

Ball valve

Operating manual

Series C 108



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Subject to technical modifications.

Read carefully before use.
Save for future use.

1 About this document

This manual

- is part of the fitting
- applies to all series referred to
- describes safe and proper operation during all operating phases

1.1 Target groups




Operating company

- Responsibilities:
 - Keep this manual available at the place of operation, also for future use.
 - Ensure that employees read and observe this manual and other applicable documents, especially the safety instructions and warnings.
 - Observe any additional country-specific rules and regulations that relate to the system.

Qualified personnel, fitter








- Mechanics qualification:
 - Qualified employees with additional training for fitting the respective pipework
- Electrical qualification:
 - Qualified electrician
- Responsibility:
 - Read, observe and follow this manual and the other applicable documents, especially all safety instructions and warnings.

1.2 Other applicable documents

<p>Resistance lists Resistance of materials used to chemicals</p> <p>www.asv-stuebbe.de/pdf_resistance/300051.pdf</p>	
	<p>Data sheet Technical data and conditions of operation</p> <p>www.asv-stuebbe.de/pdf_datasheets/301368.pdf</p>
<p>CE declaration of conformity Conformity with standards</p> <p>www.asv-stuebbe.de/pdf_DOC/300168.pdf</p>	


Tab. 1 Other application documents, purpose and where found

1.3 Warnings and symbols

Symbol	Meaning
	<ul style="list-style-type: none"> • Immediate acute risk • Death, serious bodily harm
	<ul style="list-style-type: none"> • Potentially acute risk • Death, serious bodily harm
	<ul style="list-style-type: none"> • Potentially hazardous situation • Minor injury
	<ul style="list-style-type: none"> • Potentially hazardous situation • Material damage
	<p>Safety warning sign</p> <ul style="list-style-type: none"> ▶ Take note of all information highlighted by the safety warning sign and follow the instructions to avoid injury or death.
	Instruction
1., 2., ...	Multiple-step instructions
✓	Precondition
→	Cross reference
	Information, notes

Tab. 2 Warnings and symbols


2 General safety instructions

 The manufacturer accepts no liability for damages caused by disregarding any of the documentation.

2.1 Intended use

- Only use the fitting to shut off pipes for appropriate media (→ Resistance list).
- Adhere to the operating limits (→ Data sheet).

2.2 General safety instructions

 Read and observe the following regulations before carrying out any work.

2.2.1 Obligations of the operating company

Safety-conscious working

- Only operate the fitting if it is in perfect technical condition and only use it as intended, remaining aware of safety and risks, and adhering to the instructions in this manual.
- Ensure that the following safety aspects are observed and monitored:
 - Intended use
 - Statutory or other safety and accident-prevention regulations
 - Safety regulations governing the handling of hazardous substances
 - Applicable standards and guidelines in the country where the pump is operated
- Make personal protective equipment available.

Qualified personnel

- Ensure all personnel tasked with work on the fitting have read and understood this manual and all other applicable documents, especially the safety, maintenance and repair information, before they start any work.
- Organize responsibilities, areas of competence and the supervision of personnel.
- The following work should be carried out by specialist technicians only:
 - Installation, repair and maintenance work
 - Work on the electrical system
- Make sure that personnel to be trained only work on the fitting under the supervision of specialist technicians.

2.2.2 Obligations of personnel

- Observe the instructions on the fitting and keep them legible, e.g. name plate and identification marking for fluid connections.
- Only carry out work on the fitting if the following requirements are met:
 - System is empty
 - System has been flushed
 - System is depressurized
 - System has cooled down
 - System is secured against being switched back on again
- Do not make any modifications to the device.

2.3 Specific hazards

2.3.1 Hazardous media

- When handling hazardous media (e.g. hot, flammable, explosive, toxic, hazardous to health or the environment), observe the safety regulations for the handling of hazardous substances.
- Use personal protective equipment when carrying out any work on the fitting.
- Collect leaking pumped liquid and residues in a safe manner and dispose of in accordance with environmental regulations.

3 Layout and Function

3.1 Marking

3.1.1 Name plate



Fig. 1 Name plate (example)

- 1 Type
- 2 ID number
- 3 Nominal pressure [bar] / Nominal diameter [mm]
- 4 Materials (body, ball seals, other gaskets)
- 5 Date of manufacture - Series number

3.2 Assembly

Manually driven ball valve for shutting off pipes.

- Optional flow direction
- Opening angle OPEN/CLOSE 90°
- Optional installation position
 - Position electric drive laterally or over the fitting.

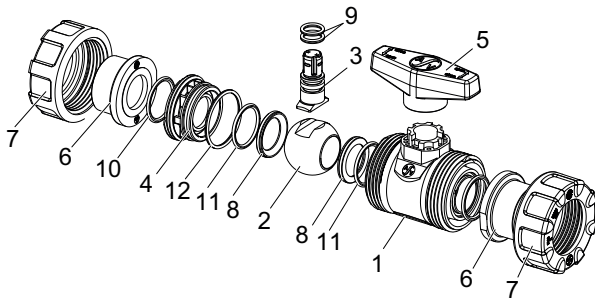


Fig. 2 Assembly

- 1 Housing
- 2 Ball
- 3 Stem
- 4 Union threaded neck
- 5 Hand lever
- 6 Insert
- 7 Union nut
- 8 Ball seal
- 9 O-ring
- 10 O-ring
- 11 O-ring
- 12 O-ring

4 Transport, Storage and Disposal

4.1 Unpacking and inspection on delivery

1. Unpack the fitting when received and inspect it for transportation damage.
2. Report any transportation damage to the manufacturer immediately.
3. Ensure that the information on the name plate agrees with the order/design data.
4. With immediate installation, dispose of packaging material according to local regulations.
 - For later installation, leave the fitting in the original packaging.

4.2 Transportation

1. If possible, transport fitting (including drive) in the original packaging.
2. Lift fitting manually for transport. For weight specifications (→ Data sheet).

4.3 Storage


NOTE

Material damage due to inappropriate storage!

- ▶ Store the fitting properly.

1. Make sure the storage room meets the following conditions:
 - Dry
 - Frost-free
 - Vibration-free
 - Not in direct sunlight
 - Storage temperature +10 °C to +60 °C
2. Store fitting in “Valve open” state, if possible in the original packaging.

4.4 Disposal

 Plastic parts can be contaminated by poisonous or radioactive media to such an extent that cleaning will not be sufficient.

WARNING

Risk of poisoning and environmental damage from medium!

- ▶ Use personal protective equipment when carrying out any work on the fitting.
 - ▶ Before disposing of the fitting:
 - Collect escaping medium and dispose separately according to local regulations.
 - Neutralize residues of medium in the fitting.
 - ▶ Remove plastic parts and dispose of them in accordance with local regulations.
-
- ▶ Dispose of the fitting in accordance with local regulations.

5 Installation and connection

5.1 Check operating conditions

1. Ensure the design of the fitting is consistent with the purpose intended:
 - Materials used (→ Type plate).
 - Medium (→ Order and design data).
2. Ensure the required operating conditions are met:
 - Resistance of body and seal material to the medium (→ Resistance lists).
 - Media temperature (→ Data sheet).
 - Operating pressure (→ Data sheet).
 - Setting range
3. Consult with the manufacturer regarding any other use of the device.

5.2 Planning pipelines

WARNING

Risk of poisoning and environmental damage from medium!

Leaks due to impermissible pipework forces.

- ▶ Ensure that the fitting is not subject to any pulling or thrusting forces or bending moments.

1. Plan pipes safely:
 - No pulling or thrusting forces
 - No bending moments
 - Adjust for changes in length due to temperature changes (compensators, expansion shanks)
 - Optional flow direction
 - Optional installation position and direction
2. Dimensions (→ Data sheet).

5.3 Installing fitting in pipe

WARNING

Risk of poisoning and environmental damage from medium!


Leak due to faulty installation.

- ▶ Installation work on the pipes should only be performed by technicians who have been specially trained for the pipework in question.

NOTE


Material damage due to contamination of the fitting!

- ▶ Make sure no contamination reaches the fitting.
- ▶ Flush the pipe with a neutral medium.

 The fitting is installed according to the connection type of the pipes.

1. Open fitting completely.
2. Prepare pipe ends according to connection type.
3. Unscrew union nuts and slide over free pipe ends.
 - Check mounting direction.
4. Connect inserts with pipe ends.
5. Position fitting between the pipe ends.
6. Hand-tighten the union nut.

5.4 Performing the hydrostatic test

 Pressure test using neutral medium, e.g. water.

1. Pressurize the fitting, ensuring:
 - Test pressure < permissible system pressure
 - Test pressure < 1.5 PN
 - Test pressure < PN + 5 bar
2. Check the fitting for leaks.

6 Operation

6.1 Commissioning

- ✓ Fitting correctly installed and connected

WARNING

Risk of injury and poisoning due to medium spraying out!

- ▶ Use personal protective equipment when carrying out any work on the fitting.
-
1. Opening and closing the fitting:
 - Hand lever along the pipe: Fitting opened
 - Hand lever perpendicular to the pipe: Fitting closed
 2. After the initial stresses due to pressure and operating temperature, check if the fitting is sealed.

7 Maintenance

WARNING

Risk of injury and poisoning due to hazardous media liquids!

- ▶ Use personal protective equipment when carrying out any work on the fitting.

7.1 Servicing

1. Visual and function check (every three months):
 - Normal operating conditions unchanged
 - No leaks
 - No unusual operating noises or vibrations
2. Ensure that fitting functions properly (opening, closing).
3. Clean the fitting with a moist cloth if necessary.

7.2 Maintenance

WARNING

Risk of injury and poisoning due to hazardous or hot media!

- ▶ Use personal protective equipment when carrying out any work on the fitting.
- ▶ Safely collect the media and dispose of it in accordance with environmental regulations.

WARNING

Risk of injury during disassembly!

- ▶ Wear protective gloves, components can be very sharp-edged due to wear or damage.
- ▶ Remove components with springs (e.g. pneumatic drive) carefully, since spring tension can cause components to be ejected.

7.2.1 Removing fitting

1. Ensure that:
 - System is empty
 - System has been flushed
 - System is depressurized
 - System has cooled down
 - System is secured against being switched back on again
2. Remove fitting from the pipe.
3. Decontaminate fitting if required.
 - Dead space in the fitting may still contain medium.

7.2.2 Fixing leaks in the port

1. Removing fitting (→ [7.2.1 Removing fitting, Page 6](#)).
2. Tighten union threaded neck.
3. Install fitting (→ [5.3 Installing fitting in pipe, Page 5](#)).
4. If the fitting is still leaky, replace ball seals and/or ball.

7.3 Replacement parts and return

- Have the following information ready to hand when ordering spare parts (→ Type plate).
 - Fitting type
 - ID number
 - Nominal pressure and diameter
 - Body and seal material
- Please complete and enclose the document of compliance for returns (→ www.asv-stuebbe.com/service/downloads).



- Only use spare parts from ASV Stübbe.

8 Troubleshooting

WARNING

Risk of injury and poisoning due to hazardous or hot media!

- ▶ Use personal protective equipment when carrying out any work on the fitting.
- ▶ Safely collect the media and dispose of it in accordance with environmental regulations.


Consult with the manufacturer regarding faults which are not identified in the following table, or which cannot be traced to the indicated causes.

Error	Possible cause	Corrective action
Medium leakage at the pipe fittings	Pre-tension of the O-ring too small	▶ Retighten union nut by hand.
Medium leakage at the stem	O-ring worn	▶ Replace fitting (→ 7.2.1 Removing fitting, Page 6).
Fitting does not close completely	Ball seals worn Ball worn	▶ (→ 7.2.2 Fixing leaks in the port, Page 6).


Tab. 3 Troubleshooting

9 Appendix

9.1 Technical specifications

 Technical data (→ Data sheet).

9.1.1 Pressure and temperature limits

 Pressure and temperature limits (→ Data sheet).

9.2 Tightening torques

Description	Size	Tightening torque [Nm]
Union nut	–	hand-tight
Union threaded neck	–	hand-tight

Tab. 4 Tightening torques

