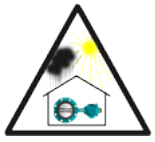
Installation

Introduction:

To guarantee the benefits of the InterApp butterfly valves AQUARIA, proper procedures and compliance with the installation instruction are essential. The installation has to be carried out according to the state of the art and only by qualified personnel. InterApp reserves the right to decline responsibility for damage or premature failure if the recommendations contained in this instruction are not being followed. Consult the corresponding valve datasheet concerning the installation of a valve at the end of the line. Dimension, material and application range of the butterfly valves AQUARIA are according to the technical documentation.



Storage:

InterApp butterfly valves AQUARIA should always be stored free from dust and humidity.
The valve is supplied with the disc in a slightly open position and should remain so until the installation is completed. (Fig. 1).
Butterfly valves supplied with a single acting spring closing pneumatic actuator should be stored with disassembled actuator, this to avoid a lasting deformation of the liner.
The actuator should be mounted only after the installation of the valve in the piping.

Precautions to be taken prior to installation:

Please make sure that the valve intended for installation is suitable for the service conditions prevailing. The responsibility about the used fluids (corrosion resistance, pressure, temperature, etc.) lies by the user of the plant.
Call your supplier or InterApp if you need any assistance.
Please consider that turbulences (i.e. created by piping bow) generate hydro dynamic forces increasing the operating torque of the valve. We recommend installing the valve minimum 5 x DN after pipe fittings.

Check before installation:

Positioning:

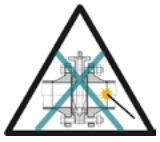
For the installation of valves in horizontal pipelines, we recommend to install the valves with their shaft in a horizontal position.
Please ensure that the lower edge of the disc opens with the direction of the flow. This prevents deposition of slurries and contamination in the shaft sealing area. (Fig. 2)

Gaskets:

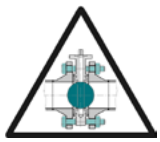
Never use gaskets nor grease. (Fig. 3)

Installation:

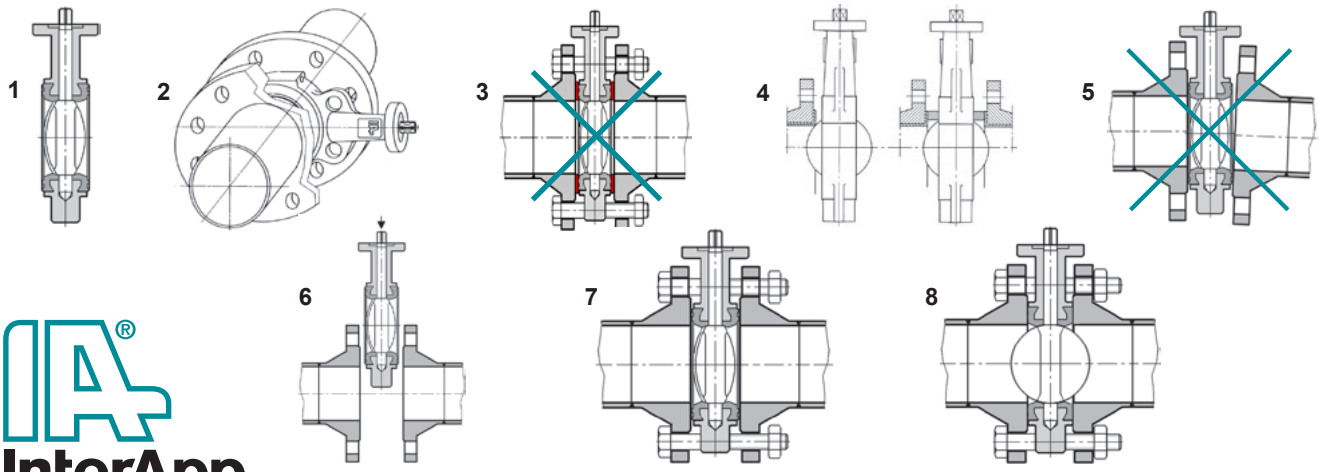
Flange facings must be smooth and clean. Rust, welding scores, rests of paint, dirt, etc. must be removed in order to prevent damage of thevalve gasket.
AQUARIA butterfly valves, in wafer style design, are suitable for installation between DIN PN10/16 or ANSI150 flanges. For the installation of valve between flanges of other standards consult InterApp or its authorised distributors.



The valve should not be mounted in pipes, where the actual bore diameter is less than the nominal bore dimension of the valve. In that case, spacer rings should be fitted between flanges and valve to prevent damage to the disc on opening. (Fig.4)
The valve should never be installed between flanges which are not parallel to each other.
Make sure that pipes and valves are installed concentric. The disc of a misaligned valve may be damaged. (Fig.5). Furthermore, it is absolutely inadmissible to carry out any welding on the piping while the valve is between the flanges. This would destroy the liner of the valve.



The flanges have to be spread in order to ease the installation of the valve and the disc must be partially open (Fig. 6). Misspreaded flanges may damage or roll the liner outside the body flanges.
Set all stay-bolts by keeping the disc slightly open and do not tighten the nuts (Fig. 7).
By tightening the stay-bolts when the disc is closed, the liner will be compressed in a wrong position. An excessive closing torque and leakage will result.Open completely the disc (Fig. 8). Ensure that the piping is aligned. Tighten diagonally opposite the nuts.



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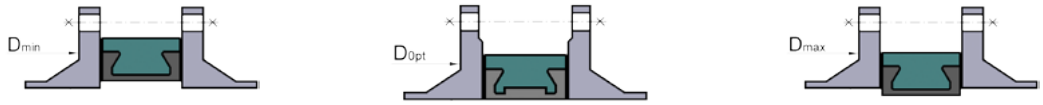
Flange inside diameter:

The InterApp butterfly valve has to be mounted between flanges without gasket. It has bidirectional tightness. Consult the corresponding valve datasheet concerning the installation of a valve at the end of the line. It is centered by stay-bolts or by screws. The diameter of the flange should be in accordance with the stated values Dopt, Dmin, Dmax.



Dmin Minimum diameter of the flange enabling to move the disc (in case of a perfectly centered valve).

Dopt Diameter of the flange for optimal mounting.

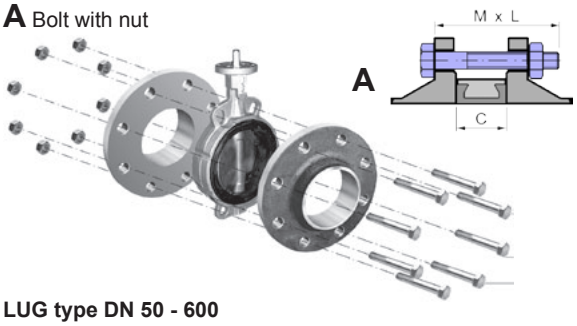
Dmax Maximum diameter of the flange.

DN	32	40	50	65	80	100	125	150	200	250	300
Dmin	19	32	35	53	74	93	119	147	198	247	297
Dopt	34	42	53	68	83	103	128	153	202	253	303
Dmax	47	57	68	87	104	126	154	174	226	277	328

Bolting::

Wafer DN 25 - 400

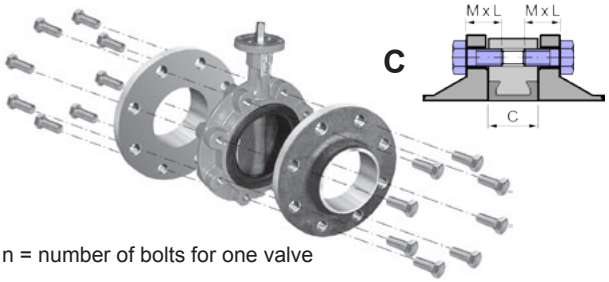
A Bolt with nut



A		PN 6		PN 10		PN 16		ANSI 150	
DN	C	n	M x L	n	M x L	n	M x L	n	UNC x L [Inch]
25	30	4	M10x80	4	M12x90	4	M12x90	4	UNC 1/2"-13 x 3"
32	30	4	M12x80	4	M16x100	4	M16x100	4	UNC 1/2"-13 x 3 1/4"
40	33	4	M12x90	4	M16x100	4	M16x100	4	UNC 1/2"-13 x 3 1/2"
50	43	4	M12x100	4	M16x110	4	M16x110	4	UNC 5/8"-11 x 4"
65	46	4	M12x100	4	M16x110	4(8)	M16x110	4	UNC 5/8"-11 x 4 1/2"
80	46	4	M16x110	8	M16x120	8	M16x120	4	UNC 5/8"-11 x 4 1/2"
100	52	4	M16x120	8	M16x120	8	M16x120	8	UNC 5/8"-11 x 5"
125	56	8	M16x120	8	M16x130	8	M16x130	8	UNC 3/4"-10 x 5"
150	56	8	M16x120	8	M20x140	8	M20x140	8	UNC 3/4"-10 x 5 1/4"
200	60	8	M16x130	8	M20x150	12	M20x150	8	UNC 3/4"-10 x 5 1/2"
250	68	12	M16x140	12	M20x160	12	M24x170	12	UNC 7/8"-9 x 6 1/4"
300	78	12	M20x160	12	M20x170	12	M24x180	12	UNC 7/8"-9 x 6 3/4"

LUG type DN 50 - 600

C Bolt



n = number of bolts for one valve

C		PN 10		PN 16	
DN	C	n	M x L	n	M x L
25	30	8	M12X30	8	M12X30
32	30	8	M16X30	8	M16X30
40	33	8	M16X30	8	M16X30
50	43	8	M16x30	8	M16x30
65	46	8	M16x40	8	M16x40
80	46	16	M16x40	16	M16x40
100	52	16	M16x40	16	M16x40
125	56	16	M16x50	16	M16x50
150	56	16	M20x50	16	M20x50
200	60	16	M20x50	24	M20x50
250	68	24	M20x60	24	M24x60
300	78	24	M20x60	24	M24x60

Function test:

Prior starting to use the installation, we recommend to make a function test. Therefore the valve must be opened and closed at least once in order to check that the disc doesn't touch the flanges and that the valve is tight through the passage and toward outside.

If a pressure test of the complete piping system is being carried out, it is very important that the testing pressure is not higher than the nominal pressure of the valve. An overpressure could destroy the valve. In order to ensure a reliable function of the butterfly valves, we recommend to operate these at least once monthly.

Cleansing of the piping:

When cleansing the piping system it is very important to assure that the cleaning products and devices are harmless for the valve. Not convenient products and devices might destroy the valve.

Removal:

Before removing the valve from the pipe consider that dangerous fluids might leak. Corresponding measures of precaution have to be applied.

When removing the valve from the pipe please take care not to damage the disc and the liner of the valve.

Disposal:

Please notice that some residues could remain in the inner of the valve and that they might be dangerous for people or the environment. Therefore, the butterfly valve has to be handled with the corresponding caution. After its use, the butterfly valve has to be disposed of according to the state of the art and under consideration of the environment.

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