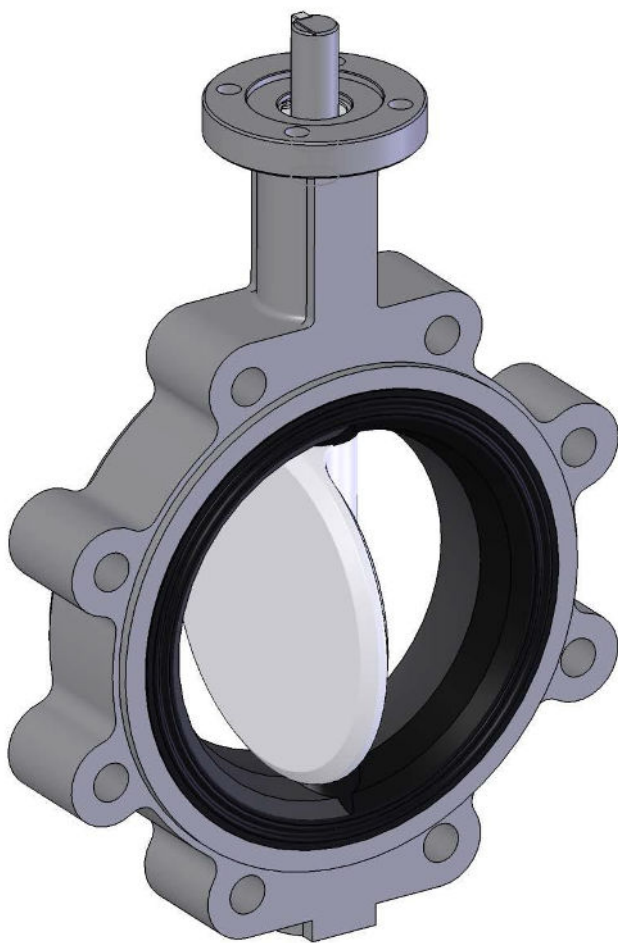


# DEZURIK 2-20" BOS BUTTERFLY VALVES



Instruction **D10459**  
February 2025

## 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

The BOS Butterfly Valve is a resilient-seated valve for general industrial applications. Lugged or wafer end connections are offered, with a choice of disc, seat, and shaft materials. Pressure and temperature ratings are shown on the valve data plate. The BOS Butterfly Valves are certified to NSF/ANSI 61 per NSF/ANSI 372. Refer to DeZURIK's website at [DeZURIK.com](http://DeZURIK.com) for certificate and details.

## Handling and Storage

Lifting the valve improperly may damage it. Do not fasten lifting devices to piping or attached components. Lift the valve with slings, chains or cables fastened around the valve body, or fastened to bolts or rods through bolt holes in the flanges.

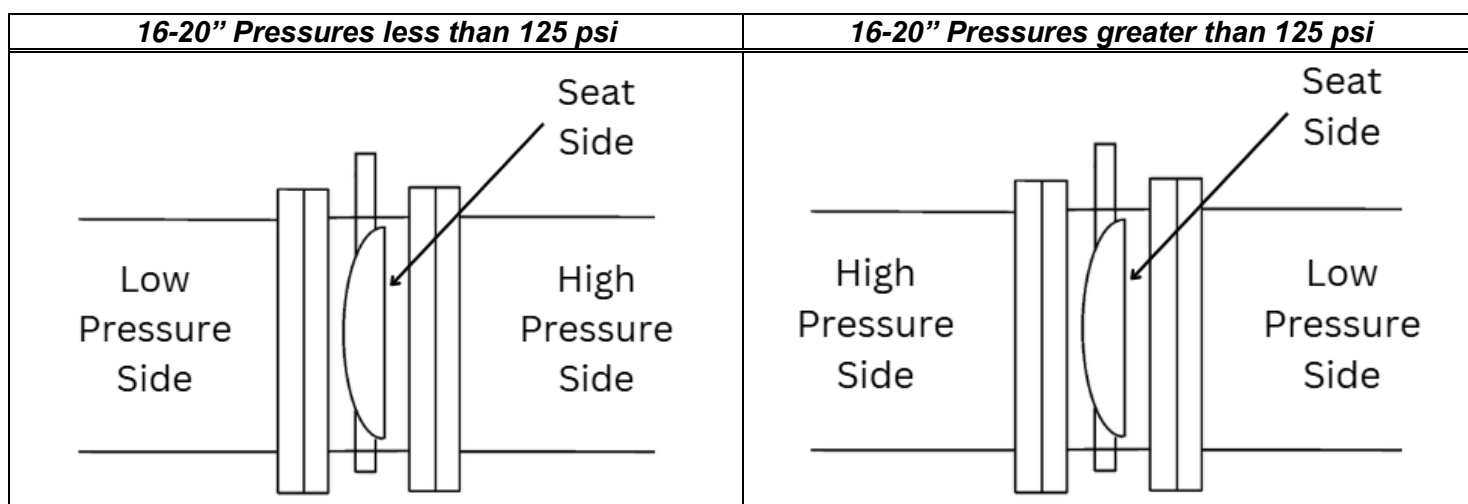
If installation will be delayed, refer to **Form 1454 – Recommended Long & Short-Term Storage Procedures**.

## Installation

Refer to the valve installation drawing for dimensional information. Basic valve drawings A56914 and A56915 list flange seal diameters.

**Note:** Installing the valve in the wrong location may cause excessive dynamic torque and damage the valve. Install the valve at least 8 pipe diameters downstream from the nearest pump or elbow.

- For valve sizes 2-14" install the valve so that the seat side will be on the higher-pressure side when the valve is closed. The seat side of the valve is marked "SEAT SIDE". Allowable pressures available in Table 1.
- Refer to Figure 1 for 16-20" installation direction details. For valve sizes 16-20", install the valve so that the seat side will be on the higher pressure side when the valve is closed except for when system pressures are above the seat side pressure rating. If system pressures are above the seat side pressure rating install the valve so that the seat side will be on the lower pressure side when the valve is closed. The seat side of the valve is marked "SEAT SIDE". Allowable pressures available in Table 1.



**Figure 1: Installation Direction**

- If possible, install the valve with the shaft horizontal to provide a self-cleaning action on the seat.

**Table 1: Pressure Ratings**

<b>2-14" Valves</b>	
<b>Disc/Shaft Material</b>	<b>Pressure Rating</b>
Ductile Iron disc with 410 Stainless Steel shaft	250 psi (1725 kPa)
316 Stainless Steel disc with 316 Stainless Steel shaft	200 psi (1380 kPa)
Aluminum Bronze disc with 410 Stainless Steel shaft	250 psi (1725 kPa)
<b>16-20" Valves</b>	
<b>Disc/Shaft Material</b>	<b>Pressure Rating</b>
Ductile Iron disc with 410 Stainless Steel shaft	250 psi (1725 kPa) non-seat side 125 psi (860 kPa) seat side
316 Stainless Steel disc with 316 Stainless Steel shaft	200 psi (1380 kPa) non-seat side 125 psi (860 kPa) seat side
Aluminum Bronze disc with 410 Stainless Steel shaft	250 psi (1725 kPa) non-seat side 125 psi (860 kPa) seat side

- Use pipeline flanges that conform to ASME/ANSI B16.1 Class 125 or ASME/ANSI B16.5 Class 150.
- Mount wafer body valves to the pipeline flanges with either bolts or studs that extend through both flanges:
- Mount lugged body valves to the pipeline flanges with bolts only. Studs are not recommended.

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## Installation (cont.)

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### **NOTICE**

**Lifting a larger size valve incorrectly can damage it. Do not fasten lifting devices to the actuator or disc, or through the seat opening in the body. Lift the valve with slings fastened around the valve body or attach them to bolts or rods run through holes for the pipeline flanges.**

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1. If the valve has been ordered without an actuator, mount the actuator on the valve.
  - For a DeZURIK actuator, refer to the Actuator Instructions.
  - For an actuator other than DeZURIK, the dimensional requirements for the actuator interface are shown on the Installation Drawing for the valve.
2. Before installation, remove all foreign material such as weld spatter, oil, grease, and dirt from the valve, flanges, and pipeline.
3. Open the valve and clean the seat and sealing edge of the disc.
4. Place the valve in the pipeline with the valve closed. Handle the valve carefully so that the integral flange sealing surfaces are not scratched or damaged. Do not use gaskets between valve and mating flanges.
5. Ensure that the valve, the pipeline and the mating connections are aligned and centered before tightening the pipeline bolts.
6. Open the valve slowly to ensure that there is adequate clearance between the open disc and the pipeline.
7. Tighten the bolts evenly, in a crisscross pattern.

## Operation

Clockwise rotation of the valve shaft closes the disc into the seat. The valve is fully closed when the flat side of the disc is parallel with the flange sealing surface on the body. The valve is fully open when the disc is 90° counterclockwise from the closed position. A machined flat on the top of the valve shaft corresponds to the flat side of the disc. The machined flat may be used to determine the approximate position of the disc when the disc is not visible.

The valve actuator is connected to the valve shaft, and positions the disc at the open, closed, or intermediate positions. The adjustable open and closed position stops in the valve actuator are set to match the open and closed positions of the valve. Refer to the Actuator Instructions for actuator stop adjustment information.

## **Maintenance**

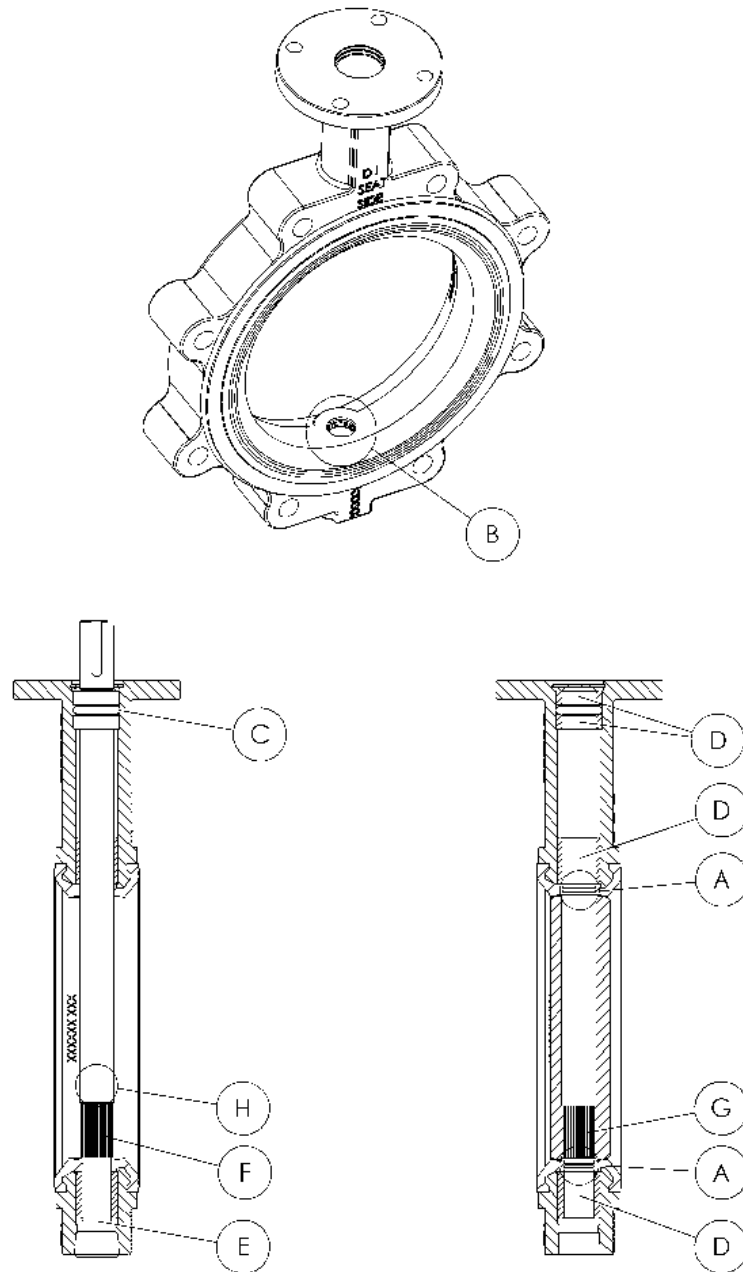
### ***Lubrication***

The valve is lubricated at the factory and does not require routine lubrication. Refer to the actuator instructions for actuator lubrication requirements.

If the valve is disassembled, apply a paint-like coating of the below lubricant to the following surfaces (see Figure 1 for each area listed below):

- A. The two shaft holes and lip seals in the seat.
  - B. The area of the seat adjacent to the two shaft holes.
  - C. The upper shaft seal (A6).
  - D. The inside diameters of the four shaft bearings (A4, A5 & A12).
  - E. The chamfer on the bottom end of the shaft (A3).
  - F. The spline of the shaft (A3).
  - G. The spline of the disc (A2).
  - H. The area of shaft just above the spline.
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- For oxygen service valves, use Hooker Fluorolube GR-362 (no substitutes are allowed).
  - For other valves with EPDM, NBR or FKM seat material, use Dow Corning 111 (no substitutes are allowed).

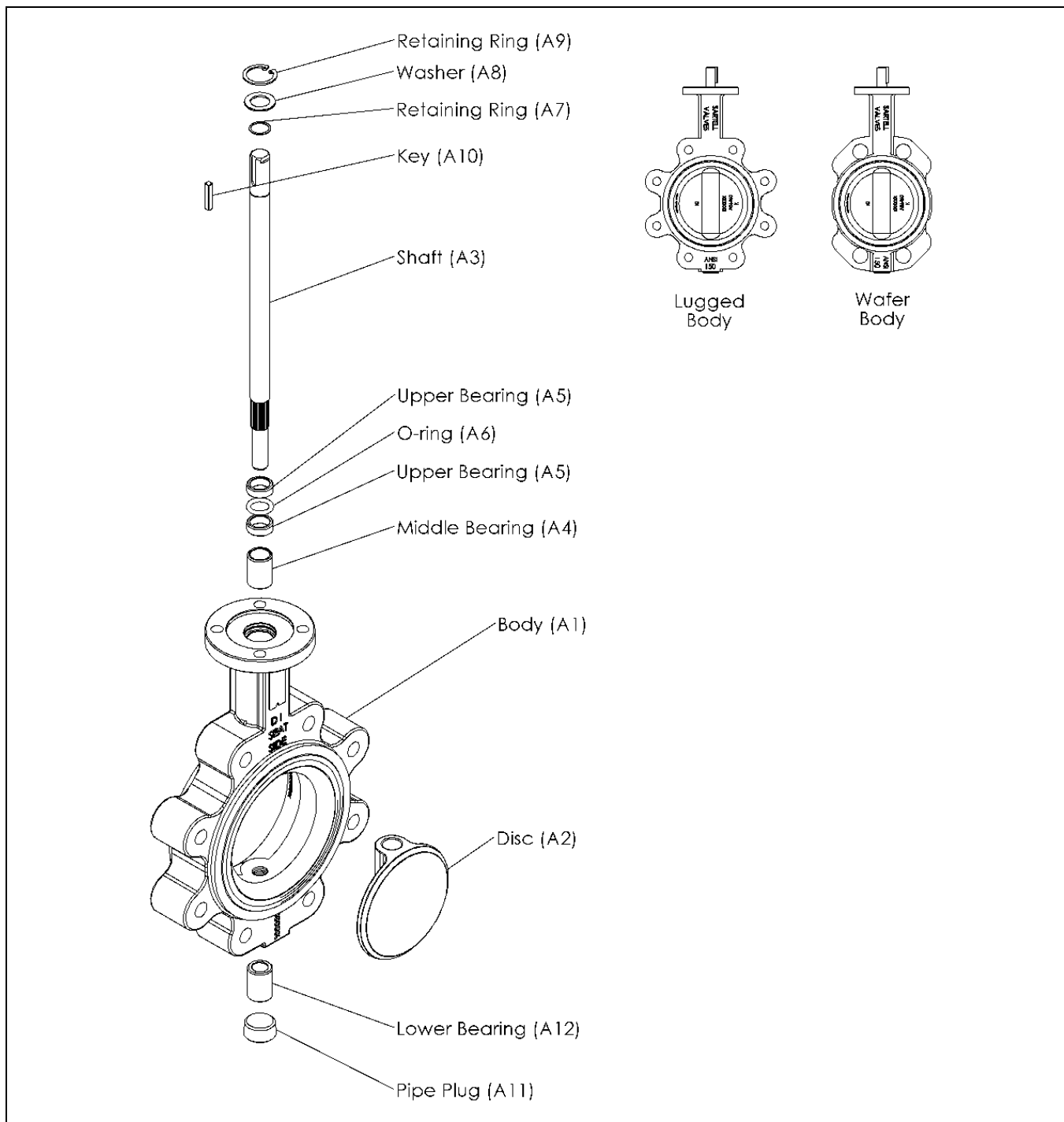
**Lubrication** (Continued)



**Figure 2: Areas to Lubricate**



## Parts Identification



**Figure 3: Parts Identification**

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## ***Removing Valve from Pipeline***

Follow the steps below to remove the valve from the pipeline.

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**⚠WARNING**

**Loosening the flange bolts on a pressurized valve can allow the valve to suddenly shift position and release uncontrolled pipeline fluid. To avoid personal injury or pipeline damage, relieve the pressure in the pipeline before loosening the pipeline flange bolts.**

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1. Relieve pressure in the pipeline and drain the pipeline.
2. Close the valve.

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**⚠WARNING**

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

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3. If the actuator is powered, disconnect and lock out the pneumatic, hydraulic, or electrical power to prevent accidental operation.
4. Support the valve, remove the flange bolting, and remove the valve from the pipeline. Refer to the lifting requirements in the *"Installation"* section.

## ***Disassembling the Valve***

Refer to Figure 2 for parts identification.

1. Remove the valve from the pipeline as described in the *"Removing Valve from Pipeline"* section.
2. Remove the actuator as described in the Actuator Instructions.
3. Remove the pipe plug (A11) from threaded lower end of body (A1).
4. Remove the retaining ring (A9) from the groove in the upper end of body (A1).
5. Remove the washer (A8).
6. To remove the shaft (A3) from the disc (A2), tap the lower end of the shaft (A3) towards the upper end of the body (A1) and remove the shaft from the body.
7. Remove the disc (A2) from the body (A1).
8. Remove the two upper bearings (A5) and O-ring (A6) from the upper body shaft bore.

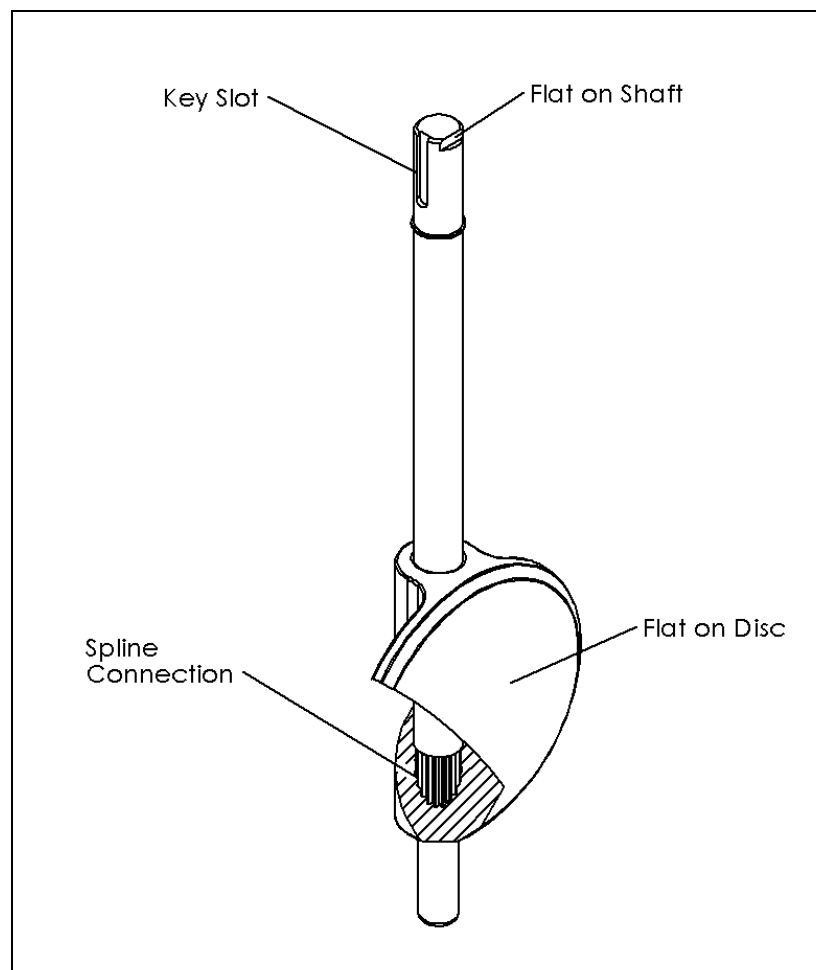
### ***Reassembling the Valve***

Clean and inspect all parts and replace worn parts. Refer to Figure 2 for parts identification. Lubricate the valve as noted in the “*Lubrication*” section.

1. Place the two upper bearings (A5) and O-ring (A6) seal in the upper body shaft bore.
2. Assemble the disc (A2) in the body (A1) with the spline towards the bottom of the body aligning the disc shaft bore with the body shaft bores.
3. Assemble the shaft (A3) into the body (A1) and disc (A2) shaft bores until the spline in the shaft just contacts the disc spline (slight resistance will be felt between shaft and disc).

**Note:** If the retaining ring (A7) in the shaft (A3) is damaged, replace the retaining ring. Verify that the new retaining ring is completely seated in the shaft groove before installing the shaft.

4. Position the flat on shaft (A3) so that it is parallel to and on the same side of the flat on the disc (A2). See Figure 3 for disc/shaft alignment. Then slide and fully engage the shaft spline with the disc spline (shaft will bottom out in disc bore when fully engaged).



***Figure 4: Disc/Shaft Alignment***

## Reassembling the Valve (Continued)

5. Assemble the thrust washer (A8) into the upper body shaft bore and against the retaining ring (A7) on the shaft (A3). Ensure the washer counterbore faces towards the retaining ring and the retaining ring fits in the counterbore of the washer.
6. Assemble the retaining ring (A9) into the retaining ring groove located in the upper body bore.  
**Note:** Verify that the retaining ring is completely seated in the retaining ring body groove.
7. Assemble the pipe plug (A11) into the threaded lower body.
8. Mount the actuator on the valve as described in the “*Actuator*” instructions.
9. Install the valve as described in the “*Installation*” section. If the actuator is a powered actuator, re-connect the power and other connections.

## Troubleshooting

Condition	Possible Cause	Corrective Action
Valve does not fully close.	Object is wedged between disc and seat	Open valve, and allow flow to remove object
	Closed position stop is not adjusted correctly.	Adjust closed stop.
	Disc-to-shaft connection has failed.	Replace shaft and/or disc.
Valve leaks when closed.	Closed position stop is not adjusted correctly.	Adjust closed stop.
	Seat is worn or damaged.	Replace valve or valve body.
	Sealing edge of disc is worn or damaged.	Replace valve or valve body.
Valve does not fully open.	Open position stop is not adjusted correctly.	Adjust open stop.
	Disc-to-shaft connection has failed.	Replace shaft and/or disc.
Opening or closing torque is excessive.	Bearings, shaft, disc or seat are dirty or worn	Clean or replace dirty or worn components.
	Shaft is bent.	Replace shaft.
Valve leaks between body and pipeline flanges.	Valve flange seal is damaged.	Replace valve or valve body.
	Flange bolts are tightened incorrectly.	Tighten the flange bolts evenly, in a crisscross pattern.
	Flange gaskets were used between valve and pipeline flanges.	Remove flange gaskets.
Media leaks between actuator and top of valve	O-ring (A6) leaking at top of shaft.	Inspect and replace O-ring (A6).

## 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.

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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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