



OPERATING INSTRUCTIONS

EN

Translation of the Original

SEK 15 - SEK 28 - SEK 40

Sound Enclosure Kit

Disclaimer of liability

These operating instructions describe all models and variants of your product. Note that your product may not be equipped with all features described in this document. Pfeiffer Vacuum constantly adapts its products to the latest state of the art without prior notice. Please take into account that online operating instructions can deviate from the printed operating instructions supplied with your product.

Furthermore, Pfeiffer Vacuum assumes no responsibility or liability for damage resulting from the use of the product that contradicts its proper use or is explicitly defined as foreseeable misuse.

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Table of contents

1	About this manual	4
1.1	Validity	4
1.1.1	Documents applicables	4
1.1.2	Products concerned	4
1.2	Target group	4
1.3	Conventions	4
1.3.1	Pictographs	4
1.3.2	Instructions in the text	5
1.3.3	Abbreviations	5
1.3.4	Labels	5
2	Safety	6
2.1	General safety information	6
2.2	Precautions	6
2.3	Safety instructions	7
2.4	Intended use	7
2.5	Foreseeable misuse	7
3	Product description	8
3.1	Product identification	8
3.1.1	Scope of delivery	8
3.1.2	Function	8
3.2	The Human/Machine Interface	8
3.3	Storage	9
4	Installation	10
4.1	Installation on the pump	10
5	Maintenance	12
5.1	On-site maintenance	12
5.2	Disposal	12
6	Spare parts	13
7	Technical data and dimensions	15
7.1	Technical characteristics	15
7.2	Dimensions	15

1 About this manual



IMPORTANT

Read carefully before use.

Keep the manual for future consultation.

1.1 Validity

This operating instructions is a customer document of Pfeiffer Vacuum. The operating instructions describe the functions of the named product and provide the most important information for the safe use of the device. The description is written in accordance with the valid directives. The information in this operating instructions refers to the product's current development status. The document shall remain valid provided that the customer does not make any changes to the product.

1.1.1 Documents applicables

Document	Part Number
ACP 15 Multi-stage Roots pump	123884
ACP 15 Multi-stage Roots pump V2	128853
ACP 28-40 Multi-stage Roots pumps	112369
ACP 28-40 Multi-stage Roots pumps V2	128852
ES 25S External silencer	109922

1.1.2 Products concerned

This document applies to products with the following part numbers:

Part Number	Description
122480	SEK 15 - Sound enclosure kit
114379	SEK 28 - SEK 40 Sound enclosure kit

This supplementary information describes the specific compared to the standard product and is only used in addition to the current operating instructions. Product use is similar to that of the standard product. The operator is responsible for using this supplementary information with the applicable documents cited.

1.2 Target group

This user manual is intended for all persons in charge of transport, installation, commissioning/decommissioning, use, maintenance or storage of the product.

The work described in this document must only be carried out by persons with suitable technical training (specialized staff) or persons who have undergone Pfeiffer Vacuum training.

1.3 Conventions

1.3.1 Pictographs

Pictographs used in the document indicate useful information.



Note



Tip

1.3.2 Instructions in the text

Usage instructions in the document follow a general structure that is complete in itself. The required action is indicated by an individual step or multi-part action steps.

Individual action step

A horizontal, solid triangle indicates the only step in an action.

- This is an individual action step.

Sequence of multi-part action steps

The numerical list indicates an action with multiple necessary steps.

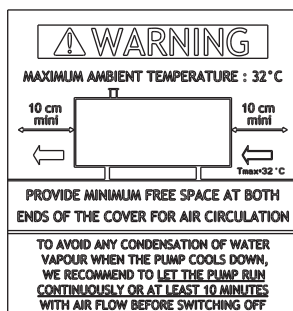
1. Step 1
2. Step 2
3. ...

1.3.3 Abbreviations

Exh.
IN

Exhaust
Inlet flange

1.3.4 Labels



This label indicates:

- the ambient use temperature should not be exceeded.
- the minimum space that should be provided around the cover for air circulation.
- the manipulation to be performed to prevent water condensation from forming.

The product comes with a sheet of labels including other language versions. The installer must stick these labels to the most appropriate and visible place on the pump to warn the operator about potential hazards.

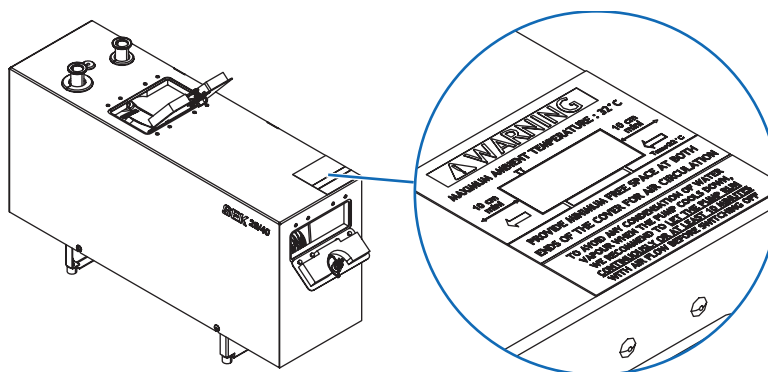


Fig. 1: Location of safety labels

2 Safety

2.1 General safety information

The following 4 risk levels and 1 information level are taken into account in this document.

DANGER

Immediately pending danger

Indicates an immediately pending danger that will result in death or serious injury if not observed.

- Instructions to avoid the danger situation

WARNING

Potential pending danger

Indicates a pending danger that could result in death or serious injury if not observed.

- Instructions to avoid the danger situation

CAUTION

Potential pending danger

Indicates a pending danger that could result in minor injuries if not observed.

- Instructions to avoid the danger situation

NOTICE

Danger of damage to property

Is used to highlight actions that are not associated with personal injury.

- Instructions to avoid damage to property



Notes, tips or examples indicate important information about the product or about this document.

2.2 Precautions



Duty to provide information on potential dangers

The product holder or user is obliged to make all operating personnel aware of dangers posed by this product.

Every person who is involved in the installation, operation or maintenance of the product must read, understand and adhere to the safety-related parts of this document.



Infringement of conformity due to modifications to the product

The Declaration of Conformity from the manufacturer is no longer valid if the operator changes the original product or installs additional equipment.

- Following the installation into a system, the operator is required to check and re-evaluate the conformity of the overall system in the context of the relevant European Directives, before commissioning that system.

Installation and maintenance procedures described in this manual must be performed by qualified technicians trained in the relevant health and safety aspects (EMC, electrical safety, chemical pollution). Our service centers can provide the necessary training.

- Do not expose any part of the human body to the vacuum.
- Comply with all safety and risk prevention instructions in accordance with local safety standards.
- Regularly check compliance with all precautionary measures.
- The protections provided by the pump are not guaranteed if the pump is used in a manner not specified in this manual.

- ▶ Do not remove the blanking plates sealing the inlet and exhaust ports if the product is not connected to the pumping line.
- ▶ Do not operate the product unless the inlet and exhaust are connected to a vacuum and exhaust pumping line.

2.3 Safety instructions

All safety instructions in this document are based on the results of the risk assessment carried out in accordance with Machinery Directive 2006/42/EC Annex II and EN ISO 12100 Section 5. Where applicable, all life cycle phases of the product were taken into account.

WARNING

Risk of gas build-up under the SEK cover

The manufacturer has no control over the types of gases used with the pump. Process gases are often toxic, flammable, corrosive, explosive or reactive. There is a risk of serious or fatal injury if these gases are allowed to escape freely into the atmosphere.

- ▶ Apply the relevant safety instructions in accordance with local regulations. This information is available from the operator's safety department.
- ▶ **The pump exhaust must be connected** to the installation's dangerous gases extraction system.
- ▶ Regularly check that there are no leaks where the pump connects to the exhaust pipework.
- ▶ **Regularly check that there is no gas under the SEK cover**, as well as the condition and tightness of the pump.

NOTICE

Risk of overheating

Poor ventilation could lead internal components to overheat:

- ▶ do not use the sound enclosure cover at an ambient temperature above 32°C,
- ▶ do not obstruct the venting grids.
- ▶ leave a free space of 10 cm in front of and behind the sound enclosure cover.



To prevent water vapor formation

To prevent any water vapor condensation when the pump cools down, operate the pump for 30 minutes with the gas ballast open to eliminate the condensable gases.

2.4 Intended use

The sound enclosure kits are designed to reduce the sound level when the pump is in use.

- The SEK sound enclosure kits are only used with the multi-stage Roots pumps with which they are compatible (see chapter "Applicable Documents").

2.5 Foreseeable misuse

Misuse of the product will render the warranty and any claims void. Any use, whether intended or not, that diverges from the uses already mentioned will be treated as non-compliant; this includes but is not limited to:

- connection of the pumps and devices for which it is not intended
- connection of devices that are not electrically insulated,
- accessories or spare parts that are not mentioned in this manual
- pumping applications for flammable products such as oxygen and silane
- microelectronic applications, LPCVD, LTO because of the incompatibility of the filtration element
- drying applications, lyophilization, pumping of condensable substances, impregnation using polymerizable resins, debubbling of monomers
- The product is not designed to carry people or loads and should not be used as a seat, stepladder or similar.

3 Product description

3.1 Product identification

To correctly identify the product when communicating with our service center, always have the information from the product rating plate available.

3.1.1 Scope of delivery

Delivered with	SEK 15	SEK 28	SEK 40
Noise reduction cover	1	1	1
DN 25 ISO-KF extension	1	2	1
DN 40 ISO-KF extension	-	-	1
DN 25 ISO-KF quick-connect clamp	1	2	1
DN 40 ISO-KF quick-connect clamp	-	-	1
250 µm conical filter	-	1	1
M5 x 10 RLS screw	-	4	4
M6 x 16 CBHC screw	4	-	-
Base	1	1	1
Centering ring	-	1	1
External silencer ES 25S	1	-	-

3.1.2 Function

The SEK sound enclosure kits are accessories for the ACP 15, 28 and 40 pumps.

They significantly reduce the sound level (-20dBA) when the pump is in operation.

The external silencer ES 25S is installed at the ACP 15 pump exhaust. It significantly reduces the sound level when pumping at high pressure.

3.2 The Human/Machine Interface

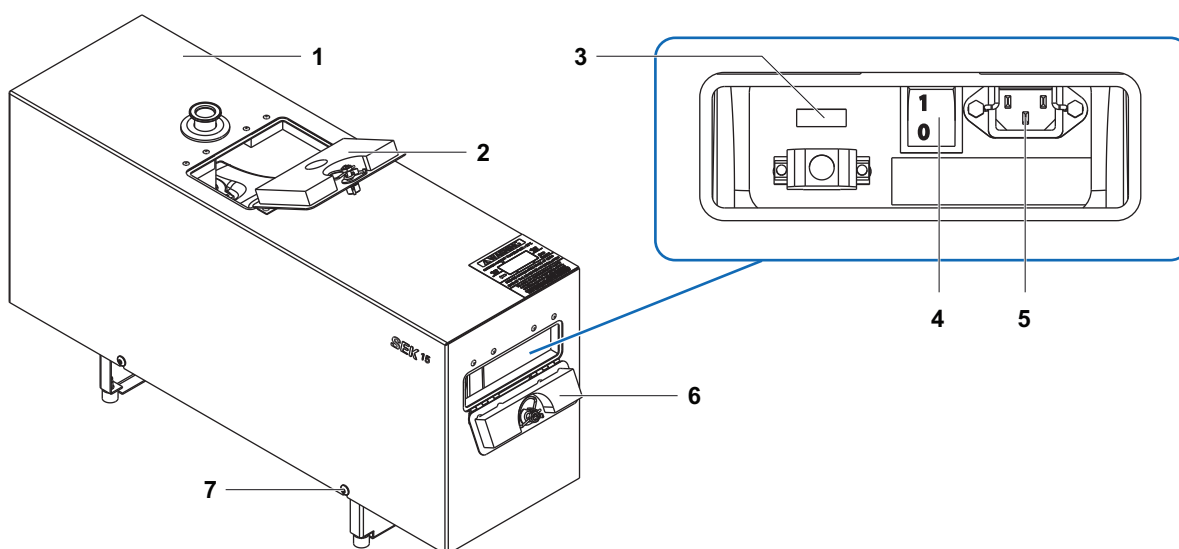


Fig. 2: SEK 15

- | | |
|--|------------------------------------|
| 1 Noise reduction cover | 5 Electrical connector |
| 2 Upper hatch/Access to the manual gas ballast | 6 Rear hatch/Access to powering on |
| 3 Time counter | 7 Cover securing screw. |
| 4 ON/OFF switch | |

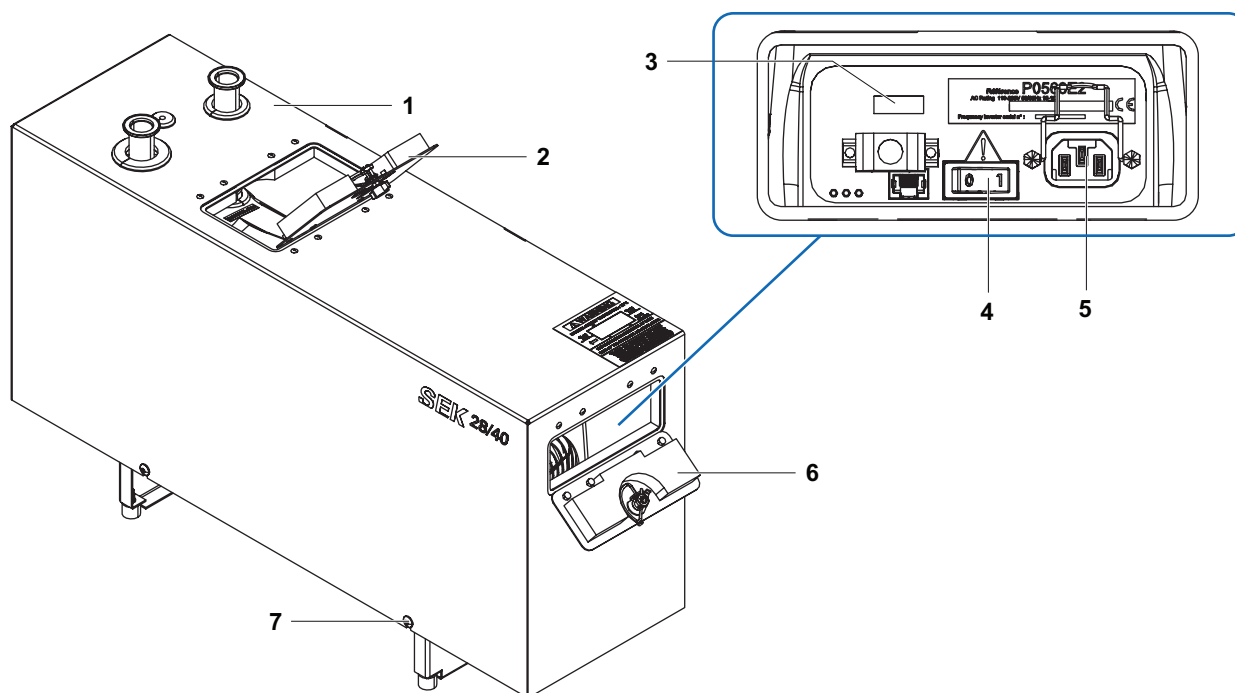


Fig. 3: SEK 28 - 40

- | | |
|--|------------------------------------|
| 1 Noise reduction cover | 5 Electrical connector |
| 2 Upper hatch/Access to the manual gas ballast | 6 Rear hatch/Access to powering on |
| 3 Time counter | 7 Cover securing screw. |
| 4 ON/OFF switch | |

3.3 Storage

If the new product is to be stored:

- ▶ Store the product in its original packaging in a clean, dry, and unpolluted environment.
- ▶ Store the product within the storage temperature range (+5 – +65 °C).
- ▶ Make sure the product is not crushed during storage.

If the product has been unpacked, used, or stored for a long duration (> 1 year):

- ▶ Perform the necessary servicing before installing it (see chapter “Maintenance”)

4 Installation

General instructions for installing the pump in the pumping line in accordance with industry best practice

1. Pumps equipped with their own sound enclosure cover require good ventilation to prevent overheating.
2. Carry out installation on a stopped and switched off pump.
3. Use the connecting accessories supplied with the sound enclosure kit.
4. Only use accessories on the pumping line, for the inlet and exhaust lines, with materials and sealing properties that are compatible with the gases being pumped. Refer to the connection accessories catalog available at the [Pfeiffer-Vacuum](https://www.pfeiffer-vacuum.com) website.
5. When assembling the pumping line, include accessories for isolating the pump from the pumping line and making maintenance easier to carry out (pump inlet and exhaust isolation valves, purge valves, etc.).
6. Remove the blanking plates used to seal the inlet and exhaust ports.

4.1 Installation on the pump

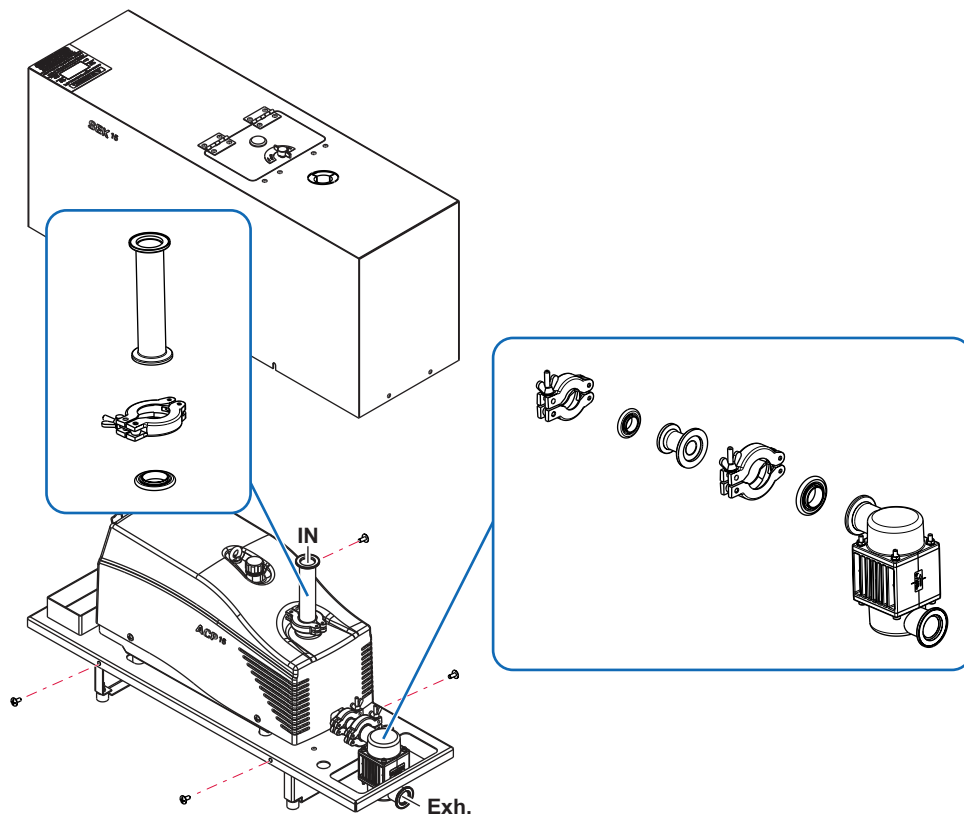


Fig. 4: Installation of SEK 15 on the ACP 15 pump

Installation procedure for SEK 15 on the ACP 15 pump

1. Place the pump on the base.
2. Install the DN 25 ISO-KF extension on the inlet flange.
 - The C5 D28 seal is placed between the inlet flange and the extension.
 - The DN 25 ISO-KF quick-connect clamp holds the assembly on the inlet flange.
3. Fit the external silencer ES 25S on the pump exhaust (Operating Instructions - ES 25S - Part Number 109922).
4. Fit the noise reduction Cover on the base.
5. Secure the cover to the base on each side using M6 x 16 CBHC screws.
6. Connect the pump to the electrical supply.

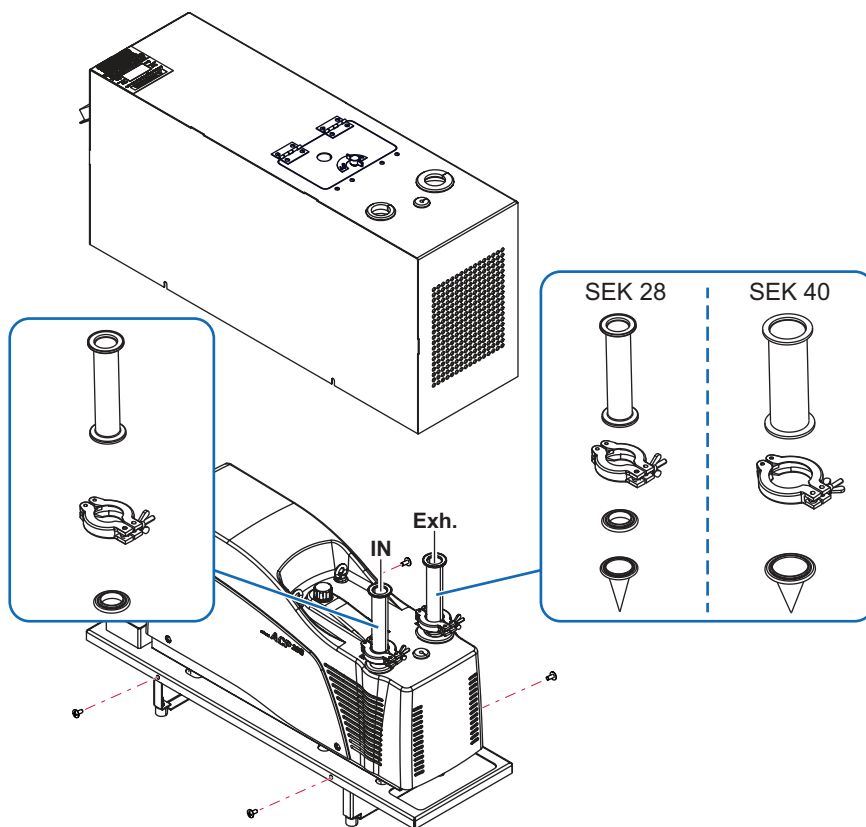


Fig. 5: Installation of SEK 28-40 on the ACP 28 or ACP 40 pump

Installation procedure for SEK 28-40 on the ACP 28 or ACP 40 pump

1. Place the pump on the base.
2. Install the DN 25 ISO-KF extension on the inlet flange.
 - The C5 D28 seal is placed between the inlet flange and the extension.
 - The DN 25 ISO-KF quick-connect clamp holds the assembly on the inlet.
3. Install the extension corresponding to the pump model on the pump exhaust.
4. Fit the noise reduction Cover on the base.
5. Secure the cover to the base on each side using M5 x 10 RLS screws.
6. Connect the pump to the electrical supply.

5 Maintenance

5.1 On-site maintenance

The cover does not require any maintenance on the customer's premises other than the day-to-day servicing described in this manual. All other maintenance must be carried out by the service center.

- ▶ Clean the outer surfaces of the product using a clean, lint-free cloth and a product that will not damage the screen-printed surfaces or adhesive labels.
- ▶ Remove dust from the venting slats with a cloth. Do not use compressed air blower.

5.2 Disposal



Environmental protection

The product and its components **must be disposed of in accordance with the applicable regulations relating to environmental protection and human health**, with a view to reducing natural resource wastage and preventing pollution.

Our products contain different materials which must be recycled. Take special precautions for:

- fluoroelastomers which may breakdown if they are exposed to high temperatures
- components in contact with the products resulting from the processes which may have been contaminated
- a used filtration element should not be discarded of in the usual manner: call a qualified organization for disposal

6 Spare parts

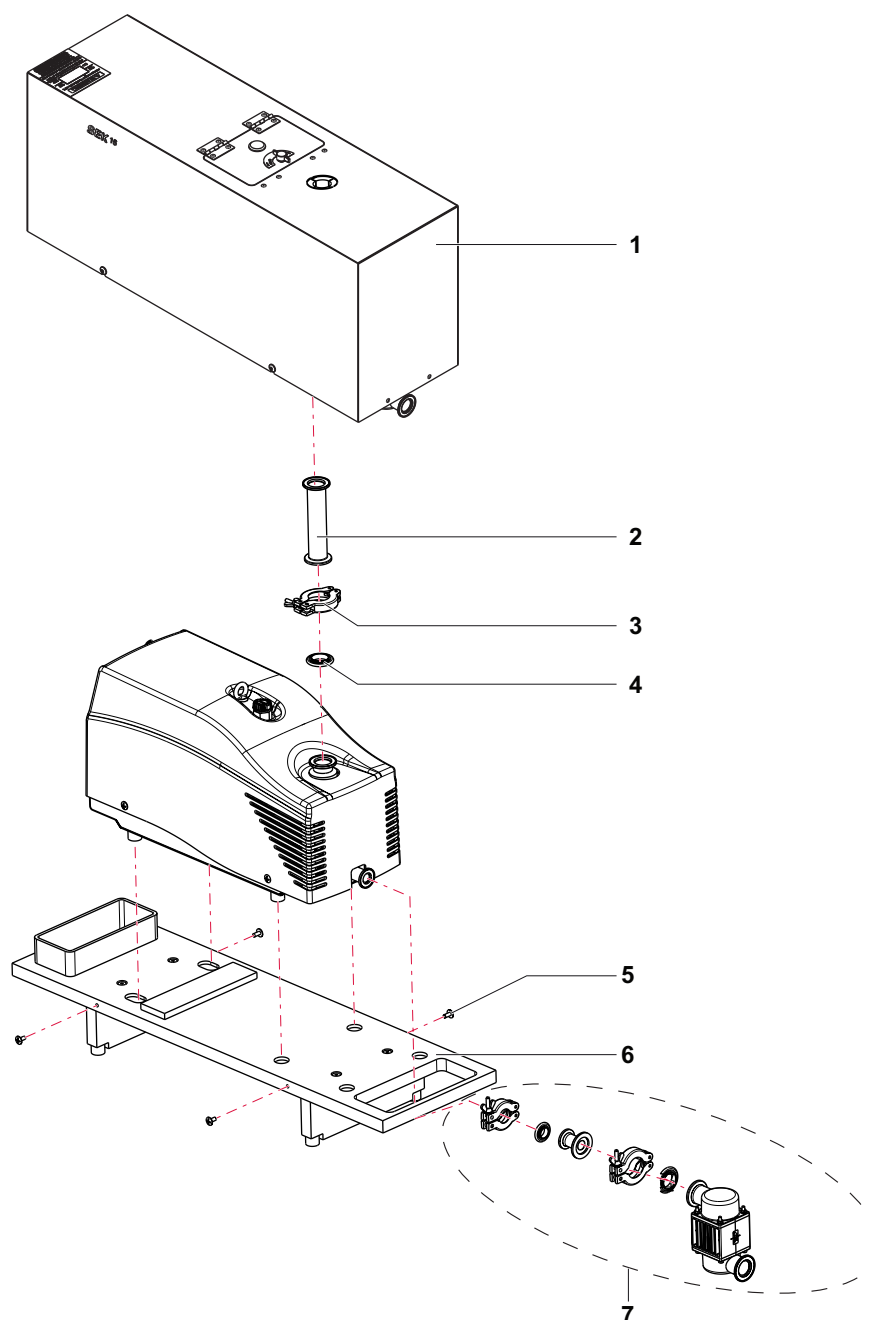


Fig. 6: SEK 15

Mark	Description	Quantity	Part Number
1	Noise reduction cover	1	-
2	DN 25 ISO-KF extension	1	A462855
3	DN 25 ISO-KF quick-connect clamp	1	083264
4	C5 D28 seal	1	-
5	M6 x 16 CBHC screw	4	-
6	Base	1	-
7	External silencer ES 25S	1	112785

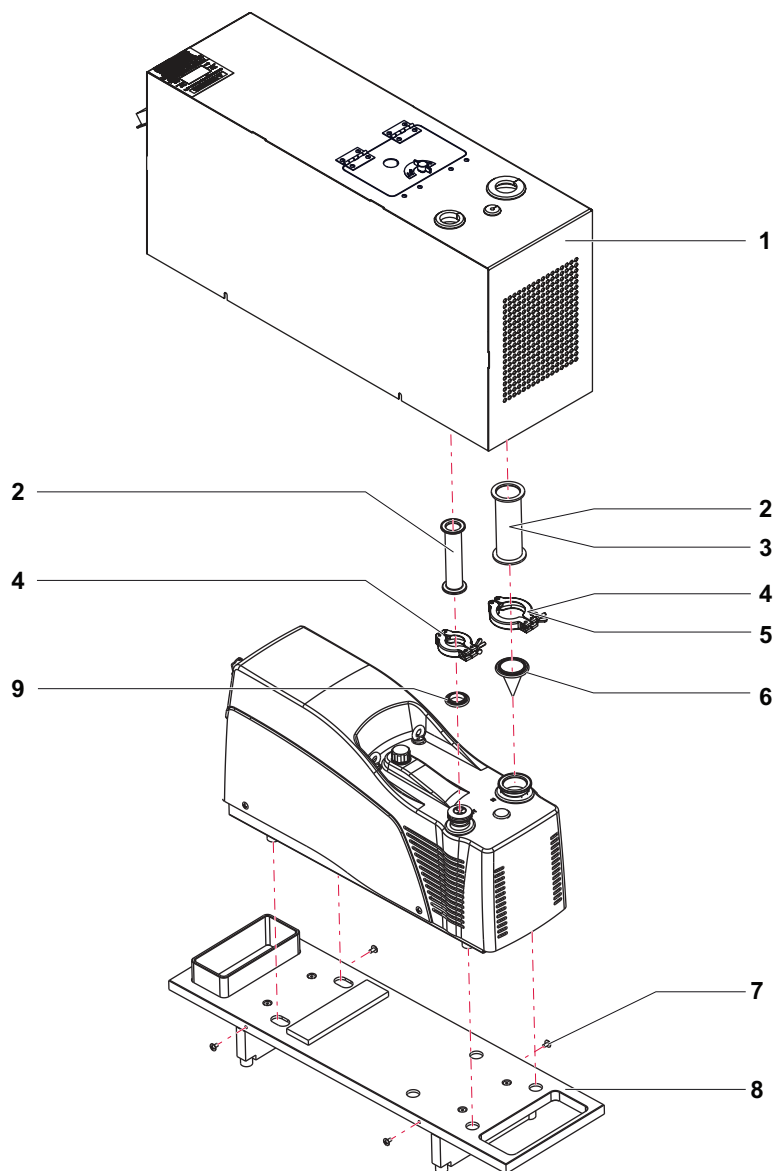


Fig. 7: SEK 28 - SEK 40

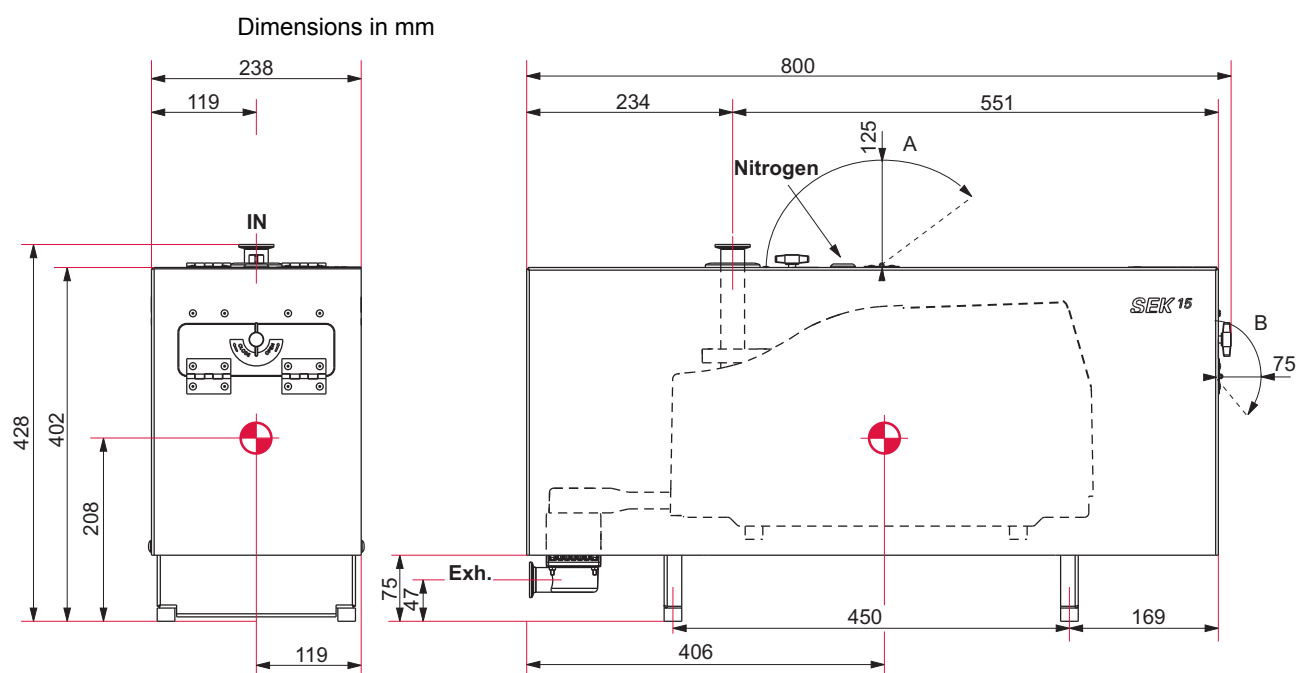
Mark	Description	Quantity		Part Number
		SEK 28	SEK 40	
1	Noise reduction cover	1	1	-
2	DN 25 ISO-KF extension	2	1	A462855
3	DN 40 ISO-KF extension	0	1	303024
4	DN 25 ISO-KF quick-connect clamp	2	1	083264
5	DN 40 ISO-KF quick-connect clamp	0	1	-
6	250 µm conical filter	1	1	-
7	M5 x 10 RLS screw	4	4	-
8	Base	1	1	-
9	DN 25 ISO-KF FPM Centering ring	2	1	068229



7 Technical data and dimensions


7.1 Technical characteristics

	SEK 15 - SEK 28 - SEK 40
Use temperature: ambient temperature	12°C<T<32°C
Weight	24 kg
Sound level reduction	-10 dB (A)
Product use	Interior
Protection rating (IP)	20

7.2 Dimensions



-  Center of gravity
 Opening radius of the upper hatch

-  Opening radius of the rear hatch

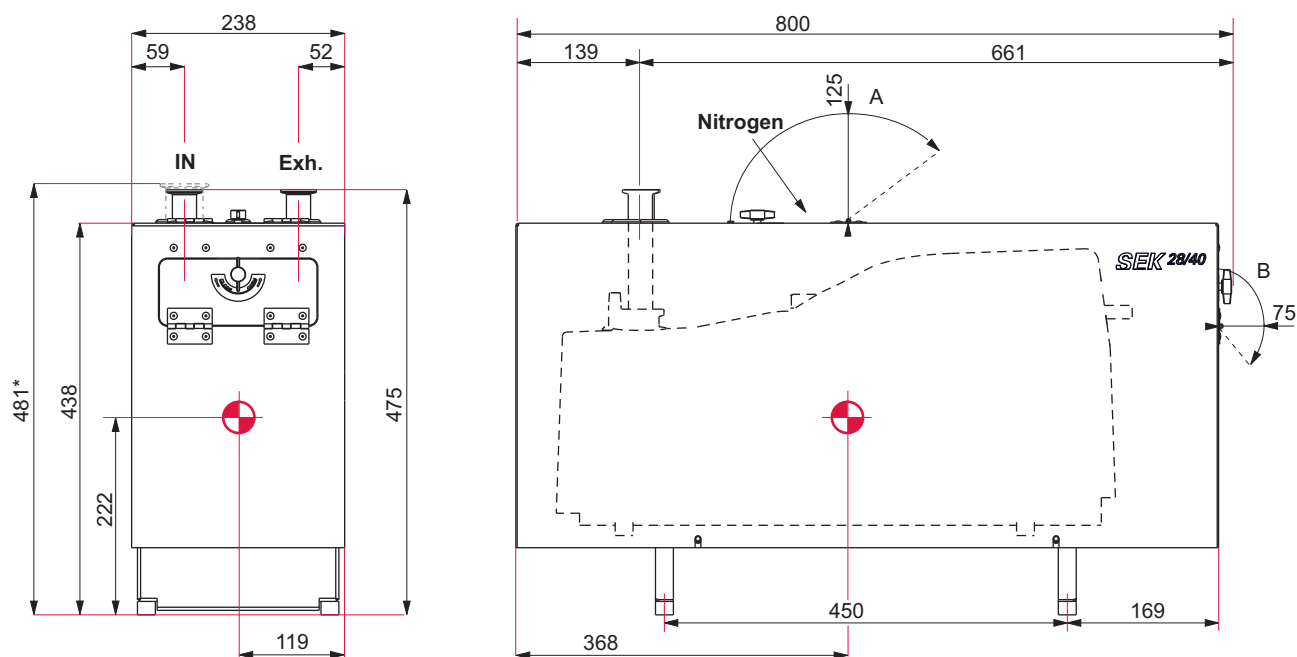


Fig. 9: Dimensions SEK 28- 40



Center of gravity

A

Opening radius of the upper hatch

B

Opening radius of the rear hatch

*

SEK 40

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COMPETENCE IN THEORY AND PRACTICE

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