

BUTTERFLY VALVE

INSTALLATION

OPERATION

AND

MAINTENANCE MANUAL



Handling Manual for Butterfly Valve

1. Transportation

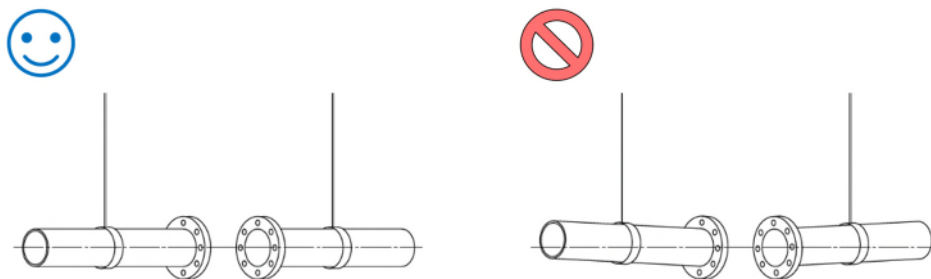
- If using the cardboard box for package, the strength of the box may be decreased due to moisture. Be sure to protect the package and handle it carefully.
- Please avoid strong shock (drop, overturn, or thrown out) or vibration toward valves.
- Please do not hang the valve through handle as the handle may come off and the valve may drop.
- Please handle the painted valves with care to prevent them from cracking and peeling off.

2. Storage

- Please be sure not to expose valves with the package to rain, water, or dew, etc. while in storage.
- Please store valves inside the house and assure the surrounding temperature to normal temperature 0 ~ 40 degree C, and do not place them directly on the ground or on concrete.
- Please avoid using or storing valves at corrosive environment
- Please avoid shock (drop, overturn, etc.) or vibration to valves while in storage. Moreover, do not load on valves.
- Please do not dismantle valves.

3. Installation

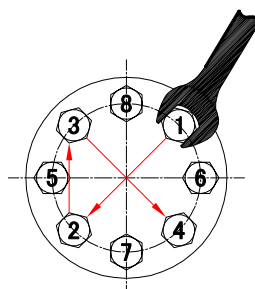
- Accurate centering between upstream and downstream pipes is essential for trouble-free operation of valves (Drawing 1).



Drawing 1

3-1. Wafer type butterfly valve

- Verify the valve specification and use the correct flange.
- Select the correct bolts and nuts.
- To avoid leakage, please tighten flange bolts alternately, diagonally, and repeatedly with the same force (Drawing 2).



Drawing 2

- Do not over tighten the bolts (reference value for close torque)

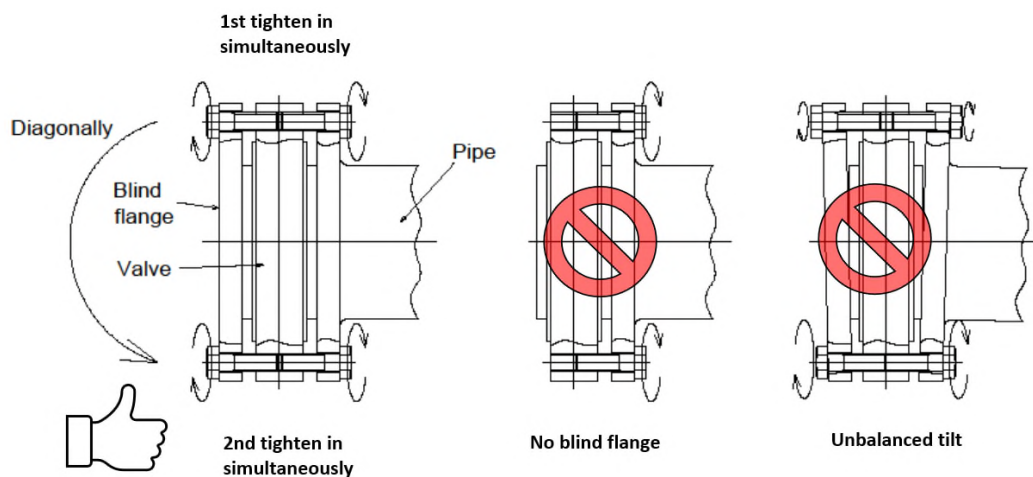
Unit: Nm

SIZE	JIS10K	PN16	ANSI 125
50A	9.0	9.0	9.0
65A	14.0	14.0	17.0
80A	7.0	7.0	16.0
100A	11.0	11.0	13.0
125A	14.0	14.0	19.0
150A	20.0	20.0	22.0
200A	21.0	21.0	34.0
250A	32.0	34.0	36.0
300A	38.0	38.0	40.0

- If the pipe flanges do not match properly with the valve seal for sealing, please use special flanges (please contact us for special flanges).

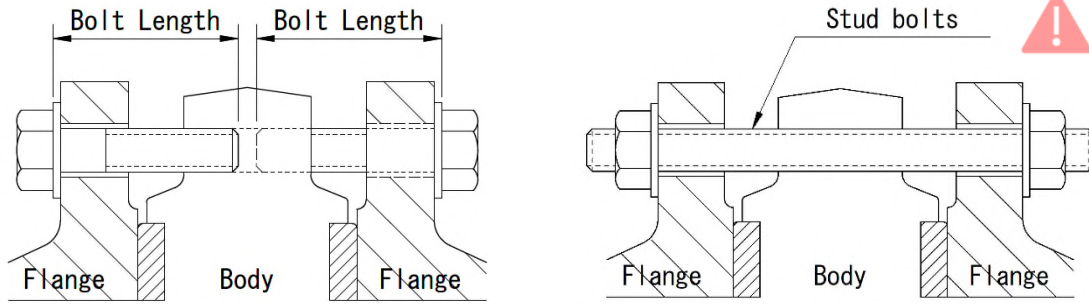
3-2. Lug type butterfly valve

- Verify the valve specification and use the correct flange.
- Verify the threads that are specified.
- To avoid leakage, please tighten flange bolts alternately, diagonally, and repeatedly with the same force (Drawing 2).
- This valve can be installed at the end of the pipeline, but flanges must be installed on both sides of the product.
- Tighten the bolt on both sides simultaneously and tighten diagonally to prevent the rubber seat from moving to the opposite side, that may cause the leakage from flange seal or stem seal (Drawing 3).



Drawing 3

● Bolts length for use (reference value)



Size	PN 16		ANSI 125	
	Bolt No.	Spec	Bolt No.	Spec
50A	8	M16X40L	8	UNC5/8" X35L
65A	8	M16X40L	8	UNC5/8" X40L
80A	16	M16X40L	8	UNC5/8" X40L
100A	16	M16X45L	16	UNC5/8" X45L
125A	16	M16X45L	16	UNC3/4" X50L
150A	16	M20X50L	16	UNC3/4" X50L
200A	24	M20X55L	16	UNC3/4" X55L
250A	24	M24X60L	24	UNC7/8" X60L
300A	24	M24X70L	24	UNC7/8" X70L



Bolt length apply for the thickness of the standard flange and 1pcs of flat washer.

Flat washer M16 (UNC5/8") : 3.3mm, M20 (UNC3/4") : 3.3mm, M24 (UNC7/8") : 4.3mm

The bolt length should not touch each other when tightening the bolts on both sides.



Using a stud bolts and nuts for installation valve is not recommended.

● Do not over tighten the bolts (reference value for close torque)

Unit: Nm

Size	JIS10k	PN16	ANSI 125
50A	9.0	9.0	9.0
65A	14.0	14.0	17.0
80A	7.0	7.0	16.0
100A	11.0	11.0	13.0
125A	14.0	14.0	19.0
150A	20.0	20.0	22.0
200A	21.0	21.0	34.0
250A	32.0	34.0	36.0
300A	38.0	38.0	40.0

- If the pipe flanges do not match properly with the valve seal for sealing, please use special flanges (Please contact us for special flanges).

4. Possible troubles, causes and measures

Possible troubles	Causes	Measures
Leak in the sealing surface	1. A disc or a sealing surface is dirty 2. The pipe flange does not match properly with the sealing surface of the butterfly valve. Or the flange is installed with only one side of the product. 3. The pressure is too high	1. Clean the butterfly valve disc and pipe 2. Disassemble the flanges and the product and reinstall them. Or install the flanges on both sides of the product. 3. Do not use the pressure that exceeds the design pressure
Valve body cracking	1. The installation way is not proper.	1. Use the correct bolts to install according to Drawing 1 and Drawing 2
Leak from the stem	1. The pipe flange does not match with the sealing surface on the butterfly valve. Or the flange is installed with only one side of the product. 2. Damage in the internal stem component	1. Disassemble the flanges and the product and reinstall them. Or install the flanges on both sides of the product. 2. Please inform TOZEN

ZBJ06-PDF(E)-2312



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