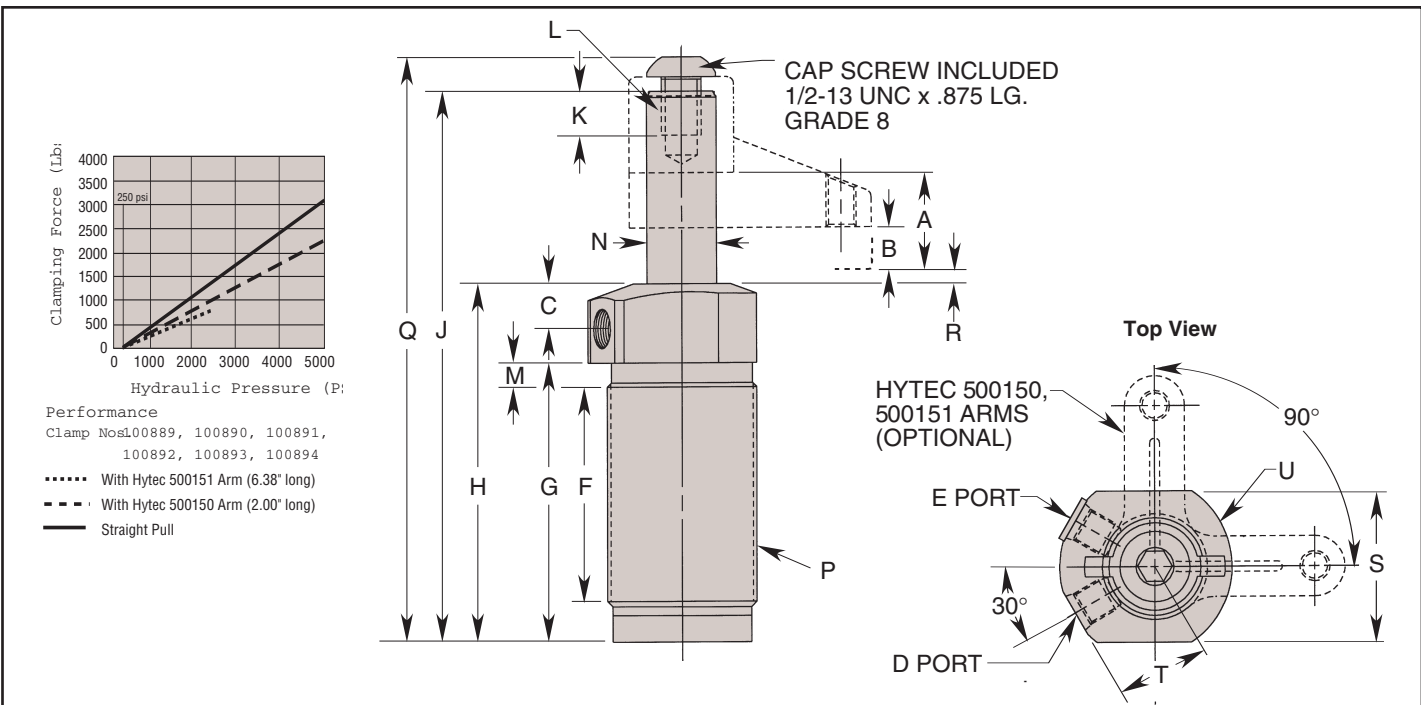
**NOTE:** \* With 1.5" long arm at 5,000 psi max. operating pressure.  
 † Do not pressurize - single-acting only.  
 †† See page 59 for custom arm mounting.  
 Internal cam may be removed for an unguided straight pull.  
 See page 58 for maximum operating speeds and rotation options.  
 ††† Surface finish to be 63. Finish of 125 acceptable with concentric tool marks only. Finish area to be .525 DIA. min. centered on .130 ø port hole. See operating instructions for additional port details.





**Features:**

- Full thread provides wide range of precise height adjustment
- Simple installation/removal
- "Live Roller" design provides industry's most reliable swing/pull mechanism
  - Piston/Cam combination provides solid path for clamping action
  - Typical ball and groove mechanism has higher potential for clogging and for damage from mis-aligned work pieces
- Available in single and double acting versions
- Special rod wiper seal protects internal clamp components
- Unique drainage system channels contaminants away from clamp
- Corrosion resistant construction
- 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
- Straight pull capacity 3,144 lbs. at 5,000 psi max



Cat. No.	Specifications						Dimensions (In Inches)						
	Oper.	Swing Direction	*Force (Lbs.)	Eff. Area (Sq. In.)		Oil Cap. (Cu. In.)		A Total Stroke	B Clamping Stroke	C	D Clamp Port	E Unclamp Port	F
				Clamp	Unclamp	Clamp	Unclamp						
100892	Single-Acting	Left Hand (Counter Clockwise)	2,400	.626	-	.740	1.267	.490	.632	7/16-20UNF SAE-4	Breather Plug 7/16-20UNF SAE-4†	2.797	
100893		Right Hand (Clockwise)											
100894		Straight Pull											
100889	Double-Acting	Left Hand (Counter Clockwise)	2,400	1.227	-	1.460	1.267	.490	.632	7/16-20UNF SAE-4	Breather Plug 7/16-20UNF SAE-4†	2.797	
100890		Right Hand (Clockwise)											
100891		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
100892													
100893													
100894													
100889	3.494	4.486	6.871	.550	1/2-13UNC	.285	.875	1-7/8-16UN	7.311	.104	1.875	1.150	1.125
100890													
100891													

**NOTE:** † Do not pressurize - single-acting only. \*With 2" arm at 5,000 psi max. operating pressure. Internal cam may be removed for an unguided straight pull.

# Swing/Pull Clamps - Cartridge Style - 2400 lbs.



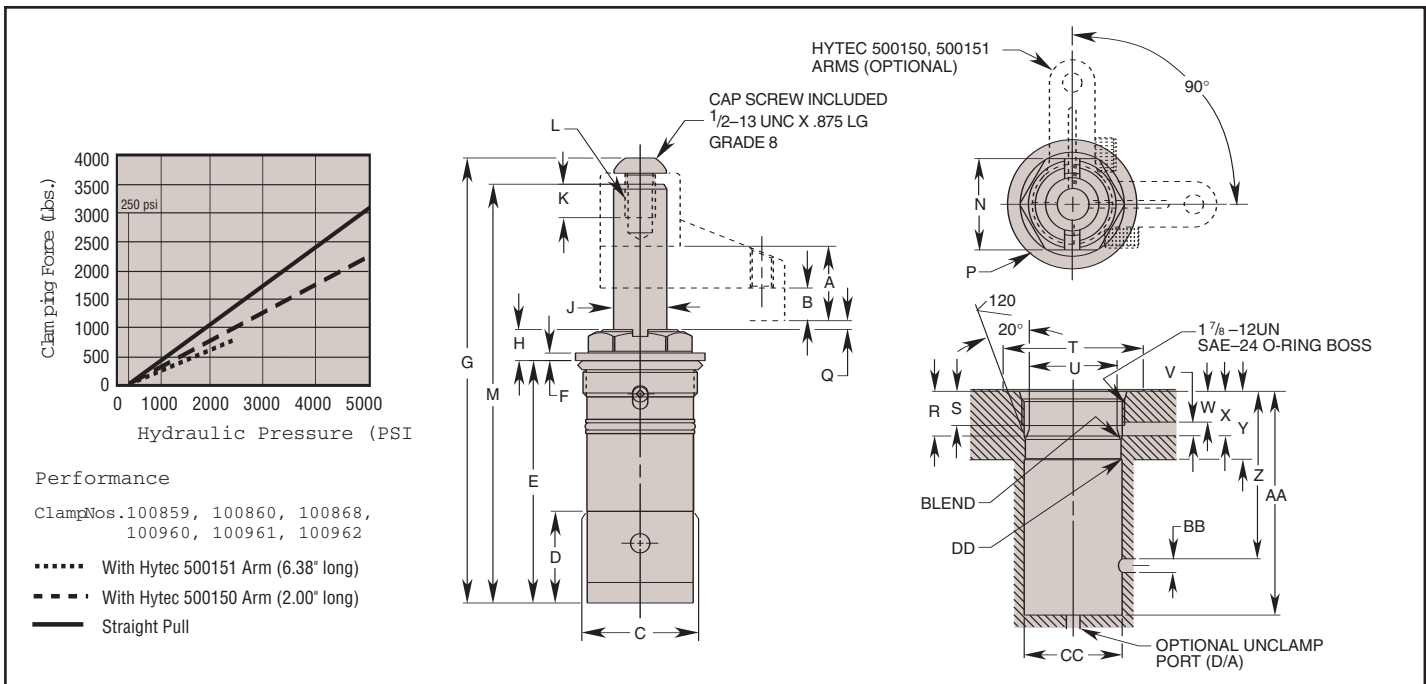
Swing/Pull Clamps - Cartridge Style - 2400 lbs.



### Features:

- Small footprint minimizes acreage on fixture
- Low profile reduces overall fixture height
- Manifold mounting eliminates exposed plumbing, reducing chip build-up on fixture
- "Live Roller" design provides industry's most reliable swing/pull mechanism
  - o Piston/Cam combination provides solid path for clamping action
  - o Typical ball and groove mechanism has higher potential for clogging and for damage from mis-aligned work pieces
- Simple cavity design enables faster fixture building
- Available in single and double acting versions
- Special rod wiper seal protects internal clamp components

- Unique drainage system channels contaminants away from clamp
- Cartridge design eliminates exposed tubing and saves space
- Single-acting or double-acting
- 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
- Clamping arms are adjustable within a full 360 degrees
- Straight pull capacity 3,144 lbs. at 5,000 psi max.
- Heavy duty, corrosion resistant return spring (single-acting)



### Performance

Clamp Nos. 100859, 100860, 100868, 100960, 100961, 100962

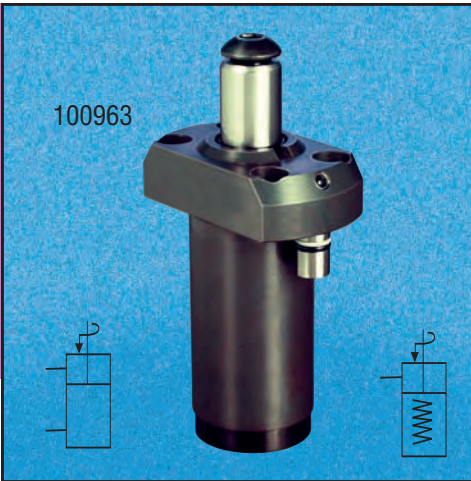
- With Hytec 500151 Arm (6.38" long)
- - - With Hytec 500150 Arm (2.00" long)
- Straight Pull

Cat. No.	Operation	Specifications						Dimensions (In Inches)									
		Swing Direction	*Force (Lbs.)	Eff. Area (Sq. In.)		Oil Cap. (Cu. In.)		A Total Stroke	B Clamping Stroke	C Dia.	D	E	F	G	H	††J Dia.	
				Clamp	Unclamp	Clamp	Unclamp										
100859	Single-Acting	Left Hand (Counter Clockwise)	2,400	.626	-	.740	1.163	.490	1.747	1.506	3.976	.150	7.311	.510	.875		
100860		Right Hand (Clockwise)															
100868		Straight Pull															
100960	Double-Acting	Left Hand (Counter Clockwise)	2,400	1.227	-	1.460	1.163	.490	1.747	1.506	3.976	.150	7.311	.510	.875		
100961		Right Hand (Clockwise)															
100962		Straight Pull															

Cat. No.	Dimensions (In Inches)																		
	K Thread Min.	L Thread Size	M	N Hex.	P Dia.	Q	R	S Thread Min.	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.
100859																			
100860														1.250	-		†Vent		
100868																4.031		1.750	.020
100960	.550	1/2-13UNC	6.871	1.750	2.125	.104	.801	.560	2.185	1.750	.125	.562	.812						
100961							.831			1.753					3.006		.125		
100962																			

**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 59 for custom arm mounting.

See page 58 for maximum operating speeds and rotation options. Internal cam may be removed for an unguided straight pull. See operating instructions for additional port details.

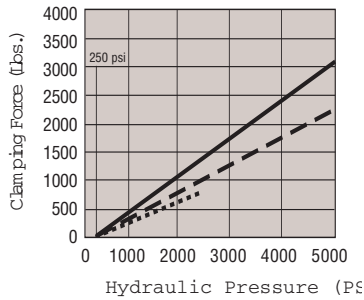


100963

**Features**

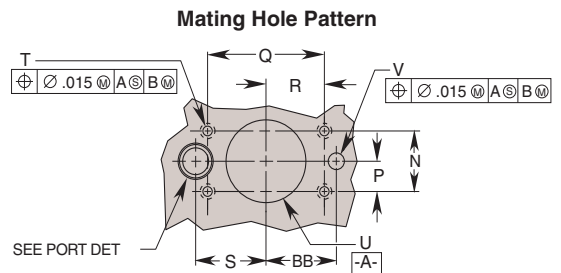
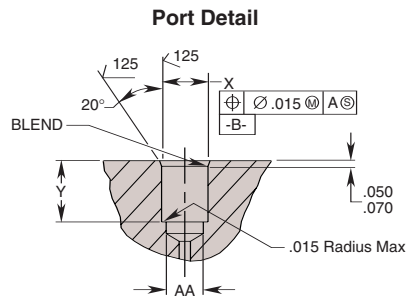
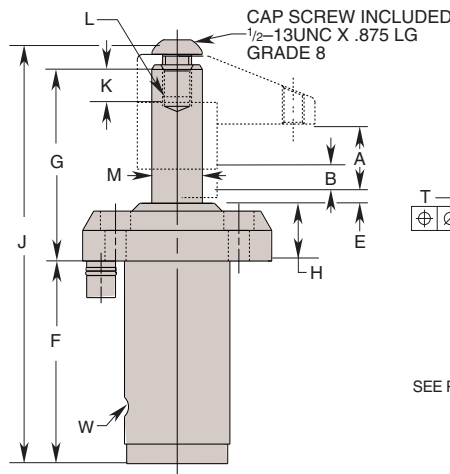
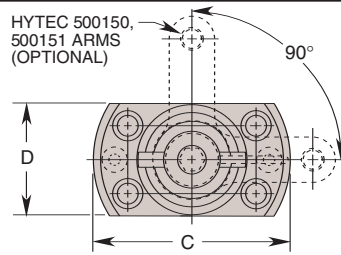
- Unique connector bushing provides positive mating with fixture, reducing the potential for leakage or weeping.
- Simple cavity design eliminates need for threaded holes in mating surfaces
- Manifold design eliminates external plumbing and reduces fixture height
- "Live Roller" design provides industry's most reliable swing/pull mechanism
  - o Piston/Cam combination provides solid path for clamping action
  - o Typical ball and groove mechanism has higher potential for clogging and for damage from mis-aligned work pieces

- Available in single and double acting versions
- Special rod wiper seal protects internal clamp components
- Unique drainage system channels contaminants away from clamp
- 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
- Single and double-acting models
- Straight pull capacity 3,144 lbs. at 5,000 psi max.



**Performance**  
 Clamp Nos. 100895, 100896, 100897, 100963, 100964, 100965

- ..... With Hytec 500151 Arm (6.38" long)
- With Hytec 500151 Arm (2.00" 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 Stroke	C Dia.	D	E	F	G	H	J
				Clamp	Unclamp	Clamp	Unclamp									
100895	Single-Acting	Left Hand (Counter Clockwise)	2,400	.626	-	.740	1.163	.490	3.257	1.860	.104	3.491	3.380	.995	7.311	
100896		Right Hand (Clockwise)														
100897		Straight Pull														
100963	Double-Acting	Left Hand (Counter Clockwise)	2,400	1.227	-	1.460	1.163	.490	3.257	1.860	.104	3.491	3.380	.995	7.311	
100964		Right Hand (Clockwise)														
100965		Straight Pull														

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										
100895																										
100896											-	†Vent														
100897	.550	1/2-13 UNC	.875	1.125	.562	2.125	1.062	1.311	5/16-18 UNC	1.840	1.870	††.250	-	.500	.640	.481										
100963																										
100964																										
100965																1.311										

**NOTE:** \* With 2.00" long arm at 5,000 psi max. operating pressure.  
 † Do not pressurize - single-acting only.  
 †† See page 59 for custom arm mounting.  
 Internal cam may be removed for an unguided straight pull.

See page 58 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.

# Swing/Pull Clamps - Threaded Body Style - 2400 lbs.



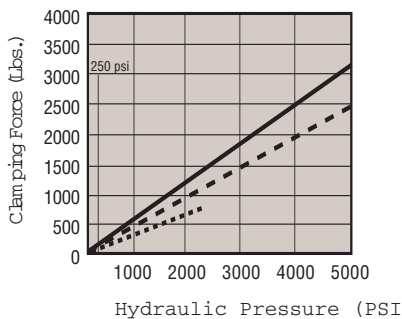
Swing/Pull Clamps - Threaded Body Style - 2400 lbs.



### Features:

- Full thread provides wide range of precise height adjustment
- Simple installation/removal
- "Live Roller" design provides industry's most reliable swing/pull mechanism
  - Piston/Cam combination provides solid path for clamping action
  - Typical ball and groove mechanism has higher potential for clogging and for damage from mis-aligned work pieces
- Available in single and double acting versions
- Special rod wiper seal protects internal clamp components

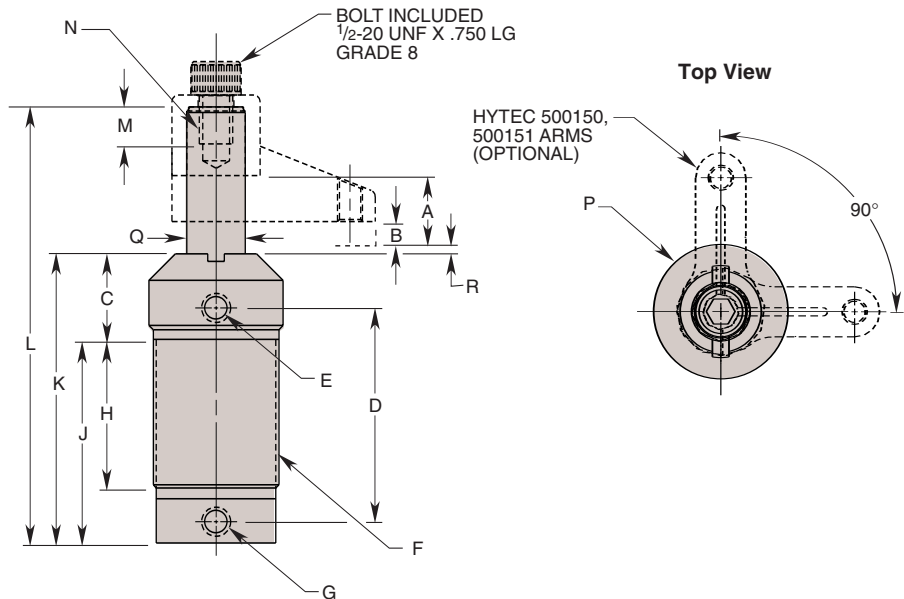
- Unique drainage system channels contaminants away from clamp
- Heat treated, chrome plated piston rod
- Unique "Live roller" swing mechanism for increased service life
- Power-Tech™ treated body and hardened cam for long wear and corrosion resistance
- Clamping arms are adjustable anywhere within a full 360 degrees
- Straight pull capacity 3,144 lbs. at 5,000 psi.



### Performance

Clamp Nos. 100841, 100842, 100848, 100849, 100870, 100871

- With Hytec 500151 Arm (6.38" long)
- - - - With Hytec 500150 Arm (2.00" long)
- Straight Pull



Cat. No.	Specifications				Dimensions (In Inches)								
	Swing Direction	*Force (Lbs.)	Eff. Area (Sq. In.)		Oil Cap. (Cu. In.)		A Total Stroke	B Clamping Stroke	C	D	E Clamp Port	F Thread Size	
			Clamp	Unclamp	Clamp	Unclamp							
100841	Left Hand (Counter Clockwise)	2,400	.63	1.23	.74	1.46	1.163	.500	1.252	3.188	1/8 NPTF	1 7/8 - 16 UN	
100842	Right Hand (Clockwise)												
100870	Straight Pull												
100848	Left Hand (Counter Clockwise)				1.21	2.36	1.938	1.250					4.688
100849	Right Hand (Clockwise)												
100871	Straight Pull												

Cat. No.	Dimensions (In Inches)									
	G Unclamp Port	H	J	K	L	M Thread Min.	N Thread Size	P Dia.	†Q Dia.	R
100841	1/8 NPTF	2.240	3.062	4.312	6.575	.550	1/2 - 20UNF	2.000	.875	.061
100842										
100870										
100848		3.740	4.562	5.812	8.810					
100849										
100871										

**NOTE:** \* With 2" arm at 5,000 psi max. operating pressure. Internal cam may be removed for an unguided straight pull.  
 † See page 59 for custom arm mounting. See page 58 for maximum operating speeds and rotation options.

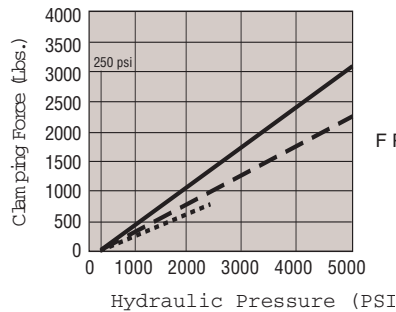
110079



**Features:**

- Manifold design eliminates external plumbing and reduces fixture height
- “Live Roller” design provides industry’s most reliable swing/pull mechanism
  - Piston/Cam combination provides solid path for clamping action
  - Typical ball and groove mechanism has higher potential for clogging and for damage from mis-aligned work pieces
- Available in single and double acting versions
- Special rod wiper seal protects internal clamp components
- Unique drainage system channels

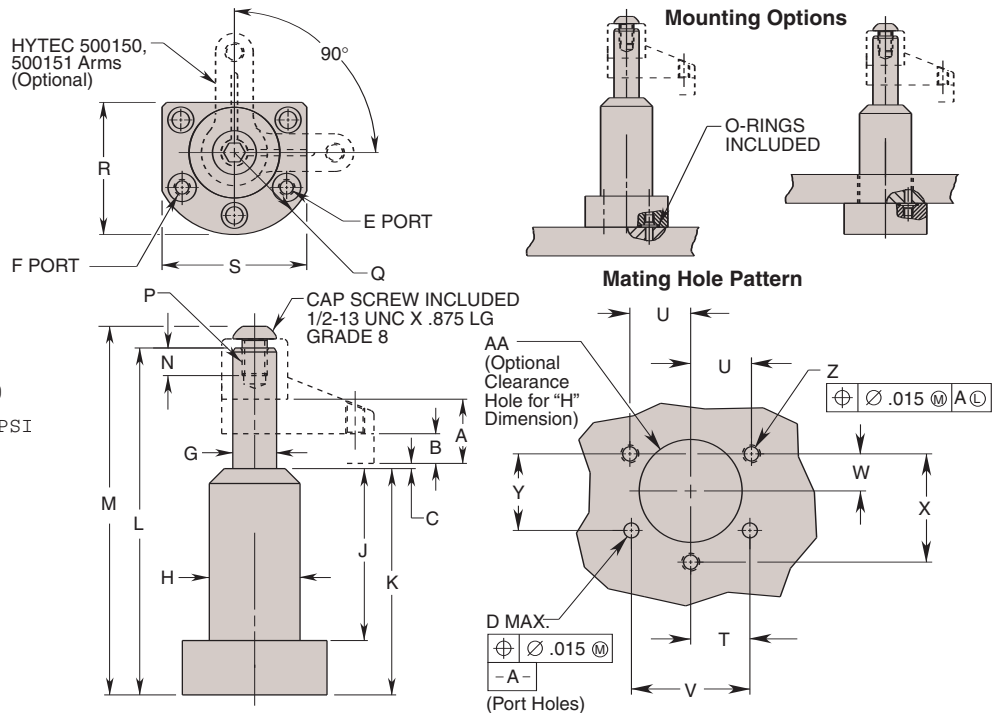
- contaminants away from clamp
- Corrosion resistant construction
- Heat treated, chrome plated piston rod
- Manifold mountable
- Unique “Live Roller” swing mechanism for increased service life
- Power-Tech™ treated body and hardened cam for long wear and corrosion resistance
- Single- and double-acting models are dimensionally interchangeable
- Straight pull cap. 3,144 lbs. at 5,000 psi max.
- Flange top or bottom mounting



**Performance**

Clamp Nos. 110079, 110080, 110081, 110082, 110083, 110084

- With Hytec 500151 Arm (6.38" long)
- - - With Hytec 500150 Arm (2.00" long)
- Straight Pull

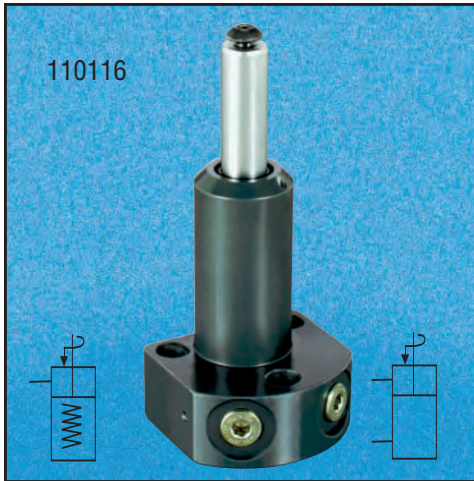


Cat. No.	Specifications						Dimensions (In Inches)							
	Oper.	Swing Direction	*Force (Lbs.)	Eff. Area (Sq. In.)		Oil Cap. (Cu. In.)		A Total Stroke	B Clamping Stroke	C	†††D Port Dia.	E Clamp Port	F Unclamp Port	††G Dia.
110079	Single-Acting	LH (Counter Clockwise)	2,400	.626	—	.740	1.163	.490	.104	.309 Max.	SAE O-Ring	†Vent	.875	1.807
110080		RH (Clockwise)												
110081		Straight Pull												
110082	Double-Acting	LH (Counter Clockwise)	1.227	1.460	—	—	—	—	—	—	—	—	—	—
110083		RH (Clockwise)												
110084		Straight Pull												

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	Z Thread Size	AA Dia.
110079																	
110080																	
110081	3.419	4.504	6.905	7.335	.550	½-13 UNC	1.630	2.630	2.880	1.024	1.082	2.048	.625	1.875	1.342	⅝-18 UNC	1.830
110082																	1.850
110083																	
110084																	

**NOTE:** \* With 2.00" long arm at 5,000 psi max. operating pressure.  
 † Do not pressurize - single-acting only.  
 †† See page 59 for custom arm mounting.  
 Internal cam may be removed for an unguided straight pull.

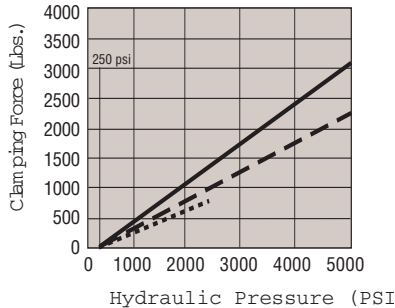
See page 58 for maximum operating speeds and rotation options.  
 ††† Surface finish to be 63. Finish of 125 acceptable with concentric tool marks only. Finish area to be .525 DIA. min. centered on .309 DIA. port hole. See operating instructions for additional port details.



### Features:

- External plumbing eliminates need to gun drill additional ports in fixture
- Can be inserted from above or below fixture plate
  - Top mounting provides extra height to accommodate large work pieces
  - Top mounting does not require drilling of large fixture hole
- Special rod wiper seal protects internal clamp components
- Corrosion resistant construction
- Heat treated, chrome plated piston rod
- Unique "Live-Roller" swing mechanism for increased service life

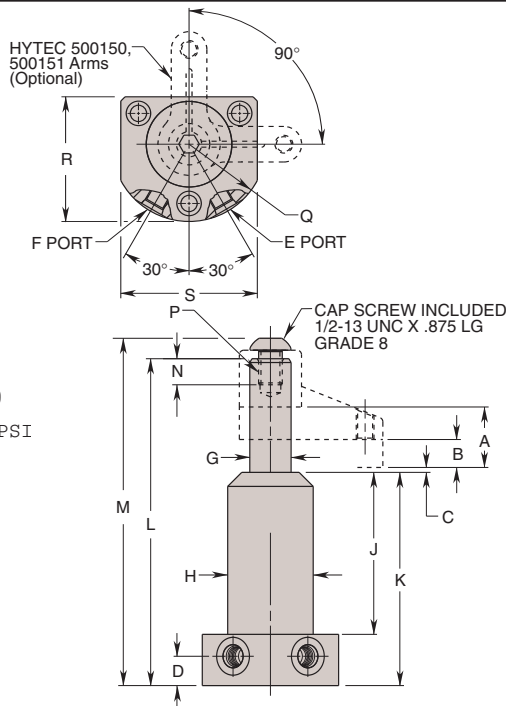
- Power-Tech™ treated body and hardened cam for long wear and corrosion resistance
- 5000 psi maximum
- Single- and double-acting models are dimensionally interchangeable
- Straight pull capacity 3,144 lbs. at 5,000 psi



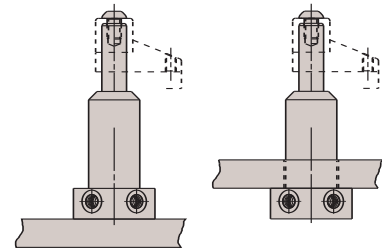
### Performance

Clamp Nos. 110116, 110117, 110118, 110119, 110120, 110121

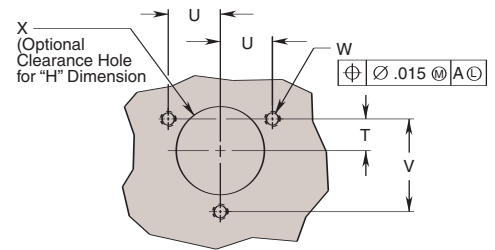
- With Hytec 500151 Arm (6.38" long)
- - - With Hytec 500150 Arm (2.00" long)
- Straight Pull



### Mounting Options



### Mating Hole Pattern



Cat. No.	Specifications						Dimensions (In Inches)							
	Oper.	Swing Direction	*Force (Lbs.)	Eff. Area (Sq. In.)	Oil Cap. (Cu. In.)		A Total Stroke	B Clamping Stroke	C	D	E Clamp Port	F Unclamp Port	††G Dia.	H Dia.
110116	Single-Acting	LH (Counterclockwise)	2,400	.626	.740	1.163	.490	.104	.620	3/16-20 UNF	Breather Plug 3/16-20 UNF † SAE-4	.875	1.807	
110117		RH (Clockwise)												
110118		Straight Pull												
110119	Double-Acting	LH (Counterclockwise)	1.227	1.460							3/16-20 UNF			
110120		RH (Clockwise)												
110121		Straight Pull												

Cat. No.	Dimensions (In Inches)													
	J	K	L	M	N Thread Min.	**P Thread Size	Q Radius	R	S	T	U	V	W Thread Size	X Dia.
110116														
110117														
110118	3.419	4.504	6.905	7.335	.550	1/4-13 UNC	1.630	2.630	2.880	.625	1.082	1.875	3/16-18 UNC	1.830
110119														1.850
110120														
110121														

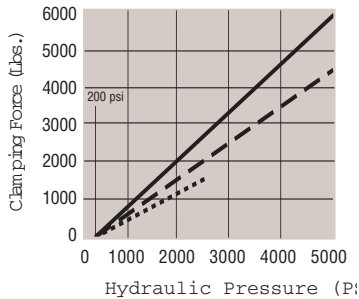
**NOTE:** \* With 2.00" long arm at 5,000 psi max. operating pressure.  
 † Do not pressurize - single-acting only.  
 †† See page 59 for custom arm mounting.

Internal cam may be removed for an unguided straight pull.  
 See page 58 for maximum operating speeds and rotation options.



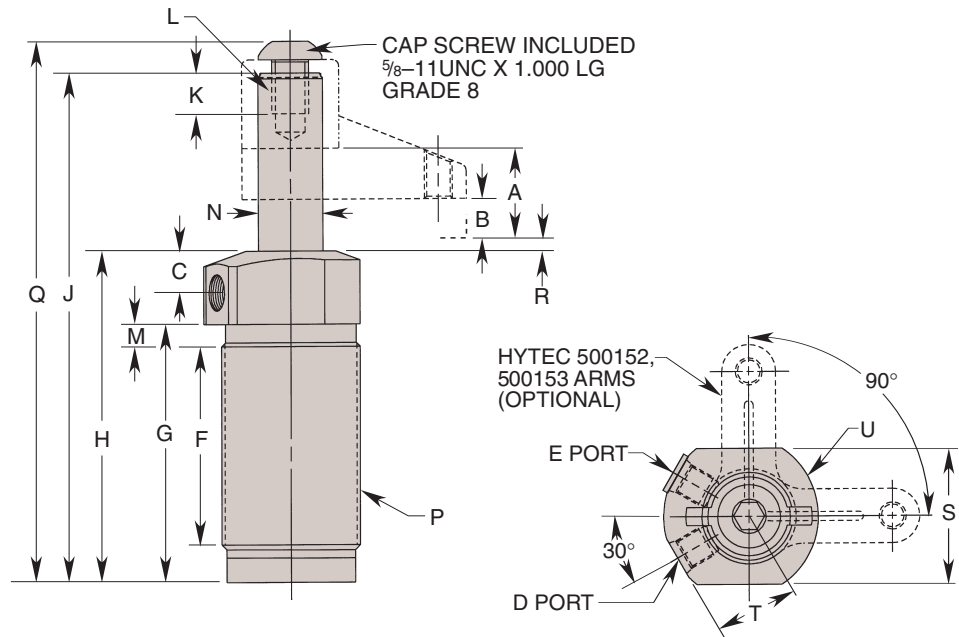
**Features:**

- Full thread provides wide range of precise height adjustment
  - Simple installation/removal
  - "Live Roller" design provides industry's most reliable swing/pull mechanism
    - o Piston/Cam combination provides solid path for clamping action
    - o Typical ball and groove mechanism has higher potential for clogging and for damage from mis-aligned work pieces
  - Available in single and double acting versions
  - Special rod wiper seal protects internal clamp components
- Unique drainage system channels contaminants away from clamp
  - Corrosion resistant construction
  - 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
  - Straight pull capacity 5,900 lbs. at 5,000 psi max



**Performance**

Clamp Nos. 100901, 100902, 100903, 100898, 100899, 100900  
 ..... With Hytec 500153 Arm (6.96" long)  
 - - - With Hytec 500152 Arm (2.50" 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 Stroke	C	D Clamp Port	E Unclamp Port	F
				Clamp	Unclamp	Clamp	Unclamp						
100901	Single-Acting	Left Hand (Counter Clockwise)	5,000	1.178	-	-	1.625	.600	.804	7/16-20UNF SAE-4	Breather Plug 7/16-20UNF SAE-4†	3.822	
100902		Right Hand (Clockwise)											
100903		Straight Pull											
100898	Double-Acting	Left Hand (Counter Clockwise)	5,000	1.178	2.405	3.908	1.625	.600	.804	7/16-20UNF SAE-4	Breather Plug 7/16-20UNF SAE-4†	3.822	
100899		Right Hand (Clockwise)											
100900		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
100901	4.686	5.880	9.265	.690	5/8-11UNC	.250	1.248	2 1/2-16UN	9.856	.330	2.500	1.420	1.375
100902													
100903													
100898													
100899													
100900													

**NOTE:** \* With 2.50" long arm at 5,000 psi max. operating pressure.  
 † Do not pressurize - single-acting only.  
 †† See page 59 for custom arm mounting.

Internal cam may be removed for an unguided straight pull. See page 58 for maximum operating speeds.

# Swing/Pull Clamps - Cartridge Style - 5000 lbs.

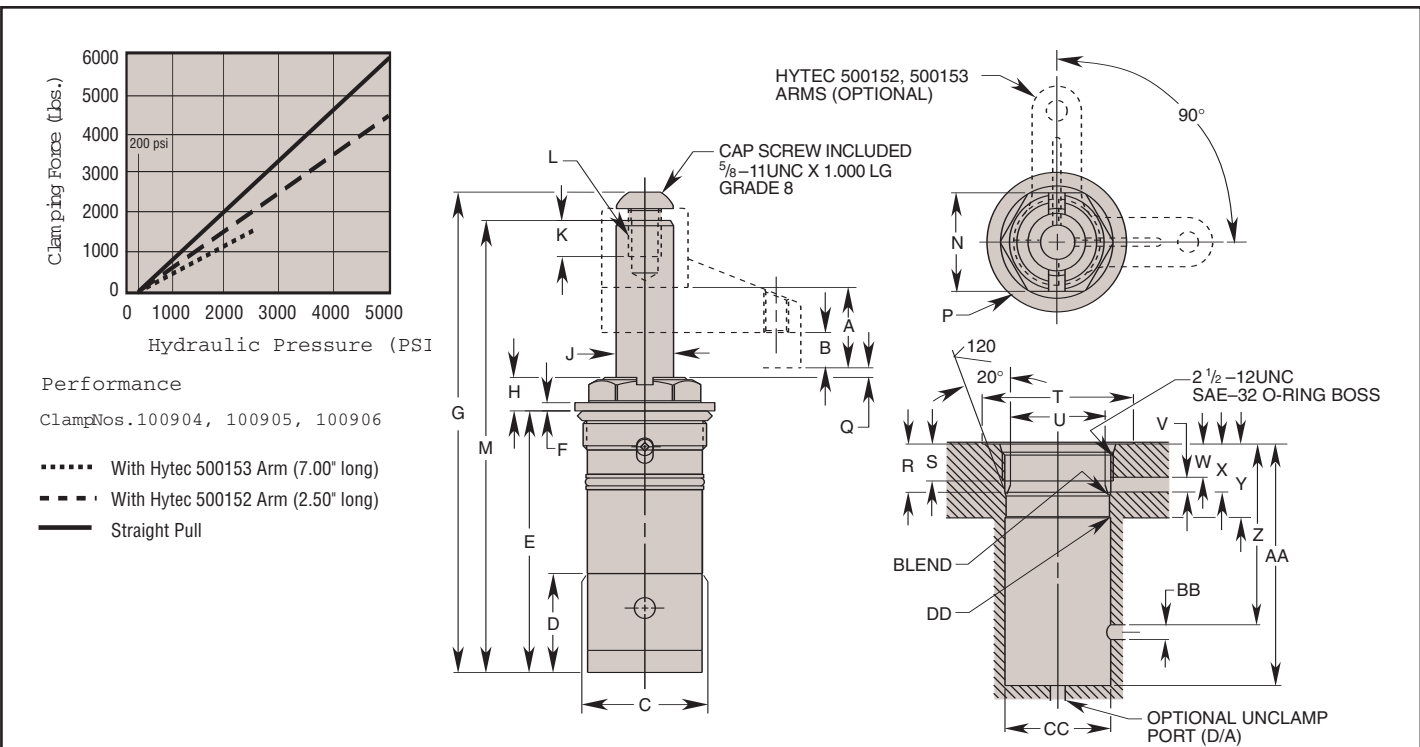


Swing/Pull Clamps - Cartridge Style - 5000 lbs.



- Features:**
- Small footprint minimizes acreage on fixture
  - Low profile reduces overall fixture height
  - Manifold mounting eliminates exposed plumbing, reducing chip build-up on fixture
  - "Live Roller" design provides industry's most reliable swing/pull mechanism
    - o Piston/Cam combination provides solid path for clamping action
    - o Typical ball and groove mechanism has higher potential for clogging and for damage from mis-aligned work pieces
  - Simple cavity design enables faster fixture building
  - Available in single and double acting versions

- Special rod wiper seal protects internal clamp components
- Unique drainage system channels contaminants away from clamp
- Corrosion resistant construction
- 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
- Single and double-acting
- Straight pull capacity 5,900 lbs. at 5,000 psi max



**Performance**  
 ClampNos. 100904, 100905, 100906

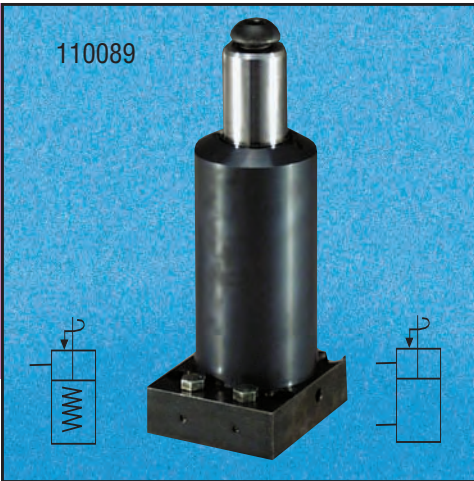
..... With Hytec 500153 Arm (7.00" long)  
 - - - - With Hytec 500152 Arm (2.50" long)  
 ——— Straight Pull

Cat. No.	Specifications				Dimensions (In Inches)										
	Oper.	Swing Direction	*Force (Lbs.)	Eff. Area (Sq. In.)	Oil Cap. (Cu. In.)	A Total Stroke	B Clamping Stroke	C Dia.	D	E	F	G	H	†† J Dia.	K Thd. Size
100904	Single-Acting	LH (Counterclockwise)	5,000	1.178	1.914	1.625	.600	2.372	2.162	5.340	.160	9.856	.540	1.248	.740
100905		RH (Clockwise)													
100906		Straight Pull													
100988	Double-Acting	LH (Counterclockwise)	5,000	1.178	3.908	1.625	.600	2.372	2.162	5.340	.160	9.856	.540	1.248	.740
100989		RH (Clockwise)													
100990		Straight Pull													

Cat. No.	Dimensions (In Inches)					Mounting Dimensions (In Inches)												
	L Thd. Size	M	N Hex.	P Dia.	Q	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.
100904	%11UNC	9.265	2.125	2.750	.330	1.136	.870	2.810	2.375	.125	.870	1.136	1.584	—	5.378	*Vent	2.374	.020
100905																		
100906																		
100988																		
100989																		
100990																		

**NOTE:** \* With 2.50" long arm at 5,000 psi max. operating pressure.  
 † Cavity must be vented.  
 †† See page 59 for custom arm mounting.  
 Internal cam may be removed for an unguided straight pull. See operating instructions for additional port details.  
 See page 58 for maximum operating speeds.



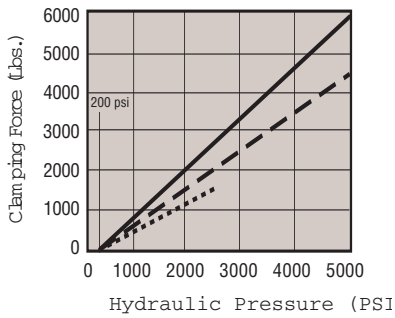


110089

**Features:**

- Manifold design eliminates external plumbing and reduces fixture height
- "Live Roller" design provides industry's most reliable swing/pull mechanism
  - o Piston/Cam combination provides solid path for clamping action
  - o Typical ball and groove mechanism has higher potential for clogging and for damage from mis-aligned work pieces
- Available in single and double acting versions
- Special rod wiper seal protects internal clamp components
- Unique drainage system channels

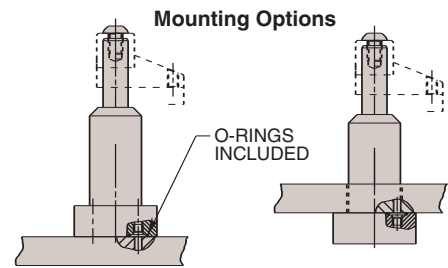
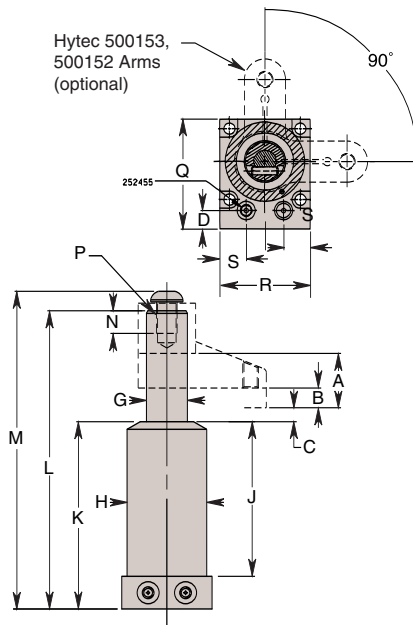
- contaminants away from clamp
- Corrosion resistant construction
- Heat treated, chrome plated piston rod
- Manifold mountable
- Unique "Live Roller" swing mechanism for increased service life
- Power-Tech™ treated body and hardened cam for long wear and corrosion resistance
- Single- and double-acting models are dimensionally interchangeable



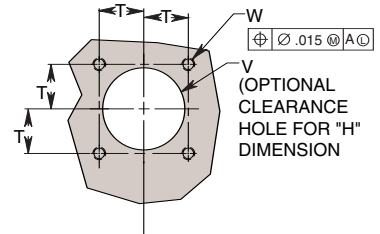
**Performance**

ClampNos. 100904, 100905, 100906

- With Hytec 500153 Arm (7.00" long)
- - - - With Hytec 500152 Arm (2.50" long)
- Straight Pull



**Mating Hole Pattern**



Cat. No.	Specifications						Dimensions (In Inches)																		
	Oper.	Swing Direction	*Force (Lbs.)	Eff. Area (Sq. In.)	Oil Cap. (Cu. In.)		A Total Stroke	B Clamping Stroke	C	D Port Dia.	E Clamp Port	F Unclamp Port	††G Dia.	H Dia.											
110089	Single-Acting	LH (Counterclockwise)	5,000	1.178	1.914	—	1.625	.600	.330	.340 MAX.	3/16-20UNF SAE-4	Breather Plug 3/16-20UNF SAE-4†	1.248	2.425											
110090		RH (Clockwise)													—	—									
110091		Straight Pull													—	—									
110092	Double-Acting	LH (Counterclockwise)													2.405	3.908	—	—	—	—	—	—	3/16-20UNF SAE-4	—	—
110093		RH (Clockwise)													—	—	—	—	—	—	—	—	—	—	—
110094		Straight Pull													—	—	—	—	—	—	—	—	—	—	—

Cat. No.	Dimensions (In Inches)																					
	J	K	L	M	N Thread Min.	P Thread Size	Q	R	S	T	U	V Dia.	W Thread Size									
110089	4.737	5.917	9.297	9.887	.690	3/16-11 UNC	3.305	2.750	.570	1.085	.408	2.442 2.462	3/16-18 UNC									
110090																						
110091																						
110092		5.730	9.110	9.700										—	—	—	—	—	—	—	—	—
110093																						
110094																						

**NOTE:** \* With 2.50" long arm at 5,000 psi max. operating pressure.  
 † Do not pressurize - single-acting only.  
 †† See page 59 for custom arm mounting.

Internal cam may be removed for an unguided straight pull.  
 See page 58 for maximum operating speeds and rotation options.

# Swing/Pull Clamp - Surface Mount - Externally Plumbed - Lower Flange Style - 5000 lbs.



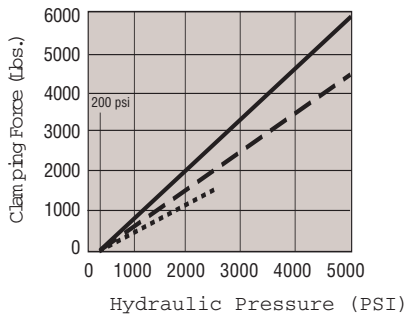
Swing/Pull Clamp - Surface Mount - Externally Plumbed - Lower Flange Style - 5000 lbs.



### Features:

- External plumbing eliminates need to gun drill additional ports in fixture
- Can be inserted from above or below fixture plate
  - o Top mounting provides extra height to accommodate large work pieces
  - o Top mounting does not require drilling of large fixture hole

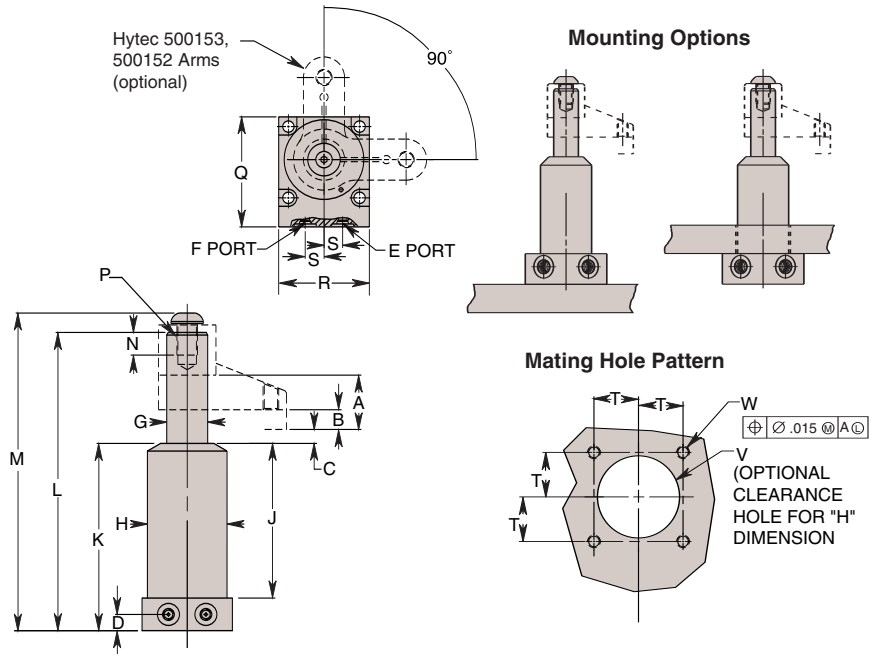
- Special rod wiper seal protects internal clamp components
- Corrosion resistant construction
- Heat treated, chrome plated piston rod
- Power-Tech® treated body and hardened cam for long wear and corrosion resistance



### Performance

Clamp Nos. 110095, 110096, 110097  
110098, 110099, 110100

- With Hytec 500153 Arm (7.00" long)
- - - - With Hytec 500152 Arm (2.50" 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 Stroke	C	D	E Clamp Port	F Unclamp Port	††G Dia.
110095	Single-Acting	LH (Counterclockwise)	5,000	1.178	1.914	1.625	.600	.330	.500	3/16-20 UNF SAE-4	†Breather Plug 3/16-20 UNF SAE-4	1.248	2.425
110096		RH (Clockwise)											
110097		Straight Pull											
110098	Double-Acting	LH (Counterclockwise)	2.405	3.908	1.625	.600	.330	.500	3/16-20 UNF SAE-4	3/16-20 UNF SAE-4	1.248	2.425	
110099		RH (Clockwise)											
110100		Straight Pull											

Cat. No.	Dimensions (In Inches)											
	J	K	L	M	N Thread Min.	P Thread Size	Q Radius	R	S	T	V Dia.	W Thread Size
110095	4.737	5.917	9.297	9.887	.690	3/8-11 UNC	3.305	2.750	.570	1.085	2.442 2.462	3/8-18 UNC
110096												
110097												
110098		5.730	9.110	9.700								
110099												
110100												

**NOTE:** \* With 2.50" long arm at 5,000 psi max. operating pressure.  
† Do not pressurize - single-acting only.  
†† See page 59 for custom arm mounting.

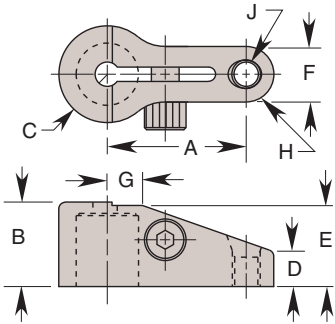
Internal cam may be removed for an unguided straight pull.  
See page 58 for maximum operating speeds and rotation options.

Hytec 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 5000 psi. The long arms are designed to be used as is or easily modified for your applications that require a longer reach. When

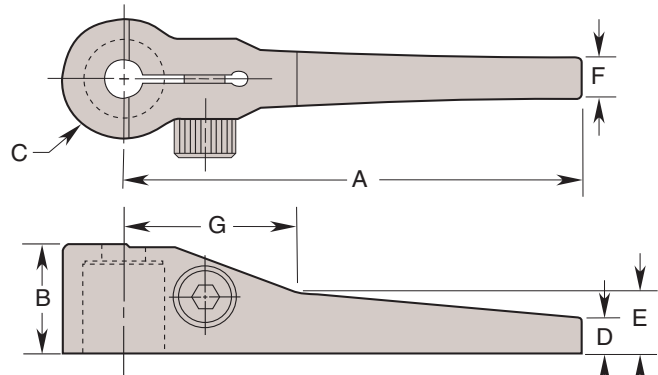
using the long arms, maximum hydraulic pressure and flow must be reduced. See the accompanying charts. Do not use meter-out circuitry for controlling double-acting clamp speeds. See pages 105 and 123 for metering valves. Contact Hytec if further design assistance is required.

### Swing/Pull Clamp Arms

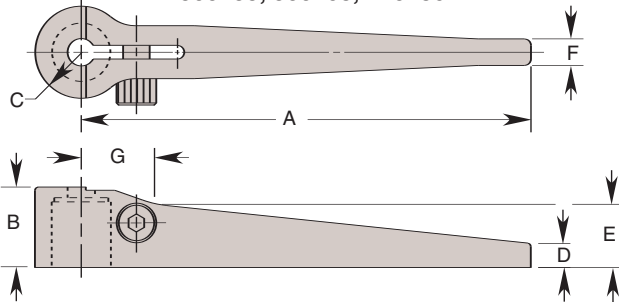
500150, 500152, 500154, 500167, 110185



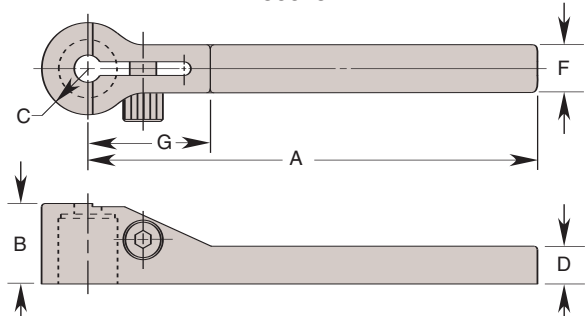
500153



500155, 500168, 110186



500151



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 Radius	D	E	F	G	H Radius	J Thread Size	
500167	365	340	5,000	15	.3	1	1.060	.600	.330	.234	.575	.380	.275	.190	10-24 UNC	
500168		*125	*2,450	8	.5	2	3.250			.171		.225	.937	—	—	
500154	750	750	5,000	25	.4	2	1.250	.760	.435	.314	.730	.500	.319	.250	¼-20 UNC	
500155		*220	*2,150	12	.8	4	4.250			.228		.598	.250	.694	—	—
110185	1,200	1,200	5,000	34	.45	3.2	1.500	.830	.500	.365	.800	.624	.354	.312	⅝-16-18UNC	
110186		*335	*2,058	17	.9	6.8	5.375			.312		.800	.250	1.312	—	—
500150	2,400	2,400	5,000	100	.5	8	2.000	1.200	.688	.475	1.140	.750	.540	.375	⅝-16 UNC	
500151		*720	2,350	50	1	17	6.375			.615		—	.750	2.000	—	—
500152	5,000	4,500	5,000	250	.5	25	2.500	1.700	.930	.750	1.650	1.250	.743	.625	⅝-13 UNC	
500153		*1,540	*2,500	125	1	33	6.964			.559		.973	.650	2.500	—	—

\* Maximum values at supplied lengths. If arm is shortened, see charts on page 59.

Cat. No.	Specifications			
	Rotation Angle Degrees	Rotation Direction	Clamp Capacity (Lbs.)	Clamping Stroke
350912	30	Right Hand	2,400	.500
350915		Left Hand		
350913	45	Right Hand	2,400	.500
350916		Left Hand		
350914	60	Right Hand	2,400	.500
350917		Left Hand		

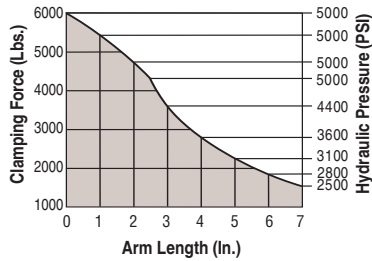
\* With 2.00" long arm at 5,000 psi max. operating pressure.

### Rotation Options

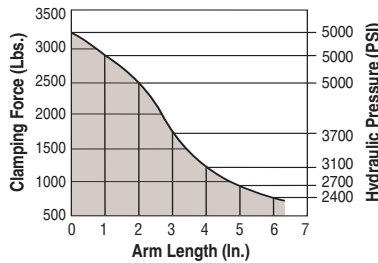
Hytec's 2,400 lbs. capacity, .500 inch clamping stroke Swing/Pull clamps can be converted to a 30, 45, or 60 degree swing by exchanging the internal cam. Order the appropriate cam from the table to the left.

All of Hytec's 2,400 lbs. capacity, .500 inch clamping stroke Swing/Pull clamps are also available from the factory with 30, 45, and 60 degree swing options. Contact Hytec for ordering information.

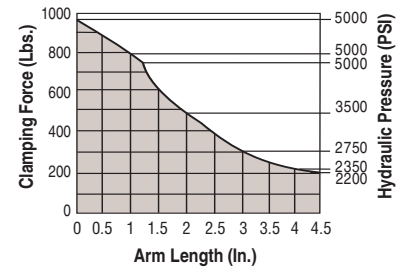
# Swing/Pull Clamp Performance



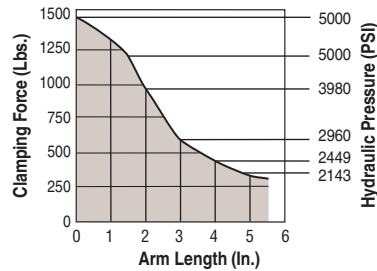
**Clamp Performance**  
2 1/2", 5,000 Lbs. Capacity Swing/Pull Clamps



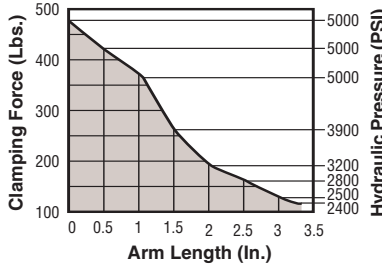
**Clamp Performance**  
1 7/8", 2,400 Lbs. Capacity Swing/Pull Clamps



**Clamp Performance**  
1 1/4", 750 Lbs. Capacity Swing/Pull Clamps



**Clamp Performance**  
1 1/2", 1,200 Lbs. Capacity Swing/Pull Clamps



**Clamp Performance**  
1 1/16", 365 Lbs. Capacity Swing Pull Clamps

**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:

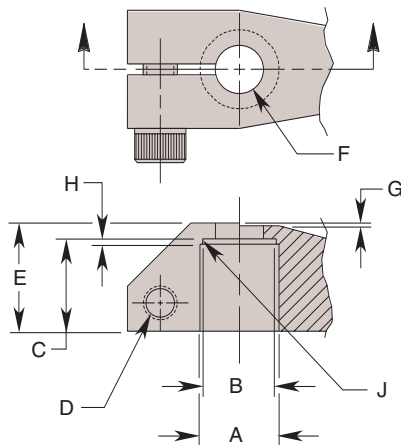
$$FORCE = P \times A \times [1 - (P/M \times .23)]$$

P = Hyd. system operating pressure (PSI)

A = Clamp effective area (sq. in.)

M = Max. rated pressure of chosen arm length (PSI)

**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 Hytec 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.

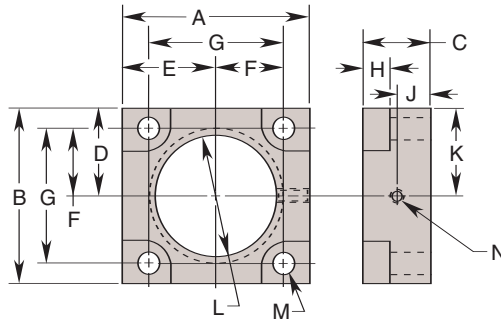
**IMPORTANT:**

Any clamp using a modified or custom arm that is longer or heavier than Hytec's standard arms must be derated to prevent internal damage. Do not exceed the maximum speed and pressure ratings for Hytec'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 Hytec 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	500167	.437	.415	.520	1/4-20 UNC	.600	.270	.025	.020	.005 .020
		.439	.439	.540						
750	500154	.562	.540	.650	5/16-18 UNC	.760	.387	.030	.060	
		.564	.564	.670						
1200	110185	.625	.602	.700	3/8-16 UNC	.830	.534	.060	.050	
		.627	.627	.720						
2,400	500150	.875	.853	1.030	1/2-18 UNF	1.200	.659	.050	.050	
		.878	.878	1.010						
5,000	500152	1.250	1.228	1.420	3/4-18 UNF	1.700	.659	.050	.050	
		1.253	1.253	1.440						

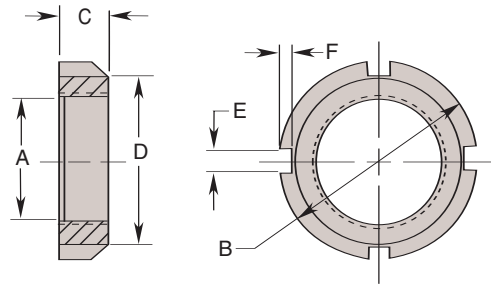
NOTE: \* See charts for capacity and maximum pressure at desired arm length.  
\*\* Torque must be sufficient to secure arm to piston rod.

### Flange Mounting Bracket



Hytec's flange mounting brackets allow you to secure your swing/pull clamps in two ways. You may use the setscrew and nylon thread protector ball (supplied) or simply lock the clamp using an optional jam nut.

### Jam Nut



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
100979	1.593	1.500	.500	.750	.750	.560	1.120	.200	.250	.750	1½-16 UNC	.222	¼-20 UNC
100127	1.875	1.750		.875	.938	.703	1.406			.875	1¼-12 UNF	.219	
110187	2.062	2.000	.750	1.000	1.031	.780	1.560	.210	.375	1½-16 UN	.281		
100114	2.750	2.500	1.000	1.250	1.375	1.000	2.000	.265	.500	1½-16 UN	.281		
100914	3.500	3.250	1.250	1.625	1.750	1.250	2.500	.500	.625	2½-16 UN	.406		

NOTE: Includes locking set screw and nylon ball to protect clamp threads.

JAM NUTS						
Cat. No.	Dimensions (In Inches)					
	A Thread Size	B Dia.	C	D	E	F
100980	1½-16 UN	1.500	.310	—	.240	.100
100916	1¼-12 UNF	2.000	.500	1.688	.250	.138
100910	1¼-16 UN					
110188	1¼-16 UN	2.250	1.938			
100911	1¼-16 UN	2.750	2.438			
100912	2½-16 UN	3.250	2.875	.312	.169	
100913	2½-16 UN	3.500	3.125			

# Swing Clamps



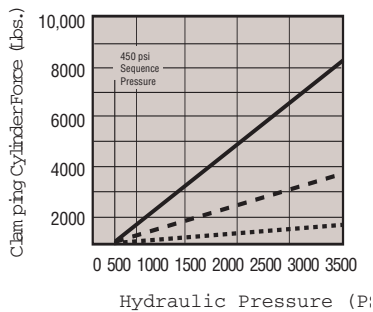
Single-screw mounting and the adjustable clamping screw make these clamps easy to reposition on the fixture to adapt to various workpiece sizes, and make set-up and adjustment faster than other methods. It also lets you clamp several workpiece sizes without changing the fixture each time. When mounted on a T-slot machine table, the need for fixtures is often eliminated.

Two separate actuators are used to perform the clamping function. First, a cylinder is used to swing the clamping arm 90° into position over the workpiece. Then a second cylinder is sequenced to pivot the clamping arm into contact with the workpiece and hold it in place.

Twelve clamps are available with maximum clamping forces of up to 8,295 lbs.: six with right hand and six with left hand swing. Minimum operating pressure is 500 psi, maximum is 3,500 psi.

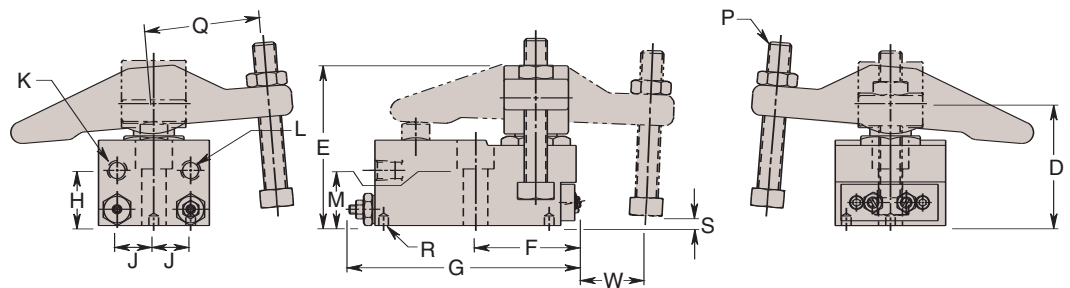
**Features:**

- Single or double-acting (see page 35)
- Single screw mounting
- Internal sequence valve
- Adjustable clamping screw
- T-slot mountable
- SAE and NPT ported versions



Performance  
 ..... Clamp capacity 1610  
 - - - - - Clamp capacity 3780  
 ——— Clamp capacity 8295

Left Hand Swing Shown



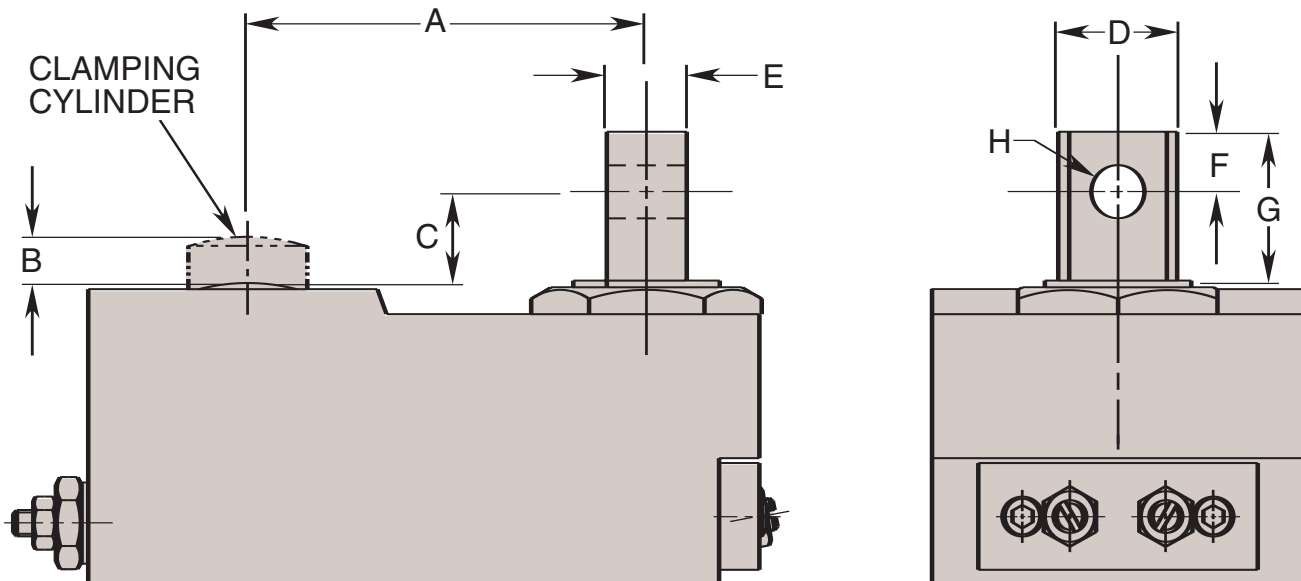
Cat. No.		Specifications							Dimensions (In Inches)								
Right Hand Swing	Left Hand Swing	*Max. Clamping Force	Oil Cap. (Cu. In.)		Min. Operating Pressure (PSI)	Max. Operating Pressure (PSI)	Max. Clamping Stroke (In.)	Max. Flow Rate (Cu. In./Min.)	Max. Swing Speed (Secs.)	A	B	C	D	E	F	G	H
			Advance	Return													
110101	110102	1610	.330				.310	45	.250	2.060	1.938	.938	2.782	3.833	2.875	5.938	1.250
110103	110104	3780	.770	.160	500	3,500	.487	15	.500	2.500	2.000	1.200	3.462	4.462	3.000	6.500	1.500
110105	110106	8295	1.520				.446	10	1.000	3.062	2.438	1.378	3.790	5.071	3.312	7.375	1.937

Cat. No.		Dimensions (In Inches)															
Right Hand Swing	Left Hand Swing	J	**K Retract Port	**L Advance Port	M	N Dia.	P Clamping Screw	Q	R		S Adjust. Range		T	U	V	W	
									Dia.	Depth	Min.	Max.					
110101	110102	.875	3/16-20 UNF SAE-4	3/16-20 UNF SAE-4	1.250	.531	1/2-13 UNC	2.250					1.500	1.219	2.750	1.375	.812
110103	110104	1.000	3/16-20 UNF SAE-4	3/16-20 UNF SAE-4	1.500	.656	3/8-11 UNC	3.125	.257	.250	.000		2.000	1.719	3.000	1.500	1.750
110105	110106	1.218	3/16-20 UNF SAE-4	3/16-20 UNF SAE-4	1.750	.781	3/8-9 UNC	3.250					2.375	2.219	3.500	1.750	1.875

NOTE: \* At 3,500 psi maximum operating pressure.  
 \*\* Advance and Retract Ports reversed on Right Hand Swing Clamps.

- Standard arm may be customized for use in specific applications.
- Standard clamping arm is 1045 steel heat treated to 38 Rc max.
- Modified/custom-designed clamping arms must be spring biased or counterweighted so that the arm pivots away from the workpiece.
- Arms must be stopped such that they do not pivot below the retracted height of the clamping cylinder.

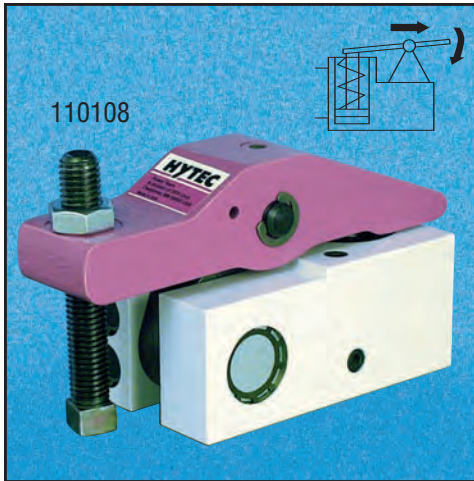
**Note:** Modified arms may not have the same workpiece clamping force as standard clamps. Clamping force may be calculated by using the dimensions and cylinder force data below. Any clamp using a modified or custom arm that is longer or heavier than the standard arm, must have its flow restricted to prevent internal damage.



Cat. No.		Specifications	Dimensions (In Inches)							
Right Hand Swing	Left Hand Swing		A	B	C	D Dia.	E	F	G	H Dia.
110101	110102	*Clamping Cylinder Effective Area (Sq. In.) .44	2.794	.375	1.344	.864	.495	.488	1.133	.441
110103	110104	1.23	3.250	.500	1.063	1.114	.742	.562	1.472	.566
110105	110106	2.41	3.750	.545	.930	1.364	.866	.610	1.580	.629

**NOTE:** \* Sequence Pressure 450 psi must be subtracted from System Operating Pressure when calculating Clamping Cylinder Force. [System Operating Pressure (PSI) – 450 psi] X Effective Area (Sq. In.) = Clamping Cylinder Force (Lbs.).

# Retract Clamps



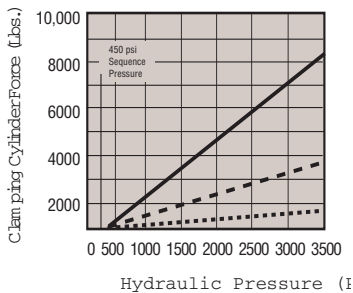
Single screw mounting and the adjustable clamping screw make these clamps easy to reposition on the fixture to adapt to various workpiece sizes, and make set up and adjustment faster than other methods. Plus, it enables you to work several piece sizes without changing the fixture each time. When mounted on a T-slot machine table, the need for fixtures is often eliminated.

Very similar in operation to the swing clamps, with the exception of having the clamping arm move out toward the workpiece in a straight line rather than rotating 90°, making them ideal for applications where the shape of the fixture or part does not allow room for the clamp to swing.

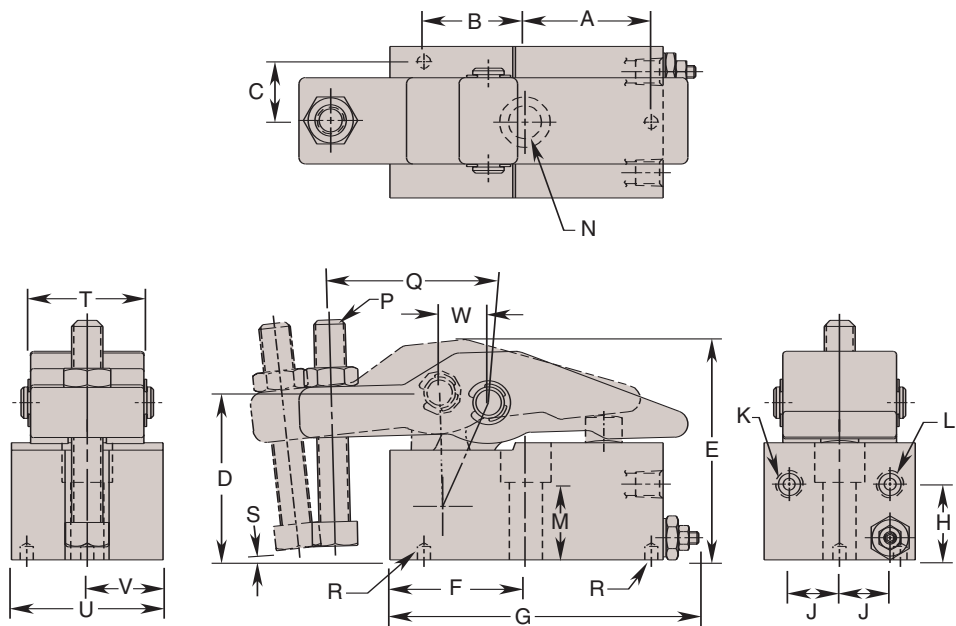
These clamps are available with maximum clamping forces of up to 8,295 lbs.: Minimum operating pressure is 500 psi, maximum is 3,500 psi.

**Features:**

- Single or double-acting (see page 35)
- Single screw mounting
- Internal sequence valve
- Adjustable clamping screw
- T-slot mountable
- SAE and NPT ported versions



Performance  
 ..... Clamp capacity 1610  
 - - - - Clamp capacity 3780  
 ———— Clamp capacity 8295



Cat. No.	Specifications							Dimensions (In Inches)									
	*Max. Clamping Force (Lbs.)	Oil Cap. (Cu. In.)		Min. Operating Pressure (PSI)	Max. Operating Pressure (PSI)	Clamping Stroke (In.)	Max. Flow Rate (Cu. In./Min.)	Max. Advance Speed (Secs.)	A	B	C	D	E	F	G	H	J
110107	1610	.230				.310			2.060	1.940	.938	2.843	3.852	2.456	5.563	1.250	.875
110108	3780	.670	.060	500	3,500	.487	15	.500	2.500	2.000	1.200	3.312	4.312	2.670	6.112	1.500	1.000
110109	8295	1.420				.446			3.062	2.438	1.378	3.875	5.157	3.033	7.052	1.937	1.218

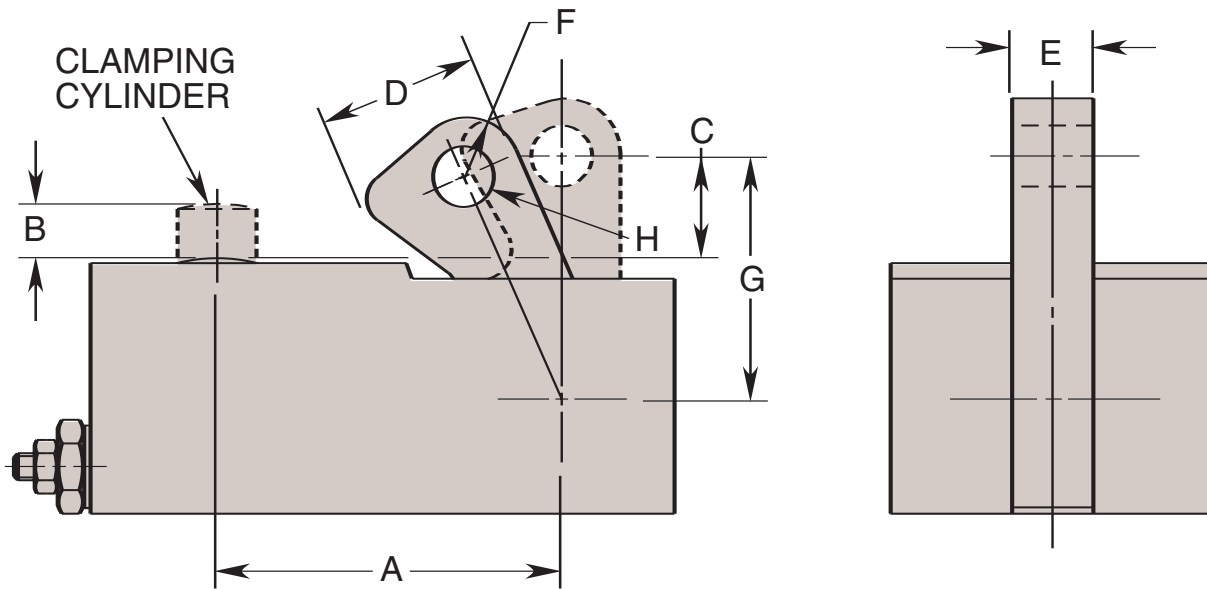
Cat. No.	Dimensions (In Inches)													
	*K Retract Port	*L Advance Port	M	N Dia.	P Clamping Screw	Q	R		S Adjustment Range		T	U	V	W Reach
							Dia.	Depth	Min.	Max.				
110107	1/8"-20 UNF SAE-4	1/8"-20 UNF SAE-4	1.250	.531	1/2"-13 UNC	2.250			.250	2.125	1.219	2.750	1.375	.625
110108	1/8"-20 UNF SAE-4	1/8"-20 UNF SAE-4	1.500	.656	5/8"-11 UNC	3.125	.257	.250	.062		1.719	3.000	1.500	.986
110109	1/8"-20 UNF SAE-4	1/8"-20 UNF SAE-4	1.750	.781	3/4"-9 UNC	3.250			.438	2.938	2.219	3.500	1.750	1.100

NOTE: \* At 3,500 psi max. operating pressure.



- Standard arm may be customized for use in specific applications.
- Standard clamping arm is 1045 steel heat treated to 38 Rc max.
- Modified/custom-designed clamping arms must be spring biased or counterweighted so that the arm pivots away from the workpiece.

**NOTE:** Modified arms may not have the same workpiece clamping force as standard clamps. Clamping force may be calculated by using the dimensions and cylinder force data below. Any clamp using a modified or custom arm that is heavier than the standard arm, must have its flow restricted to prevent internal damage.



Cat. No.	Specifications *Clamping Cyl. Effective Area (Sq. In.)	Dimensions (In Inches)							
		A	B	C	D Max.	E Max.	F Max. Radius	G	H Dia.
110107	.440	2.794	.375	.798	1.425	.489	.525	1.906	.439
110108	1.230	3.250	.500	.930	1.612	.736	.587	2.250	.564
110109	2.400	3.750	.545	1.055	1.893	.869	.775	2.625	.627

**NOTE:** \* Sequence Pressure 450 psi must be subtracted from System Operating Pressure when calculating Clamping Cylinder Force. [System Operating Pressure (PSI)-450 psi] X Effective Area (Sq. In.) = Clamping Cylinder Force (Lbs.).

# Edge Clamps



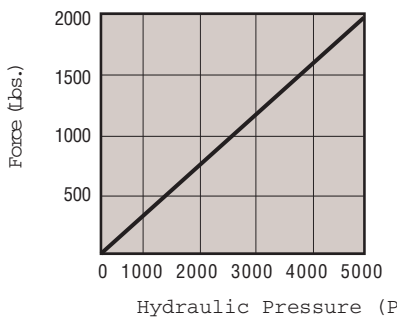
Hytec's edge clamps perform three functions: locating the workpiece, clamping horizontally against secondary locators and clamping vertically against the primary locating surface. This combined horizontal and vertical clamping force can locate and secure many parts with no other clamps being needed.

These clamps are extremely compact relative to their clamping force and are available in either conventionally or manifold mounted versions. At only 1 inch tall, their low profile design allows them to remain below most workpieces for unrestricted machining access to a part's top surface.

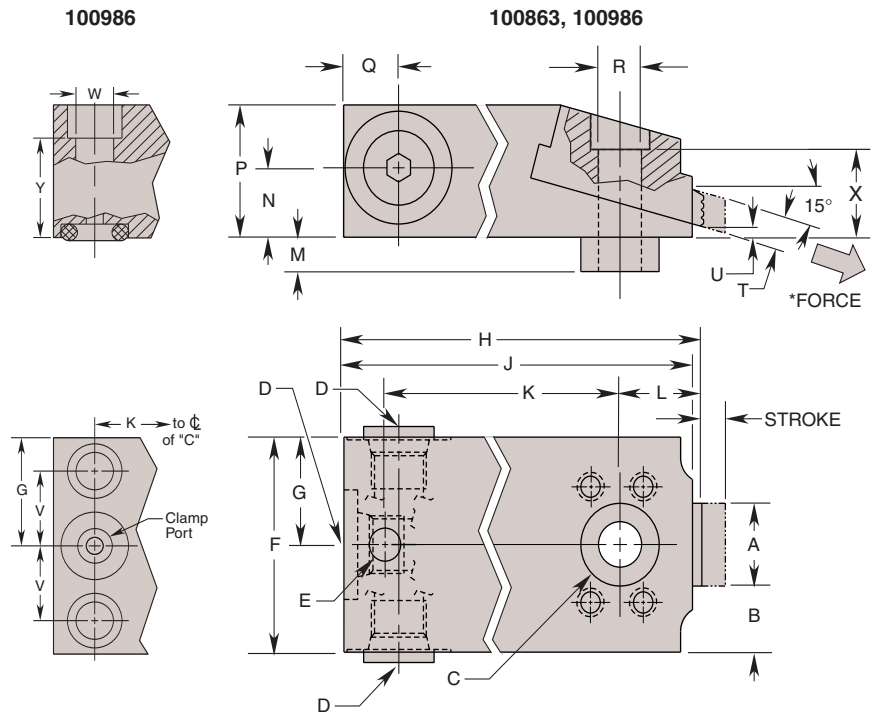
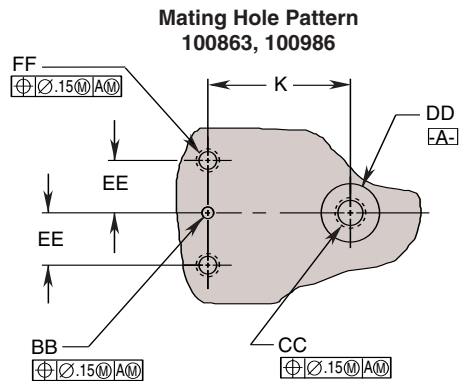
The 100986 clamp is compactly designed for manifold mounting. The 100863 clamp has three pressure ports for convenient installation and easy chaining of multiple clamps. A generous .188" stroke compensates for workpiece variations. Includes removable mounting/ locating bushing.

**Features:**

- 15 degree clamping angle
- Hardened, serrated, plated gripper
- Single-acting
- Hardened, tool steel piston
- Three pressure ports (100863)
- Compact design
- Dual, zinc plated return springs
- Conventional and manifold mount versions



Performance  
— Clamp No. 100863, 100986



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		F	G	H	J	K	L	M
100863	2,000	.188	.422	.080	.625	.500	.624	1/8-20 UNF SAE-4	.250	.175	1.625	.812	2.856	2.780	1.875	.653	.240
100986																	

Cat. No.	Dimensions (In Inches)																
	N	P	Q	R Dia.	T	U	V	W	X	Y	BB Dia.		CC Thread Size	DD		EE	FF Thread Size
100863	.525	1.000	.483	.344	.250	.090	—	—	.750	—	—	‡ .250	†† 5/16-18 UNC	.626	.250	—	—
100986	—		—	—	.250	.090	.562	.285	.750	.750	†.121 †.135	—				—	—

**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



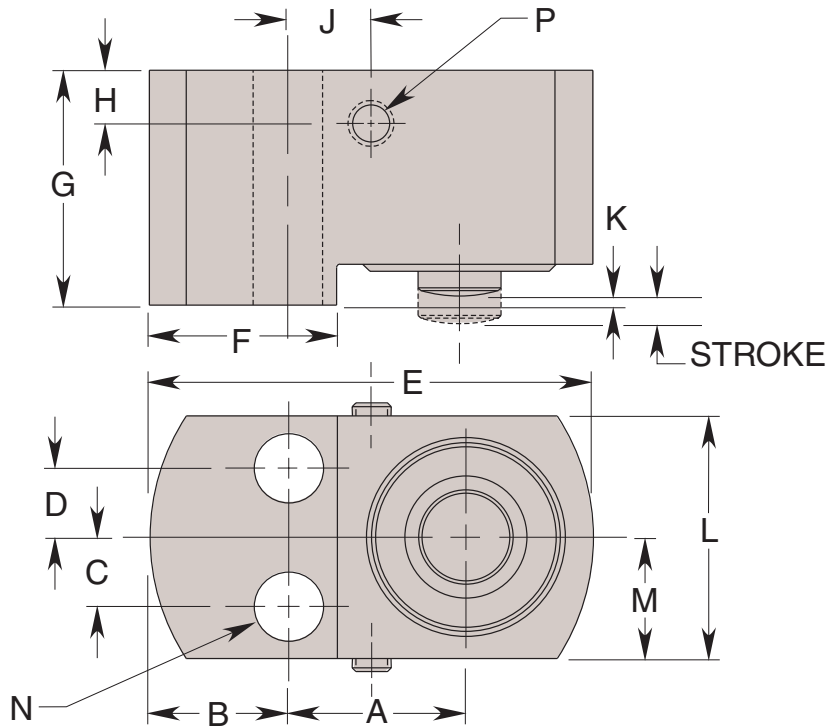
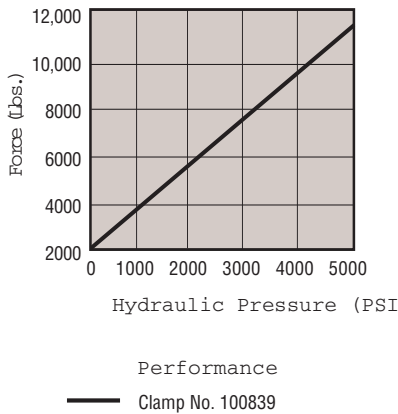
This clamp is ideal for permanent installation on presses to facilitate quick die changes or can be used in many workholding applications. Its unique design allows it to be mounted simply by using a clamp riser equal in thickness to the member being clamped. Just two 5/8" grade 8 cap screws are sufficient to mount the clamp and resist its 11,180 lbs. maximum clamping force. For proper clamp support and minimum deflection, design the riser so that it contacts the entire clamp mounting surface.

Two pressure ports make these clamps easy to chain together without the need for an extra tee fitting for each clamp.

The clamp features a low overall height, heat treated body bronze plated piston and a piston rod wiper seal to keep contaminant's out. Intended for use in 5,000 psi maximum systems, this single acting, spring return clamp has a .250 inch stroke.

**Features:**

- Bronze plated piston and piston rod
- Heat treated, corrosion resistant body
- Rod wiper seal



Cat. No.	Specifications				Dimensions (In Inches)													
	*Force (Lbs.)	Stroke (In.)	Eff. Area (Sq. In.)	Oil Cap. (Cu. In.)	A	B	C	D	E Dia.	F	G	H	J	K	L	M	N Dia.	P Port Thread Size
100839	11,180	.250	2.236	.56	1.600	1.250	.625	.625	4.000	1.690	2.125	.480	.750	.050	2.190	1.095	.656	1/8 NPTF

**NOTE: \*** Based on 5,000 psi max. operating pressure. Use of this product may require modifications of or attachments to the dies to be clamped. This work should be performed only by persons qualified to insure system safety.