UNITED

Grooved Butterfly Valve
Manually Gear Operated with Tamper Switch
MODEL 2400-G

INSTALLATION & MAINTENANCE MANUAL

UL LISTED

FM APPROVED

NSF NSF61 NSF372

LEAD

MSS-SP-67
300 PSI Working Pressure

UNITED Water Products

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1. Product Review

1.1 Application:

UNITED Grooved Butterfly Valves are designed to be used as shut-off valves or throttling valves in water supply, fire protection, and many other piping systems.

1.2 Product Features:

a) EPDM Encapsulated ductile iron disc for bubble-tight shut off
b) Flag type position indicator
c) Low torque operation
d) High cycle life
e) Built-in supervisory switch
f) Top flange to ISO 5211/1
g) Working Pressure: 2"~12": 300 psi
h) Working Temperature: 33°F to 176°F (0°C to 80°C
i) Fusion bonded epoxy powder coated to AWWA C550
j) UL Listed/FM Approved for indoor or outdoor use.

2. Technical Parameters

2.1 Guiding Standards:

2.1.1 Design Standards：

MSS SP-67 *Butterfly Valves*

2.1.2 Groove Dimension:

AWWA C606 *Grooved and Shouldered Joints*;

ISO 6182 *Fire protection — Automatic sprinkler systems —Part 12: Requirements and test methods for grooved-end components for steel pipe systems*

2.1.3 Face to Face dimension:

MSS SP-67, Table 4;

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
Grooved Butterfly Valve Manually Gear Operated with Tamper Switch	2400-G-	300PSI	2" ~ 12"	0～-80℃

2.3 Statement of Connection

2.3.1 The valves are designed to be connected to the piping system with couplings;

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

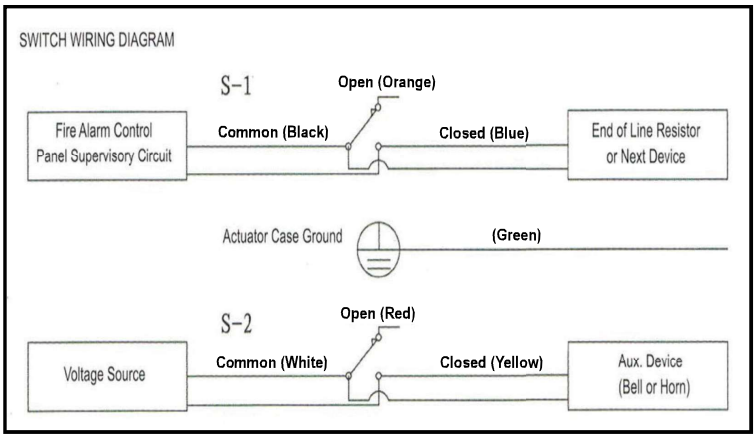
2.4 Material Specification

Part No.	Part	Material Specification
1	Valve Body	Ductile Iron ASTM A536, 65-45-12
2	Disc	Ductile Iron ASTM A536, 65-45-12+EPDM
3	Stem	SS431, 420, 304, 316, 416

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

a) Check the system requirements, especially for operating pressure and temperature, and ensure it is within the performance capability of the valve being installed.

b) Be careful when opening the packing crates to avoid damage to the valves and valve parts inside. Inspect the contents carefully prior to use.

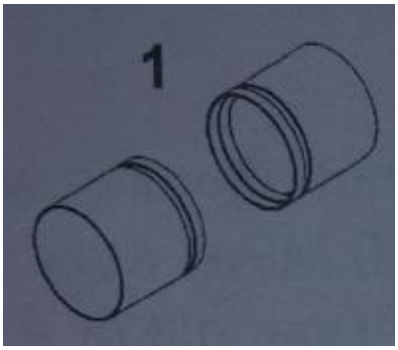
c) Inspect the grooves and gasket seats on the valves and adjoining pipes or fittings for burrs, cracks, or other damage; and clear away any dirt or debris.

d) Thoroughly lubricate the coupling gasket and place over the adjoining pipe or fittings; make sure that the gasket is with even tension around the pipe.

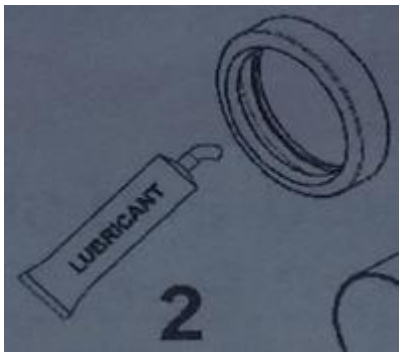
e) Make sure that the disc is in the closed position, so that debris cannot block the seating surface of the valve.

f) Operate the valve to the full open and closed positions to check that it is functioning properly.

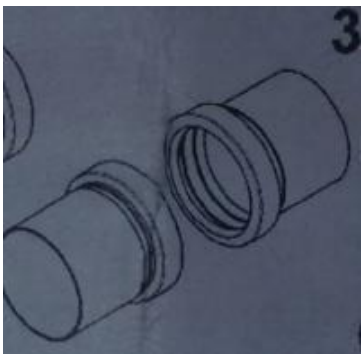
g) Proceed to install the valve in accordance with the following 7 step illustrated guide.



Piping checking

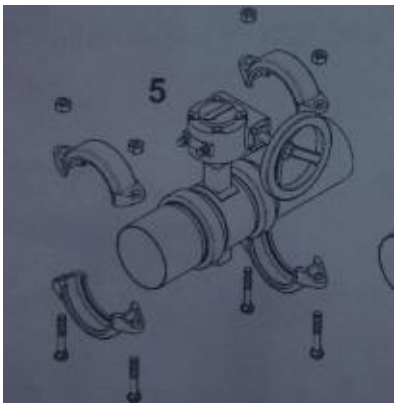


Gasket checking and lubrication

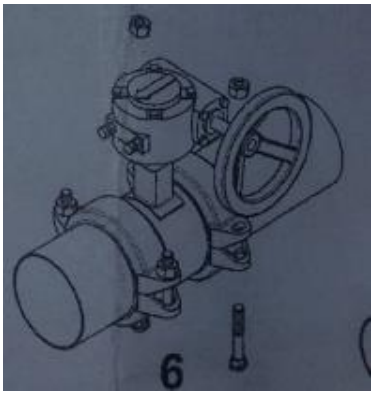


Install gasket

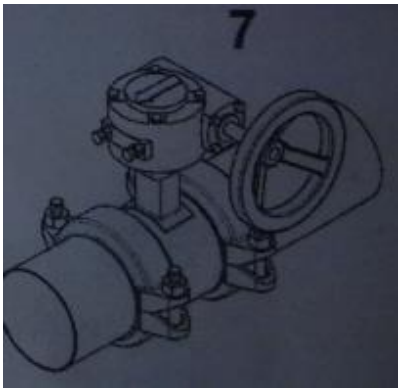
Connection of valve and piping with gasket



Coupling installation



Tightening of bolts and nuts



Installation completed

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 the open position when doing piping system pressure test.

d) For butterfly valves with bypass, open the bypass first before opening the valve.

e) If the valve is heavy, prepare support first before installation

5. Problems and Proposed Solutions

Possible Problems	**Possible Causes**	**Proposed Solutions**
Sealing Surface leakage	1. debris lodged in the waterway around the seating area; 2. Sealing surface damaged; 3. Sealing surface worn out during operation	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.	1. Stem is damaged or there are impurities around stem; 2. Stem is crooked;	1. Check the stem area and remove the impurities; 2. Change for a new stem

6. Care & Maintenance

a) These valves should be stored in a cool and dry environment, with the two ends well protected from entering of impurities; When the valves are in storage for more than 6 months, check every 6months 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 0~90 °axially around the stem, and when it turns 90 °, the valves come to a fully open position.

c) For manual operation, the valve opens when operated anti-clockwise and the valve closes when operated clockwise; for operation with electric actuator, need to follow the instruction of the actuator.

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