

HAITIMA

Instruction Manual

Butterfly Valve


2014

HIM-078 Version: **B**



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1. INTRODUCTION AND SAFETY INFORMATION

1.1 INTRODUCTION

This manual has been prepared to serve as a guide to insure continuous satisfactory service and assist in restoring a valve to proper working condition.

It covers wafer type, lug type, CLASS 125/150, PN10/16, JIS 10K, ductile iron, cast iron butterfly valves.

The installation, storage, operation, disassembly / assembly inspection and repair, service problems, maintenance covering these butterfly valves are also included in this manual.

Prior to performing any work on these butterfly valves, it would be useful to have a general understanding of their construction.

1.2 SAFETY INFORMATION

The following general safety notices supplement the specific warnings and cautions appearing elsewhere in this manual. They are recommended precautions that must be understood and applied during operation and maintenance of the equipment covered herein.

- a. Always wear eye shields, gloves and overalls. Wear protective footwear and headgear.
- b. To avoid injury, never attempt disassembly while there are pressures either upstream, or downstream. Even when replacing packing rings, caution is necessary to avoid possible injury.
- c. Do not attempt to disassemble a butterfly valve while there is pressure in the line. Make sure both upstream and downstream pressures are removed. Disassemble with caution in the event all pressures have not been relieved.
- d. Prior to replacing packing rings remove all pressure from the valve.
- e. To prevent valve distortion, inefficient operation, or early maintenance problems, support piping on each side of the butterfly valve.
- f. Do not touch surface of butterfly valve on high temperature.
- g. Butterfly valves are not to be used with unstable fluids.
- h. If provided, the Locking device on the handle is to avoid improper use of the butterfly valve by unauthorized people.
This can be locked with a patch lock.

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2. GENERAL PRECAUTIONS

2.1 STORAGE

2.1.1 Temporary Storage

If the butterfly valve is to be stored before installation, the following should be observed.

- a. Keep the butterfly valve wrapped and protected as shipped from the manufacturer.
- b. Do not remove the plastic bag or protective end covering until the butterfly valve is ready for installation. This will reduce the possibility of foreign material damaging internal butterfly valve components.
- c. Butterfly valve stored outdoors should be positioned such that water dose not accumulate in the valve body.

2.1.2 Long Term Storage

If the butterfly valves are to be stored more than of one year, they should be prepared in the following manner.

- a. open the flange plate to the angle of about 10°to avoid the permanent deformation of rubber on the butterfly valve.
- b. Store the butterfly valve in a dry area or protect the cavity by applying a preservative coating.
- c. Do not remove the protective end covering. (If any)
- d. Butterfly valve which will remain in storage for an excessive period of time should have a preservative applied to the external surface.
- e. Do not store the valves outdoors.

2.2 PREPARATION

- a. Check the specification and material of the butterfly to confirm if they are in accordance with the design. Avoid the inappropriate usage due to different liquid application.
- b. The piping must be thoroughly cooled after welding before installing butterfly valves. It is high prohibited to weld the flange after the butterfly valve has been installed.
- c. Certain rounding chamfer should be prepared on the contact surface of the washer of flanged housing of butterfly valve. All the dust, foreign matters and welding slag shall be thoroughly cleaned before installation to avoid leakage and improver movement of the valve.
- d. Before installation, all the pipes related with the valve shall be properly lifted to avoid the occurrence of improper stress.
- e. The surfaces of flanges shall be paralleled and homocentric. Meanwhile, the distance between two flange surfaces must be at least 6mm to 10mm wider than the width of butterfly valve.
- f. During installation, no washer is needed between butterfly valve and flange.
- e. The installation direction must get attention for the pipes with different flow speed specification.

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- e. The surfaces of flanges shall be paralleled and homocentric. Meanwhile, the distance between two flange surfaces must be at least 6mm to 10mm wider than the width of butterfly valve.

3. INSTALLATION AND OPERATION

3.1 INSTALLATION

Keep the disc in semi-opening status and the disc shall be located in front of the body. Place the body in-between flanges and the lock in the flange bolt.

Do not use flange gasket. Before fastening the flange bolt, open the disc carefully to the fully opened position to ensure appropriate calibration space and that a gap will be maintained between the O.D. of the disc and the I.D. of the adjacent pipe. Keep the disc at the full-open position and then fasten the flange bolt according to the specified torque. After fastening the bolt, turn the disc carefully to the fully closed position to ensure an appropriate gap will be allowed for the disc O.D.

3.2 OPERATION

- a. Before operate the valve, use compressed air to clean the foreign matters on the external sides of the pipes and use water to clean the inner surface of the pipes.
- b. Open the valve to check the indicator board to avoid exceeding the open width or closing position when screw the valve.
- c. The open and close operation shall take STOPPER as the benchmark. The angle board and Handle would be damaged if use other hand tool to apply extra force.
- d. Open the valve when conduct pressure test on the pipes.
- e. If the piping needs to be put at the full close status after installation, it is necessary to conduct one or two times of full open and close operation of valves each month. This would prevent the piping from being adhered by some foreign matters.
- f. During the overhaul of piping or the piping has been used for sometimes, it is necessary to open and shut down the valve every two weeks.

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4. MAINTENANCE AND REPAIR

4.1 INSPECTION AND MAINTENANCE

If the butterfly valves are to be stored more than of one year, they should be prepared in the following manner.

- a. Periodically Checking:

Check the corrosion of valve plate and the abrasion status of washers every year. Meanwhile, add lubricant into the shaft centers and valve plates.
- b. Periodically Checking:

Pay attention to the operating status and check if there are any abnormalities like clogged by foreign matters and abrasion of valve carrier. When the valve has been clogged, open the valve a little large to flash away the foreign matters. If the abnormality still could not be removed or the valve carrier has been worn down, dismount the valve to conduct further checking.
- b. Once the angle indicator board has been removed from the butterfly, please adjust the valve plate to the position of full closed before re-mount the board, and then ten tight the angle indicator board.

4.2 DISASSEMBLY

Steps:

- a. Remove the handle and manual gear box or actuator from the actuator mounting flange.
- b. Remove the handle operator, gear panel and screws from the upper part of the butterfly valve body.
- c. Pull the stem and the bushing from the upper part of the butterfly valve body.
- d. Push the disc from the left or right side from the seat of butterfly valve body.
- e. Squeeze the seat into an arc shape and then push downward from left or right to pull out the seat and it can be replaced.

4.3 ASSEMBLY

Steps:

- a. Open the flange plate to the angle of about 10°before installation. (Same operation is also needed before dismounting.
- b. Arrange supporting screw on proper locations to adjust the distance between two flanges (the distance must be 6mm to 100m wider than the width of butterfly valve).
- c. Use bolt to penetrate the two flanges at the lower side of flanges to avoid the drop of butterfly valve.

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- d. Insert the butterfly between the surfaces of the two flanges and then insert other bolts.
- e. Check then ensure the center of butterfly is homocentric with the center of flange and the valve plate would not be interfered by the inner diameter or neighboring mechanical parts. Then screw tight the bolts with the method of gradually tight opposite bolts.
- f. Double confirm the fully open and fully close status of the valve.



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5. QUALITY ASSURANCE AND SERVICE

5.1 QUALITY ASSURANCE

HAITIMA's warrants its products to be free from defects in material and workmanship for a period of eighteen (18) months from the date of shipment or twelve (12) months from the date of installation whichever comes first. This warranty is limited to the repair or replacement of the defective item providing that it was handled, installed, used and maintained in accordance with the manufacturer's recommendations and applicable standard industry practices. HAITIMA will not be liable for any additional direct or indirect costs beyond the repair or replacement of the defective item.

This warranty is in lieu of any other warranty expressed or implied.

5.2 SERVICE

Manufacturer may provide field installation and debugging where contractually specified.

Manufacturer will follow up the quality of the valve provided and offer service in accordance with customer requirements.

6. TECHNICAL PARAMETERS

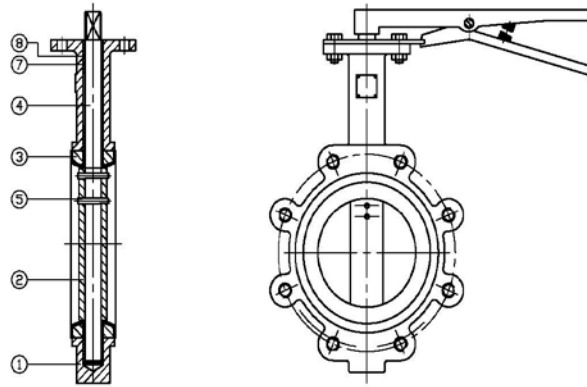
6.1 TORQUE

NPS	DN	Torque	
		N-M	in-lb
2"	50	26.7	236.6
2-1/2"	65	37.3	330.2
3"	80	50.1	443
4"	100	92.3	816.9
5"	125	149.5	1323.2
6"	150	222.8	1972.1
8"	200	429	3797

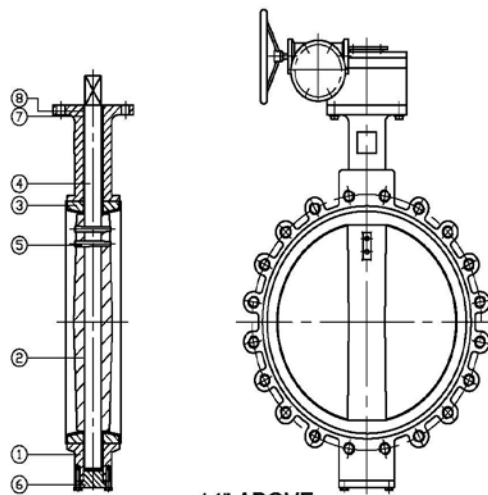
NPS	DN	Torque	
		N-M	in-lb
10"	250	711.1	6293.7
12"	300	1034.3	9154.1
14"	350	1216.8	10769.5
16"	400	1726.4	15279.8
18"	450	2234.7	19778.7
20"	500	3193.6	28265.4
24"	600	5765.5	51028.7

Table 1 – Torque

6.2 BUTTERFLY VALVE STRUCTURE



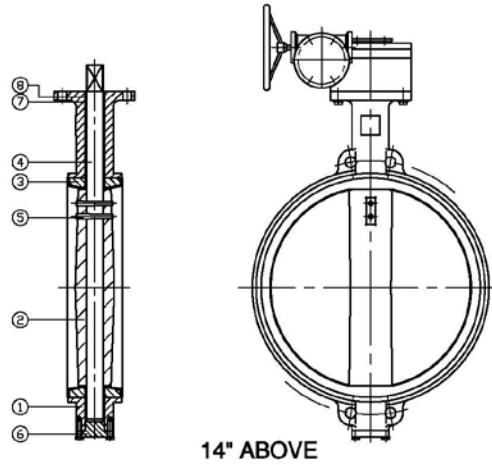
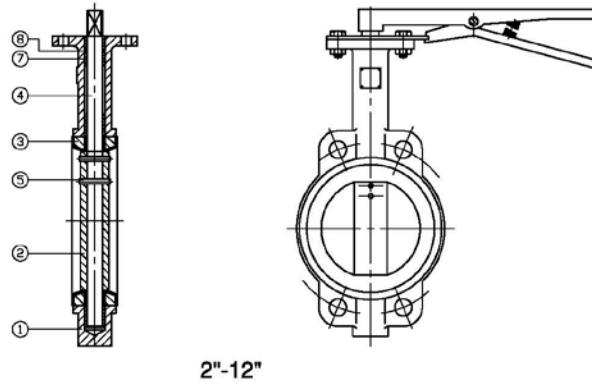
2"-12"



14" ABOVE

ITEM	PARTS
1	BODY
2	DISC
3	SEAT
4	STEM
5	TAPER PIN
6	COVER
7	BUSHING
8	O-RING

Table 2 – Wafer Type Butterfly Valve



ITEM	PARTS
1	BODY
2	DISC
3	SEAT
4	STEM
5	TAPER PIN
6	COVER
7	BUSHING
8	O-RING

Table 3 – Lug Type Butterfly Valve