

L1680
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IMPORTANT RECEIVING INSTRUCTIONS: Visually inspect all components for shipping damage. If any shipping damage is found, notify carrier at once. Shipping damage is NOT covered by warranty. The carrier is responsible for all repair or replacement cost resulting from damage in shipment.

SAFETY FIRST

Carefully plan your system by selecting components designed to perform the intended operation and which will adequately perform with existing equipment. Always check the product limitations regarding pressure ranges, load capacities and set-up requirements. The system operating pressure must not exceed the pressure rating of the lowest rated component in the system. Read all CAUTIONS, WARNINGS and INSTRUCTIONS included with, or attached to, each product. Follow all safety precautions to avoid personal injury or property damage during the system operation. ENERPAC CANNOT BE RESPONSIBLE FOR DAMAGE OR INJURY RESULTING FROM UNSAFE USE OF PRODUCT, LACK OF MAINTENANCE, OR INCORRECT PRODUCT AND SYSTEM APPLICATION. Contact ENERPAC when in doubt as to safety precautions, or applications.

Description

Enerpac SC-1 swing clamps can be set for left swing, right swing, or straight pull operations. Swing cylinders rotate 90° during the first portion of the stroke, continuing without rotation for the final clamping stroke.

STROKE	Initial	Clamping	Total
	1.00"	0.50	1.50"

Swing cylinders can be operated as either single acting or double acting. SC-1 cylinders come with a retract spring for single acting operation. A standard clamp arm is supplied with cylinder.

Specifications

- Operating Pressure: 3000 PSI maximum
- Maximum Frequency: 40 Cycles/Minute
- Swing Arc: 90°
- Seal Material: Buna-N/Polyurethane/Molythane

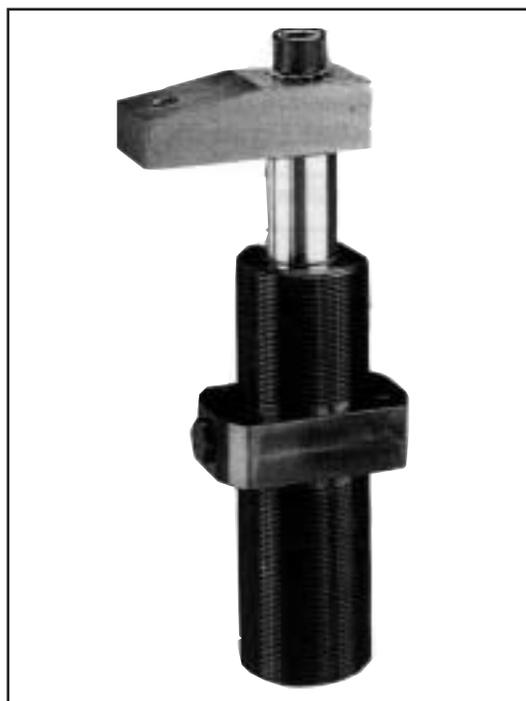


Figure 1: SC-1 Swing Clamps

Accessories

- Cylinder brackets
- Buttons and toggle parts
- SC1CN locknut
- DCA-2 double clamp arm

Installation

Clamp Arms

Clamp arms supplied with cylinders can be used to full operating pressure of cylinders, and will produce maximum clamping force. Longer or modified clamp arms require lowering the maximum operation pressure so that less clamping force is produced.



DO NOT exceed the values shown in Figure 2 or equipment damage and/or personal injury could result.

Clamp Arm Length (Inches)	Maximum Rated Pressure (PSI)	Cylinder Capacity (lbs) @max. PSI
No clamp ★	3000	2640
2 ★★	3000	2164
3	3000	1960
4	3000	1740
5	2400	1200
6	2000	840

★ For double arm clamping (DCA-2), use half of straight pull capacity for each side.

★★ Standard clamping arms supplied. Longer arms indicated in chart can be fabricated by the user. See Figure 3 for dimensions.

Figure 2: Clamp Arm Specifications

NOTE: Maximum recommended flow rate with standard arm is 200 cubic inches per minute. When using longer clamp arms, the flow rate should be reduced and a V66-F flow control valve should be used.

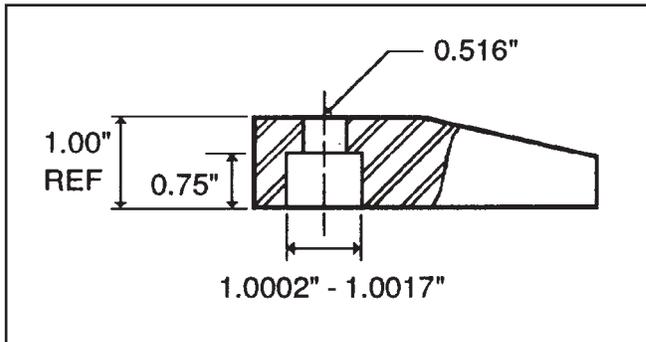


Figure 3: Clamp Arm Dimensions

Tightening Clamp Arm to Cylinder

1. Back out the ball bearing plug located on the side of the cylinder opposite of the advance port. This will help to prevent possible internal damage to the cylinder while tightening the clamp arm to the plunger.
2. Place clamp arm in vise. **DO NOT** place the body of the cylinder in the holding device.
3. Tighten the bolt holding the arm to the cylinder.
4. Retighten the ball bearing plug.

Setting Plunger Rotation

Swing cylinders are supplied with rotation set to clockwise. Follow steps below to change rotation.

1. Remove plug located opposite advance port to access plunger guide ball. Remove ball.
2. Turn plunger until selected groove is visible. See Figure 4.
3. Replace ball, making sure it is seated in the groove and reinstall plug.

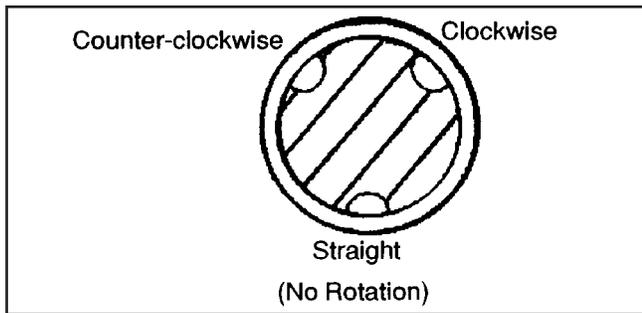


Figure 4: Plunger Rotation (Top View)

Mounting Swing Clamp

Secure swing clamp to fixture using one of the following methods:

- Screw threaded housing into tapped hole (1 7/8"-16 UN).
- Bolt cylinder down using the 4 mounting holes in the flange. Mounting holes are 0.40" diameter.
- Mount in a through-hole and secure with a locknut (P/N SC1CN).



NEVER exceed maximum pressure rating of lowest rated component in your system. Maximum pressure for SC-1 swing cylinder with standard clamp arm is 3000 PSI. When using custom clamp arms over 4 inches long, the maximum pressure rating is LOWER. See Figure 2 for clamp arm specifications. Exceeding rated pressure will result in component failure and may cause equipment damage and/or personal injury.

Operation

Connection for Single Acting

Connect pressure line to 1/4"-18 NPT port in flange.

Connections for Double Acting

1. Remove plunger return spring.
2. Connect advance line to 1/4"-18NPT lower side port or the 1/8"-27NPT bottom port. If using the bottom port, plug the lower side port with a 1/4"-18NPT pipe plug.

Air Removal

1. Apply low hydraulic pressure (approximately 10-20 PSI) to the system.
2. Loosen plug opposite advance port slightly to allow air to escape until hydraulic fluid appears.
3. Tighten the plug to prevent further leakage.



NEVER operate a double-acting swing clamp unless BOTH ports are connected to the hydraulic circuit. If one of the ports is left uncoupled, pressure will build up behind it when the swing clamp is operated. This may lead to equipment damage and/or personal injury.

If your swing cylinder requires repair work, contact a local ENERPAC authorized service center.

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