



INSTRUCTIONS FOR ASSEMBLY AND DISASSEMBLY NOZZLE DISC CHECK VALVES DOUBLE GUIDED

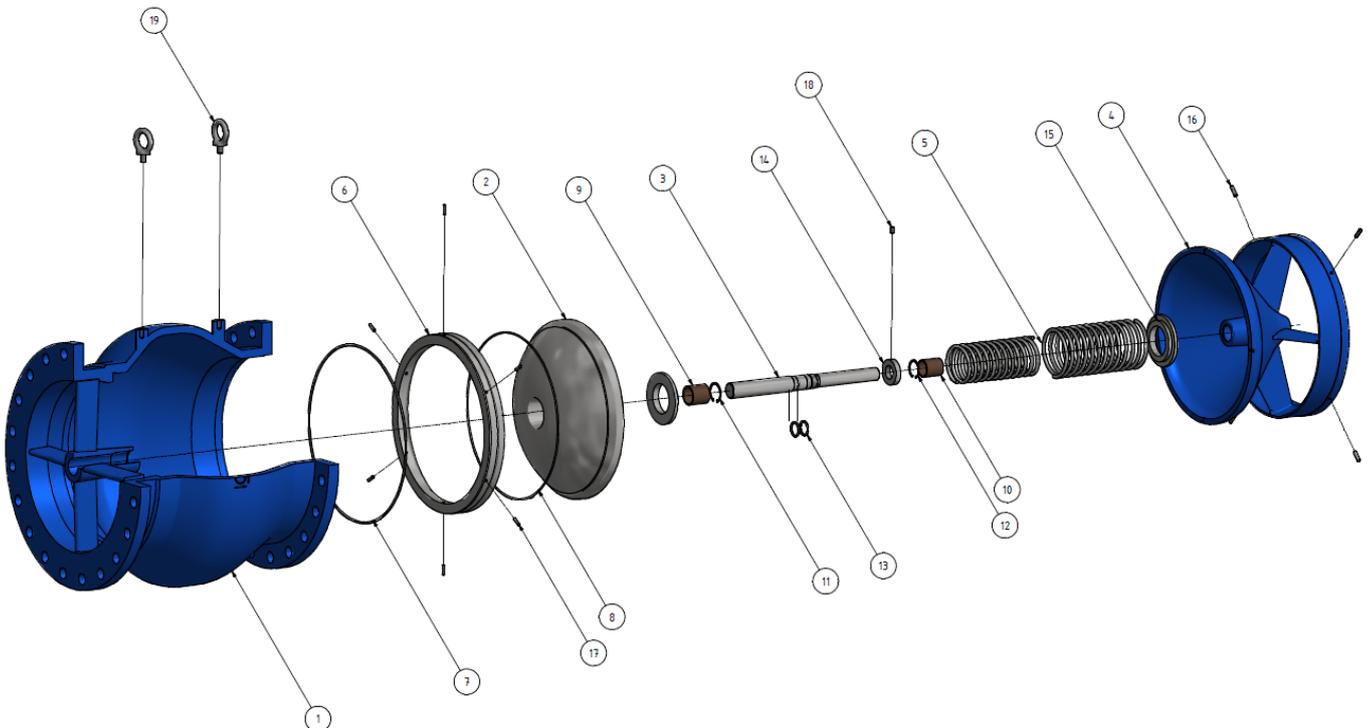
1. OBJECT AND SCOPE

The object of following instruction is to establish the procedure for assembly, disassembly and mounting in pipeline of the nozzle disc check valve produced by Castflow Valves SL.

2. MAINTENANCE

Castflow nozzle disc check valves do not require any special maintenance. In certain cases it might be possible to replace the internals (springs, shafts and bearings), caused by natural wear of the components or the accelerated wear as cause of the non appropriate installation in the pipeline (such like not respecting the precautions for assembly in pipeline or the application with very corrosive or aggressive fluids) . For general recommendations please consult our **mounting instructions and maintenance for check valves**

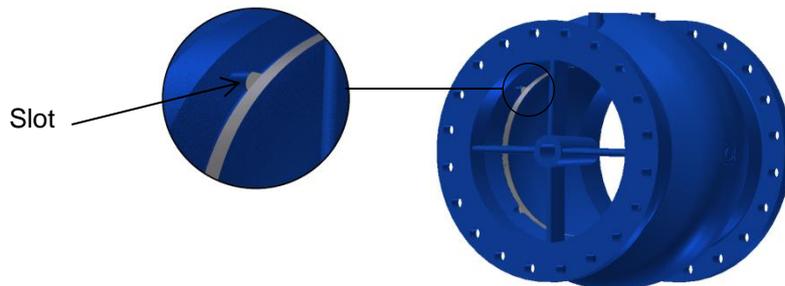
3. ASSEMBLING AND DISASSEMBLING WITH METAL DISC



3.1 DISASSEMBLING

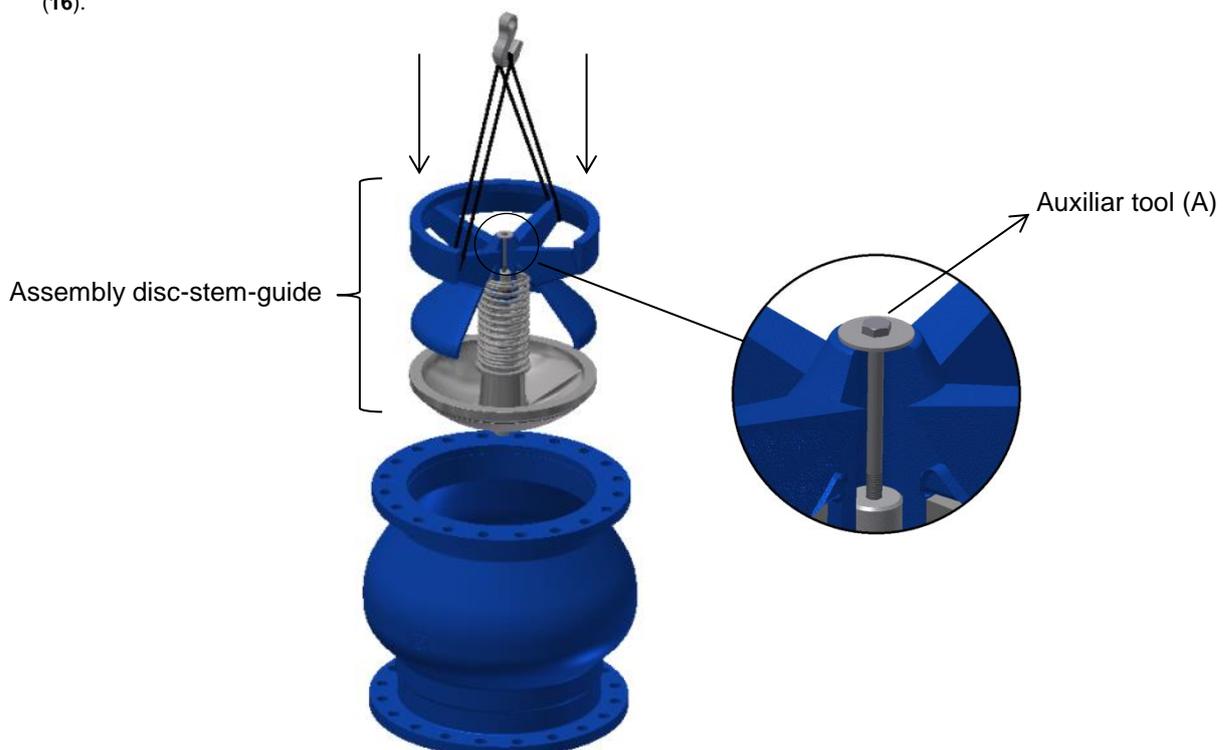
11. Situate the valve with the body (1) in vertical position with the guide (4) at the top.
12. Remove block pins (16) that block the guide (4) to the body (1).
13. Pull out the guide (4) until it gets out of its lodging; open the circlip of the guide (12) to replace its bearing (10).

14. Take out the spring washers (15) and the springs (5).
15. Remove the assembly disc (2) - stem (3).
16. Open the circlip of the body (11) to disassemble and replace the second bearing (9).
17. Turn the body (1) upside down with its spokes on top. Take out the pins (17) of the disc (6) and then hit it with a punch of soft bronze, through the 4 slots that there are in the body (1).
18. When the disc is out, remove its O-ring (7).



3.2 ASSEMBLING

1. Put the body (1) in vertical position, with the arrows (flow indicator) indicating upwards.
2. Install the bearing of the body (9) and its circlip (11).
3. Introduce the seal ring (6) with its O-ring (7) and block it with the pins (17).
4. Outside of the body, do first the assembly disc (2) - stem (3).
5. After that, introduce in the stem (3) the spring washers (13) and the springs (5).
6. Install the bearing of the guide (10) and its circlip (12).
7. Finish the outside assembly with the guide (4).
8. Connect the assembly described above; disc (2) - stem (4) - guide (3); with an auxiliary tool (A) (nut with washer) screwing it to the stem (3) as shown in the drawing. (This assembly is recommended for easier manipulation, however components can be introduced individually by sequence)
9. Lift the assembly with ropes tied to the spokes of the guide (3), and introduce it in the body (1).
10. Once the assembly before is inside the body. Take away the auxiliary tool and the ropes. Then, block the guide with the pins (16).

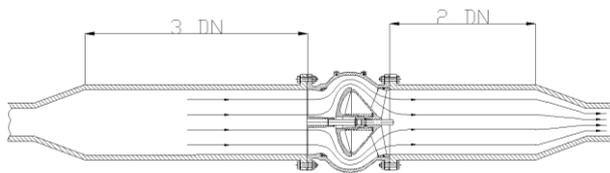


6. PRECAUTION FOR INSTALLING AXIAL DISC CHECK VALVES

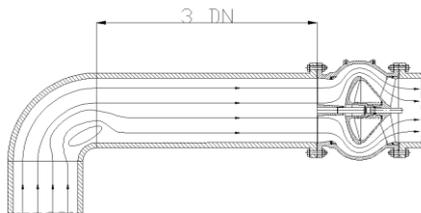
- For valves with soft seat (rubber) be careful when welding is made near to the valves. Extreme temperatures (+80°C) can damage the rubber coating of the valves.
- Do not install the valves in pipeline with intermittent flow (pulsations).
- Installation of the axial disc check valves immediately after the exit of pumps, elbows, reducers, etc. can cause unstable flow at the entry of the check valve (turbulence). Damage on the internal elements (shafts, springs, etc.) will be caused as the disc is not full opening continuously. In some cases cavitations can appear. Cavitation will accelerate corrosion in the area were it is produced. This phenomenon can be extremely serious in equipment with corrosive fluids.

In case the valves are installed at the outlet of a pump, reducing cone or elbow, the distance should be calculated considerable in order to avoid turbulences at the entry of the valves. We recommend installing the valve upstream with a minimum distance of **3 times the diameter away from any perturbing element** to avoid wear on the internal parts and **2 times the diameter for downstream** in order to assure full pressure recovery after the valve.

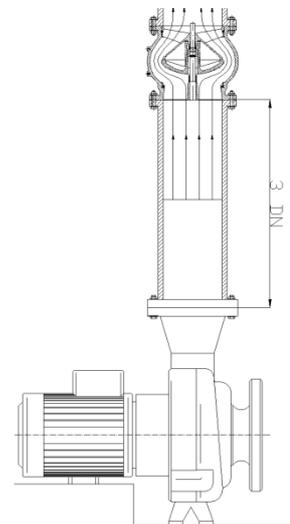
Position with reducing cones



Position with elbow



Position with pump



Note: In case the valves cannot be installed as recommended, the customer must assure a stable fluid at the valve entry. Or the installation must be evaluated and validated by the manufacturer. More frequent maintenance is required when valves cannot be installed according to our instructions

7. MANIPULATION OF AXIAL DISC CHECK VALVES

Always try to elevate the valves with the 2 lifting plugs situated in the middle of the body or using 2 ropes and putting them inside of the flange holes. Never lift the valve by the guide spokes.



Incorrect



Correct