



WATER PRODUCTS
AWWA Butterfly Valves - Eccentric Plug Valves

Series 820 AWWA Butterfly Valves

Installation, Operation and Maintenance



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SERIES 820 AWWA BUTTERFLY VALVE

Installation, Operation and Maintenance

GENERAL

The Homestead Series 820 AWWA Butterfly valve operates 90 degrees from open to close. It is bi-directional and can be installed regardless of the direction of flow.

UNLOADING

Improper lifting of the valve may cause damage. Do not lift the valve using the actuator, valve shaft or body opening. Use eye bolts or rods through the flange holes and attach slings or chain.

STORAGE

The valves should be stored in a clean, dry, cool location and should be protected from dust, freezing water or ultraviolet rays. Should it be necessary to store outdoors, precautions should be taken to store high enough off the ground and covered to ensure that they are protected from rain and snow.

CONNECTIONS

Mating flanges must comply with ASME/ANSI B16.1, Class 125 or ASME/ANSI B16.5, Class 150. Mechanical joint connections must comply with ANSI A21.11/AWWA C111.

LOCATION

It is recommended that the valve be installed at a distance of at least (8) pipe diameters downstream from the nearest pump or elbow.

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ORIENTATION

Although the valves are designed to operate in any position, it is recommended that the valve be installed with the shaft in the horizontal position. It is also preferred that the bottom or opening half of the valve disc cycles downstream of the valve body.

INSTALLATION

1. Prior to installation, all foreign material that could damage the resilient seat should be removed from the valve, adjacent pipe areas and pipeline.
2. Prepare the faces of the mating flanges by thoroughly cleaning with a suitable solvent.
3. Verify that the valve is fully closed and position the valve between the mating flanges of the pipeline.
4. Align the upstream gasket to the body holes and the corresponding bolt holes of the pipeline flange.
5. Insert (2) bolts at the bottom of the flange to aid in supporting and aligning the valve.
6. Insert the remaining bolts around the flange and lightly tighten.
7. Repeat this procedure on the downstream flange.
8. Final tightening of all bolts should be done by tightening those bolts opposite each other in alternate sequence.



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OPERATION – Manual Actuator

Verify that the valve is operating properly by manually cycling from full closed to full open. The valve disc should operate freely. If the valve is electrically, pneumatically or hydraulically actuated, use the manual override system to perform this operation. The normal rotational direction of the valve is “clockwise to close”.

OPERATION – Power Actuator

Check the source of supply and verify that all necessary pneumatic or electrical connections are compatible with the actuator requirements. After connection of the actuator power supply, cycle the valve several times to determine whether the connections are correct and that the valve is performing properly. All stops, limit switches and torque switches are set at the factory and should require no adjustment

MAINTENANCE - Valve

The Homestead Series 820 valve has been designed for long service life with minimum maintenance requirements. Outside of periodic replacement of the packing, all other replacements are considered as overhaul procedures for which the valve must be removed from the line. This valve does not require routine maintenance.

MAINTENANCE – Manual Gear

The manual gear units are factory lubricated with grease and should not require routine maintenance. If relubrication is required, a lithium based grease should be used.



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PACKING REPLACEMENT – UPPER SET

1. Relieve pipeline pressure and draw down water in the pipeline.
2. If present, match-mark the actuator and valve mounting flange for correct alignment during reassembly.
3. Remove the actuator from the valve. If the actuator is powered, disconnect power supplies prior to removal.
4. If present, match-mark and remove shaft coupling and key.
5. Remove the retaining ring and the non-metallic washer.
6. Remove all of the packing rings using a hooked tool taking care not to scratch the shaft or the body bore.
7. Lightly coat the I.D. and the O.D. of the new replacement packing set with an NSF-61 approved lubricant, such as Dow Corning III, and slide the rings, one at a time, into the body-packing bore. Insert each ring into the body-packing bore at a slight angle and carefully push into position, making sure that the sealing lips are not bent over. Push packing firmly into place using a blunt-end tool.
8. Replace the non-metallic washer and the retaining ring.
10. Replace any actuation components previously removed using the match-marks made during disassembly.



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PACKING REPLACEMENT – LOWER SET (continued)

5. Remove all of the packing rings using a hooked tool taking care not to scratch the shaft or the body bore.
6. Lightly coat the I.D. and the O.D. of the new replacement packing set with an NSF-61 approved lubricant, such as Dow Corning III, and slide the rings, one at a time, into the body-packing bore. Insert each ring into the body-packing bore at a slight angle and carefully push into position, making sure that the sealing lips are not bent over. Push packing firmly into place using a blunt-end tool.
7. Replace the non-metallic washer and the retaining ring.
8. Replace the cover plate.

NOTE:

If packing replacement is necessary, be sure that the replacement packing material is compatible with the flow medium and service.

REMOVING VALVE

1. Improper lifting of the valve may cause damage. Do not lift the valve using the actuator, valve shaft or body opening. Use eye bolts or rods through the flange holes and attach slings or chain.
2. Support the valve before removing flange or mechanical joint connections, then remove valve from pipeline.



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DISASSEMBLY

1. Remove lever, gearbox or power actuator from the valve.
2. Remove the packing plate from the top end of the valve.
3. Remove the cover plate, retaining ring and washer from the bottom of the valve. On 24" size, remove thrust bolt.
4. Remove the torque bolt(s) connecting the shaft to the disc.
5. Remove the shaft from the top end of the valve by pushing on the bottom end of the shaft.
6. Remove the disc from the opposite of the seating side of the valve.

REASSEMBLY

1. Place the valve body in a horizontal position, with the seating side down, and full clearance above and below the valve opening.
2. Lightly coat the body seat around the shaft bores with an NSF-61 approved lubricant, such as Dow Corning III.
3. Hold the disc in a vertical position with the shaft bolt holes towards the top of the body and lower the disc into the body opening.
4. Align the disc shaft holes with the body shaft holes and insert the shaft into the upper valve body, through the disc and into the lower valve body.
5. Align the shaft bolt holes in the disc with those in the shaft and reinstall the torque bolt(s).



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REASSEMBLY (continued)

6. Replace the washer, retaining ring and cover plate. On 24" size, apply pipe sealant to the threads of the thrust bolt and reinstall.
7. Reinstall the packing plate to the top end of the valve.
8. Reinstall the actuation component.

ADJUSTING ACTUATOR CLOSED POSITION STOPS

1. Relieve pipeline pressure and draw down water in the pipeline.
2. Loosen the nut on the Closed (right) position stop screw.
3. Back out the stop screw three turns CCW.
4. Close the valve until the disc can be felt fully contacting the seat.
5. Turn the stop screw CW until contact with the internal stop can be felt.
6. Tighten the stop screw nut.

ADJUSTING ACTUATOR OPEN POSITION STOPS

1. Relieve pipeline pressure and draw down water in the pipeline.
2. Loosen the nut on the Open (left) position stop screw.
3. Back out the stop screw three turns CCW.
4. Open the valve until the gearbox indicator points to open.
5. Turn the stop screw CW until contact with the internal stop can be felt.
6. Tighten the stop screw nut.



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TROUBLE SHOOTING

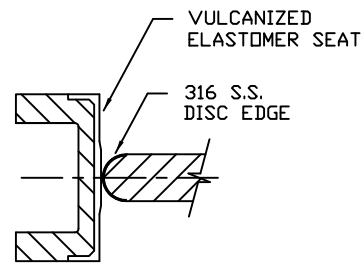
<u>Problem</u>	<u>Possible Cause</u>	<u>Solution</u>
Valve will not fully open....	Improper stop setting.....	Adjust open actuator stop
Valve will not fully close....	Improper stop setting.....	Adjust closed actuator stop
“	Obstruction in line.....	Remove obstruction
Valve leaks when closed...	Improper stop setting.....	Adjust closed actuator stop
“	Obstruction in line.....	Remove obstruction
“	Excessive line pressure.....	Reduce line pressure
Valve leaks at stem.....	Improper packing adjustment.....	Cycle valve to re-seat packing
“	Damaged packing.....	Replace packing

SPARE PARTS

<u>Item</u>	<u>Qty per Valve</u>
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Set v-ring packing	2
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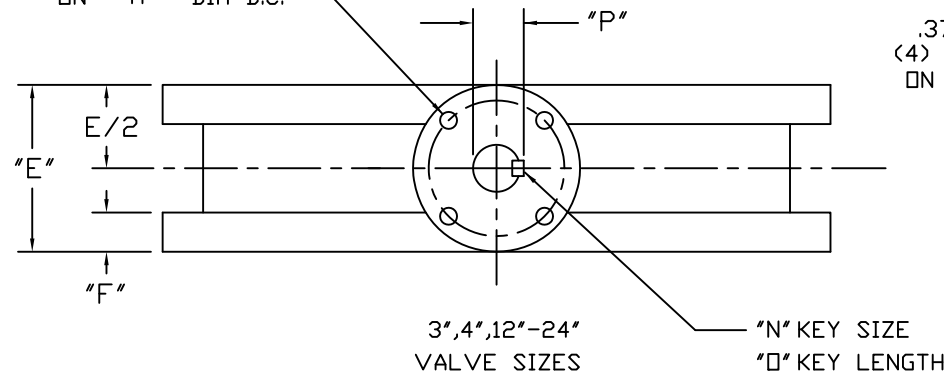
(Call the factory @ 610-770-1100 to order)



SECTION "A-A"

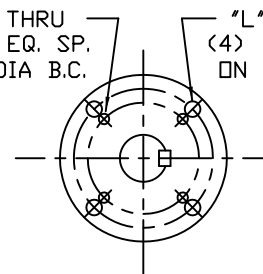
VALVE SIZE	PART NUMBERS		TABLE OF DIMENSIONS																
	NITRILE PART NO.	EPDM PART NO.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	WT/LBS
3	8202600030	8209700030	6.25	1.25	7.50	.562	5.00	.750	.750	4	6.00	—	4.00	.437	3.25	.187	1.25	.651	29
4	8202600040	8209700040	7.00	1.25	9.00	.625	5.00	.937	.750	8	7.50	—	4.00	.437	3.25	.187	1.25	.714	48
6	8202600060	8209700060	8.00	1.50	11.00	1.125	5.00	1.000	.875	8	9.50	—	6.00	.562	5.00	.250	1.58	1.237	58
8	8202600080	8209700080	9.50	2.00	13.50	1.125	6.00	1.125	.875	8	11.75	—	6.00	.562	5.00	.250	1.58	1.237	96
10	8202600100	8209700100	10.88	3.00	16.00	1.375	8.00	1.187	1.000	12	14.25	—	6.00	.562	5.00	.312	2.95	1.529	150
12	8202600120	8209700120	12.25	3.00	19.00	1.375	8.00	1.250	1.000	12	17.00	—	6.00	.562	5.00	.312	2.95	1.529	204
14	8202600140	8209700140	14.00	3.00	21.00	1.625	8.00	1.375	1.125	12	18.75	—	6.00	.562	5.00	.312	2.95	1.777	267
16	8202600160	8209700160	15.00	3.00	23.50	1.875	8.00	1.437	1.125	12	21.25	1.000	8.00	.813	6.50	.375	2.95	2.052	398
18	8202600180	8209700180	16.50	3.50	25.00	2.250	8.00	1.562	1.250	12	22.75	1.125	8.00	.813	6.50	.50x.38	3.46	2.425	433
20	8202600200	8209700200	18.00	3.50	27.50	2.250	8.00	1.687	1.250	16	25.00	1.125	8.00	.813	6.50	.50x.38	3.46	2.425	586
24	8202600240	8209700240	22.50	3.50	32.00	2.250	8.00	1.875	1.375	16	29.50	1.250	8.00	.813	6.50	.75x.50	3.46	2.492	780

"L" DIA THRU
(4) HOLES EQ. SP.
ON "M" DIA B.C.

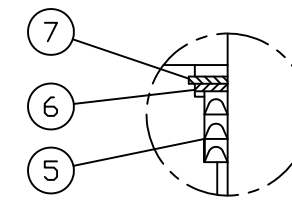


3", 4", 12"-24"
VALVE SIZES

.375" DIA THRU
(4) HOLES EQ. SP.
ON 4.00" DIA B.C.



6", 8", 10"
VALVE SIZES



ENLARGED VIEW

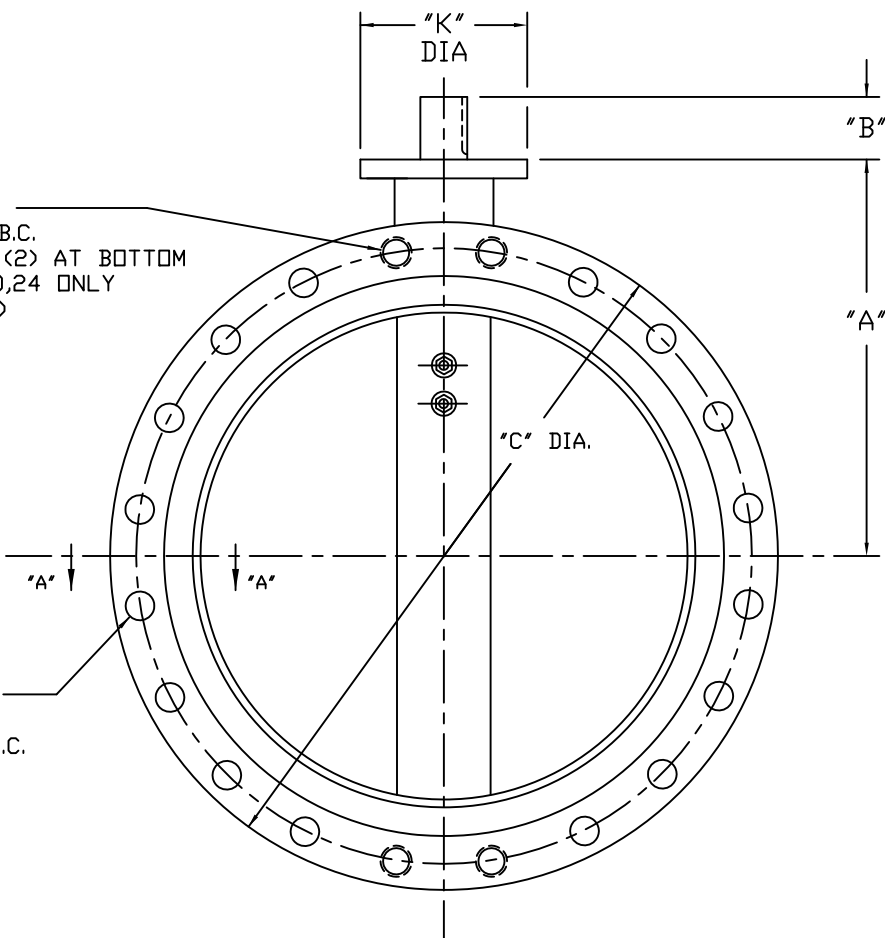
HOMESTEAD SERIES 820 AWWA BUTTERFLY VALVE
GENERAL SPECIFICATIONS:

1. MANUFACTURED IN ACCORDANCE WITH AWWA C504, CLASS 150B, LATEST REVISION.
2. FLANGES CONFORM TO ANSI B16.1 "CAST IRON PIPE FLANGES AND FLANGE FITTINGS", CLASS 125.
3. BODY AND DISC TO BE COATED WITH: "NSF 61 APPROVED" FUSION-BONDED EPOXY
4. DIRECTION TO OPEN VALVE IS COUNTER-CLOCKWISE

NOTES:

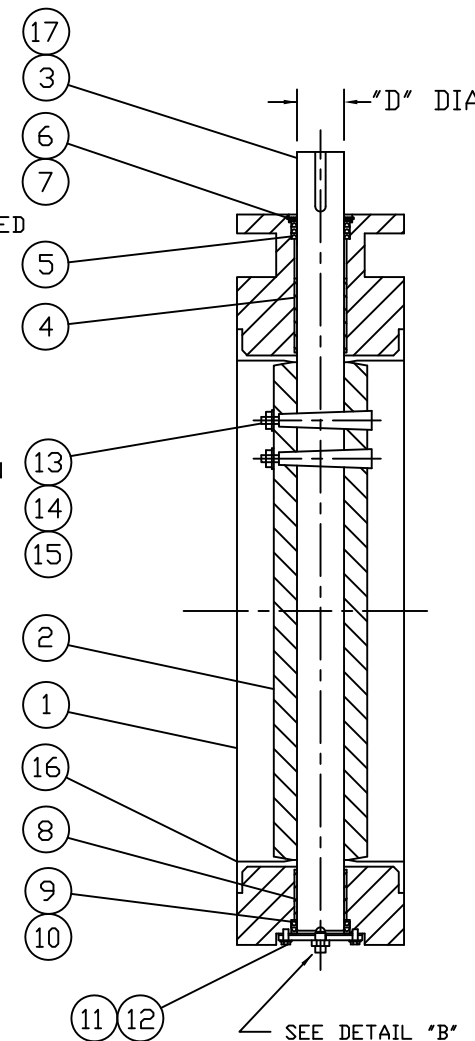
1. ELASTOMERS AVAILABLE IN EPDM AND NITRILE (BUNA-N)
SEE CHART FOR PART NUMBERS

"J" DIA. TAP
ON "I" DIA B.C.
(2) AT TOP & (2) AT BOTTOM
SIZES 16, 18, 20, 24 ONLY
(EACH FLANGE)



"G" DIA THRU
"H" HOLES
ON "I" DIA B.C.

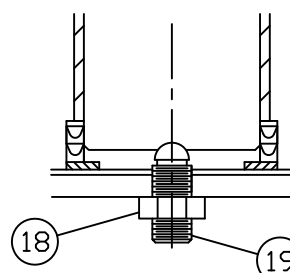
SINGLE PIN
USED ON
3" & 4"
VALVES



SEE
ENLARGED
VIEW

"D" DIA.

SEE DETAIL "B"



DETAIL "B"
24" SIZE ONLY

19	THRUST BOLT	STEEL ZINC PLATED
18	HEX NUT	STEEL ZINC PLATED
17	KEY	STEEL
16	SEAT	SEE NOTE 1
15	HEX NUT	304 STAINLESS STEEL
14	WASHER	304 STAINLESS STEEL
13	PIN	304 STAINLESS STEEL
12	CAPSCREW	STEEL ZINC PLATED
11	BOTTOM COVER	CARBON STEEL
10	WASHER	304 STAINLESS STEEL
9	PACKING	V-RING/SEE NOTE 1
8	LOWER BEARING	NYLON
7	RETAINING SPRING	CARBON STEEL
6	WASHER	304 STAINLESS STEEL
5	PACKING	V-RING/SEE NOTE 1
4	UPPER BEARING	NYLON
3	SHAFT	316 STAINLESS STEEL
2	DISC/EDGE	A536 65-45-12/316SS
1	BODY	A536 65-45-12
NO.	PART NAME	MATERIAL

PARTS LIST

HOMESTEAD® VALVES					
A DIVISION OF OLSON TECHNOLOGIES, INC.					
160 WALNUT ST. ALLENTOWN, PA. 18102 (610) 770-1100					
E	S1607	RH	9/7/14	TITLE	NUMBER
D	S1126	RH	6/10/09	3"-24" SERIES 820 - BARE	
C	S1031	RH	8/28/08	AWWA BUTTERFLY VALVES	
B	S996	RH	5/13/08		
REV	ISSUE	BY	APPR	DATE	SK-5000