

INSTALLATION & MAINTENANCE MANUAL

TRIAD - SERIES 700 / MODEL 750-751

DUCTILE IRON BODY BUTTERFLY VALVES



INSTALLATION INSTRUCTIONS

Triad butterfly valves are bi-directional allowing control of fluid flow and sealing in either direction, and are designed for installation between the faces of 125#/150# ANSI flanges. They do not require gaskets; the integral seat serves as the gasket. The wafer and lug bodies have bolt hole locations for alignment and attachment with mating flanges.

Prior to installation, close the valve. Spread the flanges apart far enough to allow the valve to slip easily between the flanges. Insert the valve between the flanges. Be sure to center the valve and not damage the liner. Allow the flanges to return to their un-spread state. Install and hand-tighten all flange bolts. Slowly open the valve, checking for free movement of the disc. If no obstruction is encountered, leave valve in the open position and tighten all flange bolts. Be certain to keep flange faces as parallel as possible during and after tightening bolts or studs. After final tightening, again check the valve for full opening and closing.

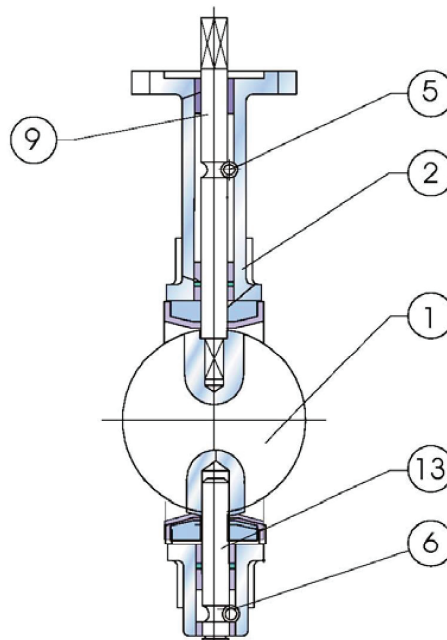
Lug style bodies used for dead end service must be installed as marked on the body (inlet – outlet).

MAINTENANCE

No regular maintenance or lubrication is required.

VALVE DISASSEMBLY

1. After removal of valve from the piping system, open the valve fully
2. Remove the handle or actuator
3. Remove the stem retaining pins (5 & 6)
4. Pull out the upper stem (9)
5. Pull out the bottom stem (13)
6. Remove the disc (1) from the liner (2). Do not damage the disc edge
7. Remove the liner (2)
8. If the valve has bushings and o-rings, remove by tapping with blunt instrument
9. Inspect all components for wear and replace as required.



VALVE ASSEMBLY

1. Clean all reusable parts
2. If valve has bushings and o-rings, tap them carefully
3. Apply a lubricant or soapy solution compatible with elastomers to facilitate assembly
4. Insert liner (2) into body by pressing it into the body evenly
5. Insert disc (1) in open position into liner. Make certain broached end of disc is at the upper stem end of the body
6. Coat the upper stem (9) with a general purpose lubricant & install into body
7. Install bottom stem (13)
8. Install retaining pins (5 & 6) to both stems

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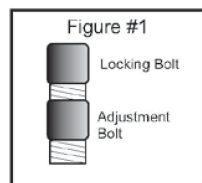
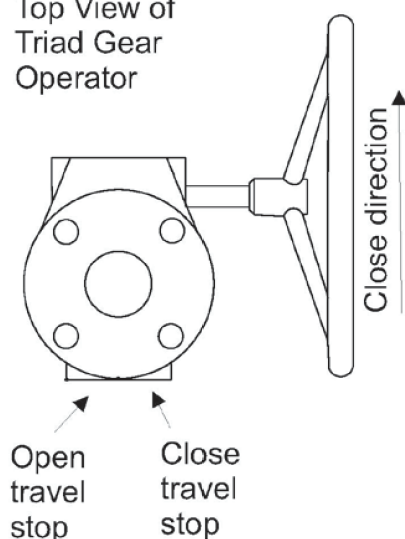
9. Install the operator
10. Check assembly by opening & closing the valve several times
11. Follow installation instructions for reinstalling the valve in the piping system.

ADJUSTMENT OF TRAVEL STOPS FOR GEAR OPERATOR

The manual gear operator provided on Triad series 750 and 751 butterfly valves come standard with two travel stop adjustments to precisely adjust the position of valve. Instructions on how to adjust the travel stop follows.

The travel stop adjustments are located on the side of the gear operator opposite the shaft. For valve sizes up to and including 14" the travel stops are counter sunk socket head screws. An allen head wrench is required to change travel. The travel adjustment screw arraignment is double bolted with the same size bolt one on top of the other (Figure #1). The top bolt being a locking device for the underside bolt (adjustment stop). The top bolt must be removed to gain access to the adjustment bolt.

Top View of
Triad Gear
Operator



TOOL REQUIRED

valve sizes 2-6"-9/64" wrench
 valve sizes 8"-14"- 7/32" wrench

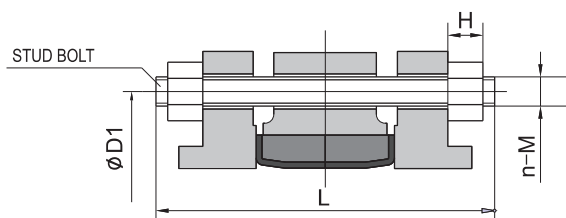
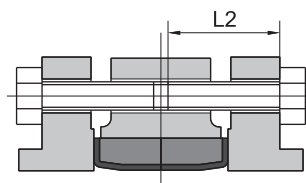
All that is required to change the end travel of the gear operator is an adjustment of the socket head screw. Before turning these screws remove the top allen head (locking bolt) completely from the gear operator. Use the hand wheel to adjust the gear to its end position and reverse the hand wheel ½ turn to relieve tension on the travel stops.

Adjustments are as follows:

Right Travel or Close Travel Stop
 CCW turns increase the valve closing.

Left Travel or Open Travel Stop:
 CCW turns increase the travel of the valve in the open direction.

Once the desired position adjustment is achieved, replace the locking screws and slightly tighten against the adjustment screws.

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SIZE		ANSI 150 VALVES						
in	mm	D1 in	n	M-BOLT	H in	L in	L1 in	L2 in
2"	50	4.74	4	5/8"-11UNC	0.71	4.92	4.13	1.5
2-1/2"	65	5.49	4	5/8"-11UNC	0.71	5.12	4.33	1.57
3"	80	6	4	5/8"-11UNC	0.71	5.12	4.33	1.65
4"	100	7.5	8	5/8"-11UNC	0.71	5.91	4.92	1.89
5"	125	8.5	8	3/4"-10UNC	0.75	6.1	5.12	2.05
6"	150	9.51	8	3/4"-10UNC	0.75	6.3	5.31	2.05
8"	200	11.75	8	3/4"-10UNC	0.75	6.69	5.71	2.28
10"	250	14.25	12	7/8"-9UNC	0.91	7.68	6.5	2.52
12"	300	17.01	12	7/8"-9UNC	0.91	8.07	6.89	2.76
14"	350	18.74	12	1"-8UNC	0.98	8.46	7.28	2.76
16"	400	21.26	16	1"-8UNC	0.98	9.06	7.68	2.95
18"	450	22.76	16	1-1/8"-7UNC	1.14	10.43	9.06	3.15
20"	500	25.00	20	1-1/8"-7UNC	1.14	11.81	10.24	3.35
24"	600	29.51	20	1-1/4"-7UNC	1.26	13.19	11.61	3.94
28"	700	34.00	24	1-1/4"-7UNC	1.26	16.54	14.37	3.94
30"	750	36.00	24	1-1/4"-7UNC	1.26	16.93	14.76	3.94
32"	800	38.50	24	1-1/2"-6UNC	1.50	18.50	16.54	4.72
36"	900	42.76	28	1-1/2"-6UNC	1.50	20.08	17.72	5.12

SIZE		DIN PN16 VALVES						
in	mm	D1 mm	n	M-BOLT	H mm	L mm	L1 mm	L2 mm
2"	50	125	4	M16	15	125	105	40
2-1/2"	65	145	4	M16	15	125	105	40
3"	80	160	8	M16	15	130	110	42
4"	100	180	8	M16	15	135	115	42
5"	125	210	8	M16	15	145	125	45
6"	150	240	8	M20	18	150	130	50
8"	200	295	12	M20	18	160	135	50
10"	250	355	12	M24	22	185	155	60
12"	300	410	12	M24	22	200	170	65
14"	350	470	16	M24	22	200	170	65
16"	400	525	16	M27	24	220	190	70
18"	450	585	20	M27	24	245	210	75
20"	500	650	20	M30	26	280	245	80
24"	600	770	20	M33	28	310	275	90
28"	700	863.50	20	M27	25	341	300	90
30"	-	-	-	-	-	-	-	-
32"	800	978	20	M30	26	375	330	90
36"	900	1,086	24	M30	26	400	350	100



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Triad Series 700 Butterfly Valve Bolt Torque Chart

SIZE	TORQUE (IN/LBS) FOR OPERATING CONDITIONS
2"	12.57
2-1/2"	14.96
3"	10.27
4"	13.63
5"	21.77
6"	33.19
8"	36.11
10"	55.49
12"	70.63
14"	57.97
16"	78.06

Note: Design pipe pressure 232 psi