

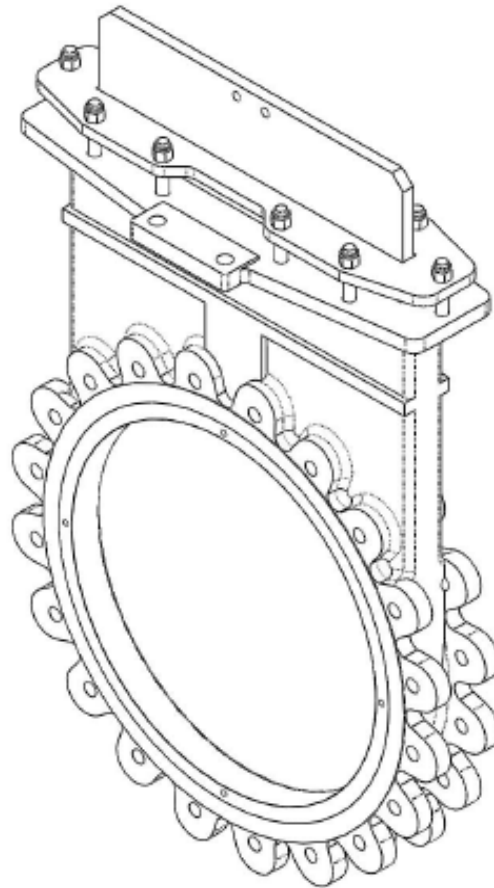


DeZURIK

2-24" (50-600mm)

KGN-RSB

**BI-DIRECTIONAL CAST
STAINLESS STEEL
KNIFE GATE VALVES**



Instruction D11023
October 2016

 **DeZURIK** |  **APCO** | **HILTON** | **WILLAMETTE**

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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Description

The KGN-RSB is a bi-directional cast stainless steel, perimeter sealed knife gate valve. A choice of several actuators and accessories is available.

Installation

Failure to install the valve properly can result in damage to the valve gate.

Install the valve to the mating pipe flange using proper size bolts. It is very important to choose the proper length of bolt for the bolt holes in the chest of the valve. These holes are bottom drilled and tapped holes.

Be careful not to bottom out bolts in the chest during installation. Table A gives recommended bolt torques to be used during installation, however, depending on the type of gaskets being used the required torques may be higher or lower. Use the cross torque pattern method for tightening the bolts. Mating flanges must be parallel and true with each other and the valve. Do not use the valve to pull together mating pipes.

After installation, open and close the valve once to assure smooth operation.

Operation

The gate in the valve is positioned by the valve actuator. The actuator moves the gate over the valve port in the closed position, and withdraws the gate from the seat in the throttling and 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.

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

Valve Size	ASME Gasket Types	
	Rubber with Soft Fabric Filler, & 1/8" Thick Hard	Soft Elastomer Gasket Shore Durometer < 75A
2" (50mm)	26 - 29	8 - 9
3" (80mm)	37 - 41	14 - 16
4" (100mm)	26 - 29	11 - 12
6" (150mm)	41 - 45	22 - 24
8" (200mm)	55 - 61	35 - 39
10" (250mm)	56 - 62	40 - 44
12" (300mm)	80 - 88	59 - 65
14" (350mm)	107 - 118	81 - 89
16" (400mm)	103 - 114	79 - 87
18" (450mm)	128 - 141	102 - 112
20" (500mm)	123 - 136	99 - 109
24" (600mm)	188 - 207	155 - 171
30" (750mm)	198 - 218	168 - 185
36" (900mm)	289 - 318	248 - 273

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.

Drawings

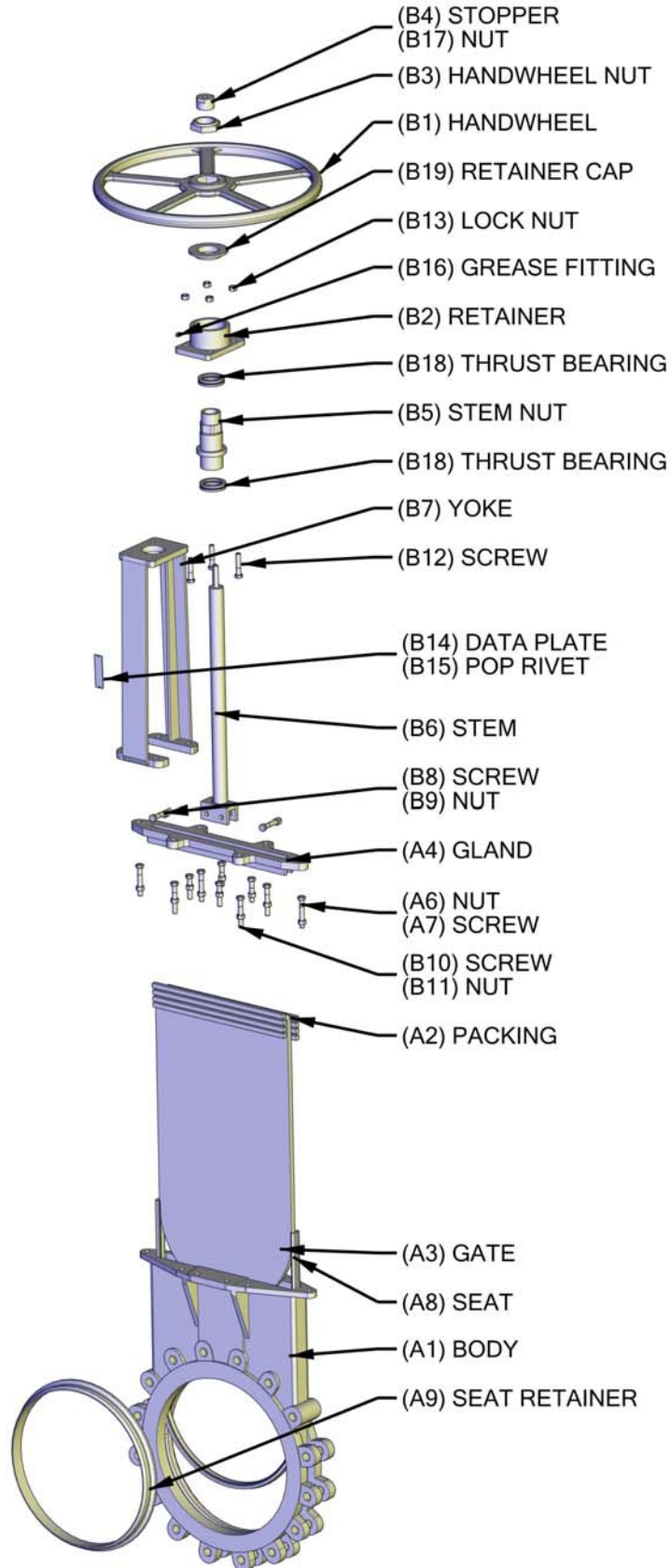


Figure 1: Component Identification

Replacement of Resilient Seat



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.
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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 valve from pipeline.
4. 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 actuator yoke and actuator from valve.
6. Remove the gland nuts, bolts and packing gland.
7. Remove the used packing from the packing chamber.
8. Remove the gate from the body. Inspect and replace galled or damaged gate as needed.
9. Remove valve seat retainer from valve body, as follows:
 - a. Insert two pins into pin holes on retainer,
 - b. Loosen retainer with bar inserting between two pins.
 - c. Remove old seat by pulling the resilient seat out of the valve body.
10. Install new resilient seat:
 - a. Clean the seat cavity in the valve body.
 - b. Insert new resilient seat into valve body seat cavity.
 - c. Trim off excess seat.
11. Assembly of valve:
 - a. Install seat retainer.
 - b. Install knife gate.
 - c. Install new packaging (see page 6).
 - d. Reassemble valve (see page 6).

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.
4. Remove the gland nuts, bolts and packing gland.
5. Remove the used packing from the packing chamber.

Installing the New Packing

Packing strip length and quantity are shown in Table 2. Ensure the inside and outside edges of each strip are packed against the gate and packing chamber, so that each strip is compressed flat and evenly.

Do not compress the packing any more than needed to stop leaks.

1. Ensure the gate is fully closed and centered in the body before packing.
2. Assemble and pack the strips one at a time.

Note: DO NOT USE SHARP TOOLS TO PACK THE STRIPS.

Reassembling Valve

1. Replace the packing gland, bolts 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.

TABLE 2: KGN-RSB PACKING SIZE

Valve Size	Packing Size [in]	Packing Length per Layer		# of Layers
		[in]	[mm]	
2" 50mm	3/8"	3.46	87.9	4x2
3" 80mm	3/8"	4.41	112.0	4x2
4" 100mm	3/8"	5.59	142.0	4x2
6" 150mm	3/8"	7.87	199.9	4x2
8" 200mm	3/8"	9.65	245.1	4x2
10" 250mm	3/8"	12.60	320.0	4x2
12" 300mm	1/2"	14.57	370.1	4x2
14" 350mm	1/2"	16.22	412.0	4x2
16" 400mm	1/2"	17.87	453.9	4x2
18" 450mm	1/2"	19.52	495.8	4x2
20" 500mm	1/2"	21.81	554.0	4x2
24" 600mm	1/2"	25.98	659.9	4x2

Note: There are two lengths of packing per layer (one on each side of the gate)

Reassembling Valve continued

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 gently - just enough to stop the leak. 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, check seat for damage
Valve leaks when fully closed, with no evidence of galling on gate	Seat is worn or torn	Replace seat
Valve leaks when fully closed and gate is galled	Seat is worn or torn	Replace gate and seat

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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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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