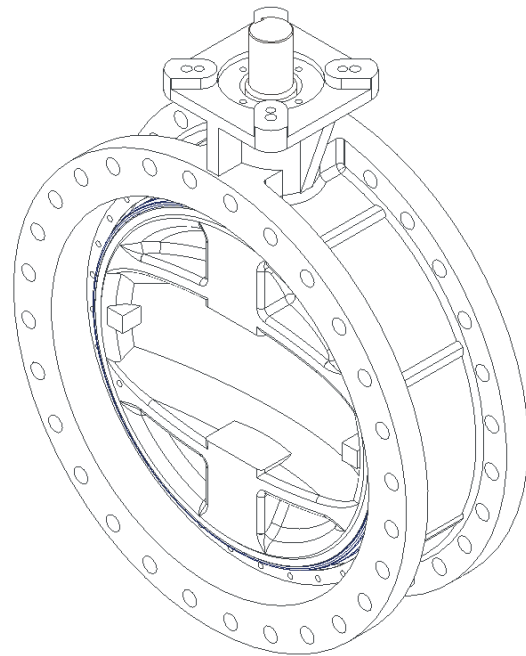


INSTALLATION, OPERATION AND MAINTENANCE MANUAL

24" to 72" Series 800 AWWA Butterfly Valve Flanged or Mechanical Joint with Replaceable Seat

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WARNING: Cancer and Reproductive Harm – www.Prop65Warnings.ca.gov

INSTALLATION, OPERATION and MAINTENANCE

24" to 72" Series 800 AWWA Butterfly Valve Class 125 Flanged or Mechanical Joint With Replaceable Rubber Seat

INTRODUCTION

This manual will provide the information to properly install, operate and maintain the valve to ensure a long service life. The Series 800 butterfly valve with replaceable seat is ruggedly constructed to provide years of trouble-free operation.

CAUTION

Before proceeding read all instructions and become familiar with the equipment and associated drawings. Follow all applicable safety procedures, codes, and regulations. This manual does not purport to address safety concerns, if any, associated with its use. It is the responsibility of the user to establish safety and health practices and determine the applicability of regulatory limitations.

The Shop Order (SO) Number, Figure Number, size and pressure rating are stamped on a nameplate attached to the valve. Please refer to the SO number when ordering parts.

DESCRIPTION

The Series 800 Butterfly Valve is a heavy-duty, rubber seated, quarter-turn water shut off valve used in municipal waterworks, power generating stations and industrial plants. The valve fully conforms with the rigorous requirements of American Water Works Association (AWWA) Standard C504. The valve rotates 90-degrees from fully open to fully closed by means of a manual or automatic actuator. Rugged construction and self-lubricating shaft bearings ensure smooth and easy operation.

RECEIVING AND STORAGE

Inspect the valve upon receipt for damage during shipment. Carefully unload all valves to the ground without dropping.

The valves should remain in a clean, dry, and weather protected area until installed. For long term storage (greater than 6 months) the rubber surfaces of the seat should be coated with a non-toxic lubricant such as Super Lube® made by Synco Chemical.

Do not expose the rubber parts to sunlight or store near electric motors or equipment that may emit

ozone. The valve should be stored with the disc slightly unseated.

Electric motor operated valves should be stored with additional consideration of the motor manufacturer's instructions.

Cylinder operated valves stored for long periods may be affected by cylinder seal distortion and consequential leakage past the cylinder seals. Operation should be confirmed, and any needed repairs made before installation.



INSTALLATION

GA Industries Series 800 flanged butterfly valves are intended to be installed between mating ANSI Class 125 flanges. Valves with mechanical joint ends are designed for use with ANSI A21.1/AWWA C111 end connections. Mechanical joint accessories are not included with the valve and must be supplied by the installing contractor.

Prior to installation ensure all debris, packing material or other foreign material has been removed from the valve.

CAUTION

It is recommended the valve be installed into piping systems in accordance with AWWA Manual of Practice M44 to prevent undue piping stress, deflection or bending that may affect the valve's performance.

The valve can be installed with its shaft in a horizontal or vertical orientation. While the valve will seal bi-directionally, potential seat adjustment/replacement is facilitated if installed with forward flow against the dome side of the disc with the flat (seal) side of the disc downstream.

If installed outdoors, below ground in a vault or in an unheated area, adequate freeze protection must be provided.

Installation immediately downstream of an elbow may produce uneven or turbulent flow through the valve and lead to premature wear and increased operating torque. Where possible, the valve should be installed at least 6 pipe diameters from pumps, elbows, or the side outlet of tees. Consult factory for recommendations if installed closer.

The valve is not designed to support adjacent equipment, piping loads should not be imposed on the valve. Ensure mating flanges are square and parallel to the valve flanges before tightening flange bolts.

Check fasteners attaching actuator to the valve as they may loosen during transit or handling. Tighten as necessary.

The valve disc must be closed or nearly closed during installation to prevent damage to the disc seating edge.

Flat-faced flanged valves should be mated with flat-faced flanges and full-face gaskets. If ring gaskets are used the bolt material shall be ASTM A307 Grade B (or equivalent). Higher strength bolting should only be used with full-face gaskets.

Lift and lower heavy valves using slings or chains around the valve body. **DO NOT LIFT BY THE ACTUATOR.** Avoid contacting or impacting other equipment. Prepare mating pipe ends and install in accordance with pipe manufacturer's instructions for the joint being used. Do not use the valve to jack or pull pipe into position. Lubricate the bolts or studs and insert around flange. Lightly tighten bolts until gaps are eliminated. Torque bolts in an alternating pattern in graduated steps. If leakage occurs wait 24 hours and re-torque the bolts but do not compress the gasket more than 50% or exceed bolt maximum torque rating.

Make sure the valve disc does not contact the inside of the pipe when open, especially when installed on HDPE or lined pipe. Check with factory for minimum pipe ID required for clearance.

All GA Industries Series 800 butterfly valves are factory tested per the requirements of AWWA C504. Small leaks may occur after installation due to handling or distortion due to installation or piping stresses. Such leaks can usually be stopped by slightly tightening (1/4 turn) the seat adjusting nut(s) at the leak location.

VALVE CONSTRUCTION

Series 800 butterfly valves with replaceable seat have an epoxy coated ductile iron body. The disc is also epoxy coated ductile iron with a 316 stainless steel seat edge. The standard replaceable rubber seat is made from peroxide cured EPDM rubber (optional Buna-N). Seat retaining segments are 316 stainless steel and retaining hardware is stainless steel. The shaft packing is a set of EPDM rubber U-cups. Refer to the List of Materials submitted for the order if non-standard materials were provided.

Refer to Page 5 for details of construction and parts location.

START UP

The valve does not generally require any calibration or adjustment prior to start-up. Prior to putting into service, the valve should be cycled open and closed to ensure smooth operation and leak tight shutoff.

SYSTEM TESTING

When GA Industries Series 800 rubber seated butterfly valves are used to isolate sections of pipeline for testing, it is important to know the valve is designed, and factory set, to hold the rated pressure only. Test pressures higher than the factory rating may result in leakage past the seat or damage the valve.

CAUTION

Do not back fill excavations for buried service valves until the valve has been leak and operationally tested so that any deficiencies can be corrected while the valve and its seat side are exposed.

OPERATION

Do not operate the valve at any pressure higher than the valve's Pressure Class (150 PSI or 250 PSI). Do not exceed a handwheel or chainwheel rim pull of 200 lb. or an input torque of 300 lb-ft for wrench nuts. If portable auxiliary actuators are used, employ a torque limiting device to prevent excessive input torque. If unable to limit the input torque, stop the actuator before the valve is fully closed and complete the operation manually. Verify actuator's direction vs. that indicated on handwheel or nut before applying torque. Do not force the disc open or closed as excessive torque can damage the valve. Refer to Troubleshooting on Page 3.

PREVENTIVE MAINTENANCE

No routine maintenance or lubrication is required. Shaft bearings are permanently self-lubricating.

TROUBLESHOOTING

SYMPTOM	POSSIBLE CAUSE	RECOMMENDED REMEDY
Valve does not fully open	Valve misaligned with mating flanges	Loosen flange bolts, realign valve, re-tighten bolts in proper manner to required torque
	Valve disc obstructed	Mating pipe ID too small, chamfer pipe or use spacer. Remove any debris obstructing disc.
	Actuator not properly adjusted	Adjust "open" stop, refer to actuator manual
Leakage at flange joints	Improper flange gaskets	Full face gaskets required
	Flange bolts not properly tightened	Refer to "Installation" on Page 1
Leakage past seat when closed	Disc not fully rotating into seat	Adjust actuator "Closed" stop, refer to actuator manual
	Damaged or misaligned rubber seat	Refer to "Seat Adjustment" on Page X
	Line pressure too high	Reduce line pressure to within valve rating
Leakage past shaft packing	Damaged valve disc seat edge	Inspect, return to factory for repair if damaged
	Worn shaft seals	Cycle valve open and closed several times. If leak persists, refer to "Shaft Packing Replacement" on Page X
Water Hammer, Pressure Surge	Valve closing too fast	Close valve slower
Difficult to operate, excessive operating torque	Valve shaft and/or disc bent or deformed	Inspect, determine if freezing or high-pressure surge occurred, return valve to factory for assessment and possible repair
	Scale build-up on shaft and/or seating surfaces	Cycle valve open/closed several times, if no improvement, inspect valve seats for damage

WARNING

Before undertaking any maintenance isolate the valve by closing an upstream valve and then a downstream valve and de-pressurizing between the two valves.

WARNING

To prevent personal injury or damage to equipment, ensure powered actuators are locked out and tagged out before undertaking maintenance.

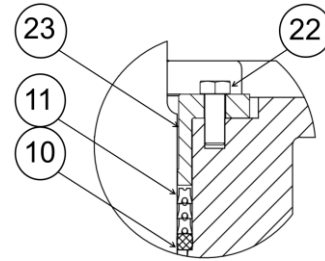


Figure 1

REPLACING THE SHAFT PACKING

GA Industries Series 800 butterfly valves with replaceable rubber seat are standard with multiple U-cup shaft packing. Refer to Figure 1.

1. Fully close the valve and remove the actuator.
2. Remove the Packing Screws (22) and slide the Packing Gland (23) up and off the upper shaft (4).
3. Use a dental pick or other tool to snag and pull out the old U-cup rings (11) and seal ring (10).
4. Lubricate the new seal ring (10) with silicone grease (Super Lube® or equal) and slide over the shaft and into the seal cavity.
5. Lubricate the U-cups (11) and oriented as shown in Figure XX, slide over the shaft and into the cavity, one on top of the other. Use the Packing Gland (23) to push them into the cavity.
6. When all have been installed, replace Packing Gland (23) and install Packing Screws (22) and tighten.
7. Introduce pressure and check for leaks.

RUBBER SEAT REPLACEMENT

The rubber seat can be replaced with the valve bolted in the pipeline with the disc in the closed or open position, but the process is easier when done with the disc closed. Refer to Figure 2 on page 4 for parts location.

1. Remove the retainer locknuts (17) and retaining segments (15) from the studs (17). A box wrench is needed if the valve is still in the pipeline, otherwise a socket.
2. Pull the rubber seat (3) off the studs (17). It may be necessary to pry it off but be careful not to damage the seat edge on the disc (2)
3. Clean the surfaces under and behind the rubber seat.
4. Install the new rubber seat (3) over the studs (17).
5. Install retaining segments (15) over the studs (17) and install the retainer locknuts (8).
6. Open the valve disc (2), clean and lubricate the rubber seat (3) and disc seating edge with silicone grease (Super Lube® or equal).
7. Fully close the valve disc (2).
8. Tighten all retainer lock nuts (8) to 75 in-lb in a clockwise circular pattern, then re-tighten to 150 in-lb in the same manner.

9. Completely fill with water and pressurize the side of the disc opposite the seat to the specified test pressure.
10. If there is water leakage noted, tighten the locknuts (8) nearest the leak by ¼ to ½. Continue this process at other locations until all leakage has stopped.
11. The locknuts should only be tightened enough to achieve a leak tight seal. Over tightening increases operating torque and shortens rubber seat life. Refer to Table 1 for maximum torque to be applied to the retainer locknuts (8).
12. The valve can now be put into service.

TABLE 1

Valve Pressure Rating	Maximum Torque
Class 150B	250 in-lb.
Class 250B	300 in-lb.

REPLACEMENT PARTS

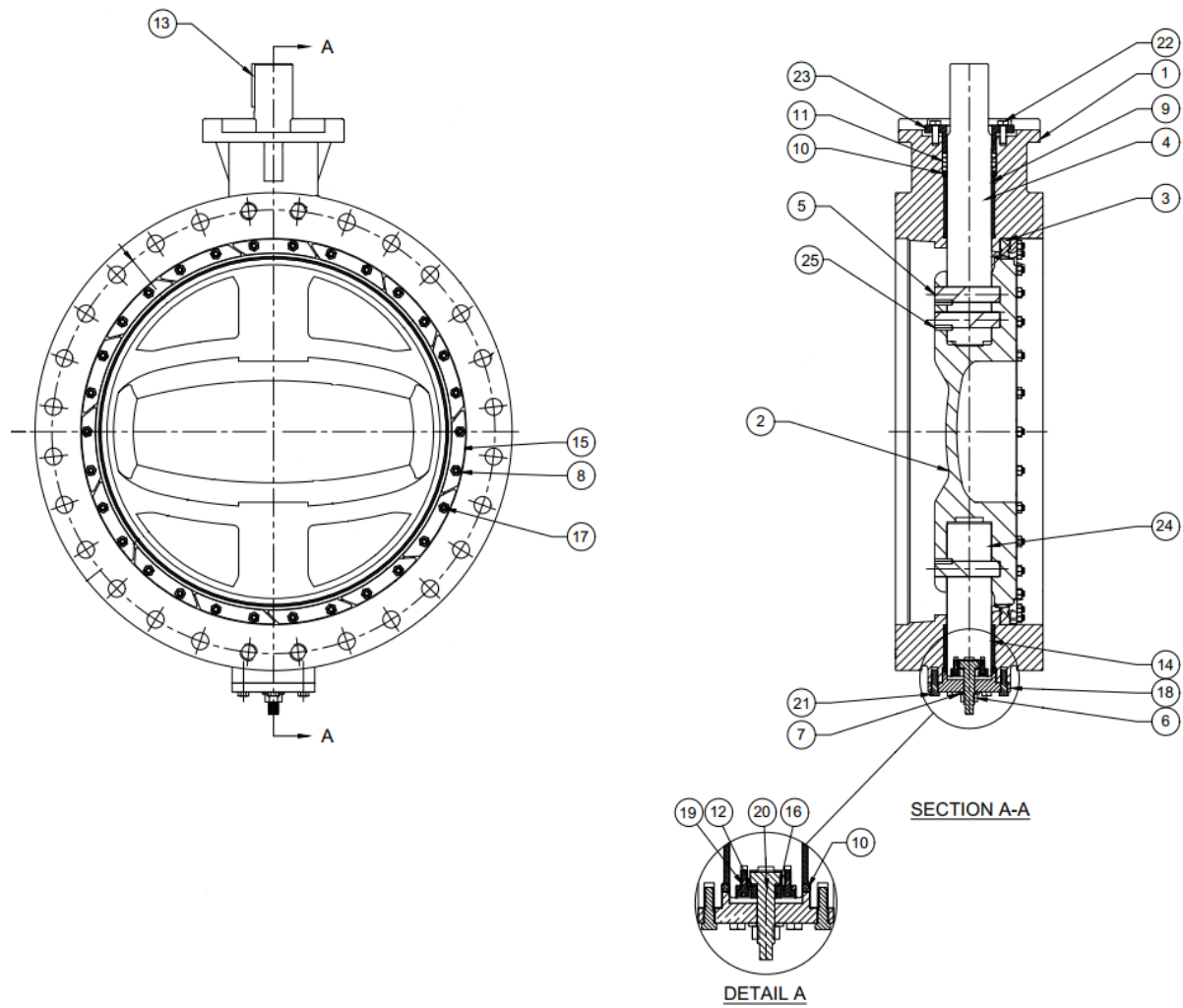
Genuine replacement parts are available from your local VAG/GA Industries representative or from the factory:

VAG USA, LLC
 234 Clay Avenue
 Mars, PA 16046 USA
 Telephone: 724-776-1020
 Fax: 724-776-1254
 E-mail: quotes-ga@vag-group.com

Please have the nameplate data available when ordering parts. Identify needed part(s) by Shop Order (SO) Number, Figure Number, valve size and individual part number.

WARRANTY:

The Warranty for GA Industries valves is included in our Terms and Conditions which can be found here: <https://gaindustries.com/terms>



24" to 72" Series 800
Parts Location

Part No.	Part Name
1	Body
2	Disc
3	Rubber Seat
4	Upper Shaft
5	Disc Pins
6	Bearing Nut
7	Thrust Bearing
8	Retainer Nut
9	Upper Bearing
10	Seal Ring
11	Shaft Packing
12	Thrust Collar

Part No.	Part Name
13	Key
14	Lower Bearing
15	Seat Retainer Segment
16	Thrust Washer
17	Retainer Stud
18	End Plate
19	Thrust Collar Screws
20	Adjustable Thrust Bearing
21	End Plate Screws
22	Packing Screws
23	Packing Gland
24	Lower Shaft
25	Disc Set Screws

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