

AZS - CHECK VALVE B20a/B20w

Transport / Storage / Installation / Operation / Maintenance

1. General

The AZS-Check valves type B are described in the leaflet „B20-B30“. These resilient seated check valves are used for liquids.

Attention: *Not for gaseous fluids use other types of check valve!*

Remark: In case of redundant installation behind pumps, and for valves > DN 150, AZS proposes for critical pipework a water hammer calculation to be done by the pump supplier or by the engineering company of the pipework.

The following prescriptions shall be respected by the user. Every activity with or by this valve shall be executed by qualified personal, that is also instructed to respect the relevant security prescriptions. In case of disregard of this instruction AZS shall not be liable for any consequences resulting thereof.

2. Transport

The valve has to be transported in its original packing, shall be protected of dirt and shall not be exposed to full daylight, not over room temperature and/or to UV-radiation for a time more than some hours during transport.

Attention: *Handle with care, protect especially the rubber lined flange surfaces from any damage !*

3. Storage before Installation

Store in a cool and dry place and protect the valve of dirt and full daylight and/or of UV-radiation. As usual for elastic rubber material, the storing time is limited to 3-4 years - (for more information see DIN 7716, §3), after that, the spare parts out of resilient material shall be replaced, see chap. 8.

4. Installation into the pipework

Attention: *Handle with care, protect especially the rubber lined flange surfaces from any damage during installation!*

4.1 Valve position

The cover of the check valve shall be in „TOP “-position for any horizontal or inclined pipework.

Attention: *Do not install the check valve in vertical pipes with flow downstream!*

4.2 Connecting flanges / Flange seal

The valve is designed to be flanged acc. to customer's order (DIN 2501 or ANSI 125/150 lbs.).

The mating flange surfaces of the pipework flanges shall be concentric, parallel, plane and machined acc. to the relevant flange standard.

The flange seal shall be acc. to DIN 2690, preferably out of rubber material (not supply of AZS!).

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4.3 Additional forces from the pipework

The valve body is designed to withstand to longitudinal forces F_x resulting from additional forces in the pipework limited to values acc. to table 1. Other loads are not admitted.

Table 1

DN	mm	<50	65	80	100	125	150	200	250	300	350	400	500	600
Fmax	kN	2	2,8	3,2	7,9	12	17	31	39	56	77	88	120	170

4.4 Installation sequence

Remark: Use lifting devices as usual, fix it at the valve, not at the actuator!

Install the check valve into the pipework in the following sequence:

- * clean all inside surfaces, if not free of dirt, clean also the mating surfaces of the flanges,
- * expand the two connecting flanges to 2 mm more than valve length plus the flange seal thickness,
- * set in the check valve, some flange bolts and the flange seal concentric to the connecting flanges,

Attention: The „arrow“direction marked on the valve body is the flow direction!

- * set in all other flange bolts, screw first loose around, then fix all flange screws crosswise to tighten the flange connection.

Attention: During the pressure test of the pipework, respect the maximal admissible pressure for the check valve: $p_{max} = 1,5x PN$ marked on the valve body!

5. First start-up

Attention: Check maximal pressure and temperature to be not too high acc. to the check valve documentation.

Check the piping flange connection and the bonnet flange connection to be tight. Check the „arrow“ direction on the valve body to be identical to the flow direction. Check minimal differential pressure acc. to chapt.6.

6. Operation

The valve is operated by the dynamic energy of the flow and needs no further operation.

Remark: The rubberlined disc needs minimal differential pressure to open and to close acc. to tables 2 and 3.

table 2

DN	<50	65	80	100	125	150	200	250	300	350	400	500	600
mWS	0,6	0,5	0,4	0,4	0,35	0,3	0,25	0,2	0,2	0,2	0,2	0,2	0,2

minimal differential pressure (m Water Column) to open the valve

table 3

DN	<50	65	80	100	125	150	200	250	300	350	400	500	600
mWS	5	4	3	2,5	2,5	2,5	2	2	1,75	1,5	1,25	1,25	1

minimal differential pressure (m Water Column) to tighten the valve (rate F acc. to EN-standard prEN 12266 /dec..95)

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Remark: These tables 2 and 3 give approximate values and are valid for new valves. The normal maturing of the organic material rubber in the disc may change these values. See also chapt. 8.

7. Maintenance

Check, if flange seal and the cover connection are tight. As long as no leakage is visible, no further maintenance is necessary.

8. Repair

When the differential pressures in tables 2 and 3 have changed more then admissible and/or when the seat-leakage is more than admissible, the wear parts (03, 04) have to be replaced.

The check valve body may remain in the pipework during this operation. Use spare parts that are produced in the last 3-4 years only! See item nos. (..) in page 4.

Replace the wear parts in the following sequence:

- * discharge the pipework, until the pipe is empty,
- * unscrew the cover bolting (05), take off the cover (02), the disc (03) and the seal (04),

Attention: mark exactly with 3 marks at the cover circumference the cover position relative to the valve body before!

* clean carefully the 45° inclined seat in the body (01). Coated abrasives P100 - then P150 may be used to polish the body seat. If the surface of this body seat is corroded, replace the whole body (01).

* replace the disc (03) and the cover seal (04). Fasten cover bolts (05) by hand first, to center it acc. to the disc position on the body seat.

Remark: A thin layer of Vaseline on the body seat may fix the disc better for this centring operation! Do not use other type of grease!

Attention: The cover (02) shall be centred exactly by the disc (03) in it's closed position. The cover shall be in the same position as marked before!

* after that, fasten the cover bolts (05) to tighten the cover seal. Check tightness after start-up.

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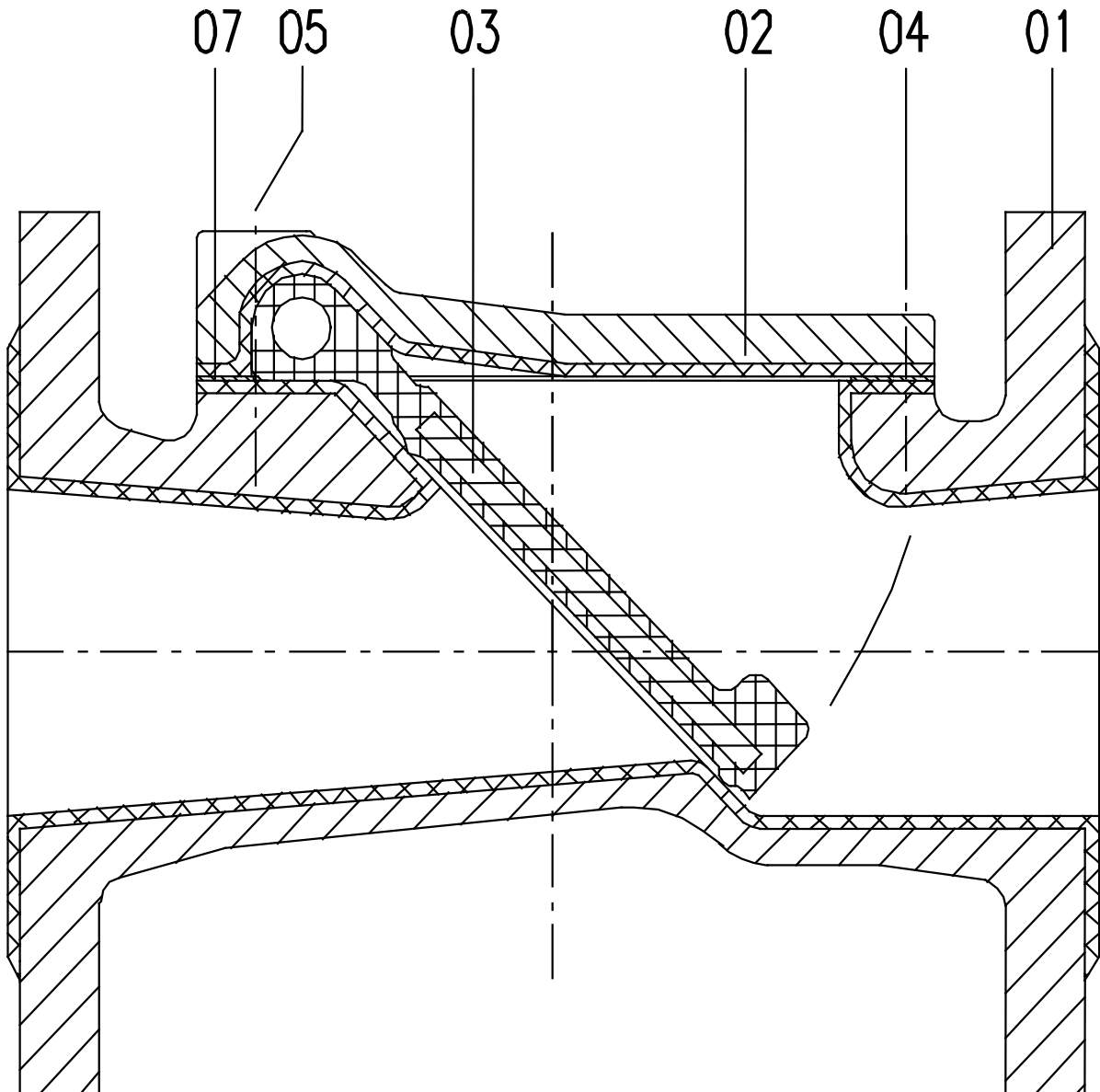
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9. Drawing



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|------------------------|-------------|
| Pos. 1 Gehäuse | Body |
| Pos. 2 Deckel | Cover |
| Pos. 3 Klappenscheibe | Disc |
| Pos. 4 Deckeldichtung | Gasket |
| Pos. 5 Schraube/Mutter | Screw/Nut |
| Pos. 7 Auskleidung | Body lining |

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