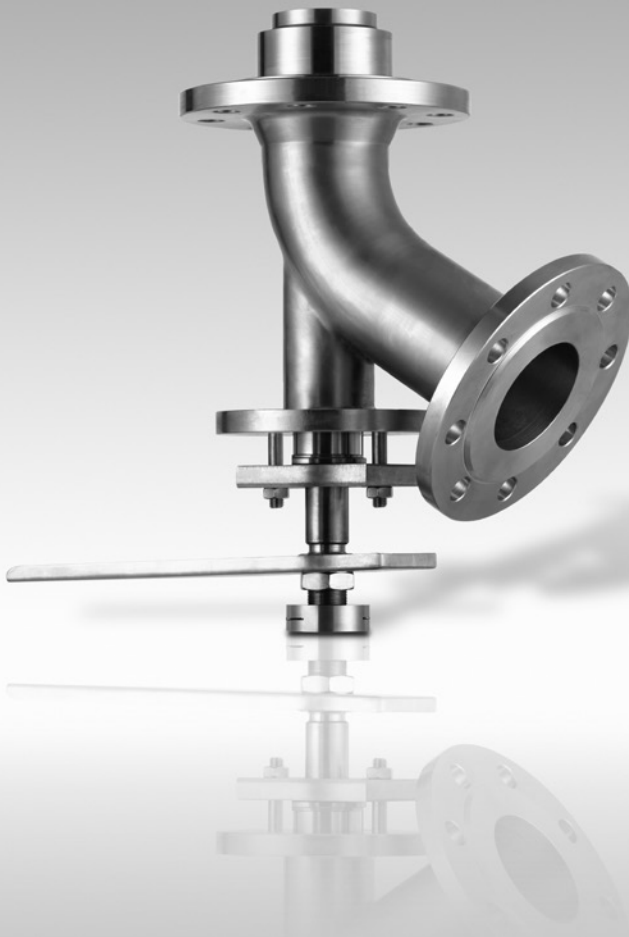


Operating and maintenance instructions series 2



2_B+W_EN

Bottom outlet valve

Nominal bores

- DN 50 to 150
- ANSI 2" to 6"

Pressure ratings

- PN 16 to 40
- ANSI Class 150 and 300

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1. Warning symbols

Safety advices and warnings are made for preventing danger against life and health of users and maintenance personnel resp. preventing material damage. They are being stressed by the presently described signal terms and in addition marked with warning symbols (pictograms). The applied symbols have the following meanings:

Danger: Death, severe injury and/or significant material damage will be the consequence if the appropriate precautions should not be taken.



Warning: Death, severe injury and/or significant material damage may be the consequence if the appropriate precautions should not be taken.



Caution: Light injury and/or material damage may be the consequence, if the appropriate precautions should not be taken.



Note: Important information about the product itself, about how to handle the product, to which special attention is being called.



2. Safety advices



The valve has been exclusively designed for the use according to the specification in our order confirmation.

Any other use is not according to the directives. For resulting damages the user alone is Unauthorized changes, as well as the use of non-original von Rohr spare parts exclude any responsibility for damages caused. Any change brought to the installation is done at the users own risk.

Maintenance and repair operation may only be done by qualified personnel observing the respective directives.

Actuators bring up great actuating power. Assembly and initiation are to be done under strict observation of the safety instructions.

It is expressly pointed out to follow the instructions for explosive devices where appropriate.

The following instructions are to be observed before any maintenance operations:

- Drain the conduit.
- Be informed about possible dangers, e.g. caused by residues of the operating medium, and take such measures where appropriate (e.g. safety gloves, safety glasses, etc.)
- Cool down the valve where appropriate.
- Exclude initiation by third party.
- Counteract pressure pads which may be formed in locked conduits.

3. Qualified personnel



According to the spirit of this manual, such persons are familiar with assembly, initiation and operation of this product, and have the qualifications for executing their function, like:

- Training or instruction according to the actual standards in safety features maintaining and using appropriate safety equipment.
- Training in first aid.
- For installations with explosion protection: Training or instruction or authorization to work in explosion-hazardous areas.
- Training at von Rohr Armaturen AG, CH-4132 Muttenz.

I. Description

1.1 Introduction

The purpose of this manual is to make yourself familiar with design, function and maintenance. Please read this manual thoroughly in order to be able to operate the valve effectively and obtain a long life time.

1.2 Specification (drawing and bill of materials)

See pages 10 to 12.

II. Installation

1. Preparation and measures of precaution



The concept development of the controlling element and the choice of materials are done according to the specification of the order. Application conditions diverging from the ordering designations are to be allowed by the manufacturer.

2. Type plate

		Typ _____	
		Fabr. Nr. _____	
PN _____	Δp _____ bar	kvs _____	t max. _____ °C

The type plate contains the following information:

- Type key
- Serial number
- Technical data (PN, Δp , kvs, t max. °C)



Type key and serial number are always to be indicated when submitting inquiries or ordering spare parts (see page 12).

3. Installation into the conduit

Installation and initiation are to be done exclusively by qualified personnel.
Security instructions are to be observed.



- The complete valve is to be inspected for damages and soiling before installation.
- The tank and conduits are to be rinsed and clean.
- It is imperative to insert seals between conduit and the valve's flanges.
- The valve has to be integrated with zero tension.
- In case of supported conduits, the fastenings need to be attached as close to the valve as possible.
The actuator is in no way to be used as a support for the conduit.
- The operating position is with actuator downward.
- Mind maintenance possibilities during installation.
- If the stem guiding has a purge port, a waste disposal exit may be connected.
- If valve and actuator are delivered separately, the installation manual for actuators needs to be consulted.
- Actuators: see separate manual.

4. Mounting an actuator

The valve allows the mounting of different actuators. Several mounting kits and couplings are available.

- When mounting an electric powered or hydraulic actuator, the following needs to be considered:

- Switch-off in closing direction via torque switch.
- Switch-off in opening direction via limit switch.



- When mounting a pneumatic actuator, the following needs to be considered:

- At too high actuating forces, the valve may be damaged.
- Safety position.



Actuators develop considerable forces. To avoid accidents, assembly manuals and security instructions need to be respected.



If the max. stroke is not reached, do not attempt to achieve this by increasing the actuating forces or using the manual override. This may be caused by foreign substances within the valve. If they are not removed, the valve could be damaged.



III. Maintenance

1. General indications

- Certain parts of a valve listed below, will wear out in the course of time. Therefore they regularly need to be verified and replaced where appropriate.
- The maintenance window depends on the operating conditions.



Each installed valve is to be considered under pressure. Before opening or dismantling a valve (replacing the diaphragm, etc.) pressure and medium must be removed from the tank and conduits.



Do only use new gaskets and packings when reassembling the device.

2. Stuffing box

2.1 Maintenance of the stuffing box

Adjustable stuffing box

- In case of a leaking stuffing box, it may be attempted to seal the stuffing box insert by retightening. If this procedure does not succeed, the packing needs to be replaced.



It is possible, that the stem is damaged or worn out. In that case, no dynamic tightness is possible. Score marks in the stem guiding may be the cause of a weak static tightness.

2.2 Replacing the gasket

- Observe general indications.
- Remove the actuator before working on the stuffing boxes.

2.3 Removing the actuator

- Set actuator to mid-stroke.
- Disconnect coupling between the actuator and the valve stem.
- Remove actuator by loosening the pillar nuts.



Sealing surfaces of seat and plug are to be handled with care. Never twist the plug on the seat.

2.4 Demounting the packing

- Remove the coupling part on the valve side.
- Remove and replace the packings with the appropriate tools. Take care that neither the surface of stem nor stem guiding is damaged.
- When replacing the stuffing box, disassemble, clean and verify the stem guiding.

2.5 Assembling

- Insert the new gaskets and packings. Mind that the sealing surfaces remain clean and undamaged. Mount the stem with plug.
- Tighten the screws in a way that the plug does not cover in the seat. For this purpose, manually move the stem during tightening.
- Mount the coupling part on the valve side.
- Mounting of the actuator see 3.6.

3. Inner parts

3.1 Demounting the valve

- Dismount the actuator as described above.
- Dismount stem with plug.

3.2 Inspecting – verifying the parts

- In case of disfunction, verify the valve for wear or damages.
- Replace or repair the part as follows:

Seat

- Visual verification of the all-over condition. Verify the sealing surfaces of the seat and the plug. Verify using special paint, additional lapping where appropriate. Replace the parts if necessary.
-

Plug and stem

- Verify all-over condition of plug and stem.
- Verify the surface also in the gasket and guiding area.
- Verify the stem for true running.

The cause for a high leak rate can be leakage between case and seat.
Verification see 3.3.



3.3 Replacing the seat

- Demount the valve as described above.
- Dismount the valve seat.
- Verify sealing surfaces between seat and body.
- Verify tightness of body/seat.
- Installation of a new seat or plug if necessary.
- Assemble valve.

3.4 Replacing the plug

- Demount the actuator as described above.
- Demount the stem guiding.
- Replace the plug including stem.

3.5 Replacing the bellows

- Demount the actuator as described above.
- Unscrew the stem guiding from the body and demount plug and stem.
- Replace the stem including bellows.
- Assemble stem guiding and traverse and screw to the body.
- Tighten screws.
- Mount valve-side coupling half onto the stem.

3.6 Assembling the valve

- Mount the seat as described above.
- Replace the plug as described above.
- Replace the bellows as described above.
- Mounting of the actuator:
 - Set actuator to mid-stroke with air.
 - Join actuator with valve, mount coupling.
 - Insert intermediate plate and, screw coupling parts together.
 - Check leak rate according to IEC534.4

IV. Verification after assembling

- Faultless operation of the valve. Check positioner where appropriate.
- Check all gaskets and packings for leakage.

V. Tightening torques

After the operating temperature is achieved, verify joining flange, fitting and retighten where appropriate.



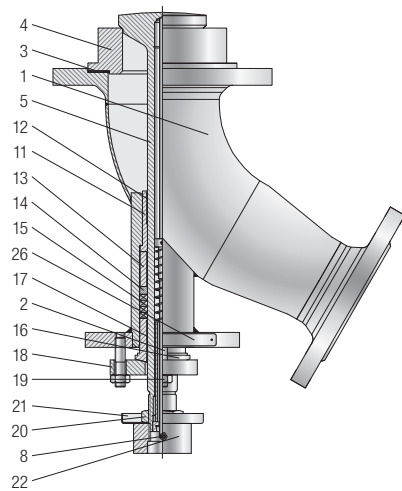
Tightening sequence in case of several screws:

Screws used to prestress a sealing are to be tightened evenly over cross.

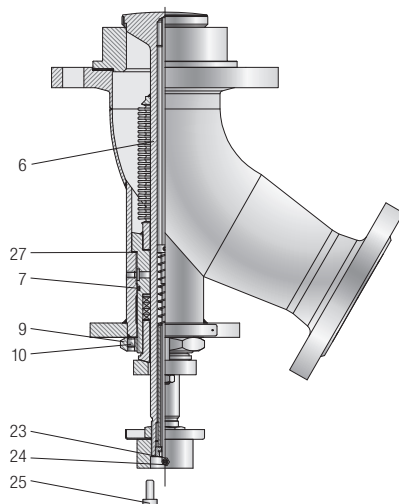
After the screws or nuts have been tightened manually onto the surface, they need to be retightened with a torque wrench.

VI. Specifications

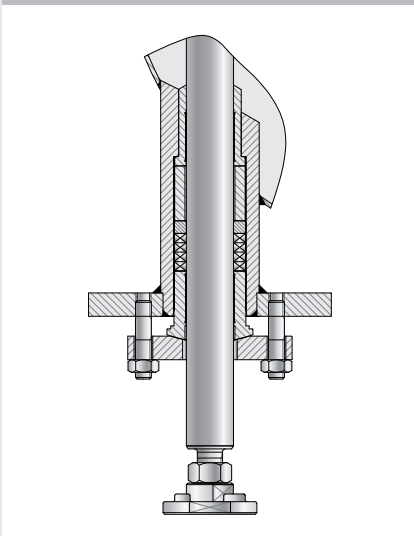
Standard



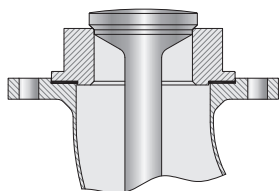
Bellows



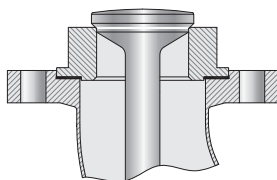
Stuffing box



On/Off (VBJ opens inwards the tank)

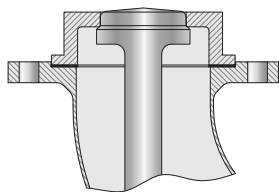


St/St

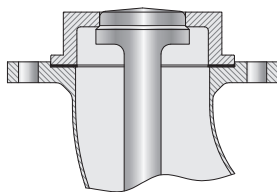


St/T

On/Off (VBA opens outwards from tank)

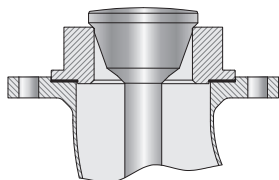


St/St

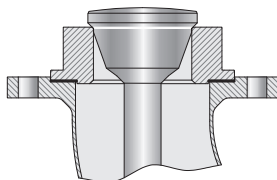


St/T

Parabolic plug (VBJ opens inwards the tank)



St/St



St/T

PT 100



St=Steel **T**=PTFE

VII. Spare parts offer/order

To: **von Rohr Armaturen AG**
 Member of the  Group
 Fichtenhagstrasse 4
 CH-4132 Muttenz
 Phone +41 (0)61 467 91 20
 Fax +41 (0)61 467 91 21
 info@von-rohr.ch
 www.von-rohr.ch

Sender

In reference to the serial number(s):

We would like to request a spare parts bid for the following items:

We would like to order the following spare parts for:

DN _____

PN _____

Material _____

Bill of materials

Item	Description	Quant.
1	Body	
2	Stud bolt	
3	Seat gasket	
4	Seat bushing	
5	Stem with plug	
6	Stem with bellows compl.	
7	O-ring	
8	Temperature sensor PT 100	
9	Hex nut	
10	Threaded pin	
11	Bearing insert	
12	Bearing bush	
13	Spacer	
14	Washer	
15	Packing	
16	Stuffing box	
17	Bearing bush	
18	Yoke	
19	Hex nut	
20	Hex nut	
21	Drip tray	
22	Coupling	
23	Washer	
24	Cable gland	
25	Hex socket screw	
26	Labeled plate	
27	Bellows gasket	