

UNITED

Lug & Wafer Butterfly Valves
Manually Gear Operated with Tamper Switch
MODEL 2400-L & 2400-W

INSTALLATION & MAINTENANCE MANUAL



MSS-SP-67
300 PSI Working Pressure: 2"~8"
250 PSI Working Pressure: 10" & 12"

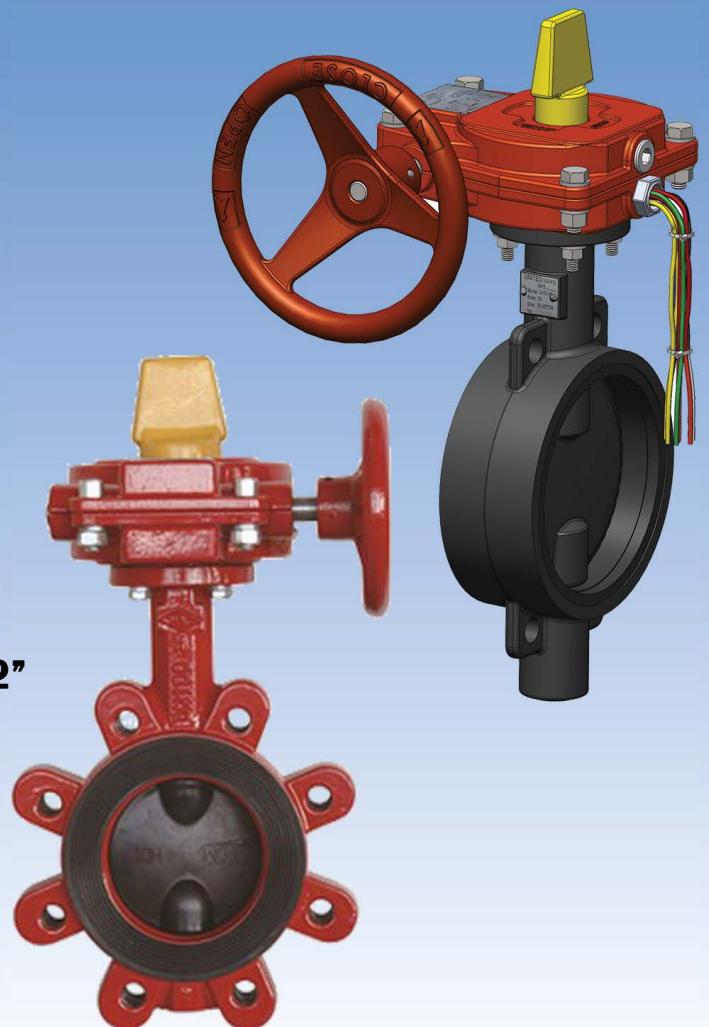


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1. Product Review

1.1 Application:

Butterfly valve serve to cut off medium flow in the piping system, widely applied in systems of water supply, fire protection, etc., and it can also serve as adjusting valve.

1.2 Product Features:

- a) Compact Design, easy for installation and maintenance, perfect choice for work areas with space constraints;
- b) 90 °quick close and shut-off; zero leakage;
- c) Small operating torque;
- d) Linear flow characteristic, good for flow adjusting;
- e) Long service life, with open and shut-off cycling up to 10,000 times;
- f) With different material options for the valve parts the valve can be applied under different working conditions.
- g) Fusion bonded epoxy coating both interior and exterior surface provide reliable corrosion resistance.

2. Technical Parameters

2.1 Guiding Standards:

2.1.1 Design Standards:

BS EN 593 Industrial valves—Metallic butterfly valves

MSS SP-67 Butterfly Valves

2.1.2 Flange Connection: ISO5211, BS EN 1092-2 PN10/PN16, ASME B16.1 CL125, ASME B16.5 CL150, JIS B2210 10K;

2.1.3 Face to Face dimension: ISO 5752, Series 20;

2.1.4 Pressure Testing:

Tightness Test: 1.1 times of rated working pressure;

Shell Test: 1.5 times of rated working pressure

2.2 Model Designation

Description	Model	Pressure Rating	Size Designation	Temperature
Wafer Butterfly Valve Manually Gear Operated with Tamper Switch	2400-W-....	300	2" ~ 8"	33°F to 176° F (0°C to 80°C)
Wafer Butterfly Valve Manually Gear Operated with Tamper Switch	2400-W-...	250	10" & 12"	33°F to 176° F (0°C to 80°C)
Lug Wafer Butterfly Valve Manually Gear Operated with Tamper Switch	2400-L-....	300	2" ~ 8"	33°F to 176° F (0°C to 80°C)
Lug Wafer Butterfly Valve Manually Gear Operated with Tamper Switch	2400-L-...	250	10" & 12"	33°F to 176° F (0°C to 80°C)

2.3 Statement of Connection

2.3.1 The valves are of wafer or lugged wafer connection for installation on pipe lines;

2.3.2 The valves can be operated in lever handle, gear box, gear box with tamper switch, electrical actuator, pneumatic actuator, etc.

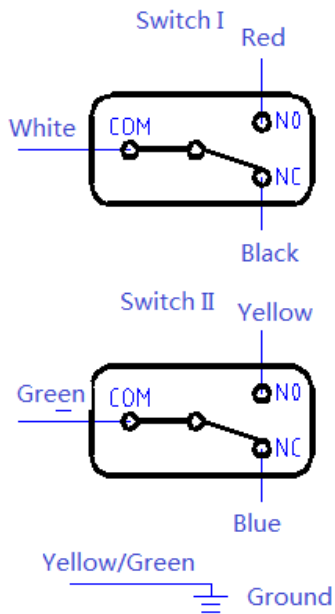
2.4 Material Specification

Part No.	Part	Material Specification
1	Valve Body	Ductile Iron ASTM A536, 65-45-12
2	Disc	Ductile Iron ASTM A536, 65-45-12 SS304, SS316, AL-Bronze C95400
3	Stem	SS420, 304, 316, 416, 431
4	Bushing	PTFE, Nylon 1010
5	Seat	EPDM, NBR

3. Supervisory Switch

3.1 Power Instructions: 5A 250VAC

3.2 Wiring Instructions



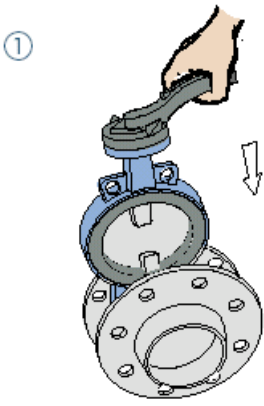
3.3 Application Environment

Both indoor and outdoor.

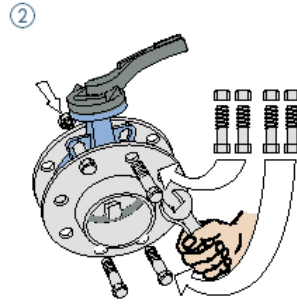
4. Installation & Application

4.1 Installation

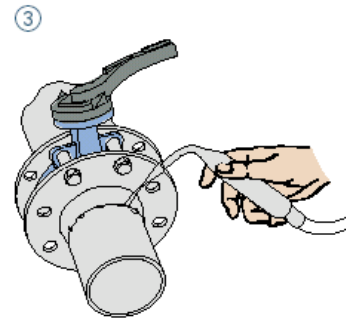
- Check carefully the working conditions to make sure that the valve is suitable to work under the specified working condition;
- Be careful when open the crate to avoid damage to the valve or valve part; Check if the valve parts are complete;
- Clean the clearway of the way to clear out the undesired impurities;
- Make sure that the disc is under closed condition, so that the impurities will not fall on the valve seating and block the seating surface;
- Make sure that there will be sufficient support to the valves in case the valve is heavy;
- Open and close the valve to check if it's operating and functioning well.
- Illustration of installation procedures:



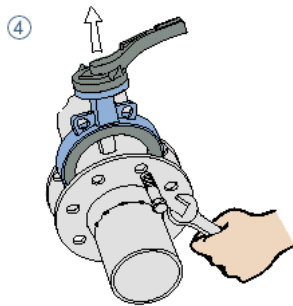
Put the butterfly valve between the two mating flanges to be installed on the pipeline.



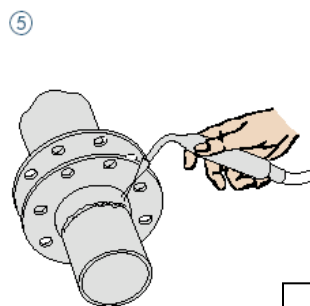
As illustrated above, insert 4 bolts and screw in the nuts slightly.



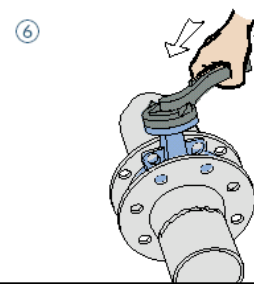
Fix the flange onto the pipeline by means of spot welding



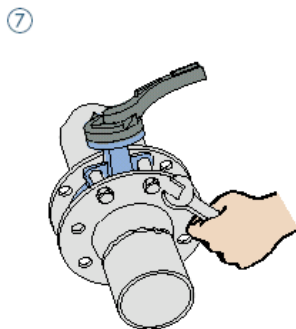
Unscrew the bolts and nuts and get the valve out



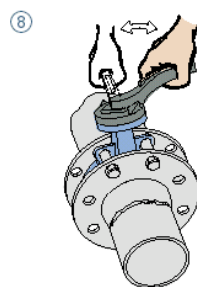
Weld the flange with the pipe securely



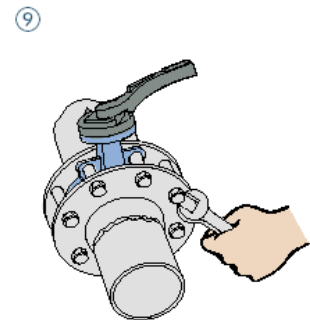
After welding seams cooled down, slide in the butterfly valve. Make sure there is enough space for the valve and the disc is slightly open.



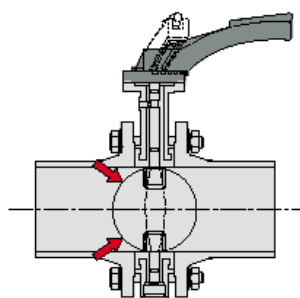
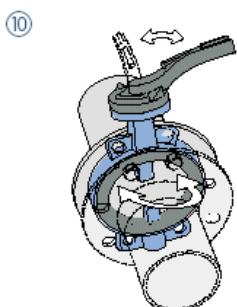
Position the valve against the mating flanges and tighten the 4 bolts and nuts gradually. (Take care not to over-tighten the bolts and nuts.)



Open and close the valve to check if it's operating correctly and then open the disc slightly.



Tighten all the bolts and nuts evenly. (When do the tightening, do it with the opposite two bolts and nuts alternatively)



Check again the opening and closing of the valves to make sure that it's operating well, especially that the disc operation to the fully open position will not be obstructed.

4.2 Application

- a) Make sure that the flow medium through the valve does not contain hard particles which might cause damage to the sealing surface.
- b) The valves should be handled carefully to avoid breakage and damage to the valve parts.
- c) Make sure that the disc is in open position when doing piping system pressure test.
- d) For butterfly valves with bypass, open the bypass first before opening of the valve.

5. Problems and Proposed Solutions

Possible Problems	Possible Causes	Proposed Solutions
Sealing Surface leakage	<ol style="list-style-type: none">1. Debris lodged in the waterway around the seating area;2. Sealing surface damaged;3. Sealing surface worn out during operation	<ol style="list-style-type: none">1. Clear out the impurities;2. Change valve seat;3. Change valve seat;
Lever handle not flexible or disc not able to open or close well.	<ol style="list-style-type: none">1. Packing over pressed;2. The packing cover is not accurately positioned;3. Stem is damaged or there is impurities around stem;4. Stem got crooked;	<ol style="list-style-type: none">1. Untighten the bolts and nuts on the packing cover a little bit;2. Adjust the position of the packing cover;3. Check the stem area and remove the impurities;4. Change for a new stem

6. Care & Maintenance

- a) These valves should be storage in cool and dry environment, with the two ends well protected from entering of impurities; When the valves are on storage for more than 6 months, check every 6 months the condition of the valves;
- b) Disc of the butterfly valves are designed to be installed aligned with the diameter of the pipelines. The discs are operated $0^{\circ}\sim 90^{\circ}$ axially around the stem, and when it turns 90° , the valves come to fully open position;
- c) Butterfly valves are positioned between two mating flanges of the butterfly valves; Wafer butterfly valves are then fixed on the pipelines with bolts and nuts tightening the two mating flanges with the valve clamped in between, while for the flanged butterfly valves the bolts and nuts connects the two flange ends of the valves with the two mating flanges on the pipeline respectively;
- d) For manual operation, the valve opens when operates anti-clockwise and the valve closes when operates clockwise; for operation with electric actuator, need to follow the instruction of the actuator.