



# Push/Pull Cylinders

## Threaded Body

### Single And Double Acting

- Four capacities from 470 lb. to 5,600 lb. clamp force at rated pressure.
- Single acting plunger is spring extended, hydraulically retracted.
- Also available in a straight line guided model, order as a Swing Clamp.
- Several sizes provide a wide range of adjustment.

Hardened chrome alloy steel plungers run longer with less wear and drag than other brands.

SAE porting is standard for leak free plumbing connection.

Vent port with bronze filter gives the cylinder a place to “breathe” and helps keep chips from drawing past wipers. (Can be used for a remote breather line. Used as the double acting unclamp port.)

Proprietary seal designs reduce leakage and increase seal life for longer lasting, more dependable cylinders.

Threaded plunger ends allow the attachment of arms, mechanisms or remote actuators.

Push/Pull cylinders are not shipped with cap screws.



G-2

Model No.	Cylinder Capacity (lb.)*		Stroke (in.)	Effective Piston Area (sq. in.)		Oil Capacity (cu. in.)	
	Extend	Retract		Extend	Retract	Extend	Retract
<b>Single Acting (S/A)</b>							
<b>Cylinders, actuated hydraulically 1 direction, spring returned</b>							
25-0105-00	N/A	470	0.57	N/A	0.098	N/A	0.056
25-0109-08	N/A	1400	0.79	N/A	0.295	N/A	0.233
25-0113-11	N/A	3100	1.16	N/A	0.626	N/A	0.726
25-0118-00	N/A	5600	1.66	N/A	1.178	N/A	1.955
<b>Double Acting (D/A)</b>							
<b>Cylinders, actuated hydraulically both directions</b>							
25-0205-00	1200	470	0.57	0.249	0.098	0.142	0.056
25-0209-08	3000	1400	0.79	0.601	0.295	0.475	0.233
25-0213-11	6100	3100	1.16	1.227	0.626	1.423	0.726
25-0218-00	12000	5600	1.66	2.405	1.178	3.992	1.955

\* Cylinder capacities are listed at 5,000 psi maximum operating pressure. The output force is adjustable by varying the hydraulic system pressure. To determine approximate output force for your application, multiply the piston area by your system operating pressure. (Actual force may vary slightly due to friction loss, seal and wiper drag, and/or return springs.)

## Dimensions

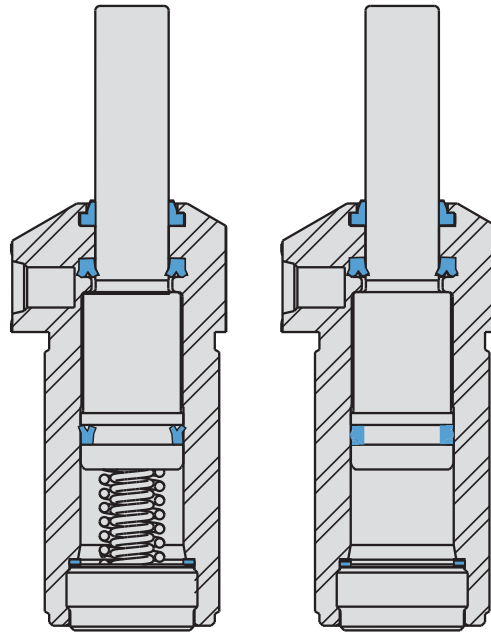
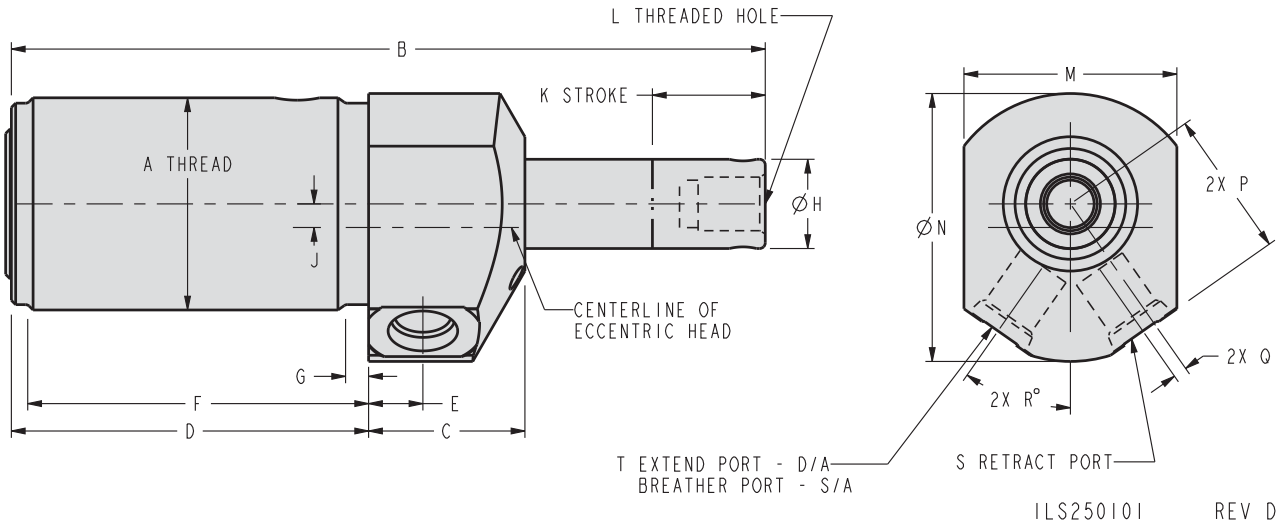
Model No.	A	B	C	D	E	F	G	H
<b>Single Acting (S/A)</b>								
25-0105-00	1 1/16-16	4.02	0.75	2.02	0.27	1.94	0.15	0.437
25-0109-08	1 1/2-16	5.32	1.09	2.54	0.38	2.40	0.15	0.625
25-0113-11	1 7/8-16	6.81	1.06	3.35	0.36	3.21	0.15	0.875
25-0118-00	2 1/2-16	9.31	1.19	4.71	0.39	4.59	0.15	1.250
<b>Double Acting (D/A)</b>								
25-0205-00	1 1/16-16	4.02	0.75	2.02	0.27	1.94	0.15	0.437
25-0209-08	1 1/2-16	5.32	1.09	2.54	0.38	2.40	0.15	0.625
25-0213-11	1 7/8-16	6.81	1.06	3.35	0.36	3.21	0.15	0.875
25-0218-00	2 1/2-16	9.31	1.19	4.71	0.39	4.59	0.15	1.250



# Push/Pull Cylinders



## Threaded Body



Pull Cylinder

Push/Pull Cylinder

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J	K	L	M	N	P	Q	R	S	T
<b>Cylinders, actuated hydraulically 1 direction, spring returned</b>									
0.19	0.57	1/4-28 X 0.28	1.13	1.50	0.81	N/A	25°	SAE 2	Breather
0.16	0.79	3/8-24 X 0.47	1.50	1.88	1.03	0.09	35°	SAE 4	Breather
0.16	1.16	1/2-20 X 0.52	1.88	2.25	1.20	0.08	30°	SAE 4	Breather
0.10	1.66	5/8-18 X 0.75	2.50	2.75	1.42	0.05	30°	SAE 4	Breather
<b>Cylinders, actuated hydraulically both directions</b>									
0.19	0.57	1/4-28 X 0.28	1.13	1.50	0.81	N/A	25°	SAE 2	SAE 2
0.16	0.79	3/8-24 X 0.47	1.50	1.88	1.03	0.09	35°	SAE 4	SAE 4
0.16	1.16	1/2-20 X 0.52	1.88	2.25	1.20	0.08	30°	SAE 4	SAE 4
0.10	1.66	5/8-18 X 0.75	2.50	2.75	1.42	0.05	30°	SAE 4	SAE 4



# Push/Pull Cylinders

Features, Frequently Asked Questions, Concept



## Standard Features

Special wipers keep chips and contaminants out.

Hardened chrome alloy steel plungers run longer with less wear and drag than other brands.

Vent port with bronze filter gives the cylinder a place to “breathe” and helps keep chips from drawing past wipers. (Can be used for a breather line. Used as the double acting unclamp port.)

BHC™ (Black Hard Coating) on the cylinder bodies helps prevent scoring and scratching, especially in the event of high side or “kick” loads which promote excessive scoring in many other brands.

Proprietary seal designs reduce leakage and increase seal life for longer lasting, more dependable cylinders.

## Frequently Asked Questions

**What is the intended application of these devices?**

They are intended for use actuating remote mechanisms, pulling on clamp plates, or often with removable “C” washers as a manual assembly, automatically activated pull clamp.

**I want a non-rotating model, how do I get a guided pull cylinder?**

See the standard swing clamp pages (C-27 to C-38), order the required swing clamp size assembled in the straight line guided track. This will get you the intended pull cylinder with a guided straight line pull, or you may add an external guide to many applications.

**I need to draw a wedge but I have had problems unlocking hydraulic wedge mechanisms. How do I solve this problem?**

The best solution is to draw the wedge using a double acting push/pull cylinder. This will give you a push capacity of approximately 2:1 providing adequate force to overcome the mechanical advantage involved in the wedging action.

**I want to make my part locators disappear. How can I do this?**

You can mount them on either single or double acting push/pull cylinders. Always use double acting if there will be a guide bushing or other frictional mechanism, or if positive extension is required in a short time. When extended, your locators are in place to help position your part. After location you just need to actuate your pull cylinders and draw the locator out of the way.

**I need to crowd a part against the fixed stops on my fixture then retract the spring plungers. Do you have anything to do this?**

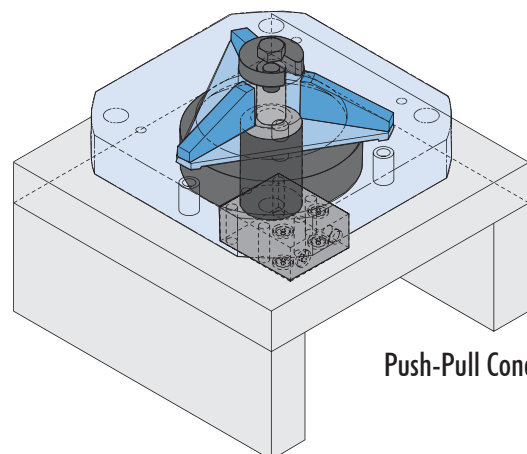
Yes, you may use single acting pull cylinders as stock crowders to hold your part in place, then draw them away for machining. This can often be done with a single hydraulic clamping circuit making your controls very simple. Be sure to use a hardened contact point on your pull cylinder when using it as a stock crowder.

**I notice that you don't have a double acting block pull cylinder. Why not?**

Double acting block pull cylinders are the same as double acting block cylinders. Please order a simple double acting block cylinder for this function. Other models may be readily available in their exact configuration under different numbers.

**I need to manually index a swing clamp. The rotation required to clear the part varies from part to part, I can use a little extra stroke also. Can you help?**

Maybe. If the contact point location on the part is not critical, you can use a single acting pull cylinder as a manually indexed swing clamp. Remember that the arm is not guided as it travels down. The extra stroke comes from your operator swinging the cylinder “flat” in the unclamp position; it then has the full cylinder stroke to pull the arm against the workpiece. Please avoid using double acting cylinders as they are difficult to swing when pressurized in the up position.



Push-Pull Concept

