

DEZURIK G-SERIES HANDWHEEL AND CHAINWHEEL ACTUATORS

Instruction **D10083**
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).

⚠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 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.

Table of Contents

Description - - - - -	4
Lubrication - - - - -	4
Adjustments - - - - -	5
Changing the Actuator Position - - - - -	5
Disassembling the Actuator - - - - -	6
Reassembling the Actuator - - - - -	7

DeZURIK

G-Series Handwheel and Chainwheel Actuators

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.

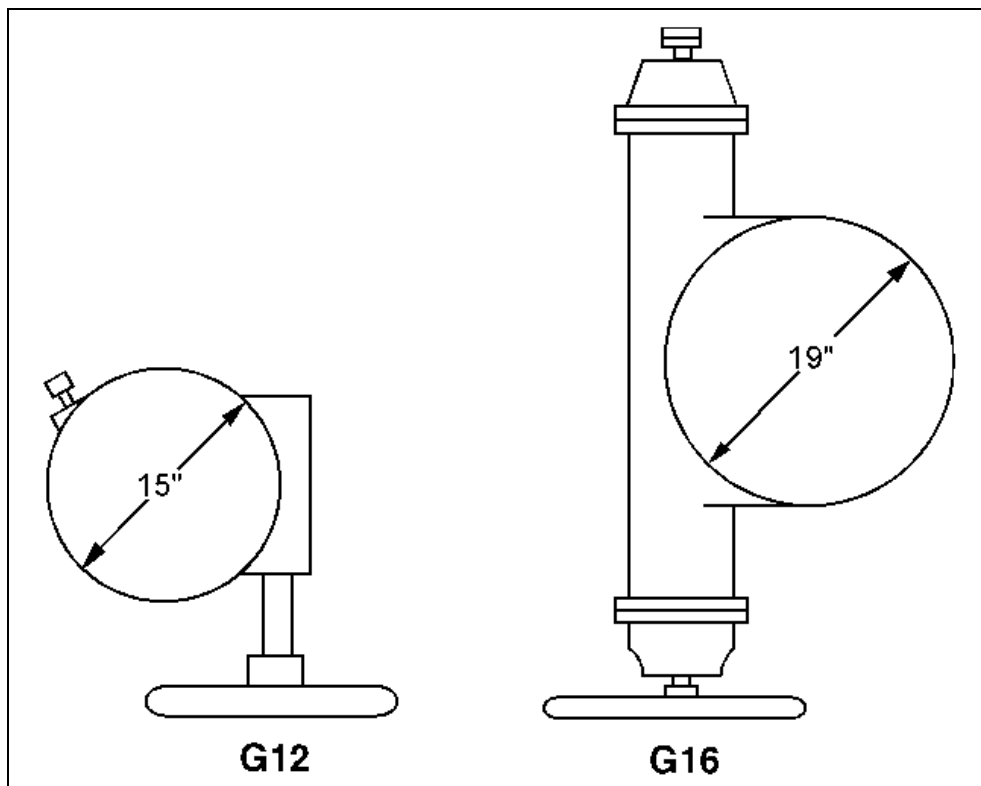


Figure 1- Actuator Identification

DeZURIK

G-Series Handwheel and Chainwheel Actuators

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.

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.

Products or parts manufactured by others but furnished by Seller are not covered by this limited warranty. Seller may provide repair or replacement for other's products or parts only to the extent provided in and honored by the original manufacturer's warranty to Seller, in each case subject to the limitations contained in the original manufacturer's warranty.

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.

THE FOREGOING REPAIR AND REPLACEMENT LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, OBLIGATIONS AND LIABILITIES, INCLUDING, BUT NOT LIMITED TO, ALL WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR OF MERCHANTABILITY OR OTHERWISE, EXPRESSED OR IMPLIED IN FACT OR BY LAW, AND STATE SELLER'S ENTIRE AND EXCLUSIVE LIABILITY AND YOUR EXCLUSIVE REMEDY FOR ANY CLAIM IN CONNECTION WITH THE SALE AND FURNISHING OF SERVICES, GOODS OR PARTS, THEIR DESIGN, SUITABILITY FOR USE, INSTALLATION OR OPERATIONS. NEITHER ANY PERFORMANCE OR OTHER CONDUCT, NOR ANY ORAL OR WRITTEN INFORMATION, STATEMENT, OR ADVICE PREPARED BY SELLER OR ANY OF OUR EMPLOYEES OR AGENTS WILL CREATE A WARRANTY, OR IN ANY WAY INCREASE THE SCOPE OR DURATION OF THE LIMITED WARRANTY.

Disclaimer

Metric fasteners should not be used with ASME Class 150/300 bolt holes and flange bolt patterns. If you use metric fasteners with ASME Class 150/300 bolt holes and flange bolt patterns, it may lead to product failure, injury, and loss of life. DeZURIK Inc. disclaims all liability associated with the use of metric fasteners with ASME Class 150/300 bolt holes and flange patterns, including but not limited to personal injury, loss of life, loss of product, production time, equipment, property damage, lost profits, consequential damages of any kind and environment damage and/or cleanup. Use of metric fasteners with ASME Class 150/300 bolt holes and flange bolt patterns is a misuse that voids all warranties and contractual assurances. If you use metric fasteners with ASME Class 150/300 bolt holes and flange bolt patterns, you do so at your sole risk and any liability associated with such use shall not be the responsibility of DeZURIK, Inc. In addition to the foregoing, DeZURIK's Manufacturer's Conditions apply.

Limitation of Liability

IN NO EVENT SHALL SELLER BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL, PUNITIVE, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO; DAMAGE TO OR LOSS OF OTHER PROPERTY OR EQUIPMENT, BUSINESS INTERRUPTION, COST OF SUBSTITUTE PRODUCTS, LOSS OF TIME, LOSS OF PROFITS OR REVENUE, COST OF CAPITAL, LOSS OF USE, OR DIMINUTION IN VALUE) WHATSOEVER, AND SELLER'S LIABILITY, UNDER NO CIRCUMSTANCES, WILL EXCEED THE CONTRACT PRICE FOR THE GOODS AND/OR SERVICES FOR WHICH LIABILITY IS CLAIMED. ANY ACTION FOR BREACH OF CONTRACT BY YOU, OTHER THAN RIGHTS RESPECTING OUR LIMITED WARRANTY DESCRIBED ABOVE, MUST BE COMMENCED WITHIN 12 MONTHS AFTER THE DATE OF SALE.

Sales and Service

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

Web site: www.dezurik.com E-Mail: info@dezurik.com



250 Riverside Ave. N., Sartell, MN 56377 • Phone: 320-259-2000 • Fax: 320-259-2227

DeZURIK, Inc. reserves the right to incorporate our latest design and material changes without notice or obligation.

Design features, materials of construction and dimensional data, as described in this manual, are provided for your information only and should not be relied upon unless confirmed in writing by DeZURIK, Inc. Certified drawings are available upon request.