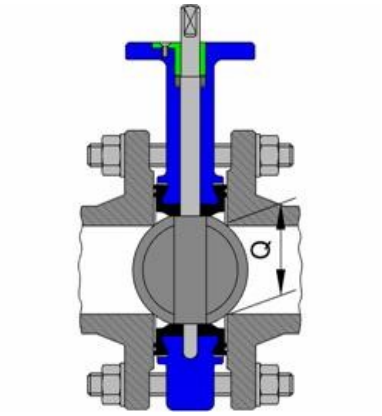
KNOWLEDGE BASE

Generic Installation Instructions
Wafer Type Butterfly Valves

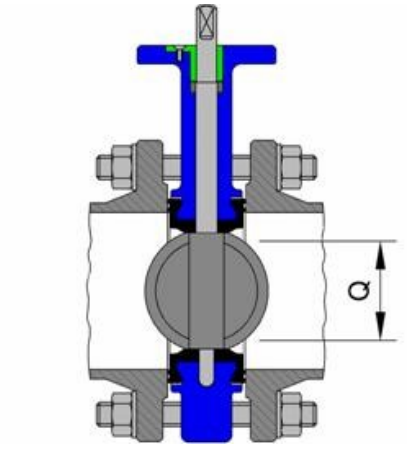
General guide for installing butterfly valves

1) BEFORE STARTING TO INSTALL - YOU MUST HAVE THE CORRECT SIZE FLANGES FOR THE VALVE BEING INSTALLED



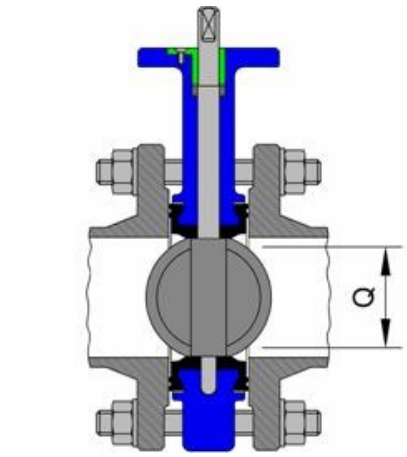
UNDERSIZE FLANGES

Undersize flanges will not clear the minimum disc clearance diameter 'Q', and will result in damage to the valve and flanges, and the valve will not function correctly.



OVERSIZE FLANGES

Oversize flanges will prevent the correct compression of the valve's liner and are unlikely to seal on the flange faces. There is a strong risk of the liner collapsing as the valve operates.



CORRECT FLANGES

Correctly sized flanges allow the valve to operate at its maximum design specifications as the liner seals correctly on the flanges, the disc is correctly contained within the liner, and the disc is free to rotate.

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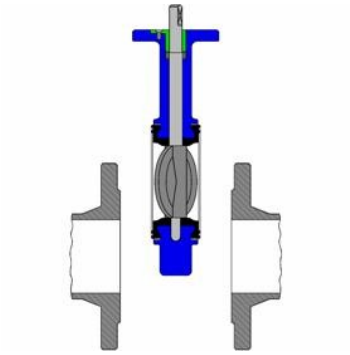
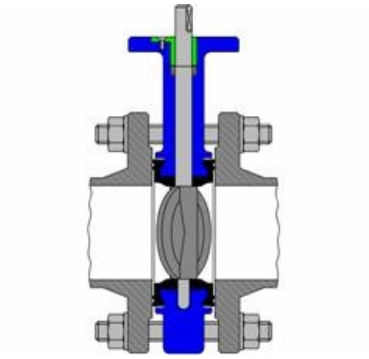
2) INSTALLING



SPREAD THE FLANGES

This allows the valve to slide between the flanges.

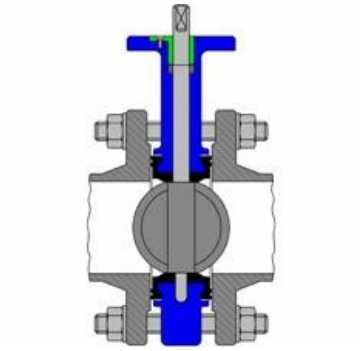
Note that the disc is in the part open position but NOT protruding beyond the body



FIT THE BOLTS

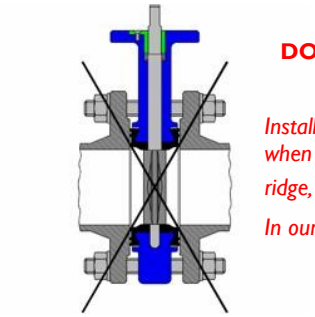
Install the bolts but do not tighten yet. Ensure bolts pass through guide lugs on valves with lugs cast into the body, these are to assist in centralising the valve with the flanges. Valve still in the part open position.

DO NOT USE GASKETS



OPEN THE VALVE & TIGHTEN THE BOLTS

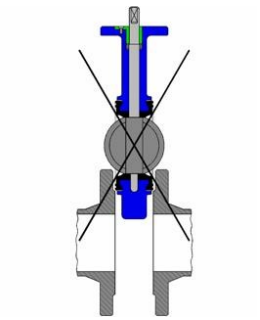
Open the valve to prevent the liner forming around the disc when the bolts are tightened, this reduces the initial operating torque. Tighten the bolts using the standard cross-wise method.



DO NOT TRY TO INSTALL THE VALVE WITH THE DISC IN THE CLOSED POSITION

Installing with the disc closed allows the liner to 'flow' around the disc creating a ridge either side of the disc when the bolts are tightened. This dramatically increases the initial torque required to move the disc over the ridge, and the extra torque required may exceed the maximum available torque from the actuator.

In our experience, in automatic butterfly valves, this is the biggest single cause of initial automatic malfunction



DO NOT TRY TO INSTALL THE VALVE WITH THE DISC OPEN BEYOND THE BODY

This will damage the disc which will in turn damage the liner when the valve is operated.

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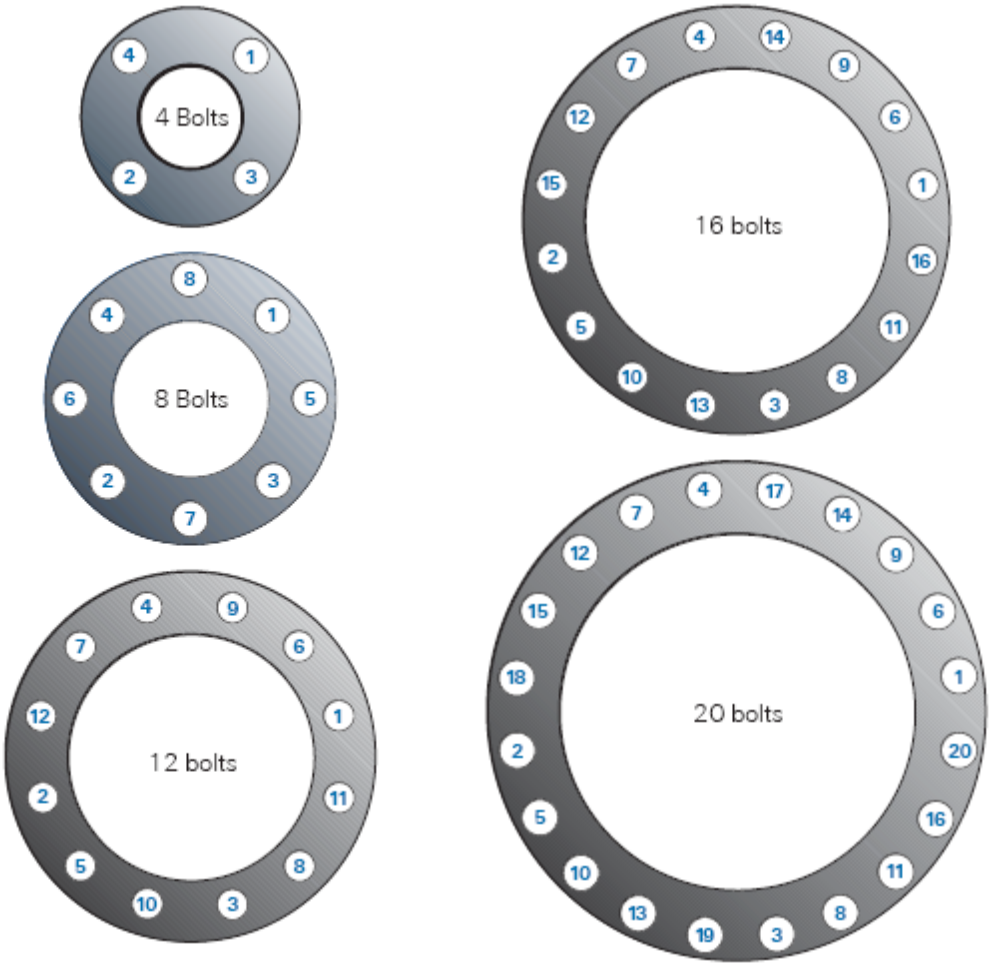
Recommended sequence for flange bolt tightening



When tightening the bolts in flanges we recommend the above sequence is followed to ensure that the flange faces are pulled together as evenly as possible. Bolts should initially be tightened by hand, then a spanner/ wrench. When using the spanner/ wrench, the nuts should be tightened1 turn at a time until tight, then say 1/2 turn each and so on.

Once fully assembled the flange bolts should be tightened to the specified torque setting suited to operating pressure and temperature conditions, again following the sequence shown.

AVS KNOWLEDGE BASE

Generic Installation Instructions
Wafer Type Butterfly Valves

Recommended Flange Bolt Lengths for Wafer Butterfly Valves

The following table shows the number and size of bolts required to mount a wafer butterfly valve between PN10 or PN16 flanges.

Valve Size	Valve body thickness	No of bolts PN10	No of bolts PN16	Bolt Size	Bolt Length
1"	32	4	4	M12	55
11/4"	32	4	4	M16	55
11/2"	32	4	4	M16	55
2"	43	4	4	M16	65
21/2"	46	4	4	M16	65
3"	46	8	8	M16	70
4"	52	8	8	M16	70
5"	56	8	8	M16	70
6"	56	8	8	M20	70
8"	60	8	12	M20	75
10"	68	12	12	M24	80
12"	78	12	12	M24	80