

# DEZURIK DOUBLE-ACTING HYDRAULIC CYLINDER FOR G SERIES ACTUATORS

Instruction **D10023**  
August 2012

## Instructions

These instructions are for use by personnel who are responsible for the installation, operation and maintenance of DeZURIK valves, actuators or accessories.

## Safety Messages

All safety messages in the instructions are identified by a general warning sign and the signal word CAUTION, WARNING or DANGER. These messages indicate procedures to avoid injury or death.

Safety label(s) on the product indicate hazards that can cause injury or death. If a safety label becomes difficult to see or read, or if a label has been removed, please contact DeZURIK for replacement label(s).

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### **⚠WARNING**

**Personnel involved in the installation or maintenance of valves should be constantly alert to potential emission of pipeline material and take appropriate safety precautions. Always wear suitable protection when dealing with hazardous pipeline materials. Handle valves which have been removed from service with suitable protection for any potential pipeline material in the valve.**

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## Inspection

Your DeZURIK product has been packaged to provide protection during shipment; however, items can be damaged in transport. Carefully inspect the unit for damage upon arrival and file a claim with the carrier if damage is apparent.

## Parts

Replaceable wear parts are listed on the assembly drawing. These parts can be stocked to minimize downtime. Order parts from your local DeZURIK sales representative or directly from DeZURIK. When ordering parts please provide the following information:

**If the valve has a data plate:** please include the 7-digit part number with either 4-digit revision number (example: 9999999R000) or 8-digit serial number (example: S1900001) whichever is applicable. The data plate will be attached to the valve assembly. Also, include the part name, the assembly drawing number, the balloon number and the quantity stated on the assembly drawing.

**If there isn't any data plate visible on the valve:** please include valve model number, part name, and item number from the assembly drawing. You may contact your local DeZURIK Representative to help you identify your valve.

## DeZURIK Service

DeZURIK service personnel are available to maintain and repair all DeZURIK products. DeZURIK also offers customized training programs and consultation services. For more information, contact your local DeZURIK sales representative or visit our website at [DeZURIK.com](http://DeZURIK.com).

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### Description

This instruction covers the double-acting hydraulic cylinder used on G-Series actuators. This cylinder can be used with Pumpcheck accessories.



#### **CAUTION!**

**This cylinder is a pressure-containing vessel. Release the pressure from both ends of the cylinder before attempting any disassembly or repairs.**

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### Supply

Supply medium is clean water. Minimum supply pressure is 50 psi. Maximum supply pressure is 150 psi.

### Lubrication

When the cylinder is disassembled, lubricate the grooves in the piston, the piston seal, the O-rings, and the cylinder wall using one of these lubricants.

- Dow Corning Molykote No. 44 (**recommended**)
- Shell Retinax AM (alternate)
- Shell Lithall MDS (alternate)

### Closed Position Adjustment

1. Turn the setscrew in the end of the cylinder counterclockwise approximately 5 revolutions.
2. Close the valve. See the valve instruction sheet to determine closed position.
3. Turn the setscrew clockwise until resistance is felt as it contacts the piston rod.
4. Lock in place with the nut, being sure the thread seal is positioned properly.

### Disassembly

1. Shut off the cylinder supply pressure and relieve the pressure in the cylinder.
2. If the actuator is powered, disconnect and lock out the pneumatic, hydraulic, or electrical power to prevent accidental operation of the actuator.



#### **WARNING!**

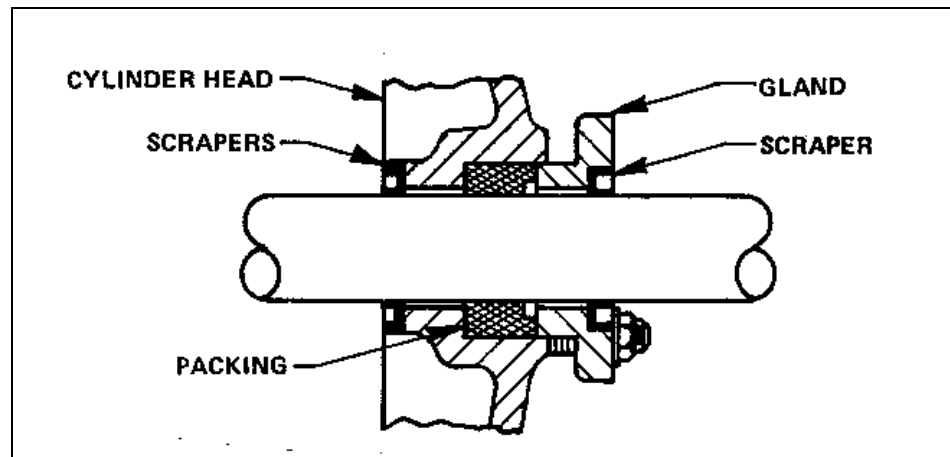
**Moving parts from accidental operation of power actuator can cause personal injury or equipment damage. Disconnect and lock out power to actuator before servicing.**

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3. Disconnect the cylinder tubing.

**Disassembly (continued)**

4. Remove the nuts and washers from the cylinder cap end of the tie rods and remove the cylinder cap.
5. Remove the cylinder tube. Rotate it while pulling it off the piston.
6. Remove the nut fastening the piston to the piston rod and remove the piston.
7. Remove the nuts from the cylinder head end of the tie rods and remove the cylinder head.
8. Remove the gland and packing from the cylinder head.
9. Remove the two scrapers. One scraper is found in the cylinder head, the other is in the gland. Figure 1 shows their location.

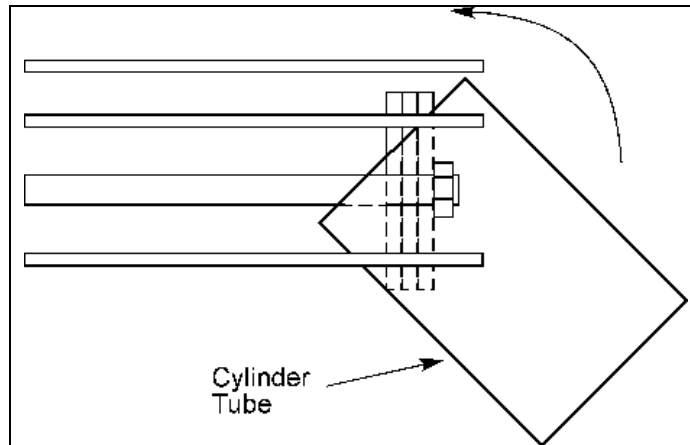


**Figure 1 – Scraper Locations**

**Reassembly**

1. Clean and examine the rod scrapers. If they are damaged, use new scrapers. Install the scrapers in the cylinder head and the gland.
2. Clean the packing chamber and the O-ring groove in the cylinder head. Then assemble the gland and the cylinder head on the piston rod.
3. Install the packing. It is recommended that new packing be used.
4. Place the lubricated O-ring in the cylinder head.
5. Remove the O-ring from the center of the piston and clean the O-ring groove. Inspect the O-ring, replacing it if damaged, and install the lubricated O-ring.
6. Slide the piston onto the piston rod, and install and tighten the nut.
7. Remove the piston seal and its O-ring and clean the O-ring, seal and the groove in the piston. Inspect the O-ring and seals, replacing them if damaged. Then install the lubricated O-ring and seal.
8. Lubricate the inside of the cylinder tube and slide the cylinder over the piston. On cylinders with 6" and larger diameter, start the cylinder at a 45 angle to the piston as shown in Figure 2. (It will be necessary to remove several cylinder tie rods to provide clearance.)

### Reassembly (continued)



**Figure 2 – Cylinder Tube Installation**

9. Clean the O-ring groove in the cylinder cap and install the lubricated O-ring.
10. Install the cylinder cap, lock washers and nuts. Tighten the nuts on the tie rods with the torques specified in Table A.

**Table A: Tie Rod Nut Torque**

Cylinder Size	Torque		
	(ft lbs)	(cm/kg)	(Nm)
3" & 4"	12	165	16
6" & 8"	16	220	22
10" & 12"	20	275	27

11. Reconnect the tubing to the cylinder ports.
12. If the actuator is a powered actuator, reconnect power to the actuator.
13. Actuate the cylinder, checking the closed position adjustment.

## Reassembly (continued)

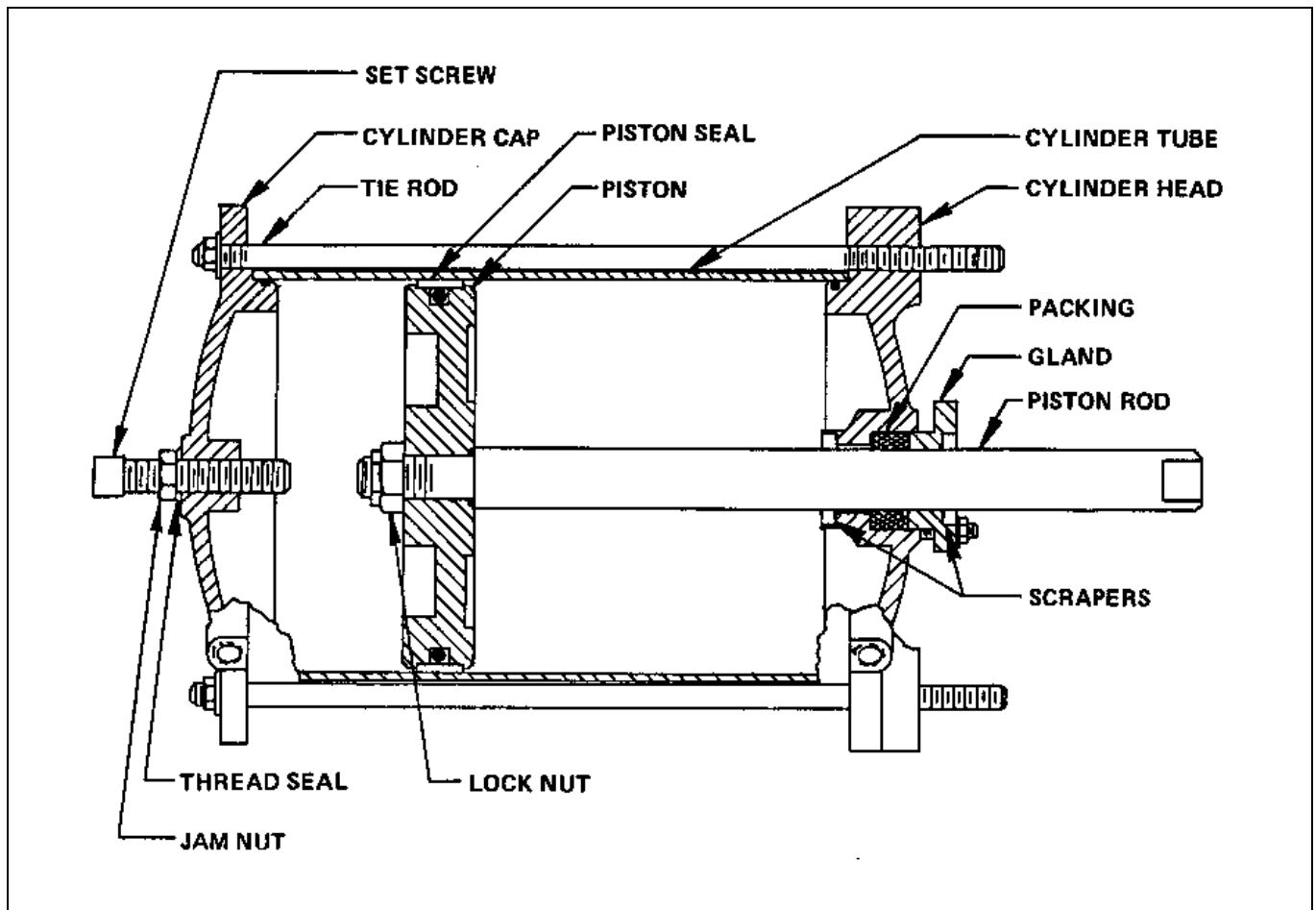


Figure 3 – Double-Acting Hydraulic Cylinder

## Limited Warranty

DeZURIK, Inc. ("Seller") manufactured products, auxiliaries and parts thereof that we manufacture for a period of twenty-four (24) months from date of shipment from Seller's factory, are warranted to the original purchaser only against defective workmanship and material, but only if properly stored, installed, operated, and serviced in accordance with Seller's recommendations and instructions.

For items proven to be defective within the warranty period, your exclusive remedy under this limited warranty is repair or replacement of the defective item, at Seller's option, FCA Incoterms 2020 Seller's facility with removal, transportation, and installation at your cost.

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No claim for transportation, labor, or special or consequential damages or any other loss, cost or damage is being provided in this limited warranty. You shall be solely responsible for determining suitability for use and in no event shall Seller be liable in this respect.

This limited warranty does not warrant that any Seller product or part is resistant to corrosion, erosion, abrasion or other sources of failure, nor does Seller warrant a minimum length of service.

Your failure to give written notice to us of any alleged defect under this warranty within twenty (20) days of its discovery, or attempts by someone other than Seller or its authorized representatives to remedy the alleged defects therein, or failure to return product or parts for repair or replacement as herein provided, or failure to store, install, or operate said products and parts according to the recommendations and instructions furnished by Seller shall be a waiver by you of all rights under this limited warranty.

This limited warranty is voided by any misuse, modification, abuse or alteration of Seller's product or part, accident, fire, flood or other Act of God, or your failure to pay entire contract price when due.

The foregoing limited warranty shall be null and void if, after shipment from our factory, the item is modified in any way or a component of another manufacturer, such as but not limited to; an actuator is attached to the item by anyone other than a Seller factory authorized service personnel.

All orders accepted shall be deemed accepted subject to this limited warranty, which shall be exclusive of any other or previous warranty, and this shall be the only effective guarantee or warranty binding on Seller, despite anything to the contrary contained in the purchase order or represented by any agent or employee of Seller in writing or otherwise, notwithstanding, including but not limited to implied warranties.

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## Sales and Service

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Web site: [www.dezurik.com](http://www.dezurik.com) E-Mail: [info@dezurik.com](mailto:info@dezurik.com)



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