

DEZURIK G-SERIES HANDWHEEL AND CHAINWHEEL ACTUATORS

Instruction D10083

August 2012

Instructions

These instructions provide information about the DeZURIK G-Series Handwheel and Chainwheel actuators. These instructions are intended for personnel who are responsible for the installation, operation and maintenance of G-Series actuators.

Safety Messages

All safety messages in the instructions are flagged with an exclamation symbol and the word Caution, Warning or Danger. These messages indicate procedures that must be followed exactly to avoid equipment damage, personal injury or death. Safety label(s) on the product indicate hazards that can cause equipment damage, personal injury or death.

Safety label(s) on the product indicate hazards that can cause equipment damage, personal 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).



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.

Inspection

Your G-Series actuator has been packaged to provide protection during shipment. Carefully inspect the unit for damage upon arrival and file a claim with the carrier if damage is apparent.

Parts

Recommended spare parts are listed on the assembly drawing. These parts should be stocked to minimize downtime.

Order parts from your DeZURIK sales representative, or directly from DeZURIK. When ordering parts, please include the 7-digit part number and 4-digit revision number (example: **9999999R000**) located on the data plate 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.

DeZURIK Service

DeZURIK service personnel are available to install, 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 www.dezurik.com.

Table of Contents

Description - - - - - 4

Lubrication - - - - - 4

Adjustments - - - - - 5

Changing the Actuator Position - - - - - 5

Disassembling the Actuator - - - - - 6

Reassembling the Actuator - - - - - 7

Description

These instructions cover adjustments and maintenance for a DeZURIK G-Series handwheel or chainwheel actuator. Two sizes, G12 and G16, are available. See Figure 1 to identify which unit you have.

**CAUTION!**

This actuator can be furnished with either cast iron or ductile iron gears.

The ductile iron gear is necessary for submerged or buried service valves or when a 2" operating nut is installed on the input shaft. Breakage of the gear teeth will occur if cast iron gears are torqued above 200 ft-lb's.

Cast Iron & Ductile Iron are similar in appearance: To determine if the gear material is ductile iron, remove the cover as described in the ACTUATOR DISASSEMBLY Section. G12 & G16 gears have "M199" cast in raised letters on either the top or under side of the web between the hub and the teeth, removal of the gear is necessary to see the marking. If there is no "M199" on the gear, the material is cast iron.

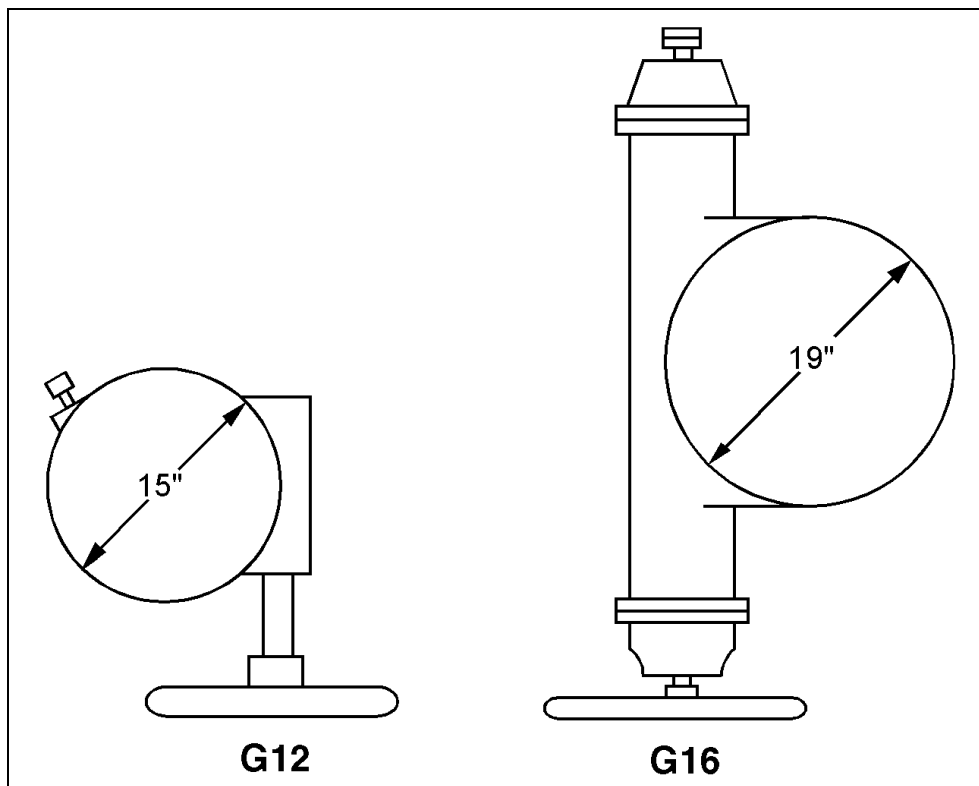


Figure 1- Actuator Identification

Lubrication

The G-Series Actuator has been lubricated at the factory and requires no routine lubrication. If the actuator is disassembled, lubricate the worm gear and bearings and pack the gear sector teeth using one of these lubricants:

- Keystone Zeniplex-1 (**recommended**)
- Amoco Amolith Grease #1-EP (alternate)
- Amsoil GHD (alternate)
- Mobil Mobilux EP 1 (alternate)
- Petro-Canada Vultrex MPG EP 1 (alternate)
- Shell Alvania EP 1 (alternate)
- Texaco Multifak EP 1 (alternate)

Adjustments

The closed position stop is a set screw located in the side of the actuator housing on the G12 unit, and is located in the end of the extension cap on the G16 unit.

Adjust the set screw to position the valve in the closed position when the gear or rack contacts the set screw. (Read the instruction sheet for the valve. Additional information on the proper closed position may be included.)

Changing the Actuator Position

The possible actuator mounting positions are shown on the customer drawing. To change the mounting position:

1. Shut off line pressure and close the valve.
2. Remove the actuator cover screws and the cover.
3. Remove the screws that fasten the actuator to the adaptor.

Note: These screws are located on the underside of the actuator.

4. Remove the actuator from the valve.
5. Remove the gear sector.

Note: Rotate it in the same direction and for the same number of degrees as the actuator will be rotated, and reinstall the gear sector in the actuator. Be sure the key and keyway are engaged.

6. Place the actuator on the valve in the desired position, and install the screws that fasten the actuator to the adaptor.

Disassembling the Actuator

G12 UNITS

1. Shut off line pressure if the actuator is mounted on an installed valve.
2. Remove the actuator cover screws and the actuator cover.
3. Note the position of the gear sector—it must be installed in the same position during reassembly.
4. Remove the gear sector.
5. Remove the pipe plug in the housing, and drive out the pin that connects the worm gear to the handwheel drive shaft.
6. Remove the drive shaft, handwheel, and bearing race.

G16 UNITS

1. Shut off pipeline pressure if the actuator is mounted on an installed valve.
2. Remove the actuator cover screws, the actuator cover, the screws and the pointer.
3. Mark the teeth on the gear and rack that are engaged.
4. Remove the four screws that fasten the drive shaft seal housing to the actuator housing.
5. Turn the handwheel to remove the drive shaft seal assembly complete with handwheel and drive shaft.
6. To disassemble the drive shaft seal housing assembly:
 - a. To remove the collar and the set screw, and turn the threaded collar out.
Note: Because this collar retains the lower bearing, the bearing will also be removed.
 - b. To remove the seal housing, remove the handwheel pin and handwheel. Then lift the seal housing off the shaft.
Note: This will allow access to the top bearing.
 - c. To remove the sleeve, remove the pin that connects it to the shaft.
7. Remove the gear sector, the rack, the pin and the rack guide.

Reassembling the Actuator

G12 UNITS

1. Assemble the drive shaft and handwheel, worm gear, thrust bearing, and bearing race.
2. Install the pin that connects the handwheel drive shaft and the worm gear.
3. Install the pipe plug in the housing.
4. Lubricate the worm gear and the gear sector with Keystone Zeniplex-1, and place the gear sector on the plug stem in the same position as it was when disassembled.
5. Fasten the actuator cover to the actuator housing.

G16 UNITS

1. Assemble the drive shaft seal housing assembly:
 - a. Pin the sleeve to the shaft.
 - b. Install the top bearing, seal housing, and handwheel.
 - c. Pin the handwheel.
 - d. Install the lower bearing and threaded collar.
 - e. Install the set screw in the collar.
2. Lubricate the rack guide, rack and gear sector with Keystone Zeniplex-1.
3. Pin the rack guide in place.

Note: Position the pin so it does not protrude into the housing.
4. Install the gear sector and rack with the proper teeth engaged.
5. Install the drive shaft seal housing.
6. Continue turning the handwheel until the drive shaft seal housing is in place against the actuator housing flange (marked P), and install the screws.
7. Fasten the actuator cover to the actuator housing.
8. Install the pointer.

Guarantee

Products, auxiliaries and parts thereof of DeZURIK, Inc. manufacture are warranted to the original purchaser for a period of twenty-four (24) months from date of shipment from factory, against defective workmanship and material, but only if properly installed, operated and serviced in accordance with DeZURIK, Inc. recommendations. Repair or replacement, at our option, for items of DeZURIK, Inc. manufacture will be made free of charge, (FOB) our facility with removal, transportation and installation at your cost, if proved to be defective within such time, and this is your sole remedy with respect to such products. Equipment or parts manufactured by others but furnished by DeZURIK, Inc. will be repaired or replaced, but only to the extent provided in and honored by the original manufacturers warranty to DeZURIK, Inc., in each case subject to the limitations contained therein. No claim for transportation, labor or special or consequential damages or any other loss, cost or damage shall be allowed. You shall be solely responsible for determining suitability for use and in no event shall DeZURIK, Inc. be liable in this respect. DeZURIK, Inc. does not guarantee resistance to corrosion, erosion, abrasion or other sources of failure, nor does DeZURIK, Inc. guarantee 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 DeZURIK, Inc. 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 install and operate said products and parts according to instructions furnished by DeZURIK, Inc., or misuse, modification, abuse or alteration of such product, accident, fire, flood or other Act of God, or failure to pay entire contract price when due shall be a waiver by you of all rights under this warranty.

The foregoing guarantee 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 DeZURIK, Inc. Factory 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 DeZURIK, Inc., despite anything to the contrary contained in the purchase order or represented by any agent or employee of DeZURIK, Inc., in writing or otherwise, notwithstanding, including but not limited to implied warranties.

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Sales and Service

For information about our worldwide locations, approvals, certifications and local representative:

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