

# Installation Instructions for flanged joints

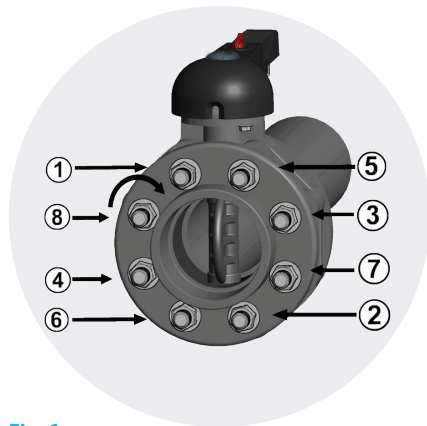


Fig. 1

To guarantee the correct installation of flanged elements, we recommend you perform the following operations:

1. insert the possible backing ring onto the pipe, before proceeding with the installation of the stub;
2. in the event of a fixed flange, check the drilling is correctly aligned with the counter flange;
3. check that the position of the counter flange takes into account the overall dimensions of the face to face distance of the components;
4. insert the flat gasket between the stubs (this step is not necessary for butterfly valves), making sure the sealing surfaces of the flanges to be welded have not been separated by an excessive distance, since this would cause it to compress;
5. proceed with solvent welding or welding of the fixed flanges or stub (in the case of backing rings) following the welding or solvent welding instructions provided by FIP;
6. insert all the bolts, washers and nuts;
7. once the cooling time is up, proceed with tightening the bolts in a "cross-wise" order (fig.1);
8. complete the bolt tightening process using a torque wrench until the tightening torque values shown in the table are reached.

## Tightening torque

Here the maximum suggested tightening torques for ODT backing rings

DN	20	25	32	40	50	63	75	90	110	125	140	160	180	200	225	250	280	315
Nm	10	15	15	20	25	35	35	35	35	35	45	70	70	70	70	70	70	90

Please note that:

- the use of flanges in coated metal or fibreglass may allow the application of higher tightening torques, provided these do not exceed the elastoplastic limit of the material;
- the use of different elastomeric seal materials from those listed in the previous table may require slightly higher tightening torques,
- FIP always recommends the use of suitably sized washers for any bolt used in the coupling flange.

## Minimum length of bolts

For flanged butterfly valves	
DN	Lmin
40	M 16x150
50	M 16x150
65	M 16x170
80	M 16x180
100	M 16x180
125	M 16x210
150	M 20x240
200	M 20x260
250	M 20x310
300	M 20x340
350	M 20x360
400	M 24x420

For flanged joints on pipes using backing rings				
d	DN	Bolts	Lenght for stub end SDR11	Lenght for stub end SDR17
20	15	M 12	65	-
25	20	M 12	70	-
32	25	M 12	80	-
40	32	M 16	90	90
50	40	M 16	90	90
63	50	M 16	100	100
75	65	M 16	110	100
90	80	M 16	110	110
110	100	M 16	110	110
125	125	M 16	130	120
140	125	M 16	140	120
160	150	M 20	140	130
180	150	M 20	150	130
200	200	M 20	160	140
225	200	M 20	160	140
250	250	M 20	180	150
280	250	M 20	180	150
315	300	M 20	190	160
355	350	M 20	200	180
400	400	M 24	230	210