



Armaturen GmbH

Armaturen, Rohre, Sonderteile aus Edelstahl
fittings, pipes, special parts of stainless steel

Operating Instructions

Non-return valve DIN between flanges

M&S Article No. 65100



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2. Symbols used



Danger warnings

Danger warnings are denoted by the danger symbol which appears on the left and are framed.



Information

Descriptions to which particular attention must be paid are denoted by this symbol which appears on the left and are also framed.

3. Sectional drawings

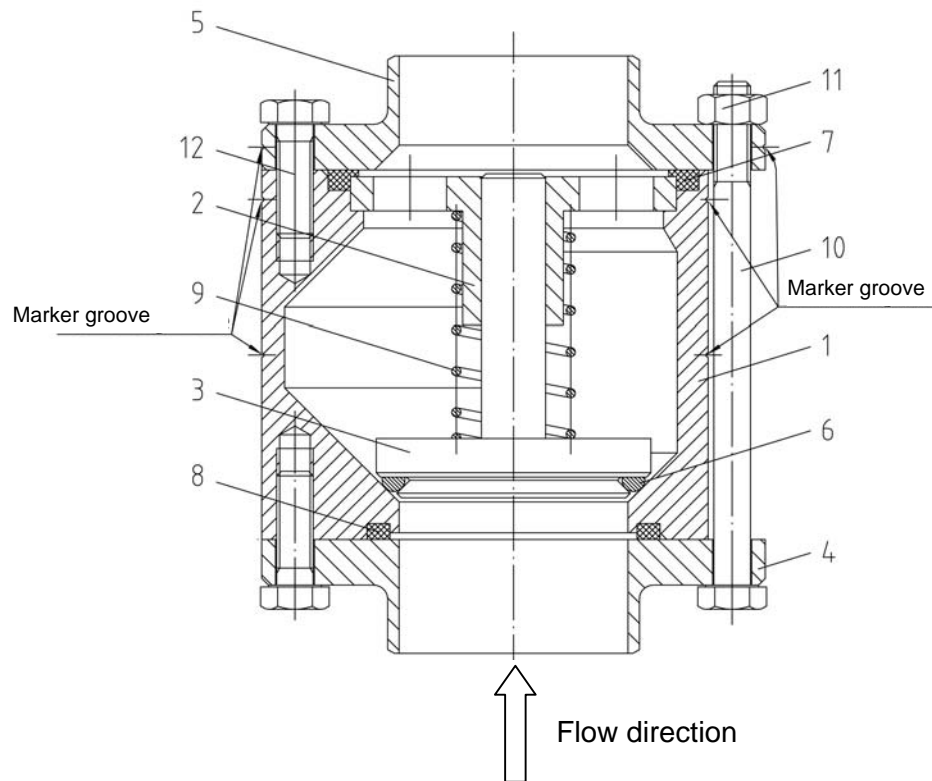


Fig. 1 Sectional view of non-return valve DIN ZF (dimensions see chapter 10.1)

Tab. 1 Bill of material non-return valve DIN ZF

Item	Designation	Item	Designation
1	Valve housing	7	Gasket
2	Guide disc	8	Gasket
3	Valve cone	9	Pressure spring
4	Inlet flange	10 ¹⁾	Hexagon screw (4x)
5	Outlet flange	11 ¹⁾	Hexagon nut (4x)
6	O-ring	12 ²⁾	Hexagon screw (8x)

¹⁾ for DN 25...DN 65

²⁾ for DN 80...DN 100

4. Use and operating principle

The non return valve is a spring loaded valve that prevents return flow of liquid or gaseous media in a system or a line. The installation position can be selected freely. Only the flow direction must be taken into consideration (see Fig.1). The valve cone (3) inserted into the valve housing (1) is pressed against the gasket surface of the housing by means of a pressure spring (9). The spring is propped up against the guide disc (2). Coming from the valve cone (3), the product can flow towards the guide disc (2). A certain pressure in the supplying pipeline is required to open the valve which must overcome the opposing spring power of the valve cone (3). This start-to-leak pressure is very low. All nominal widths result in a value of $p \leq 0.2$ bar.

The redesigned version between flanges can be distinguished from the old variant by the circumferential marker groove in the valve housing.

5. Transport

5.1 Checking the delivery contents



- When you receive the non-return valve, check the delivery against the order to make sure they correspond.
- Check that the delivery is complete, and check its condition.

If there are visible signs of transit damage and/or packing units are missing notify the forwarding agent immediately in the consignment note. You (the recipient) should take recourse against the forwarding agent immediately in writing, and M&S Armaturen GmbH must be informed of this action.

Complaints regarding transit damage that is not immediately evident must be made to the forwarding agent within 6 days.

The recipient must bear the costs for claims made after this period.

5.2 Transport



- The packing units must only be transported using suitable lifting equipment and slinging gear.
- Pay attention to the graphic symbols on the packaging.
- Transport the non-return valve carefully to prevent damage from sudden impacts; exercise due care when loading/unloading.

6. Safety advice



- Prior to maintenance works, the pipeline system containing the non-return valve must be depressurised and fluid-free!
- For safe maintenance of the non-return valve, observe the installation instructions (chap. 7).

7. Installation / disassembly / assembly

7.1 Installation



- Observe the relevant national guidelines and regulations.
- Install the non-return valve without tension into the pipeline system.
- The valve may only be installed when depressurised.
- Only assemble in cooled down and cleaned condition.

- The non-return valve can be installed in any position.
- But pay attention to the flow direction (see Fig.1). The flow direction is additionally marked on the valve housing by means of an arrow.
- Before installing the non-return valve, disconnect the flanges (4, 5) from the valve housing by loosening the connecting joint (10, 11 or 12).
- The flanges are welded to the present pipelines. The specified installation dimensions (see chapter 10.1) must be adhered to. The drilling pattern of both flanges must be aligned.
- The outer marker groove on the housing and the outlet flange must match.

7.2 Disassembly



- The valve may only be disassembled when depressurised.

- Remove hexagon screws (10¹ or 13²) and hexagon nuts (11¹).
- Pull out the valve housing (1) between the inlet flange (4) and the outlet flange (5).
- Remove the entire valve insert consisting of (2,3,6,7,8,9).
- Remove the O-ring (6) from the valve cone (3).

¹⁾ for DN 25...DN 65

²⁾ for DN 80...DN 100

7.3 Assembly



- The valve may only be assembled when depressurised.

- Assemble in reverse order.
- Check the valve function.

8. Repairs/Maintenance



- The maintenance intervals differ from case to case, the operator should define them by himself basing on sporadic checks.
- To replace the gaskets, refer to the installation instructions (chap. 7) or the cleaning instructions (chap. 9).



- M&S Armaturen GmbH cannot accept liability for claims made as a result of non-observance of these Operating Instructions or constructional changes to the non-return valve.
- Any other use or use outside the defined scope is considered to be improper use. M&S Armaturen GmbH will not accept liability for losses incurred as a result of improper use.

9. Cleaning



- Observe the safety data sheets by the cleaning agent manufacturers!

- Clean individual parts carefully.

10. Technical Data

10.1 Dimensions

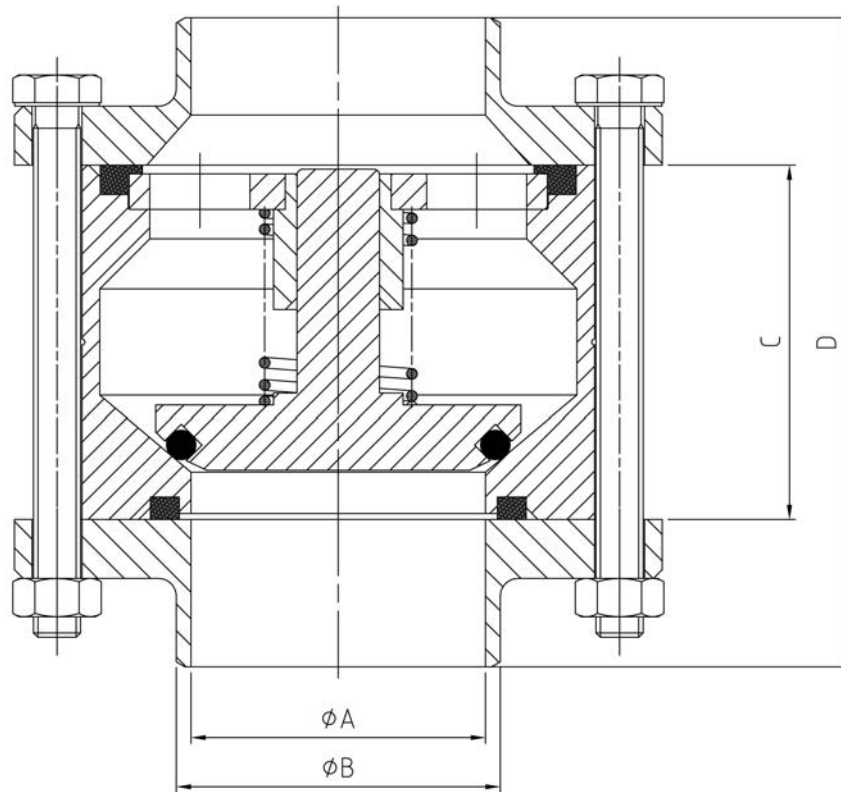


Fig. 2 Dimensions of the non-return valve DIN ZF

Tab. 2 Dimensions of non-return valve DIN ZF

DN	Ø A [mm]	Ø B [mm]	C [mm]	D [mm]
25	26	31	50	90
40	38	43	50	100
50	50	55	60	110
65	66	72	70	120
80	81	87	85	145
100	100	106	90	150

10.2 Operating conditions

- Max. operating pressure: 10 bar
- Max. operating temperature: depending on the gasket material
- Opening pressure: ≤ 0.2 bar



11. Material and surfaces

In contact with product:	1.4301/1.4307	AISI 304/304L
	1.4404	AISI 316L (optional)
Not in contact with product:	1.4301/1.4307	AISI 304/304L

Gaskets: NBR, EPDM or FKM (depending on specification and/or version)

Inner surface: depending on specification

Outer surface: depending on specification