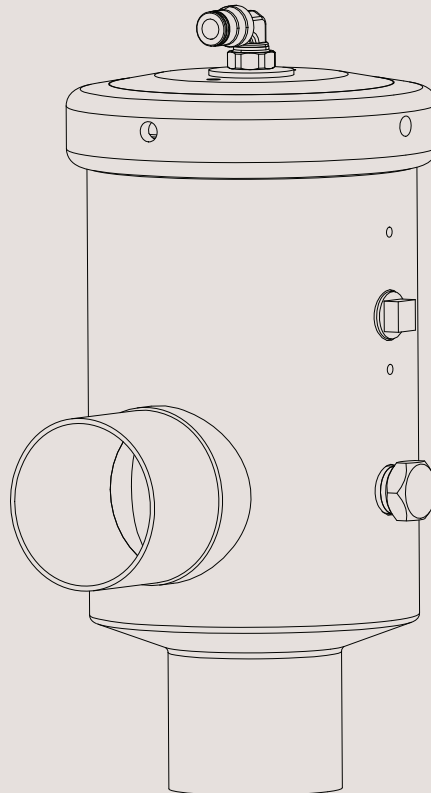




# Instruction Manual

## Alfa Laval SB Pressure Exhaust Valve



ESE02965-EN1 2015-10

Original manual



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

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# 1 EC Declaration of Conformity

The Designated Company

Alfa Laval Kolding A/S

Company Name

Albuen 31, DK-6000 Kolding, Denmark

Address

+45 79 32 22 00

Phone No.

hereby declares that

Valve

Designation

SB Pressure Exhaust Valve

Type

is in conformity with the following directives with amendments:

- Machinery Directive 2006/42/EC
- Regulation (EC) No. 1935/2004

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

QHSE Manager, Quality, Health and safety & Environment

Title

Annie Dahl

Name

Kolding

Place

2015-06-02

Date



Signature



*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.

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### 2.2 Warning signs

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General warning:



Caustic agents:



## 2 Safety

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*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.*

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### 2.3 Safety precautions

---

#### Installation:

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

**Always** release compressed air after use.

**Never** touch the moving parts if the actuator for force opening is supplied with compressed air.

**Never** touch the valve or the pipelines when processing hot liquids.

**Never** dismantle the valve or actuator for force opening when under pressure.

**Never** dismantle the valve when it is hot.



#### Operation:

**Never** dismantle the valve with the valve and pipelines under pressure.

**Never** dismantle the valve when it is hot.

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

**Always** release compressed air after use.

**Never** touch the valve or pipelines when processing hot liquids.

**Never** touch the moving parts if the actuator is supplied with compressed air.

**Always** rinse well with clean water after cleaning.

**Always** handle lye and acid with great care.



#### Maintenance:

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

**Always** release compressed air after use.

**Never** service the valve when it is hot.

**Never** service the valve with the valve and pipeline under pressure.

**Never** touch the moving parts if the actuator for force opening is supplied with compressed air.



#### Transportation:

**Always** ensure that compressed air is released.

**Always** ensure that all connections are disconnected before attempting to remove the valve from the installation.

**Always** drain liquid out of valves before transportation.

---

*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.

#### Check the delivery for:

- Complete valve
  - Instruction manual
- 

#### Step 2

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

---

### 3.2 General installation

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#### Step 1



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



**Always** release compressed air of actuator for force opening after use.

##### CAUTION

Alfa Laval cannot be held responsible for incorrect installation.

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### 3 Installation

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

#### 3.3 Valve installation

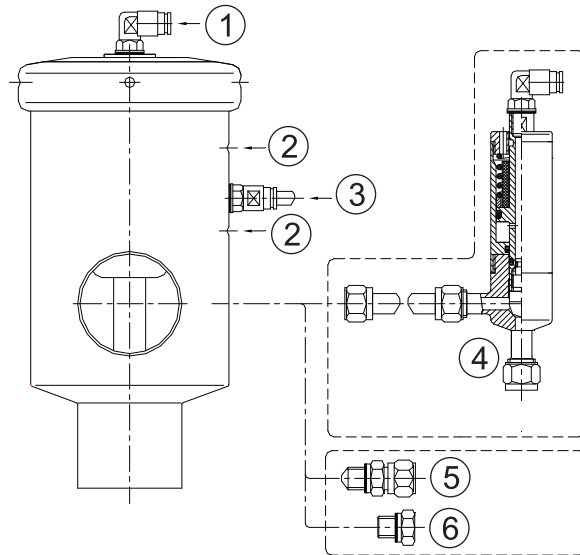
The Pressure Exhaust valve is produced with male part acc. DIN 11851 or weld end acc. ISO 2037

Connections for control air and force opening are 1/8" BSP, delivered with fittings for O.D 6 x 1 mm nylon hoses.

Cleaning nozzle and closing plug are included

The cleaning nozzle is equipped with a fitting for O.D 8 x 1 mm stainless steel pipe and should further be equipped with a CIP supply valve if needed.

- Pos. 1. Set point pressure
- Pos. 2. Leakage indicator hole
- Pos. 3. Force opening pressure
- Pos. 4. CIP supply valve
- Pos. 5. Cleaning nozzle
- Pos. 6. Closing plug

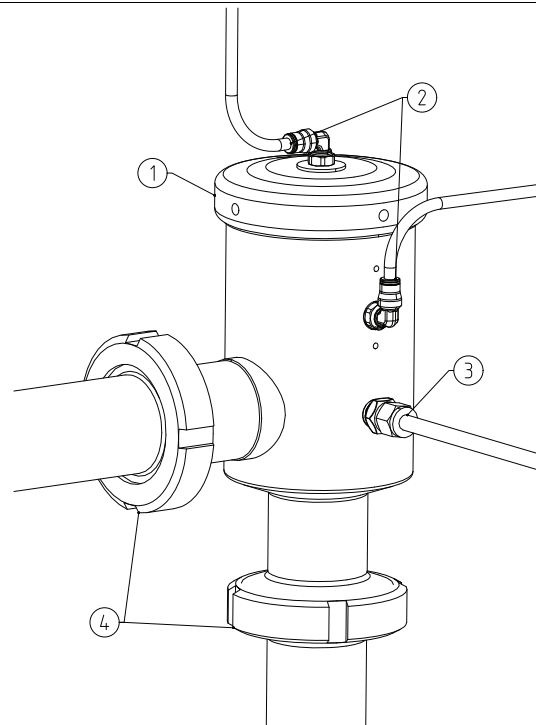


#### Union connection

- The Pressure Exhaust valve should preferably be mounted in a vertical position.
- Ensure the valve nut is tight (pos. 1).
- Ensure the valve air supply connections are tight (pos. 2).
- Ensure the cleaning nozzle or closing plug is tight (pos. 3).
- Ensure that the in and outlet connections are tight (pos. 4).

#### Weld connection

- Before welding, the valve must be disassembled so the gasket and O-rings are not damaged by the heat.
- For disassembly and assembly procedures, please refer to chapter 5 Maintenance.
- The Pressure Exhaust valve should preferably be mounted in a vertical position.
- Ensure the valve nut is tight (pos. 1).
- Ensure the valve air supply connections are tight (pos. 2).
- Ensure the cleaning nozzle or closing plug is tight (pos. 3).
- Ensure that the in and outlet connections are tight (pos. 4).





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

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### 3.4 Recycling information

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#### 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 Operation

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Study the instructions carefully and pay special attention to the warnings!  
Ensure that the valve operates smoothly.  
The items refer to the parts list and service kits section.

---

### 4.1 Operation

---

#### Step 1



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

#### CAUTION

Alfa Laval cannot be held responsible for incorrect operation.



**Always** release compressed air after use.

---

#### Step 2



**Never** touch the valve or the pipelines when processing hot liquids or when sterilising.

#### Burn hazard!



#### Step 3



**Never** touch the moving parts if the actuator is supplied with compressed air.

#### Moving parts!



- The Pressure Exhaust valve is operated by means of a set point pressure being applied to the top of the valve.
  - The pressure regulation will be identical to the set point pressure.
  - When the system pressure exceeds the set point pressure, the valve will open and blow off through the valve side branch for atmospheric discharge or collection.
  - To ensure correct working conditions there should be no backpressure after the vent port.
  - The set point pressure is adjusted to the required pressure either by means of a manual precision regulator or an IP converter controlled by a PLC.
-

Study the instructions carefully and pay special attention to the warnings!  
 Ensure that the valve operates smoothly.  
 The items refer to the parts list and service kits section.

### 4.2 Recommended cleaning



**Always** handle lye and acid with great care.

**Caustic hazard!**



**Always** use  
rubber gloves!

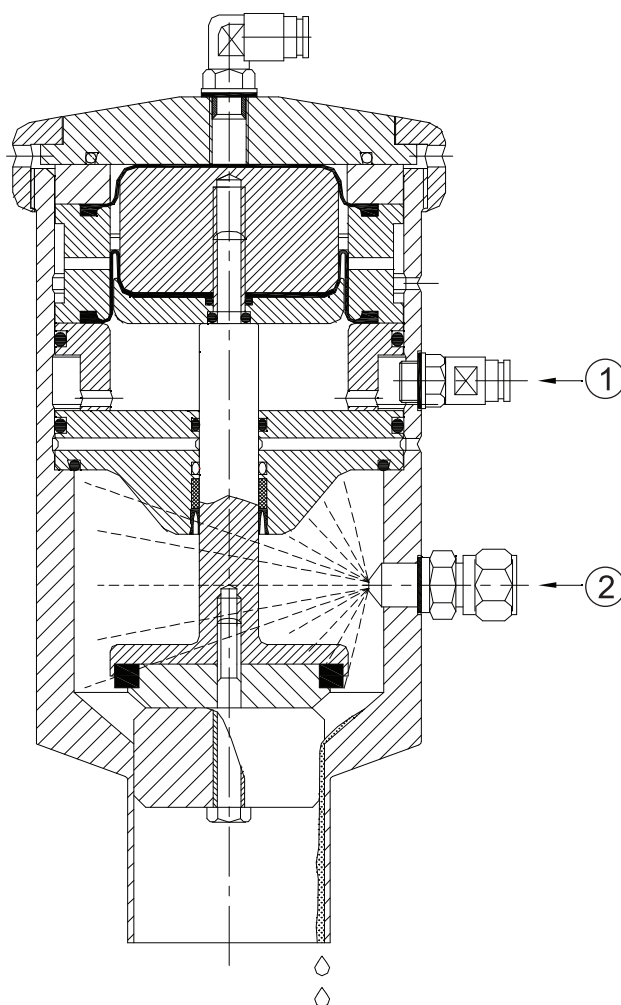


**Always** use  
protective goggles!

During CIP, the valve is force opened, letting the liquid run into the tank.  
 CIP liquid is let into the house through the nozzle on the side of the house.

#### Step 1

- Force opening pressure is applied 5-10 bar (Pos. 1)
- Cleaning fluid is applied through cleaning nozzle (Pos. 2)



## 5 Maintenance

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*Maintain the valve regularly.*

*Study the instructions carefully and pay special attention to the warnings!*

*Always keep spare rubber and seal parts in stock.*

*Check the valve for smooth operation after service.*

---

### 5.1 General maintenance

---

#### Step 1



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



All scrap must be stored/disposed of in accordance with current regulations.

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**Always** release compressed air after use.

---

#### Step 2



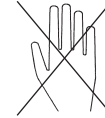
**Never** service the valve when it is hot.

**Atmospheric pressure required!**



**Never** service the valve with the valve and pipelines under pressure.

**Burn hazard!**



#### Step 3



**Never** touch the moving parts if the actuator is supplied with compressed air.

**Moving parts!**



---

A disciplined maintenance programme is essential to minimise breakdowns and maximise equipment life.

It is important that the valve is inspected regularly.

Gaskets and O-rings to be replaced approx. every 2-3 years.

Maintain the valve regularly.

Study the instructions carefully and pay special attention to the warnings!

Always keep spare rubber and seal parts in stock.

Check the valve for smooth operation after service.

### Step 1

#### Disassembling the valve

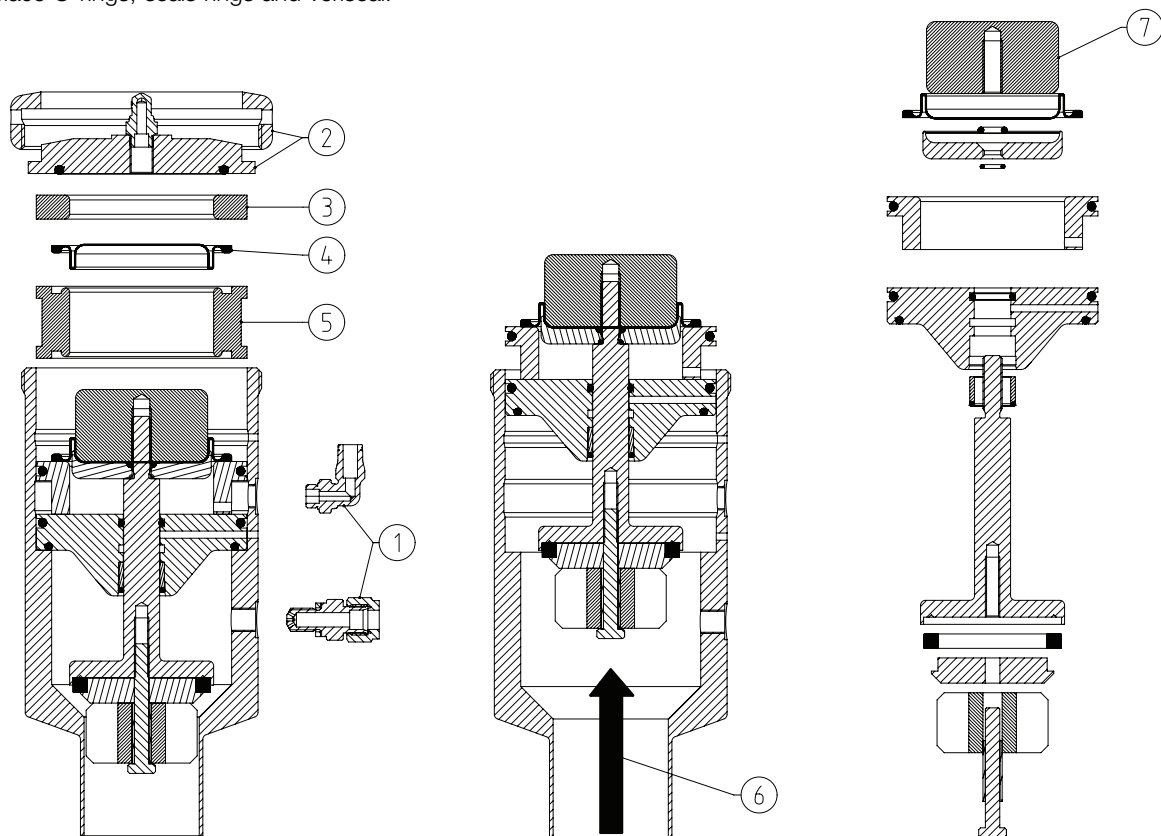
- Disconnect the pneumatic and CIP connections to the Pressure Exhaust Valve.
- Unscrew the connectors for force opener and cleaning nozzle (pos. 1).
- Unscrew valve nut and remove cover (pos. 2).
- Remove upper lining (pos 3.).
- Remove diaphragm (pos. 4).
- Remove intermediate lining (pos. 5).

### Step 2

- Using a nylon mallet, carefully knock out rest of the internal assembly (pos. 6).

### Step 3

- Unscrew piston for diaphragm (pos. 7).
- Dismantle remaining part
- Replace O-rings, seals rings and veriseal.



Assembly is carried out in the opposite order to disassembly.

**Note!** Top membrane must be fitted as in illustration. (shown on next page)

## 5 Maintenance

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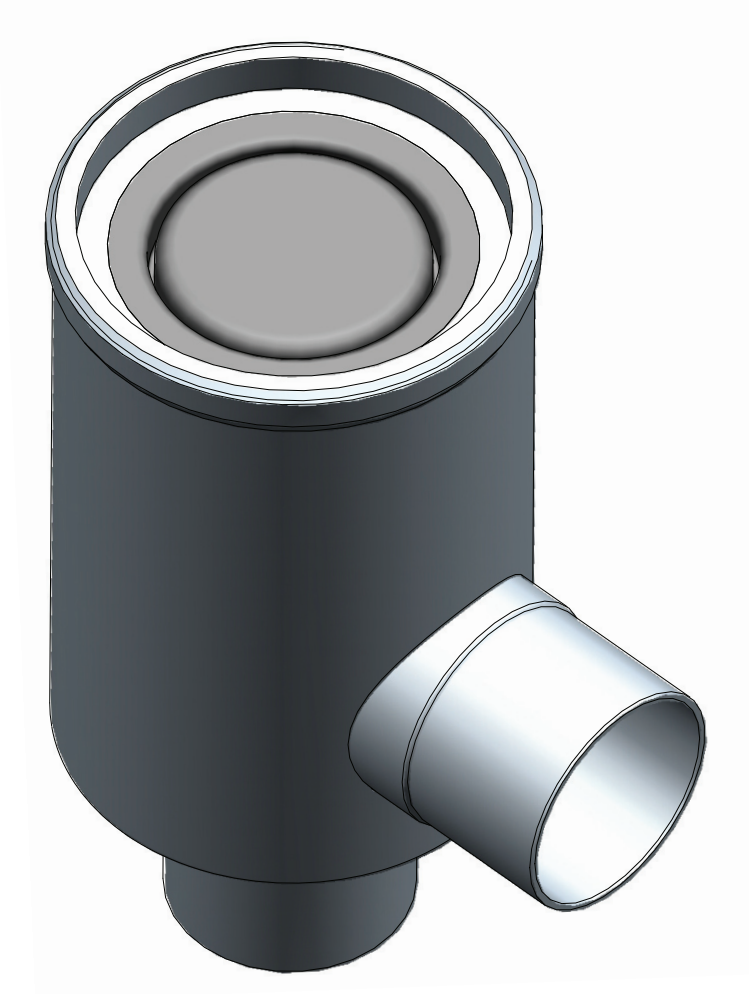
*Maintain the valve regularly.*

*Study the instructions carefully and pay special attention to the warnings!*

*Always keep spare rubber and seal parts in stock.*

*Check the valve for smooth operation after service.*

---



*It is important to observe the technical data during installation, operation and maintenance.  
All personnel should be informed about the technical data.*

## 6.1 Technical data

The Pressure Exhaust Valve is to be used in a system for remote control of the working pressure in tanks during a process creating increasing pressure. The Pressure Exhaust Valve can be mounted directly on top of the tank, as part of a tank top system or located elsewhere in the pipework.

### Valve data

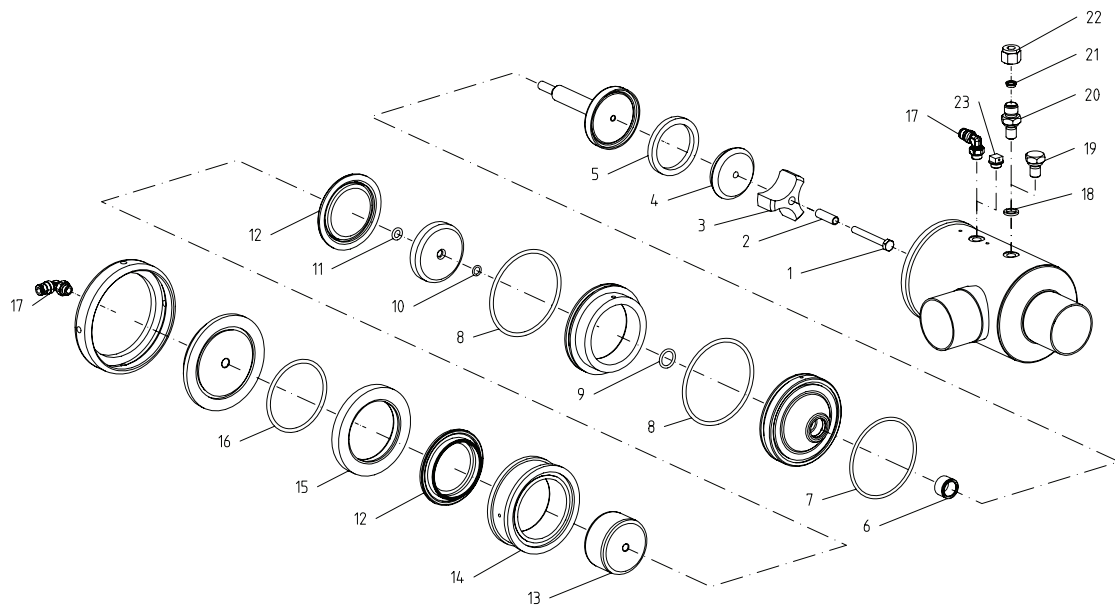
Nominal size	Working pressure	Weight
38 mm (1.5")	1-4 bar (14.5-58.0 psi)	2.7 kg
51 mm (2")	0.5-4 bar (7.2-58.0 psi)	5.6 kg

Nominal size	Working
38 mm (1.5")	1-4 bar (14.5-58.0 psi)
51 mm (2")	0.5-4 bar (7.2-58.0 psi)
Connection	
Unions	DIN 11851
Weld end acc.	ISO 2037
Force opening	
Max. air supply	20 bar (290 psi)
Min. air supply	5 bar (87 psi)
Noise of actuator	65 dB(A)
Materials	
Product wetted steel parts	EN 1.4404 (AISI 316L)
Product wetted steel surfaces	Surface roughness Ra<0.8 µm (<32 µ")
Product wetted O-rings	EPDM
Product wetted seals	EPDM
Product wetted polymers	Polypropylene

## 7 Parts List and Service Kits

*It is important to observe the technical data during installation, operation and maintenance.  
All personnel should be informed about the technical data.*

### 7.1 Pressure Exhaust; 38-51 mm





## 7 Parts List and Service Kits

*It is important to observe the technical data during installation, operation and maintenance.  
All personnel should be informed about the technical data.*

### Parts list

Pos.	Qty	Denomination
1	1	Screw
2	1	Bushing
3	1	Guide fin
4	1	Disc
5 <input type="checkbox"/>	1	Gasket, EPDM
6 <input type="checkbox"/>	1	Variseal
7 <input type="checkbox"/>	1	O-ring, EPDM
8 <input type="checkbox"/>	2	O-ring, NBR
9 <input type="checkbox"/>	1	O-ring, NBR
10 <input type="checkbox"/>	1	O-ring, NBR
11 <input type="checkbox"/>	1	O-ring, NBR
12	2	Diaphragm
13	1	Support for diaphragm
14	1	Intermediate lining for diaphragm
15	1	Upper lining for diaphragm
16 <input type="checkbox"/>	1	O-ring, NBR
17	2	Air inlet
18	1	Washer
19	1	Plug
20	1	CIP nozzle
21	1	Ferrule set
22	1	Nut
23	1	Water rejector

### Service kits

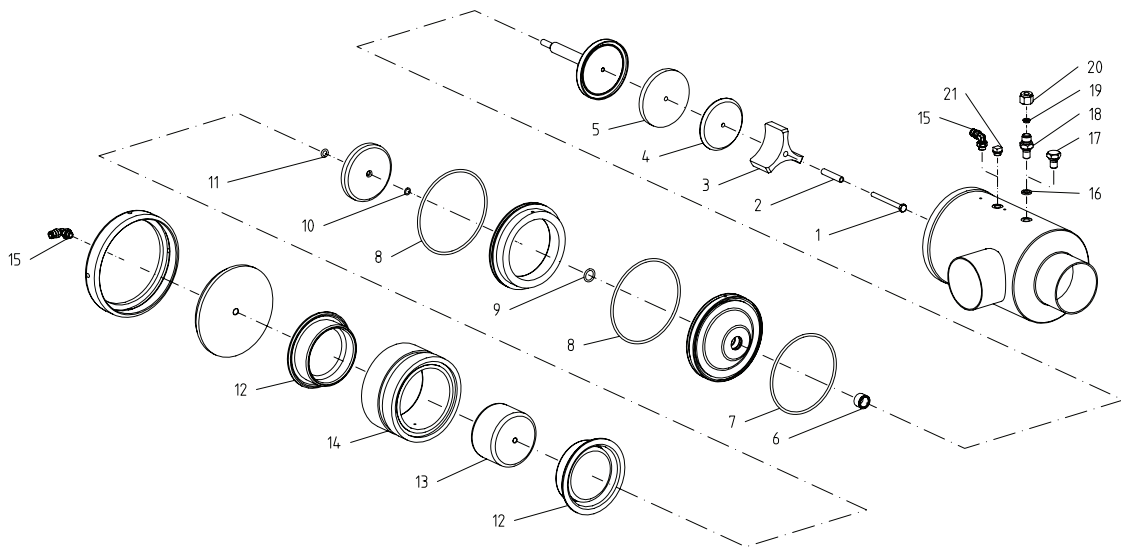
Denomination	38 mm	51 mm
<b>Service kits for Pressure Exhaust; 38-51 mm</b>		
<input type="checkbox"/> <b>Service Kit</b> .....	<b>9611924318</b>	<b>9611924319</b>

Parts marked with  are included in the service kits.

## 7 Parts List and Service Kits

*It is important to observe the technical data during installation, operation and maintenance.  
All personnel should be informed about the technical data.*

### 7.2 Pressure Exhaust; 76.1 mm



## 7 Parts List and Service Kits

*It is important to observe the technical data during installation, operation and maintenance.  
All personnel should be informed about the technical data.*

### Parts list

Pos.	Qty	Denomination
1	1	Screw
2	1	Bushing
3	1	Guide fin
4	1	Disc
5 <input type="checkbox"/>	1	Gasket, EPDM
6 <input type="checkbox"/>	1	Variseal
7 <input type="checkbox"/>	1	O-ring, EPDM
8 <input type="checkbox"/>	2	O-ring, NBR
9 <input type="checkbox"/>	1	O-ring, NBR
10 <input type="checkbox"/>	1	O-ring, NBR
11 <input type="checkbox"/>	1	O-ring, NBR
12	2	Diaphragm
13	1	Support for diaphragm
14	1	Intermediate lining for diaphragm
15	2	Air inlet
16	1	Washer
17	1	Plug
18	1	CIP nozzle
19	1	Ferrule set
20	1	Nut
21	1	Water rejector

### Service kits

Denomination

76.1 mm

#### Service kits for Pressure Exhaust, 76.1 mm

Service Kit ..... 9611924320

Parts marked with  are included in the service kits.

**How to contact Alfa Laval**

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

Please visit [www.alfalaval.com](http://www.alfalaval.com) to access the information directly.

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