Operating Instructions

Ball valve fitting according to ZB 2553

For pressure transmitter VEGABAR 82

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Contents

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1 About this document

1.1 Function

This operating instructions provides all the information you need for mounting, connection and setup as well as important instructions for maintenance, fault rectification, the exchange of parts and the safety of the user. Please read this information before putting the instrument into operation and keep this manual accessible in the immediate vicinity of the device.

1.2 Target group

This operating instructions manual is directed to trained personnel. The contents of this manual must be made available to the qualified personnel and implemented.

1.3 Symbols used

Document ID
This symbol on the front page of this instruction refers to the Document ID. By entering the Document ID on www.vega.com you will reach the document download.

Information, tip, note
This symbol indicates helpful additional information.

Caution: If this warning is ignored, faults or malfunctions can result.

Warning: If this warning is ignored, injury to persons and/or serious damage to the instrument can result.

Danger: If this warning is ignored, serious injury to persons and/or destruction of the instrument can result.

Ex applications
This symbol indicates special instructions for Ex applications.

SIL applications
This symbol indicates instructions for functional safety which must be taken into account particularly for safety-relevant applications.

- **List**
  The dot set in front indicates a list with no implied sequence.

→ **Action**
This arrow indicates a single action.

1 **Sequence of actions**
Numbers set in front indicate successive steps in a procedure.

Battery disposal
This symbol indicates special information about the disposal of batteries and accumulators.

2 For your safety

2.1 Authorised personnel

All operations described in this documentation must be carried out only by trained, qualified personnel authorised by the plant operator.

During work on and with the device, the required personal protective equipment must always be worn.

2.2 Appropriate use

The ball valve fitting is used for connection of a pressure transmitter VEGABAR 82 with extension ø 38 mm to a vessel.

You can find detailed information about the area of application in chapter " *Product description*".

Operational reliability is ensured only if the instrument is properly used according to the specifications in the operating instructions manual as well as possible supplementary instructions.

For safety and warranty reasons, any invasive work on the device beyond that described in the operating instructions manual may be carried out only by personnel authorised by the manufacturer. Arbitrary conversions or modifications are explicitly forbidden.

2.3 Warning about incorrect use

Inappropriate or incorrect use of this product can give rise to application-specific hazards, e.g. vessel overfill through incorrect mounting or adjustment. Damage to property and persons or environmental contamination can result. Also, the protective characteristics of the instrument can be impaired.

2.4 General safety instructions

This is a state-of-the-art instrument complying with all prevailing regulations and directives. The instrument must only be operated in a technically flawless and reliable condition. The operator is responsible for the trouble-free operation of the instrument. When measuring aggressive or corrosive media that can cause a dangerous situation if the instrument malfunctions, the operator has to implement suitable measures to make sure the instrument is functioning properly.

The safety instructions in this operating instructions manual, the national installation standards as well as the valid safety regulations and accident prevention rules must be observed by the user.

For safety and warranty reasons, any invasive work on the device beyond that described in the operating instructions manual may be carried out only by personnel authorised by the manufacturer. Arbitrary conversions or modifications are explicitly forbidden. For safety reasons, only the accessory specified by the manufacturer must be used.

To avoid any danger, the safety approval markings and safety tips on the device must also be observed.

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2.5 Safety label on the instrument

The safety approval markings and safety tips on the device must be observed.

2.6 Environmental instructions

Protection of the environment is one of our most important duties. That is why we have introduced an environment management system with the goal of continuously improving company environmental protection. The environment management system is certified according to DIN EN ISO 14001.

Please help us fulfil this obligation by observing the environmental instructions in this manual:

- Chapter " *Packaging, transport and storage*"
- Chapter " *Disposal*"

3 Product description

3.1 Configuration

Scope of delivery

The scope of delivery encompasses:

- Ball valve fitting
- Documentation
  - This operating instructions manual

Constituent parts

The ball valve fitting according to ZB 2553 consists of the following components:

- Ball valve
- Locking rods
- Ventilation valve
- Flanges

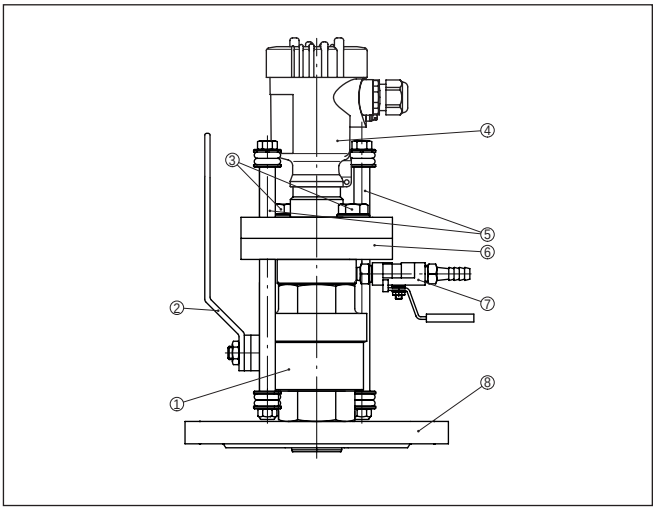

Fig. 1: Ball valve fitting acc. to ZB 2553 with pressure transmitter VEGABAR 82

1 Ball valve
2 Hand lever
3 Flange screws
4 VEGABAR 82
5 Locking rods
6 Flange, sensor side
7 Ventilation valve
8 Flange, process side

The flange on the process side is available in the following sizes:

- DN 50 PN 40
- DN 80 PN 40
- DN 100 PN 40
- ASME 2" 150 lbs
- ASME 3" 150 lbs, 300 lbs
- ASME 4" 150 lbs, 300 lbs

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- DN 50 10 K JIS
- DN 80 10 K JIS

3.2 Principle of operation

Area of application

The ball valve fitting acc. to ZB 2553 is suitable for mounting on vessels with nozzle and flange. It is suitable for pressure transmitter VEGABAR 82 with extension tube ø38 mm and enables mounting and dismounting of the pressure transmitter without emptying the vessel.

Caution:
The max. permissible vessel pressure is 2 bar (200 kPa).

Functional principle

The ball valve fitting (dimensional drawing) VEGABAR 82 can be set to two positions by means of the hand lever:

- Operation
- Service

In position " **Operation**", the ball valve is open to the process. The pressure transmitter is in measuring position. The vent valve is closed.

In position " **Service**", the ball valve is closed to the process. The pressure transmitter is in off position. The vent valve is open.

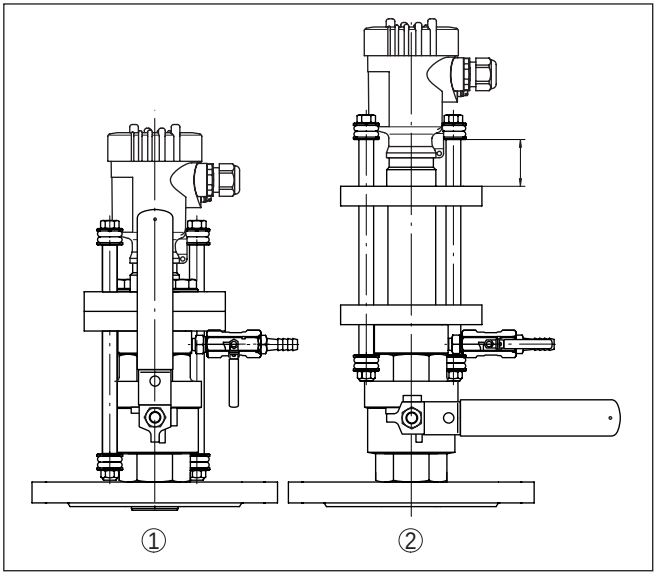


Fig. 2: Positions of the ball valve fitting

1 Operation
2 Service

3.3 Packaging, transport and storage

Packaging

Your instrument was protected by packaging during transport. Its capacity to handle normal loads during transport is assured by a test based on ISO 4180.

The packaging of standard instruments consists of environment-friendly, recyclable cardboard. For special versions, PE foam or PE foil is also used. Dispose of the packaging material via specialised recycling companies.

Transport

Transport must be carried out in due consideration of the notes on the transport packaging. Nonobservance of these instructions can cause damage to the device.

Transport inspection

The delivery must be checked for completeness and possible transit damage immediately at receipt. Ascertained transit damage or concealed defects must be appropriately dealt with.

Storage

Up to the time of installation, the packages must be left closed and stored according to the orientation and storage markings on the outside.

Unless otherwise indicated, the packages must be stored only under the following conditions:

- Not in the open
- Dry and dust free
- Not exposed to corrosive media
- Protected against solar radiation
- Avoiding mechanical shock and vibration

Storage and transport temperature

- Storage and transport temperature see chapter " *Supplement - Technical data - Ambient conditions*"
- Relative humidity 20 … 85 %

Lifting and carrying

With instrument weights of more than 18 kg (39.68 lbs) suitable and approved equipment must be used for lifting and carrying.

4 Mounting

4.1 Safety instructions

Always keep in mind the following safety instructions:

- Mount the ball valve fitting horizontally with lever on the side and ventilation valve pointing downward
- Dismount the ball valve fitting only in unpressurized status or with emptied vessel
- Make sure that you are in safe position (not on a ladder) and do not dismount the device at head level.
- Dismount the pressure transmitter only in position " **Service**"

4.2 Suitability for the process conditions

Suitability for the process conditions

Make sure that all parts of the device exposed to the process, in particular the process fitting, valve components and seal, are suitable for the existing process conditions. These include above all the process pressure, process temperature as well as the chemical properties of the medium.

You can find the specifications in chapter " *Technical data*" and on the nameplate.

4.3 Mounting preparations

The following tools are required for mounting the pressure transmitter:

- Wrench (size 13) for the locking rods
- Wrench (size 17) for the flange screws

4.4 Mount pressure transmitter

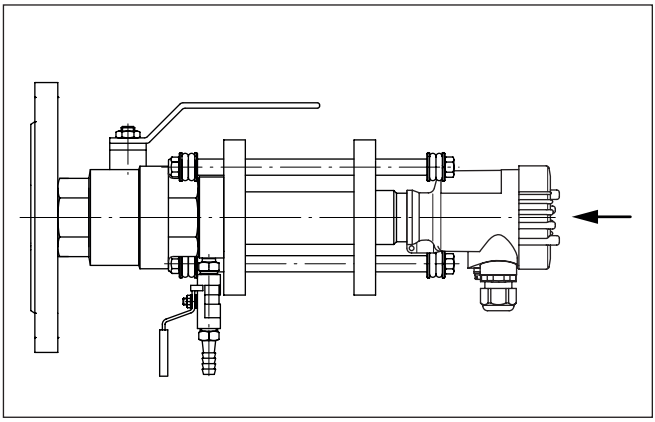
Danger:
Never bring the ball valve into position " **Operation**" without having the pressure transmitter mounted. Medium can escape and cause damage to property or injury to persons.

If the ball valve fitting in Ex applications is opened without the pressure transmitter installed, hazardous gases or vapours can escape.

Proceed as follows:

1. Starting point: Ball valve is closed (position: service)
2. Loosen hexagon nuts, O-rings and washers of the locking rods to the sensor flange
3. Open ventilation valve
4. Slide VEGABAR 82 into the opening of the ball valve fitting
5. Slide the locking rods through the holes in the sensor flange and secure with the hexagon nuts, O-rings and washers
6. Close the ventilation valve
7. Open ball valve

Danger:
When the ball valve is opened, the total vessel pressure acts on VEGABAR 82.



8. Insert the pressure transmitter with a lot of force
9. Immediately tighten the flange screws, torque see chapter " *Technical data*"

Pressure transmitter is hence mounted and can be put into operation.

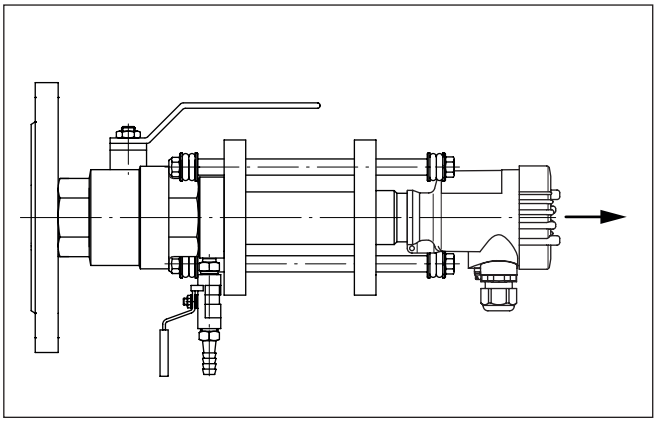
4.5 Dismount pressure transmitter

Danger:
The dismounting of the pressure transmitter must never be carried out in position " **Operation**". Medium can escape under operating pressure and cause damage to property or injury to persons.

Proceed as follows:

1. Starting point: Ball valve is open (position: operation)
2. Check if the hexagon nuts, O-rings and washers of the locking rods are tight
3. Loosen the flange screws

Danger:
The pressure transmitter can come out very quickly. With max. permissible vessel pressure, the forces can be up to 250 N.



4. Close ball valve as soon as the pressure transmitter is pulled out to the maximum (the distance is limited by locking rods)
5. Open ventilation valves slowly, to release the pressure.
6. Loosen hexagon nuts, O-rings and washers of the locking rods to the sensor flange
7. Detach pressure transmitter

Dismounting of the pressure transmitter is finished.

The reinstallation is carried out as described in chapter " *Mouting the pressure transmitter*".

Danger:
Never bring the ball valve into position " **Operation**" without having the pressure transmitter mounted. Medium can escape and cause damage to property or injury to persons.

5 Maintenance and fault rectification

5.1 Maintenance

If the device is used properly, no special maintenance is required in normal operation.

5.2 Rectify faults

Fault rectification

The first measures to be taken are to check the output signals as well as to evaluate the error messages via the display and adjustment module. The procedure is described below. Further comprehensive diagnostics can be carried out on a PC with the software PACTware and the suitable DTM. In many cases, the causes can be determined and the faults rectified this way.

24 hour service hotline

Should these measures not be successful, please call in urgent cases the VEGA service hotline under the phone no. **+49 1805 858550**.

The hotline is manned 7 days a week round-the-clock. Since we offer this service worldwide, the support is only available in the English language. The service is free, only standard call charges are incurred.

Reaction after fault rectification

Depending on the reason for the fault and the measures taken, the steps described in chapter " *Set up*" may have to be carried out again.

5.3 How to proceed if a repair is necessary

You can find an instrument return form as well as detailed information about the procedure in the download area of our homepage: www.vega.com.

By doing this you help us carry out the repair quickly and without having to call back for needed information.

If a repair is necessary, please proceed as follows:

- Print and fill out one form per instrument
- Clean the instrument and pack it damage-proof
- Attach the completed form and, if need be, also a safety data sheet outside on the packaging
- Please contact the agency serving you to get the address for the return shipment. You can find the agency on our home page www.vega.com.

6 Dismount

6.1 Dismounting steps

Warning:
Before dismounting, be aware of dangerous process conditions such as e.g. pressure in the vessel or pipeline, high temperatures, corrosive or toxic media etc.

Take note of chapters " *Mounting*" and " *Connecting to voltage supply*" and carry out the listed steps in reverse order.

6.2 Disposal

The instrument consists of materials which can be recycled by specialised recycling companies. Mark the instrument as scrap and dispose it according to the national, legal regulations.

Materials: see chapter " *Technical data*"

If you have no way to dispose of the old instrument properly, please contact us concerning return and disposal.

7 Supplement

7.1 Technical data

Materials and weights	
Material	
– Fitting	316L
– Seal	FKM
Weight depending on flange size	8.4 kg (18.52 lbs) … 12.5 kg (27.56 lbs)

Torques	
Max. torques	
– Flange screws	60 Nm (44.25 lbf ft)

Process conditions	
Product temperature	-40 … +80 °C (-40 … +176 °F) Note product temperature of the pressure transmitter. The lowest possible temperature value is valid.
Operating pressure max.	2 bar

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7.2 Dimensions

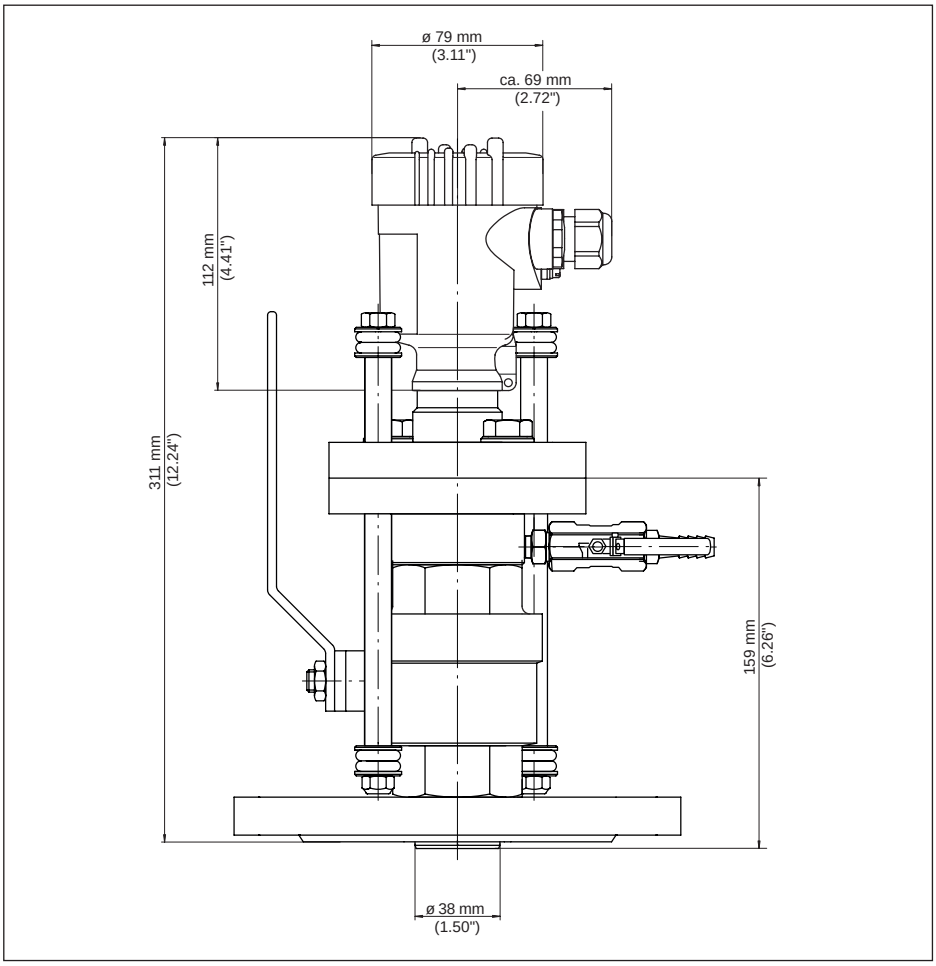

Fig. 3: Ball valve fitting acc. to ZB 2553 with pressure transmitter VEGABAR 82

Printing date:

All statements concerning scope of delivery, application, practical use and operating conditions of the sensors and processing systems correspond to the information available at the time of printing.
Subject to change without prior notice

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