



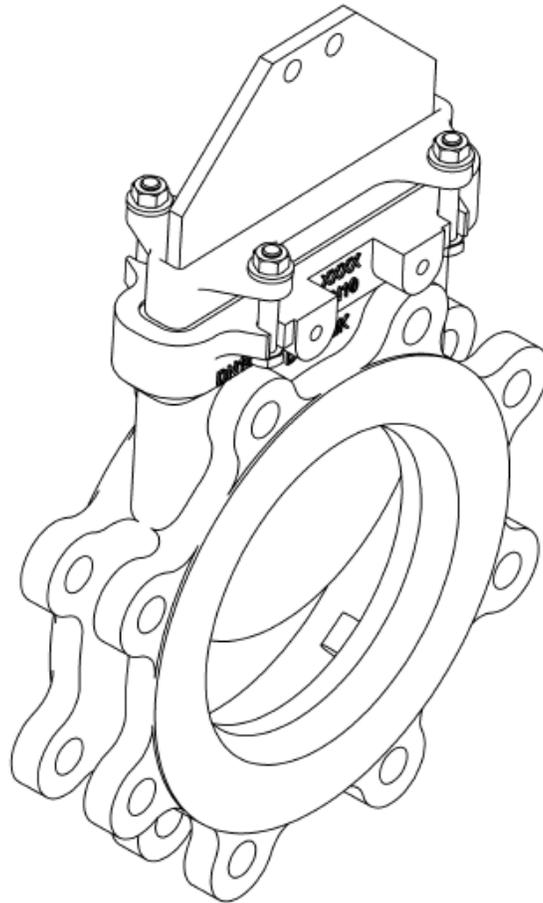
2-36" (50mm–900mm)

KGN-MSU

UNIDIRECTIONAL CAST

STAINLESS STEEL

KNIFE GATE VALVES



Instruction D11000

November 2016

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.

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DeZURIK

2-36" (50—900mm) KGN-MSU METAL SEATED KNIFE GATE VALVES

Description

The DeZURIK KGN-MSU knife gate valves are bonnetless valves with a stainless steel body and gate, and an all-metal seat. A choice of several actuators and accessories are available.

Installation

Install the valve between ASME Class 125 or Class 150 pipeline flanges. Flange gaskets are required. Before installation, remove foreign material such as weld spatter, oil, grease, and dirt from the valve and pipeline.

Install the valve so that the side marked "SEAT" is on the lower pressure side of the valve when the valve is closed; the pipeline pressure will then help seal the valve in the closed position.

Observe the following points to prevent distortion of the valve body and gate when the flange bolts are tightened:

- Align the mating pipeline flanges.
- Select the length of the flange bolts so that the bolts used in the blind holes do not bottom out when tightened.
- Tighten the flange bolts evenly, in a crisscross pattern. Refer to Table A for recommended flange bolt-stud torques.

Operation

The gate in the valve is positioned by the valve actuator. The actuator moves the gate over the valve seat in the closed position, and withdraws the gate from the seat in the open positions. Refer to the Actuator Instructions for adjustment and maintenance requirements for the actuator.

Lubrication

The valve does not require lubrication. If applicable, ensure that valve threaded stems are maintained with proper lubrication. Refer to the Actuator Instructions for lubrication requirements for the actuator.

Packing

The gate packing is contained and compressed by the packing gland. See Figure 1 for component identification.

Adjustment

If packing leaks, tighten the adjustment nuts on top of the packing gland. Tighten the nuts evenly and gently — just enough to stop the leak. Over tightening will cause excessive operating forces, and will decrease the life of the packing.

Note: Torque ranges are based on ASME Pressure Vessel Code Calculations and lab test data. These torques are only for the listed gasket types. For other gasket types listed in ASME, consult DeZURIK.

Table A: Recommended Flange Bolt/Stud Torque Range in ft-lbs (non-lubricated)

Valve Size	ASME Gasket Types; Rubber, Soft Fabric Filler, or 1/8" Thick Hard
<u>2"</u> 50mm	26 - 29
<u>3"</u> 80mm	37 - 41
<u>4"</u> 100mm	26 - 29
<u>6"</u> 150mm	41 - 45
<u>8"</u> 200mm	55 - 61
<u>10"</u> 250mm	56 - 62
<u>12"</u> 300mm	80 - 88
<u>14"</u> 350mm	107 - 118
<u>16"</u> 400mm	103 - 114
<u>18"</u> 450mm	128 - 141
<u>20"</u> 500mm	123 - 136
<u>24"</u> 600mm	188 - 207
<u>30"</u> 750mm	198 - 218
<u>36"</u> 900mm	289 - 318

Drawings

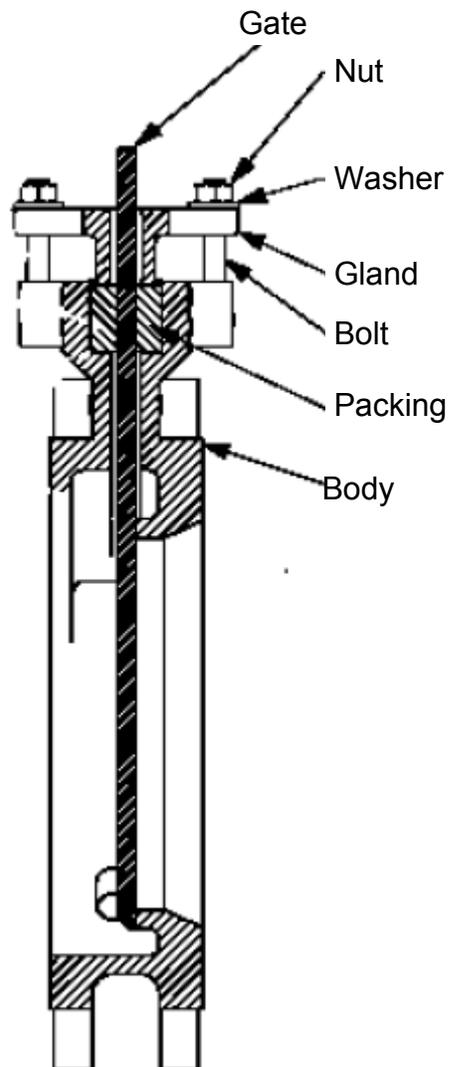


Figure 1—Component Identification

Packing Replacement

Removing the Old Packing


WARNING!

Pipeline pressure can cause personal injury or equipment damage. Relieve pipeline pressure before removing gate stem and packing gland nuts.

1. Relieve the pressure in the pipeline and close the valve.


WARNING!

Accidental operation of power actuator can cause personal injury or equipment damage. Disconnect and lock out power to actuator before servicing.

2. If the actuator is powered, disconnect and lock out power to prevent accidental operation of the actuator.
3. Remove the two screws and nuts near the top of the gate and disengage the stem from the gate by stroking the actuator (not the valve) to the open position.
5. Remove the gland nuts, washers and the packing gland.
6. Remove the used packing from the packing chamber.

Installing the New Packing

It is recommended to use a square-ended wood or plastic tool, driven by a hammer or mallet for packing rings.

Note: DO NOT USE ANY SHARP TOOLS TO PACK THE RINGS.

1. With the gate closed, center the gate in the body below the packing chamber.
2. Cut new packing rings to the length and quantity shown in Table B.
3. Install and pack the rings one at a time in the sequence shown in Figure 2.

Note: Make sure the inside and outside edges of each ring are tightly packed against the gate and packing chamber, especially in the corner areas. Pack each ring until it is flat and even.

TABLE B: Packing Ring Lengths

VALVE SIZE		# LAYERS OF PACKING	PACKING SIZE [in]	LENGTH OF PACKING IN EACH LAYER [in]
in	mm			
2	50	3	3/8	7.3
3	80	3	3/8	8.9
4	100	3	3/8	10.6
6	150	3	3/8	14.8
8	200	3	3/8	18.7
10	250	3	3/8	22.6
12	300	3	7/16	26.6
14	350	3	1/2	29.9
16	400	3	1/2	34.1
18	450	3	1/2	38.0
20	500	3	5/8	42.9
24	600	3	5/8	50.8
30	750	4	1/2	66.1
36	900	3	5/8	79.9

Packing Replacement continued

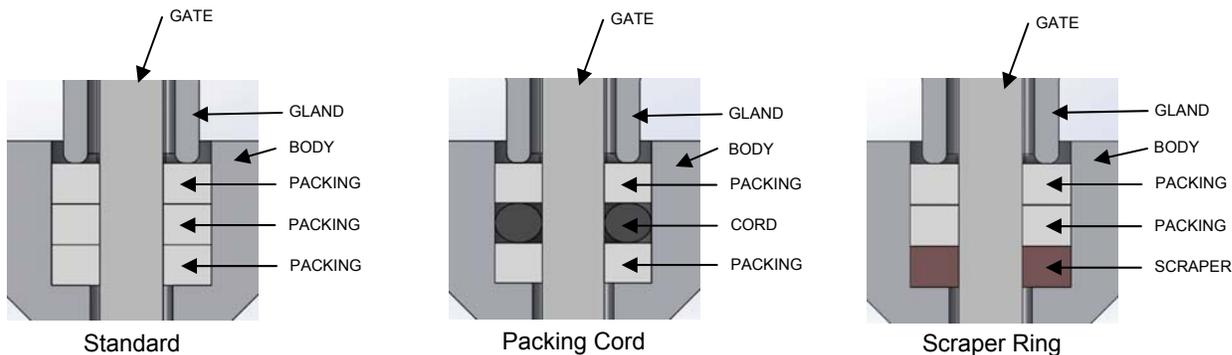


Figure 2—Packing Ring Sequence

With standard packing all the rings are the same material. With packing cord the packing cord ring is the second ring from the bottom. With the scraper ring option the scraper ring is the bottom ring.

Reassembling Valve

1. Replace the packing gland, washers, and nuts. Tighten the nuts evenly and finger tight, plus 1/2 turn.
2. Reconnect the stem to the gate with the two screws and nuts.
3. If the actuator is a powered actuator, reconnect power to the actuator.
4. Pressurize the pipeline and inspect packing for leakage.
5. If packing leaks, tighten the adjustment nuts on top of the packing gland. Tighten the nuts evenly and slowly, just enough to stop the leak. Over tightening will cause excessive operating forces, and will decrease the life of the packing.

Gate Replacement

See Figure 1 for component identification



WARNING!

Pipeline pressure can cause personal injury or equipment damage. Relieve pipeline pressure before removing gate stem and packing gland nuts.

1. Relieve the pressure in the pipeline and close the valve.



WARNING!

Accidental operation of power actuator can cause personal injury or equipment damage. Disconnect and lock out power to actuator before servicing.

Gate Replacement continued

2. If the actuator is powered, disconnect and lock out power to prevent accidental operation of the actuator.
3. Remove the pipeline flange bolts, and remove the valve from the pipeline.
4. Remove the actuator, actuator yoke, packing gland, and packing from the valve.
5. Remove and inspect the gate. If the gate appears to be scratched or galled due to too-long flange bolts in the chest area of the body, check for body damage in the tapped flange holes and within the chest cavity. Repair or replace the body, as appropriate.
6. Inspect the seat components.
7. Replace the body if the seat is worn or damaged.
8. Place the new gate in the body, in the fully closed position.
9. Replace the packing as described in "Packing Replacement".
10. Replace the yoke and actuator on the valve.
11. Adjust the actuator, yoke, and packing gland so that the valve actuates smoothly full stroke in both directions, and so that there is no evidence of binding or scratching on the gate when the gate is visible in the fully open position.
12. Replace the valve in the pipeline as described in the "Installation" section.
13. If the actuator is a powered actuator, reconnect power to the actuator.
14. Pressurize the pipeline and inspect the valve for leaks.
15. If the packing leaks, tighten the adjustment nuts on top of the packing gland. Tighten the nuts evenly and slowly, just enough to stop the leakage. Over tightening will cause excessive operating forces, and will decrease the life of the packing.

Troubleshooting

Condition	Possible Causes	Corrective Action
Packing leaks, with no evidence of galling on gate	Packing is loose	Adjust packing gland
	Packing is worn or torn	Replace packing
Packing leaks and gate is galled	Packing is worn or torn	Replace packing and gate
Valve leaks when fully closed, with no evidence of galling on gate	Metal seat is worn	Replace valve
Valve leaks when fully closed and gate is galled	Metal seat is worn	Replace valve

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.

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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.

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Sales and Service

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

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