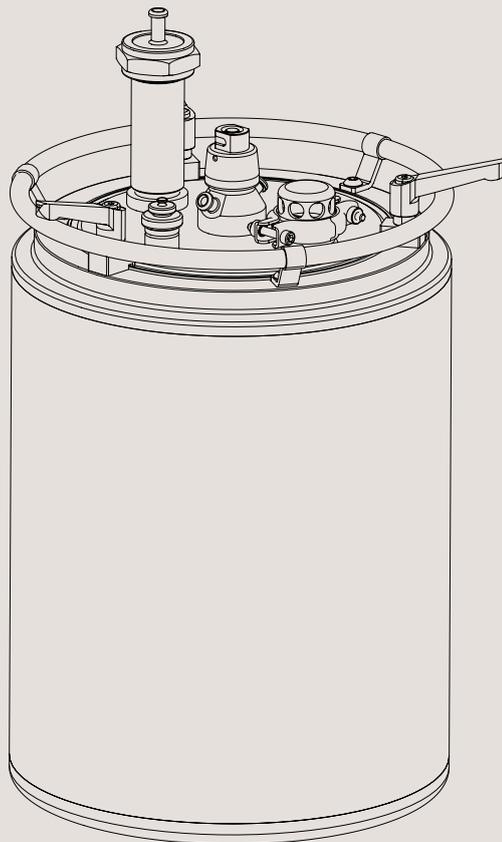




Instruction Manual

Alfa Laval SB Carlsberg Flask



ESE02966-EN3

2022-11

Original manual

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The information herein is correct at the time of issue but may be subject to change without prior notice

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1 Declarations of Conformity

EU Declaration of Conformity

The Designated Company

Alfa Laval Kolding A/S, Albuen 31, DK-6000 Kolding, Denmark, +45 79 32 22 00

Company name, address and phone number

Hereby declare that

Valve

Designation

SB Carlsberg Flask

Type

is in conformity with the following directives with amendments:
- Pressure Equipment Directive 2014/68/EU, Category I, Fluids Group II

The person authorised to compile the technical file is the signer of this document.

Global Product Quality Manager

Title

Lars Kruse Andersen

Name

Kolding, Denmark

Place

2022-11-04

Date (YYYY-MM-DD)

Signature

This Declaration of Conformity replaces Declaration of Conformity dated 2016-06-15



1 Declarations of Conformity

UK Declaration of Conformity

The Designated Company

Alfa Laval Kolding A/S, Albuen 31, DK-6000 Kolding, Denmark, +45 79 32 22 00

Company name, address and phone number

Hereby declare that

Valve

Designation

SB Carlsberg Flask

Type

is in conformity with the following directives with amendments:

- The Pressure Equipment (Safety) Regulations 2016, Category I, Fluids Group II

Signed on behalf of: Alfa Laval Kolding A/S

Global Product Quality Manager

Title

Lars Kruse Andersen

Name

Kolding, Denmark

Place

2022-11-04

Date (YYYY-MM-DD)

Signature

DoC Revison_01_112022

**UK
CA**



2 Safety

*Unsafe practices and other important information are emphasised in this manual.
Warnings are emphasised by means of special symbols.*

2.1 Important information

Always read the manual before using the valve!

WARNING

Indicates that special procedures must be followed to avoid serious personal injury.

CAUTION

Indicates that special procedures must be followed to avoid damage to the valve.

NOTE

Indicates important information to simplify or clarify procedures.

2.2 Warning signs

General warning:



Caustic agents:



All warnings in the manual are summarised on this page.

Pay special attention to the instructions below to avoid serious personal injury and damage to the valve.

2.3 Safety precautions

Installation:

Always read the technical data thoroughly (see chapter 6 Technical Data)

Never dismantle the Carlsberg Flask when under pressure.

Never dismantle the Carlsberg Flask when it is hot.



Operation:

Never dismantle the Carlsberg Flask when under pressure.

Never dismantle the Carlsberg Flask when it is hot.

Never operate the Carlsberg Flask without bursting disc.

Never sterilise the Carlsberg Flask without bursting disc.

Always read the technical data thoroughly (see chapter 6 Technical Data)



Maintenance:

Always read the technical data thoroughly (see chapter 6 Technical Data)

Never service the Carlsberg Flask when it is hot.

Never service the Carlsberg Flask when under pressure.



Transportation:

Always drain liquid out of Carlsberg Flask before transportation.

Always ensure sufficient fixing of the Carlsberg Flask during transportation.

3 Installation

The instruction manual is part of delivery. Study the instructions carefully.
The items refer to the Parts List and Service Kits section.

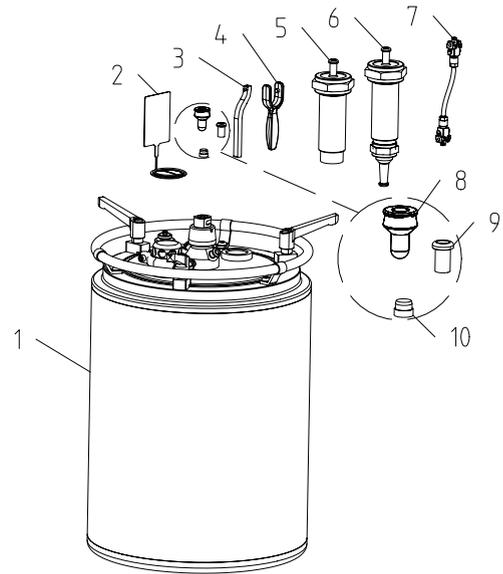
3.1 Unpacking/delivery

Step 1

CAUTION

Alfa Laval cannot be held responsible for incorrect unpacking.

| | | |
|-----|--------------------------------|-------|
| 1. | Carlsberg Flask | 1 PC |
| 2. | Bursting disc | 1 PC |
| 3. | Assembly key | 1 PC |
| 4. | Quick opening key | 1 PC |
| 5. | Filter house I | 1 PC |
| 6. | Filter house II | 1 PC |
| 7. | 3m Silicone house w. 2 clip-on | 2 PCs |
| 8. | Membrane Q | 1 PC |
| 9. | Weld in clip-on | 1 PC |
| 10. | Rubber plug NR | 1 PC |
| | Hydrophobic cotton | 2 PCs |



Parts will be found inside the Carlsberg Flask.

Step 2

Remove any packing materials from the Carlsberg Flask.
Inspect the valve/valve parts for visible transport damage.
Avoid damaging the valve/valve parts.

3.2 General installation

Step 1



Always read the technical data thoroughly.
See chapter 6 Technical Data

CAUTION

Alfa Laval cannot be held responsible for incorrect installation.

3.3 Valve assembly

Step 1

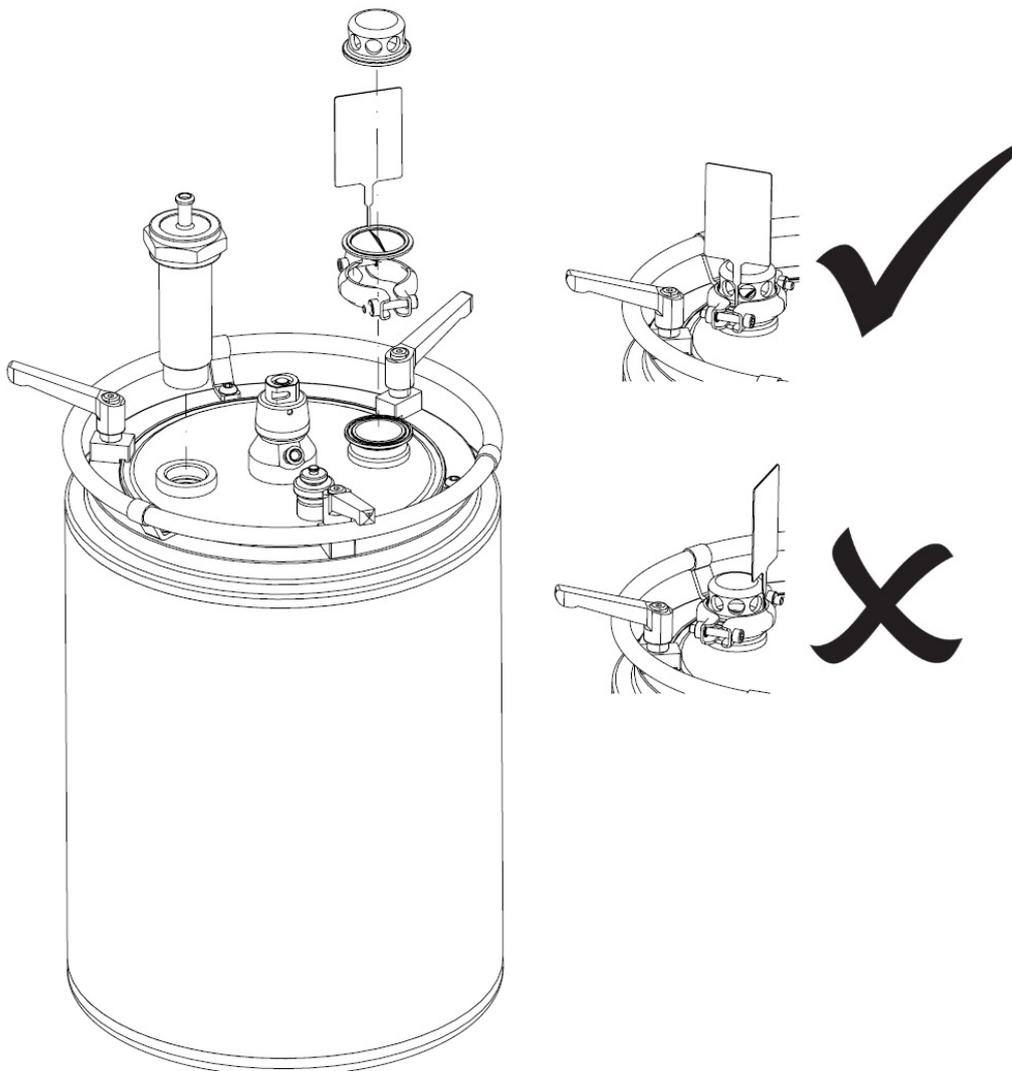
Fill the filter house with hydrophobic cotton.

Step 2

Connect the filter house to the threaded connection.
Make sure connection is tight.

Step 3

Connect bursting disc and protection cap to clamp connection.
Make sure bursting disc is positioned as in illustration to avoid the clamp damaging the bursting disc.



3 Installation

3.4 Recycling information

Unpacking

- Packing material consists of wood, plastics, cardboard boxes and, in some cases, metal straps.
- Wood and cardboard boxes can be reused, recycled or used for energy recovery.
- Plastics should be recycled or burnt at an authorised waste incineration plant.
- Metal straps should be sent for material recycling.

Maintenance

- All metal parts should be sent for material recycling.
- Worn out or defective electronic parts should be sent to a licensed handler for material recycling.

Scrapping

- At the end of use, the equipment should be recycled according to relevant local regulations. As well as the equipment itself, any hazardous residues from the process liquid must be considered and dealt with in a proper manner. When in doubt, or in the absence of local regulations, please contact your local Alfa Laval sales company.
-

4.1 Operation

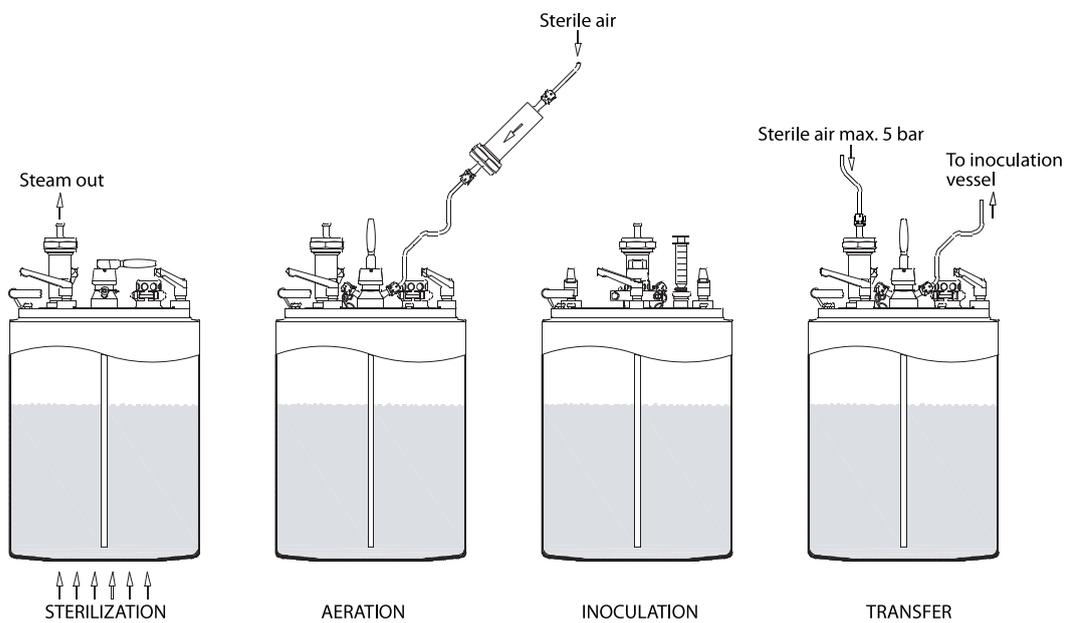


The Carlsberg Flask is equipped with a bursting disc for safety purposes.

Never operate Carlsberg Flask without bursting disc.

Alfa Laval cannot be held responsible for incorrect operation.

| Operation range | | | |
|-----------------|----------------|-------------------------------|-----------------------|
| Net volume | Total volume | Recommended transfer pressure | Allowable pressure PS |
| 25 l (6.6 gal) | 33 l (8.7 gal) | 2-3 bar (29-44 psi) | 6 bar (87 psi) |



4 Operation

4.2 Sterilisation

The flask is filled with wort to the net capacity corresponding to approximately 80% of the total volume. Sterilisation takes place in an autoclave, on a gas burner or an electric hotplate. After sterilisation, the flask is placed in a refrigerator or a cold room in order to cool down the wort to the desired working temperature.

The filter house can remain mounted on the flask during sterilisation; however, if the filter house has been sterilised separately, it is important to remount it in the end phase of wort sterilisation while steam is still evaporating from the flask so that the filter connection is also sterilised.

4.3 Aeration

Aeration of the cold wort is carried out through the membrane sample valve connected to the aeration lance. It is important to use sterile air for safety reasons; it is recommended to mount a filter in front of the membrane sample valve.

Air supply and flow should be moderate in order not to create too much foam. Foam must not enter the filter house as it will destroy the filter and may lead to blockage.

Practical tests with open lid will be the easiest way to determine the right conditions for air supply as well as duration of aeration (less than 10 minutes). Yeast culture from such tests should not be used.

4.4 Inoculation

When the wort is well aerated, yeast culture can be introduced aseptically through the membrane fitting by means of a syringe with a content of 150-200 ml.

Alternatively, dry yeast culture can be transferred to the flask via the empty filter house. In case a bigger quantity of yeast is needed, the lid can be dismounted and the culture poured into the flask – this procedure requires sterile surroundings and maximum precautions.

4.5 Transfer

During transfer of pure yeast culture from the Carlsberg Flask to the yeast propagation plant, it is important that all hose tails are fastened firmly and safely with hose clips.

The transfer of pure yeast culture into the propagation plant should take place under aseptic conditions. This procedure requires sterile air supply to the filter house and the yeast culture can be pressed from the flask into the inoculator when the membrane sample valve on the lid of the Carlsberg Flask has been connected to a sample device on the receiving vessel (the inoculator).

Connecting hose, membrane sample valve and all connections must be thoroughly sterilised by alcohol or steam before this transfer takes place. Between operations, the valve may be sealed with alcohol which should be blown out with sterile air prior to use.

When the connection has been established and the inoculation is to take place, we recommend that the sterile air supply is opened first, thereafter the membrane sample valve on top of the flask, and finally the sample device on the inoculator is opened.

When the culture has been transferred (bubbling noise in the inoculator), we recommend continuing with air supply for another 1-2 minutes in order to ensure that all the culture is transferred.

Finally, the sample device on the receiving vessel and the membrane sample valve on the Carlsberg Flask can be closed, air supply is stopped.

4.6 Recommended cleaning



Always handle lye and acid with great care.

Caustic hazard!



Always use
rubber gloves!



Always use
protective goggles!

After use, the Carlsberg Flask should be taken apart and cleaned manually with normal detergents.

5 Maintenance

5.1 General maintenance

Step 1



Always read the technical data thoroughly.
See chapter 6 Technical Data

Step 2



Never service the Carlsberg Flask when it is hot.

Burning hazard!



Step 3



Never service the Carlsberg Flask when under pressure.
Below are some guidelines for maintenance intervals.

O-ring and seals replacement every 2-5 years.

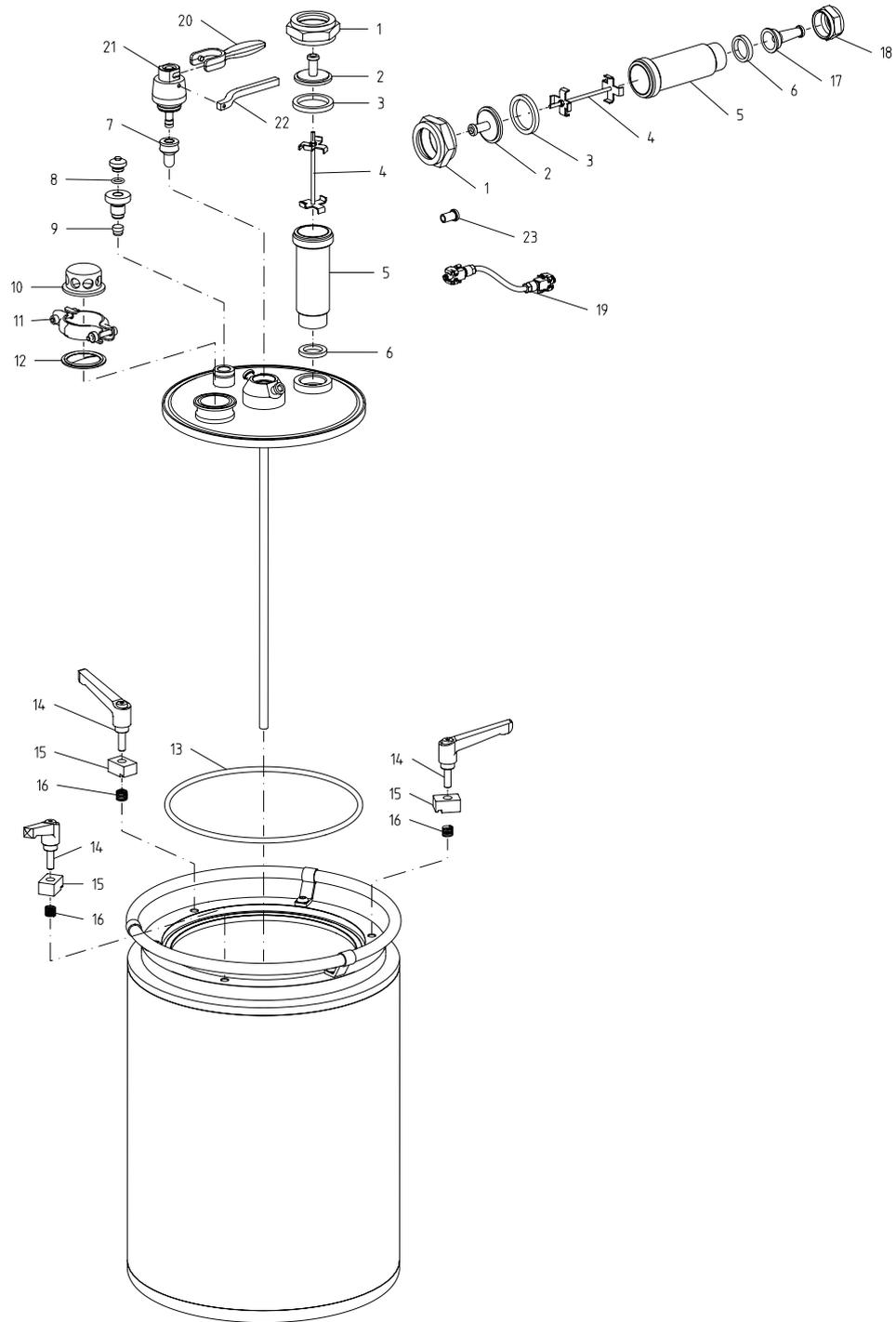
6.1 Technical data

Valve data

| Net volume | Total volume | Recommended transfer pressure | Allowable pressure PS | Weight |
|-----------------|----------------|-------------------------------|-----------------------|--------|
| 25 l (6.6 gal) | 33 l (8.7 gal) | 2-3 bar (29-44 psi) | 6 bar (87 psi) | 26 kg |

| Materials | |
|-------------------------------|--------------------------------------|
| Product wetted steel parts | EN 1.4404 (AISI 316L) with 3.1 cert. |
| Product wetted steel surfaces | Surface roughness Ra<0.2 µm |
| Product wetted seals | EPDM |
| Product wetted O-ring | Silicone |
| Temperature | |
| Max. operating temperature | 20°C |

7 Parts List and Service Kits



Parts list

| Pos. | | Qty | Denomination |
|------|-----|-----|--------------------------------|
| 1 | □◆ | 1 | Filter nut large |
| 2 | □◆ | 1 | Filter top large |
| 3 | □◆○ | 2 | Seal, EPDM |
| 4 | □◆ | 1 | Filter holder |
| 5 | □◆ | 1 | Filter house |
| 6 | ◆○ | 2 | Seal, EPDM |
| 7 | | 1 | Membrane Q, 20 pcs |
| 8 | ○ | 1 | O-ring, NBR |
| 9 | | 1 | Rubber plug NR, 100 pcs |
| 10 | | 1 | Protection cap |
| 11 | | 1 | Clamp |
| 12 | | 1 | Bursting disc |
| 13 | ○ | 1 | O-ring, Q |
| 14 | ▲ | 3 | Handle |
| 15 | ▲ | 3 | Block |
| 16 | ▲ | 3 | Spring |
| 17 | ◆ | 1 | Filter top small |
| 18 | ◆ | 1 | Filter nut small |
| 19 | | 2 | 3 m silicone hose w. 2 clip-on |
| 20 | | 1 | Quick opening key |
| 21 | | 1 | MSV actuator manual 6 bar |
| 22 | | 1 | Assembly key |
| 23 | | 1 | Weld in clip-on |

Service kits

Assembly and service kits for Carlsberg flask

| | | |
|---|---|------------|
| □ | Filter house I | 9615123601 |
| ◆ | Filter house II | 9615123602 |
| ▲ | Handle set incl. 1x (pos. 14;15;16) | 9615125970 |
| ○ | Service kit | 9611924316 |

Parts marked with □◆○▲ are included in the Assembly and service kits.

How to contact Alfa Laval

Contact details for all countries are continually updated on our website.

Please visit www.alfalaval.com to access the information directly.

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