

P326 Series Pneumatic Cylinder Actuators Instruction Manual



WARNING

Failure to follow these instructions or to properly install and maintain this equipment could result in an explosion and/or fire causing property damage and personal injury or death.

Fisher equipment must be installed, operated, and maintained in accordance with federal, state, and local codes and Fisher instructions. The installation in most states must also comply with NFPA No. 58, ANSI K61.1 and DOT standards.

Only personnel trained in the proper procedures, codes, standards, and regulations of the LP-gas or anhydrous ammonia (NH₃) industries should install and service this equipment.

Introduction

Scope of Manual

This manual covers instructions for the Types P326 Series Pneumatic Cylinder kits which give remote operation to Fisher Internal Valves.

Description

All Fisher 2 and 3-inch NPT and 3-inch flanged internal valves can be fitted with an air operated cylinder for remote valve operation. When air pressure is applied to the cylinder, it moves the cylinder rod and the internal valve's operating lever, opening the valve. Upon loss of air pressure, the valve's operating lever immediately returns to the closed position.

Type P326-5-For Type C403-24 and C413-24 double flanged valves.

Type P326-6- for Type C401, C402, C407, C421 and C427 valves (2 and 3-inch sizes).

Type 326-7 - for Type C404-24 and C413-24 single flanged valves.

Type P326-8 - For Type C204-33 single flanged valves.

The P326 kits feature a spring return design which eliminates the need for an air return. The "rolled" cylinder diaphragm has a special seal that prevents air leakage and minimizes friction. A bellows covers the cylinder rod to prevent build-up of foreign material around the rod, and a filter in the cylinder vent keeps out dust.

Specifications

Pressure Source: Air, propane or nitrogen

Cylinder Pressure Limits: Min: 20 psig

Max: 125 psig

Recommended: 20-25 psig

Temperature Limits: -60°F to 250°F

Return Mechanism: Spring Only--no air

Installation



CAUTION

Do not manually stroke the cylinder. The cylinder contains a "rolled" type of diaphragm which can be deformed if the cylinder is manually operated with the inlet restricted. The cylinder has to be partially disassembled to repair a deformed diaphragm.

Minimum air consumption and maximum cylinder life are obtained by using the minimum cylinder operating pressure - 20 to 25 psig. A Fisher Type 67Y/105 can be used to supply pressure to the cylinder if desired.



P326 Series Pneumatic Cylinder Actuators

To install an actuator kit, first remove from the internal valve shaft any existing operating lever. When installing the type:

P326-5 - Mount the bracket (1) to the flanges with 2 bolts (2) as shown in Figure 1, fitting the operating lever (Key No. 5) on the internal valve shaft.

P326-7 and 8 - Mount the bracket (1) to the flange with 2 bolts (2) as shown in Figure 3, fitting the operating lever (Key No. 5) on the internal valve shaft.

P326-6-There must be no downstream pressure in the internal valve. Remove the three screws (3) holding the bonnet to the internal valve's body and discard them. Mount the cylinder bracket (1) as shown in Figure 2 using the three longer screws (3) supplied with the unit. Fit the operating lever (5) on the internal valve shaft as the bracket is moved into place.

All P326's - Install the cotter pin (9) through the operating lever (5) and the internal valve shaft. Loosen the clevis (Key No. 6) on the cylinder rod and adjust it so that there is about 1/8" movement of the operating lever before it begins to open the internal valve. Tighten the nut (Key No. 10) to hold the clevis at this position. Connect the actuating pressure line tubing to the tee (Key No. 14).

After installing the unit, operate the cylinder with pressure to see that it smoothly opens and closes the internal valve without sticking or jamming.

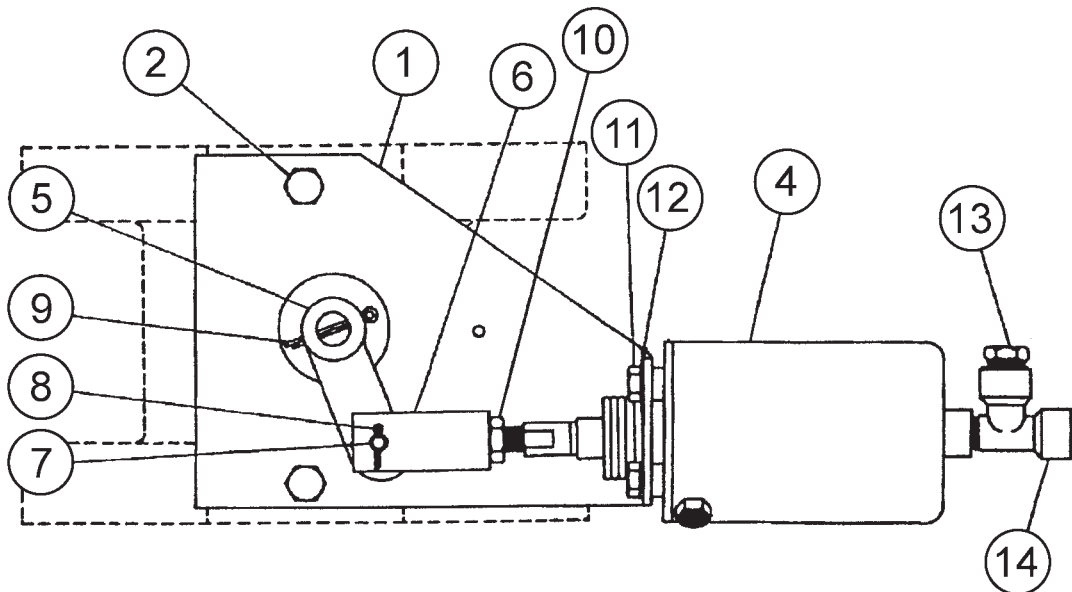


WARNING

Downstream pressure must be released before removing the three screws (3) holding the bonnet to the internal valve body. Failure to do so could result in personal injury.

Parts Reference (Refer to Figure 1,2 or 3)

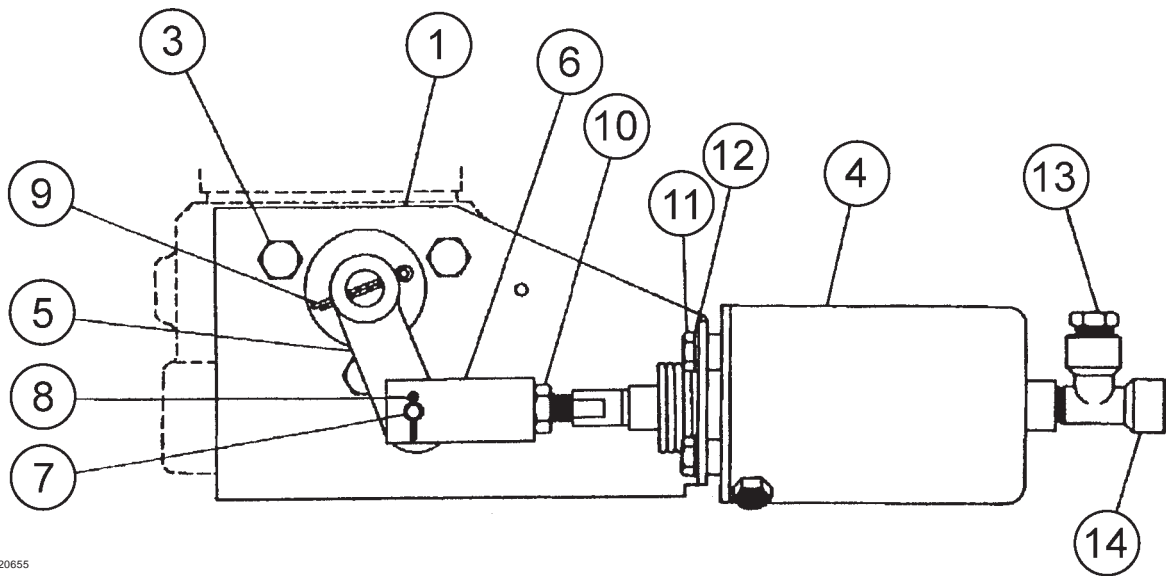
KEY NO.	NAME OF PART	KEY NO.	NAME OF PART	KEY NO.	NAME OF PART
1	Bracket	5	Operating Lever	10	Nut
2	Screw - P326-5, 7, & 8 (2 req'd)	6	Clevis	11	Screw (4 req'd)
3	Screw - P326-6 Only (3 req'd)	7	Pin	12	Washer (4 req'd)
4	Air Cylinder	8	Cotter Pin	13	Fuse Plug
		9	Cotter Pin	14	Tee



T20653

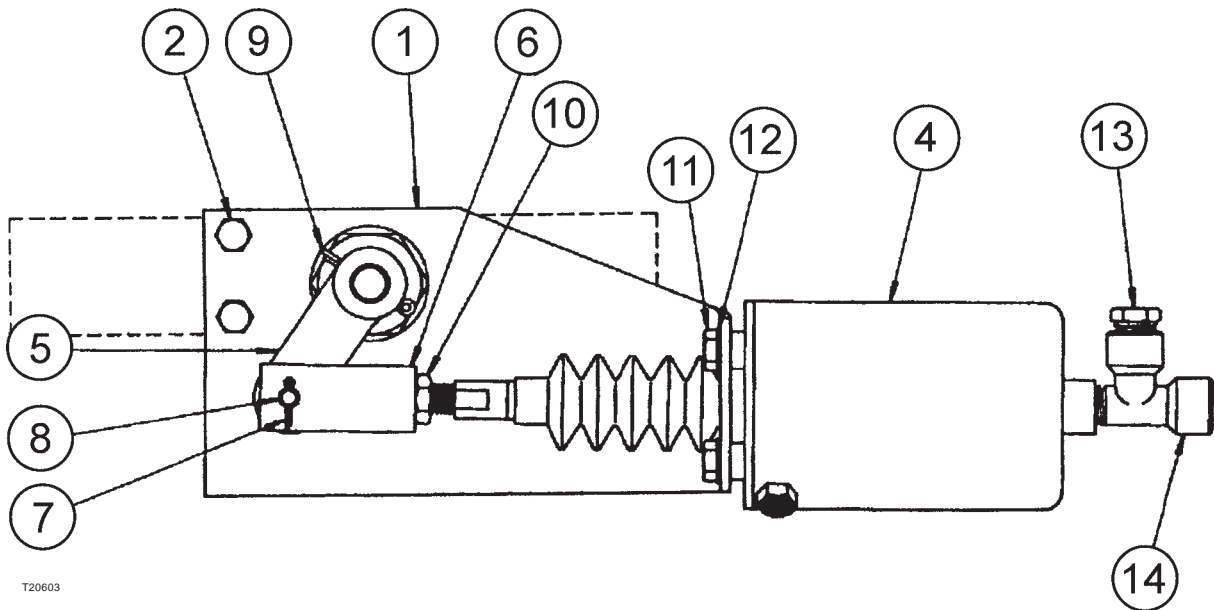
Figure 1. Type P326-5 for C403-24 internal valves

P326 Series Pneumatic Cylinder Actuators



T20655

Figure 2. Type P326-6 for C401, C402, and C407 internal valves



T20603

Figure 3. Type P326-7 for C404-24 internal valves and Type P326-8 for C204-33 internal valves

P326 Series Pneumatic Cylinder Actuators

Maintenance

A simple preventive maintenance program for the valve and its controls will eliminate a lot of potential problems. **Fisher recommends these steps be conducted once a month:**

1. Regularly inspect the operating lever to see that it operates freely and that there is no leakage around the stub shaft. If there is leakage or sticking, the packing should be replaced.
2. Check for tight closure of the seat discs regularly. Any leakage indicates a defect in the seat caused from wear or from dirt or scale lodging and embedding the seat. To check for leakage, close the internal valve and exhaust downstream pressure. Close the first valve downstream from the internal valve, and note any pressure build-up by means of a pressure gauge. If leakage is indicated, the seat discs should be replaced.
3. All operating controls should be regularly inspected, cleaned and oiled.

Because the cylinder has a diaphragm seal and no rod bearing, internal lubrication is not required. Periodic lubrication of the operating lever/clevis pivot is recommended. The breather vent filter on the cylinder should be cleaned occasionally.

Check to see that the cylinder fully opens and closes the internal valve without sticking. In spite of the bellows protecting the cylinder rod, it is still possible that a build-up of mud, corrosion, or foreign material could prevent the cylinder from closing, jamming the internal valve open. Do not permit this condition to occur.

Parts Ordering

When corresponding about this equipment, always reference the equipment type number found on the nameplate. A replacement Parts List is available for the valve. When ordering replacement parts reference the complete 11-character part number of each part. For cylinder repair kit, order part number T13622T0012.

The contents of this publication are presented for informational purposes only, and while every effort has been made to ensure their accuracy, they are not to be construed as warranties or guarantees, expressed or implied, regarding the products or services described herein or their use or applicability. We reserve the right to modify or improve the designs or specifications of such products at any time without notice.

Emerson Process Management

Fisher Controls International, LLC.

P.O. Box 8004

McKinney, Texas 75070, USA

Telephone: 1 (800) 432-8711

Telephone: 1 (972) 542-5512

www.FISHERregulators.com/lp



©Fisher Controls International, Inc., 2002; All Rights Reserved

Fisher and Fisher Regulators are marks owned by Fisher Controls International, Inc. The Emerson logo is a trade mark and service mark of Emerson Electric Co. All other marks are the property of their respective owners.