

Installation and maintenance guidelines

Pre-installation procedure

1. Check BFV identification tag for materials and type codes to ensure they are correct for application with its technical specifications.
2. Actuator should be mounted and calibrated on the BFV in prior to installation to facilitate proper alignment of disc-seat sealing.
3. Make sure the pipeline and the face of pipe connection flanges are clean. Any foreign material such as rust, pipe scale, metal clips, welding slag, etc. can obstruct disc movement and damage the seat and disc sealing surfaces.
4. Check the bolts or stud screws for proper pipe connection flanges thread and length, etc.
5. Belimo elastomer seat has molded O-ring on the face of seat. As a result, no gaskets are required as these O-rings serve the function of gasket.

Installation procedure

1. Align the piping and then spread the pipe flanges a distance apart enough to permit the BFV body to be easily dropped between the flanges without actually contacting the pipe flanges' face. (See figure 1). Particular care in handling the BFV so as to prevent further damage to the disc or seat faces.
2. Check to see that the BFV disc has been positioned to a partially open position, with the disc edge approximately 10° open from the face of the seat (See figure 2).
3. Insert the BFV between flanges. Always lift the BFV by locating holes or by using a nylon sling on the neck of the body. Never pick up the BFV by actuator or operator mounted on the top of the BFV.
4. Place the BFV between the flanges, centre it and then span the BFV body with all flange bolts by hand, but do not tighten the bolts.
5. Carefully open and close the disc to fully open and fully closed position freely without any obstruction. Make sure the disc edge does not hit the adjacent pipe I.D.
6. Systematically remove jack bolts or other flange spreaders, and hand tighten the flange bolts.(See figure 2)
7. Very slowly close the disc to ensure disc edge clearance from adjacent pipe flange I.D. Open the disc to fully open and tighten all flange bolts as per specification. (See figure 2)
8. Cycle the BFV to fully open and fully closed position. Check the actuator travel stop settings are synchronised to proper disc alignment and edge clearance. (See Figure 3 and 4)
9. The BFV is now ready for operation.

Warning!

Personal injury or property damage may result if the valve is installed where service conditions could exceed the valve ratings.

Warning!

Never complete the welding process (after tacking) with the valve between pipe flanges. This causes severe seat damage due to heat transfer.

Safety precautions

Before removing the BFV from the pipeline or loosening any bolts, it is important to verify the following conditions:

1. Make sure the pipeline is depressurised and drained.
2. Care for the flow media. Proper care should be taken for protection against toxic and/or flammable fluids.
3. Practise caution if removing the actuator from the BFV when the pipeline is under pressure. The disc may move suddenly due to the pressure.
4. Always be sure that the disc is in the closed position before removing the BFV.

General maintenance

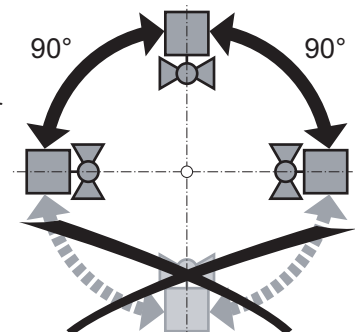
The following periodic preventative maintenance practices are recommended for all Butterfly Valves:

1. Operate the valve from fully open to fully closed to assure operability.
2. Check flange bolting for evidence of loosening and correct.
3. Inspect the valve and surrounding area for previous or existing leakage at flange faces or shaft connections.
4. Check piping and/or wiring to actuators and related equipment for looseness and correct as needed.

Recommended installation position

The butterfly valves may be mounted either vertically or horizontally.

The butterfly valves may not be installed in a hanging position i.e. with the stem pointing downwards.



Installation and maintenance guidelines

Figure 1 Initial installation of valve



Figure 2 Recommended Bolt Tightening Sequence

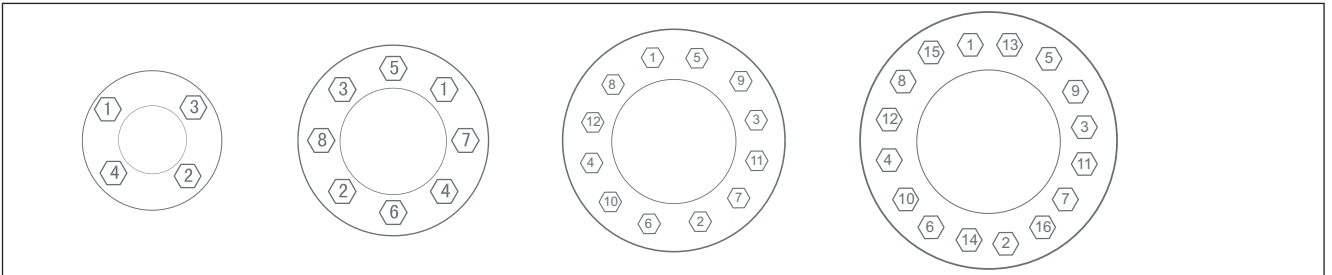


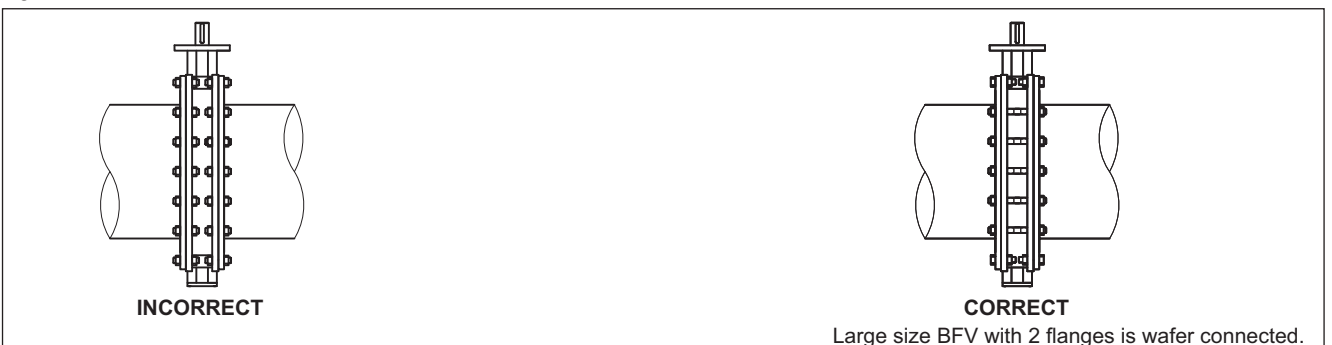
Figure 3 Centring and flanging of valve



Figure 4 Final valve alignment and tightening of flange bolts



Figure 5 Installation notes for DN700..1200 BFV



Location and orientation in piping recommendation

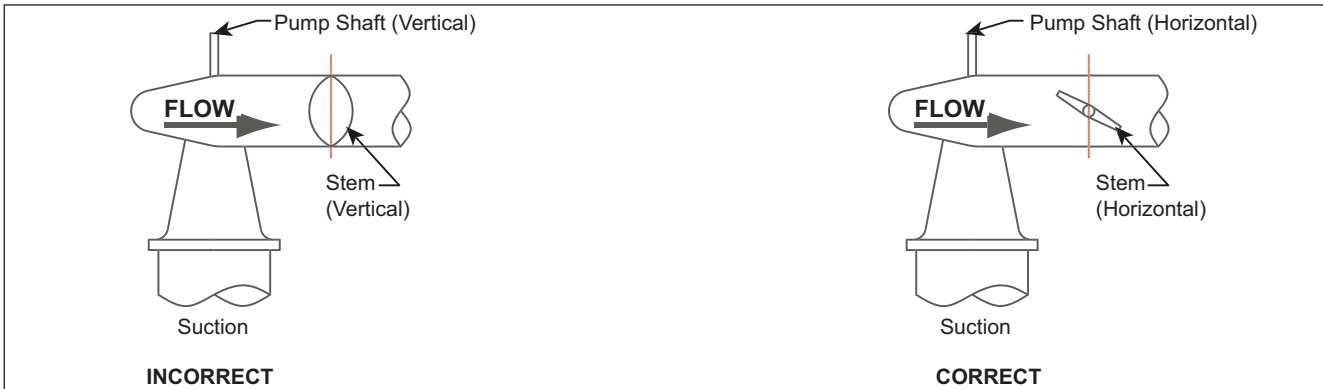
Valve Location:

- Butterfly valves should be installed if possible a minimum of 6 pipe diameters from other line elements, i.e., elbows, pumps etc.
- Where the butterfly valve is connected to a check valve or pump, use an expansion joint between them to ensure the disc does not interfere with the adjacent equipment.

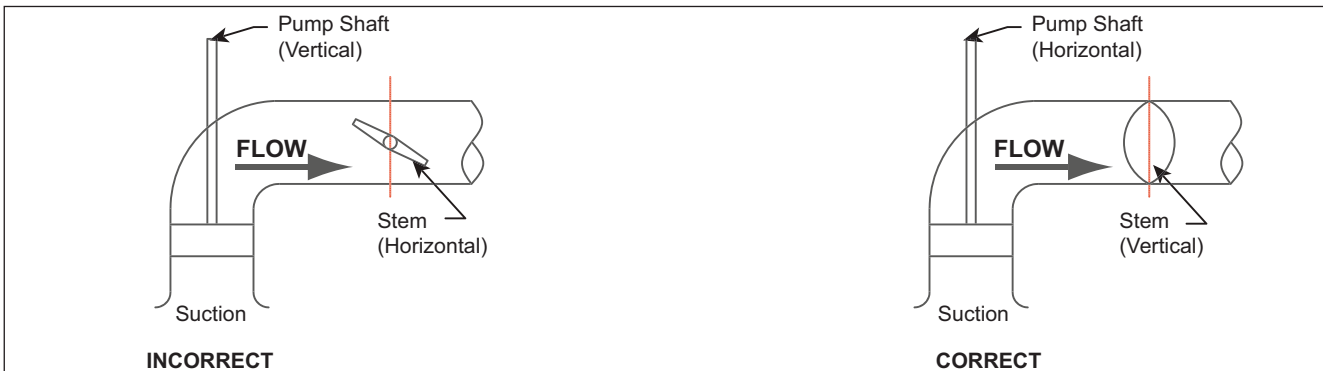
For Centrifugal Pump - Pump shaft vertical and stem vertical



For Centrifugal Pump - Pump shaft horizontal and stem horizontal



Axial Pump - Pump shaft horizontal and stem vertical



Butterfly Valves Located Downstream of a Bend or Pipe Reducer

Figure 1 Bend



Location and orientation in piping recommendation (continued)

Figure 2 Tee

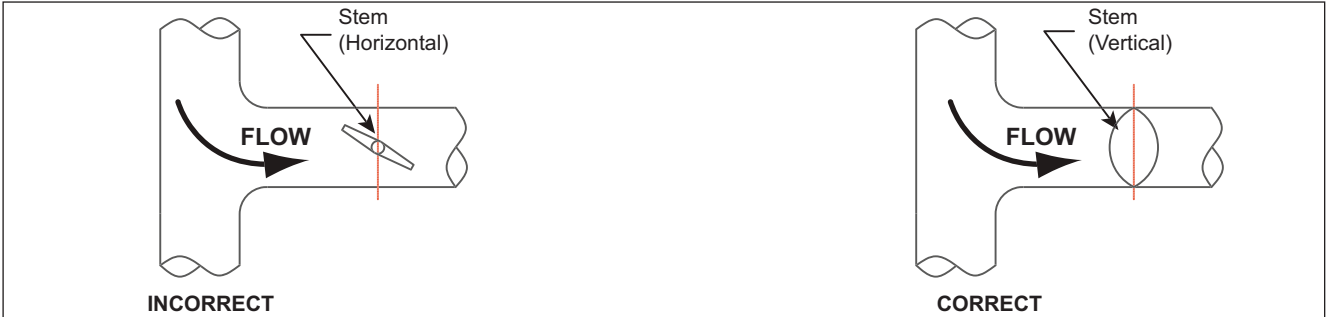
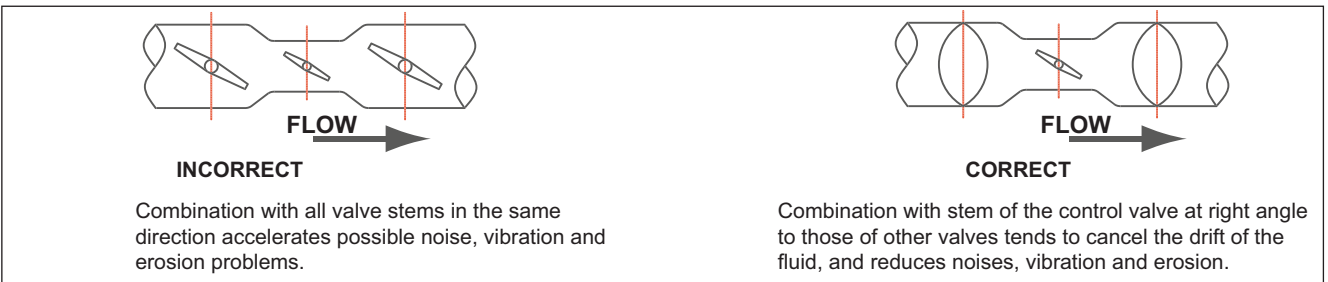


Figure 3 Pipe Reducer



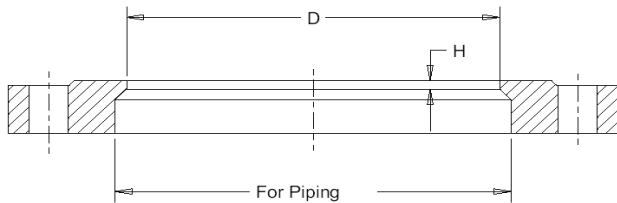
Butterfly Valves in combination for control/isolation applications:



Flange Dimensions for Butterfly Valves Recommendation

Flange Connection Standard Reference

- ISO 7005.2
- GB/T 9113.1
- GB/T 17241.6



PN25			PN16		
DN (mm)	D (mm)	H (mm)	DN (mm)	D (mm)	H (mm)
50	50	4	50	50	4
65	65	4	65	65	4
80	80	4	80	80	4
100	100	4	100	100	4
125	125	4	125	125	4
150	150	4	150	150	4
200	208	5	200	208	5
250	250	6	250	255	6
300	308	6	300	308	6
350	340	7	350	340	7
400	405	7	400	405	7
450	455	8	450	455	8
500	505	8	500	505	8
-	-	-	600	605	8
-	-	-	700	705	9
-	-	-	800	810	9
-	-	-	900	900	9
-	-	-	1000	1000	10
-	-	-	1200	1200	10