

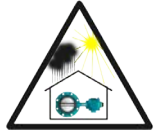
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Installation



Introduction:

To guarantee the benefits of the InterApp butterfly valves Bianca, 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. Please consult the InterApp datasheet «Flanges» concerning the allowed flange dimensions. 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 Bianca are according to the technical documentation of the Bianca.



Storage:

InterApp butterfly valves Bianca should always be stored in the original package - never expose them to dust. 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.



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) 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.



Gaskets:

There is no need to use gaskets between the flanges and the valve. However, where the valve has to be mounted between flanges which are uneven or slightly distorted, PTFE-envelope gaskets should be fitted. (Fig. 3)



Actuator-Torque:

The PTFE liner, during extended period of storage, has the tendency to deform along the contact line with the valve disc. This will result in an increase of the working torque of the valve. By rotating the disc 360° for several times, after the valve is installed, the liner will regain its original shape and the torque returns to its initial rating. (Fig. 4)



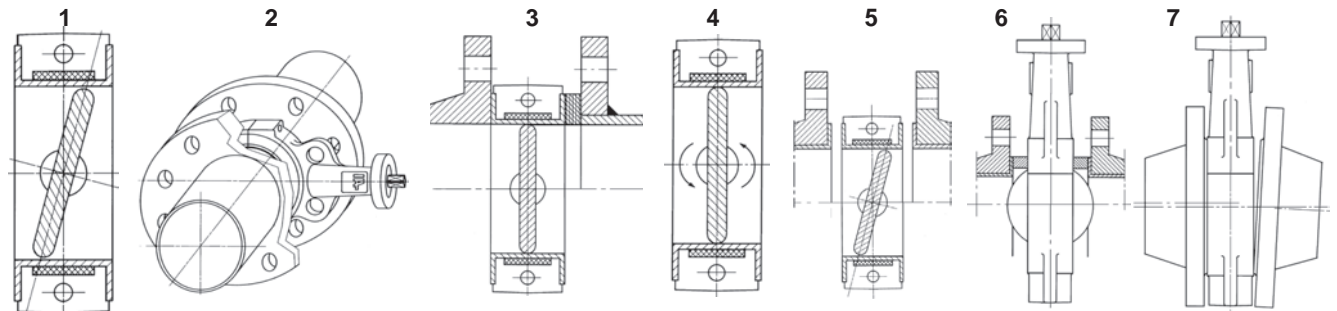
Installation:

Flange facings must be smooth and clean. Rust, welding scores, rests of paint, dirt, etc. must be removed in order to prevent damage of the valve gasket. (Fig.5)

Bianca butterfly valves, in wafer style design, are suitable for installation between DIN PN10/16 or ANSI 150 flanges. Please consult the InterApp datasheet « Flanges » concerning the allowed flange dimensions. 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.6)

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.7). 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.



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 D_{opt}, D_{min}, D_{max}.



D_{min} Minimum diameter of the flange enabling to move the disc (in case of a perfectly centered valve)

D_{opt} Diameter of the flange for optimal mounting.

| DN | 32/40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 600 | 700 | 750 | 800 | 900 |
|------------------|-------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| D _{min} | 31 | 50 | 47 | 74 | 94 | 120 | 148 | 199 | 249 | 298 | 338 | 395 | 444 | 492 | 588 | 692 | 734 | 789 | 885 |
| D _{opt} | 40 | 50 | 65 | 80 | 100 | 125 | 150 | 200 | 250 | 300 | 339 | 400 | 450 | 500 | 600 | 703 | 750 | 803 | 900 |

When mounting the valve at the end of a line please note:

- Body type **Lug B3**
 - Temperature 10 ÷ 60°C
 - Medium only for non hazardous liquids
 - no water hammer !!!
- Max. working pressure
- | | |
|-----------|-------|
| DN32-150 | 8 bar |
| DN200-300 | 6 bar |
| DN350-400 | 4 bar |

Flange bolting tightening torques:

PTFE has the tendency to cold-flow. Therefore, it is very important to observe the tightening torques of the flange bolting according to the table below.

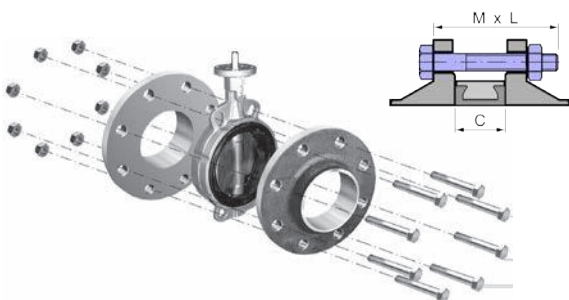
| DN | PN10 | | PN16 | | ANSI UNC | | ANSI metr. | | |
|-------------|--------|---------|------|---------|----------|---------|------------|---------|------|
| [mm] [inch] | [Nm] | [lb-in] | [Nm] | [lb-in] | [Nm] | [lb-in] | [Nm] | [lb-in] | |
| 32 | 1 1/4" | 40 | 357 | 40 | 357 | 33 | 288 | 31 | 271 |
| 40 | 1 1/2" | 40 | 357 | 40 | 357 | 33 | 288 | 31 | 271 |
| 50 | 2" | 52 | 460 | 52 | 460 | 52 | 462 | 52 | 460 |
| 65 | 2 1/2" | 52 | 460 | 52 | 460 | 52 | 462 | 52 | 460 |
| 80 | 3" | 32 | 285 | 32 | 285 | 65 | 573 | 64 | 571 |
| 100 | 4" | 45 | 396 | 45 | 396 | 45 | 398 | 45 | 396 |
| 125 | 5" | 55 | 483 | 55 | 483 | 65 | 578 | 68 | 603 |
| 150 | 6" | 90 | 794 | 90 | 794 | 86 | 760 | 90 | 794 |
| 200 | 8" | 112 | 993 | 75 | 662 | 107 | 950 | 112 | 993 |
| 250 | 10" | 116 | 1028 | 139 | 1234 | 129 | 1144 | 127 | 1124 |
| 300 | 12" | 137 | 1209 | 164 | 1451 | 152 | 1345 | 149 | 1321 |

| DN | PN10 | | PN16 | | ANSI UNC | | ANSI metr. | | |
|-------------|------|---------|------|---------|----------|---------|------------|---------|------|
| [mm] [inch] | [Nm] | [lb-in] | [Nm] | [lb-in] | [Nm] | [lb-in] | [Nm] | [lb-in] | |
| 350 | 14" | 142 | 1255 | 170 | 1506 | 240 | 2126 | 227 | 2009 |
| 400 | 16" | 160 | 1414 | 178 | 1578 | 169 | 1496 | 160 | 1414 |
| 450 | 18" | 183 | 1620 | 204 | 1808 | 273 | 2413 | 255 | 2259 |
| 500 | 20" | 188 | 1664 | 234 | 2070 | 224 | 1983 | 210 | 1857 |
| 600 | 24" | 249 | 2200 | 303 | 2681 | 293 | 2592 | 277 | 2453 |
| 700 | 28" | 275 | 2436 | 335 | 2968 | 278 | 2460 | 263 | 2327 |
| 750 | 30" | - | - | - | - | 355 | 3141 | 336 | 2972 |
| 800 | 32" | 386 | 3415 | 462 | 4085 | 419 | 3706 | 396 | 3502 |
| 900 | 36" | 453 | 4011 | 542 | 4797 | 502 | 4442 | 474 | 4198 |
| 1000 | | | | | | | | | |
| 1200 | | | | | | | | | |

Bolting:

Wafer + U-section body DN 32 - 400

A Bolt with nut



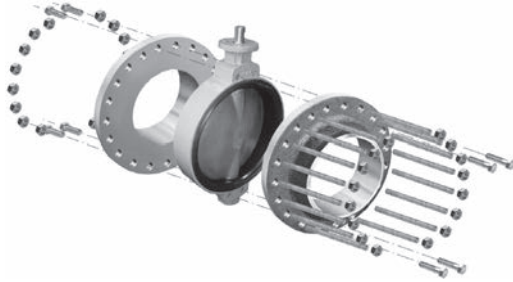
| DN | C | n | PN 6 | | PN 10 | | PN 16 | | ANSI 150 | |
|-----|-----|----|---------|-------|---------|-------|---------|-------|----------------------|----------------|
| | | | A | M x L | A | M x L | A | M x L | A | UNC x L [Inch] |
| 32 | 30 | 4 | M12x80 | 4 | M16x100 | 4 | M16x100 | 4 | UNC 1/2"-13 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" | |
| 350 | 78 | 12 | M20x160 | 16 | M20x170 | 16 | M24x190 | 12 | UNC 1"-8 x 7 1/4" | |
| 400 | 102 | 16 | M20x190 | 16 | M24x200 | 16 | M27x220 | 16 | UNC 1"-8 x 8 1/4" | |

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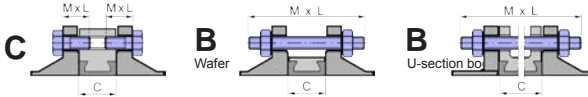
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Wafer + U-section body DN 450 - 900

B Stay bolt with 2 nuts + **C** bolt

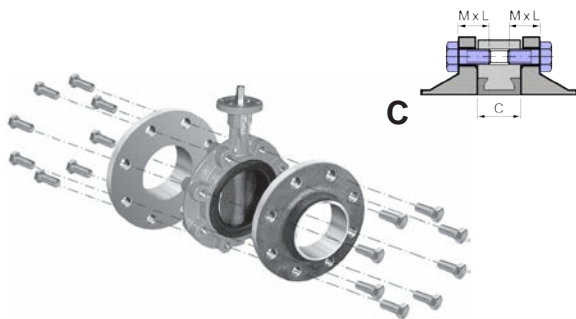


| DN | C | PN 10 | | PN 16 | | ANSI 150 | | | | | | | |
|-----|-----|-------|---------|-------|--------|----------|---------|----------------|---------|----------------|------------------------|---|-----------------------|
| | | B | C | B | C | B | C | | | | | | |
| | n | M x L | n | M x L | n | M x L | n | UNC x L [Inch] | n | UNC x L [Inch] | | | |
| 450 | 113 | 16 | M24x240 | 8 | M24x60 | 16 | M27x280 | 8 | M27x80 | 12 | UNC 1 1/8"-7 x 9" | 8 | UNC 1 1/8"-7 x 3 1/2" |
| 500 | 126 | 16 | M24x250 | 8 | M24x60 | 16 | M30x310 | 8 | M30x90 | 16 | UNC 1 1/8"-7 x 10" | 8 | UNC 1 1/8"-7 x 4" |
| 600 | 153 | 16 | M27x290 | 8 | M27x70 | 16 | M33x360 | 8 | M33x100 | 16 | UNC 1 1/4"-7 x 11 1/2" | 8 | UNC 1 1/4"-7 x 4 1/2" |
| 700 | 165 | 20 | M27x310 | 8 | M27x70 | 20 | M33x340 | 8 | M33x90 | 24 | UNC 1 1/4"-7 x 12" | 8 | UNC 1 1/4"-7 x 5" |
| 800 | 190 | 20 | M30x340 | 8 | M30x80 | 20 | M36x370 | 8 | M36x90 | 24 | UNC 1 1/2"-6 x 16 1/2" | 8 | UNC 1 1/2"-6 x 7" |
| 900 | 203 | 24 | M30x360 | 8 | M30x80 | 24 | M36x390 | 8 | M36x90 | 28 | UNC 1 1/2"-6 x 17" | 8 | UNC 1 1/2"-6 x 7 1/2" |



LUG type DN 32 - 400

C Bolt



| DN | C | PN 10 | | PN 16 | | ANSI 150 | |
|-----|-----|-------|--------|-------|--------|----------------|----------------------|
| | | C | M x L | C | M x L | C | UNC x L [Inch] |
| | n | M x L | n | M x L | n | UNC x L [Inch] | |
| 32 | 30 | 8 | M16X30 | 8 | M16X30 | 8 | UNC 1/2"-13 x 1" |
| 40 | 33 | 8 | M16X30 | 8 | M16X30 | 8 | UNC 1/2"-13 x 1 1/4" |
| 50 | 43 | 8 | M16x30 | 8 | M16x30 | 8 | UNC 5/8"-11 x 1 1/2" |
| 65 | 46 | 8 | M16x40 | 8 | M16x40 | 8 | UNC 5/8"-11 x 1 1/2" |
| 80 | 46 | 16 | M16x40 | 16 | M16x40 | 8 | UNC 5/8"-11 x 1 3/4" |
| 100 | 52 | 16 | M16x40 | 16 | M16x40 | 16 | UNC 5/8"-11 x 2" |
| 125 | 56 | 16 | M16x50 | 16 | M16x50 | 16 | UNC 3/4"-10 x 2" |
| 150 | 56 | 16 | M20x50 | 16 | M20x50 | 16 | UNC 3/4"-10 x 2" |
| 200 | 60 | 16 | M20x50 | 24 | M20x50 | 16 | UNC 3/4"-10 x 2" |
| 250 | 68 | 24 | M20x60 | 24 | M24x60 | 24 | UNC 7/8"-9 x 2 1/2" |
| 300 | 78 | 24 | M20x60 | 24 | M24x60 | 24 | UNC 7/8"-9 x 2 1/2" |
| 350 | 78 | 32 | M20x60 | 32 | M24x60 | 24 | UNC 1"-8 x 2 3/4" |
| 400 | 102 | 32 | M24x70 | 32 | M27x80 | 32 | UNC 1"-8 x 3 1/4" |

n = number of bolts for one valve



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.



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.

Maintenance

Introduction:



Please notice that fluid residues inside the butterfly could be dangerous for humans and the environment. The butterfly valve must be handled accordingly and be cleaned carefully prior to the maintenance.

Maintenance is made at the own risk of the user. Maintenance on a BIANCA must be executed by trained staff only. Only original spare parts are to be used.

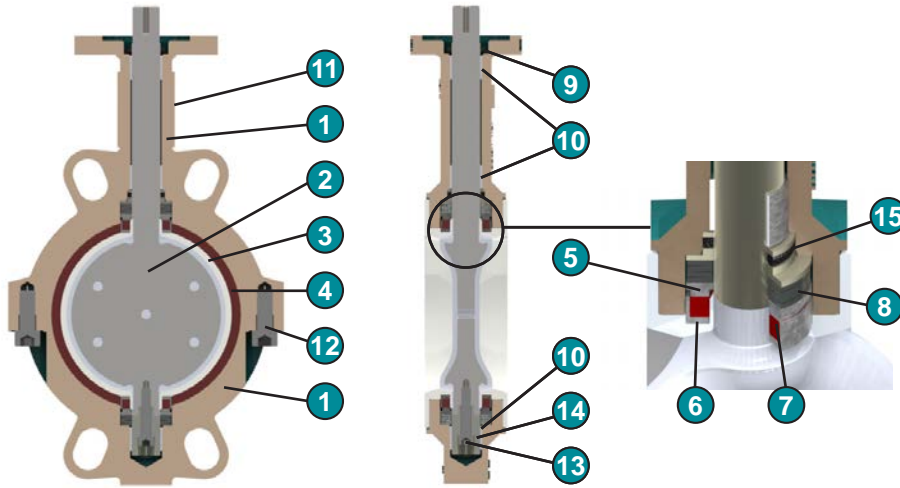
The Teflon parts of the BIANCA are very fragile and only a small scratch causes already a leaking. Thus, these parts have to be handled very carefully.

The frequency of replacement of the wear parts, is highly dependent on the fluid, cycles, operating conditions, etc. The user should include in its maintenance program a chapter for inspecting the valves to check the wear parts and change them if necessary. In the next paragraph the spare parts are identified. Please contact InterApp to obtain the specific codes and additional information for the recommended spare parts.

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1. Parts of a BIANCA



| Parts list | |
|------------|---|
| 1 | 2-piece body |
| 2 | Disc (PFA-coated/1.4435; AISI 316L) |
| 3 | Liner (PTFE) |
| 4 | Backliner (2 pieces) |
| 5 | Thrust collar (2 pieces) |
| 6 | Pressure capsule (2 pieces) |
| 7 | Seal (2 pieces) |
| 8 | Spring washer (8 pieces) |
| 9 | V-Ring |
| 10 | Bushing (3 pieces) |
| 11 | Label / Tag |
| 12 | Bolts of body (2 pieces) |
| 13 | Extension screw only for sizes DN50-100 |
| 14 | Extension only for sizes DN50-100 |
| 15 | TA-Luft seal (optional) |

2. Disassembly

2.1 Disassembly of the body halves:



Important: Before the body is disassembled, mark the body halves. It is important to reassemble the body halves in their original configuration. Unscrew both body bolts (12) alternately (body halves are spring loaded) and remove them. Pay attention not to lose spring washers or seals. Remove Liner and disc unit. Afterwards remove o-ring and backliners.

3. Reassembly

Actually, you may reassemble the valve in reverse order of disassembly. You should clean all parts before reassembling. It is necessary to replace all seals. Please use the premounted spare part kit including disc/shaft/liner and all seals and springs.

3.1 Reassembly of the liner and disc into the body:

Please stand the top body half on the top flange upside down on a surface or piece of wood with a hole for the shaft. Glue only the end of the backliners onto the body. This will hold the backliner in place during reassembly. Put the 4 spring washers and the thrust collar into the shaft bore of the top body half and following also the thrust collar. Put the pressure capsule and the seal over the long end of the shaft and make sure that the pressure capsule fits right on the liner. Then put the disc/shaft into the top body half. The position of the backliner has to be controlled before the installation of the bottom body half.

3.2 Assembling of the 2 body halves:

Now you can mount the bottom body half. Note the marks on the body halves. Screw the body bolts alternately in, but keep 3mm between the body halves. From time to time, move the disc 2-3 times. This will insure proper alignment. Afterwards you can compress the body halves. **The disc has to be closed during this process.** Finally, insert the V-ring on the shaft on the actuator mounting flange.



Before using the valve in a piping system, if it is required to make a tightness test (e.g. EN 12266-1) or similar as well as a function test. Afterwards, put the disc in a slightly open position, so that the disc edge doesn't surpass the flange surface. This position must be kept until the valve is being installed.

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