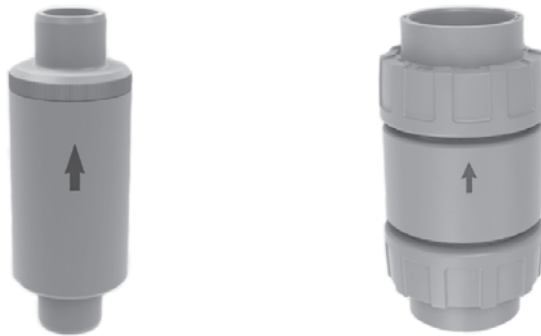


Aeration Valve B895

Aeration and Vent Valve BE891

Operating manual



Version BA-2022.08.25 EN
Print-No. 302 464
TR MA DE Rev001

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Subject to technical modifications.
Read carefully before use.
Save for future use.



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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

To download: Resistance lists Resistance of materials used to chemicals www.stuebbe.com/pdf/300051.pdf	
To download: Data sheet B895 Technical data and conditions of operation www.stuebbe.com/pdf/302470.pdf	
To download: Data sheet BE891 Technical data and conditions of operation www.stuebbe.com/pdf/302476.pdf	
To download: CE declaration of conformity Conformity with standards www.stuebbe.com/pdf/300168.pdf	


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 Safety

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

2.1 Intended use


The fitting is used for aerating and venting vessels.

- Only use the fitting with suitable media (→ Resistance lists).
- Adhere to the operating limits (→ Data sheet).
- Use the fitting exclusively when a leakage drain is connected to the outlet side.

Prevention of obvious misuse (examples)

- Do not use the fitting for media containing solids.
- Do not use the fitting for media that clog or gum up the ball or the float, impairing their opening and closing action.
- Do not use the fitting where the media flow is in the opposite sense to the marked direction of flow.

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 modify the fitting in any way.

2.3 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 them in accordance with environmental regulations.

3 Layout and Function

3.1 Marking

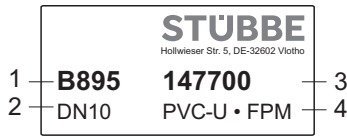


Fig. 1 Name plate (example)

- 1 Type
- 2 Nominal diameter [mm]
- 3 ID number
- 4 Materials (body, seals)

3.2 Description

Medium-activated valve for aerating and venting vessels

- Vertical installation
- Variants of connections:
 - Spigot ends for solvent or fusion welding sizes DN10–50
 - Spigot ends for solvent or fusion welding sizes DN65/80
- Observe the „TOP“ marking, arrow is pointing upwards

Type B895:

- for venting
- Valve „Open“ at depressurization (venting), valve „Closed“ by spring-loaded closure element
- Opening pressure approx. 0.05 bar, this value should be checked by the system operating company

Type BE891:

- for aerating and venting
- Valve „Open“ at depressurization (venting) and during filling due to the weight of the closure element, valve „Closed“ due to flotation of the closure element
- When the valve is closed, venting is only possible when the container pressure falls below the atmospheric pressure even with air build-up (outgassing media).

3.3 Assembly

3.3.1 B895

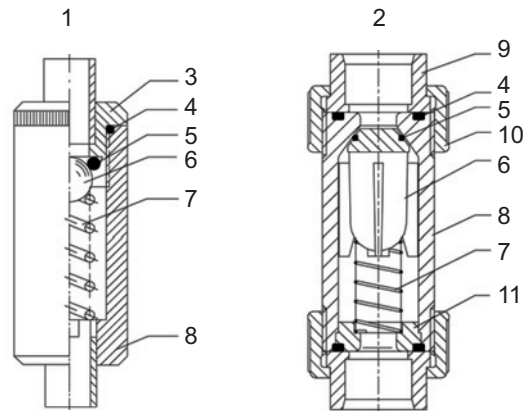


Fig. 2 Design B895

- | | |
|-----------------------|-------------------------|
| 1 Size DN10–50 | 7 Pressure spring |
| 2 Size DN65/80 | 8 Housing |
| 3 Union threaded neck | 9 Insert (here: outlet) |
| 4 O-ring | 10 Union nut |
| 5 O-ring | 11 Pressure disc |
| 6 Ball/float | |

3.3.2 BE891

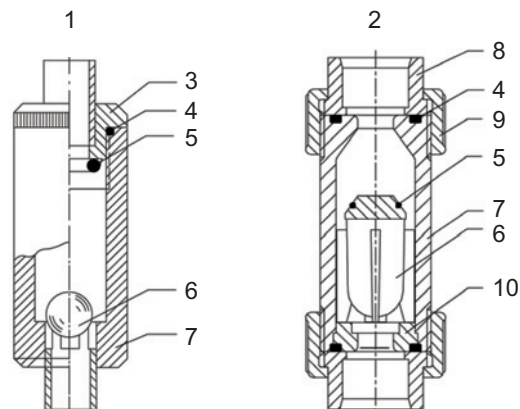


Fig. 3 Design BE891

- | | |
|-----------------------|-------------------------|
| 1 Size DN10–50 | 6 Ball/float |
| 2 Size DN65/80 | 7 Housing |
| 3 Union threaded neck | 8 Insert (here: outlet) |
| 4 O-ring | 9 Union nut |
| 5 O-ring | 10 Pressure disc |

3.4 Direction of flow

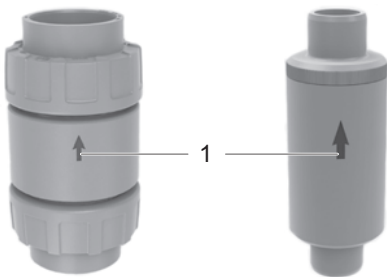


Fig. 4 Fitting with directional arrow

1 Directional arrow

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. For immediate installation, damage packaging material according to local regulations.
 - For later installation, leave the fitting in the original packaging.

4.2 Transportation

1. If possible, transport fitting in original packaging.
2. To transport, lift the fitting by hand, weight specifications (→ Data sheet).


4.3 Storage

NOTE

Material damage due to inappropriate storage!

- ▶ Store the fitting properly.
- ▶ 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

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 damage them in accordance with local regulations.
-
- ▶ Dispose of the fitting in accordance with local regulations.

5 Installation and connection

5.1 Preparations for installation

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).
3. B895 provides for additional venting of the vessel in order to facilitate filling.
4. 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)
 - Installation position vertical
 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.
- ▶ Connect the outlet side of the fitting to a leakage drain.

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.

For connection with solvent welding/fusion spigot ends: Use suitable solvent welding/fusion socket ends.

Observe direction of flow (→ [3.4 Direction of flow, Page 6](#)).


5.3.1 Connection with solvent welding/butt-weld spigot ends

1. Prepare pipe ends according to connection type.
2. Adhesively apply or weld fitting with solvent welding/butt-weld socket ends (→ manufacturer specifications).

5.3.2 Connection with union nut and insert

1. Prepare pipe ends according to connection type.
2. Unscrew union nuts and slide over free pipe ends.
 - Check mounting direction.
 - Take care to prevent the ball/float falling out of the housing.
3. Connect inserts with pipe ends.
4. Position fitting between the pipe ends.
5. 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 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.
-
- ▶ 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 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.

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 the fitting is functioning properly (opening, closing).
3. Clean the fitting with a moist cloth if necessary.

7.2 Maintenance

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 Cleaning/replacing the ball/float and O-rings

 Refer to the drawings (→ 3.3 Assembly, Page 5).

B895, size DN10–50

- ✓ Fitting disassembled
- 1. Carefully unscrew the screw-in part (3). The compression spring (7) exerts a compressive force.
- 2. Change the O-rings (4, 5).
- 3. Clean the ball (6), or if damaged, replace it.
- 4. Assemble the parts.

B895, size DN65/80

- ✓ Fitting disassembled
- 1. Carefully unscrew the union nuts (10). The compression spring (7) exerts a compressive force.
- 2. Remove the inserts (9).
- 3. Change the O-rings (4).
- 4. Removing the thrust washer (11)
- 5. Remove the compression spring (7).
- 6. Remove the float (6).
- 7. Clean the float (6), or if damaged, replace it.
- 8. Replace the O-ring (5) on the cleaned float.
- 9. Assemble the parts.

BE891, size DN10–50

- ✓ Fitting disassembled
- 1. Unscrew the screw-in part (3).
- 2. Replace the O-rings (4, 5).
- 3. Clean the ball (6), or if damaged, replace it.
- 4. Assemble the parts.

BE891, size DN65/80

- ✓ Fitting disassembled
- 1. Unscrew the union nuts (9).
- 2. Remove the inserts (8).
- 3. Change the O-rings (4).
- 4. Remove the thrust washer (10).
- 5. Remove the float (6).
- 6. Clean the float (6), or if damaged, replace it.
- 7. Replace the O-ring (5) on the cleaned float.
- 8. Assemble the parts.

7.2.3 Replacement parts and return

1. 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
2. Please complete and enclose the document of compliance for returns (→ www.stuebbe.com/en/service/download).



3. Use only spare parts from 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
Fitting is not sealing.	Fitting installed the wrong way round.	▶ Check the direction of flow in the fitting (→ 3.4 Direction of flow, Page 6). if necessary install the fitting correctly (→ 5.3 Installing fitting in pipe, Page 7).
	Ball/float or the associated O-rings dirty or worn.	▶ Clean and if necessary replace the ball/float and associated O-rings (→ 7.2.2 Cleaning/replacing the ball/float and O-rings, Page 8).
Medium is leaking from the housing.	O-ring on the housing worn.	▶ Replace the O-ring on the housing (→ 7.2.2 Cleaning/replacing the ball/float and O-rings, Page 8).
Vessel is not being aerated (B895).	Fitting installed the wrong way round.	▶ Check the direction of flow in the fitting (→ 3.4 Direction of flow, Page 6). if necessary install the fitting correctly (→ 5.3 Installing fitting in pipe, Page 7).
	The ball/float is stuck in position by the seal.	▶ Clean and if necessary replace the ball/float and associated O-rings (→ 7.2.2 Cleaning/replacing the ball/float and O-rings, Page 8). ▶ Ensure that the fitting is suitable for the medium in question (→ resistance list).
Vessel is not being vented (BE891).	The fitting is stuck in the „Closed“ position: The vessel is pressurized.	▶ Drain the medium out of the vessel until the ball/float is released from the valve seat and the air can escape.
	The fitting is stuck in the „Closed“ position: The vessel is depressurized.	▶ Clean and if necessary replace the ball/float, valve seat and O-rings (→ 7.2.2 Cleaning/replacing the ball/float and O-rings, Page 8). ▶ Ensure that the fitting is suitable for the medium in question (→ resistance list).

Tab. 3 Troubleshooting

9 Technical data, operating limits, dimensions and weights

 The particulars are described on the data sheet (→ Data sheet).