



OPERATING INSTRUCTIONS

EN

Translation of the original instructions

FAK 025/040/063/100

Adsorption filter

PFEIFFER  **VACUUM**

Table of contents

1	About this manual	3
1.1	Validity	3
1.2	Conventions	3
2	Safety	4
2.1	Safety precautions	4
2.2	Proper use	4
2.3	Improper use	4
3	Transport and storage	5
3.1	Storage	5
4	Product description	5
4.1	Product identification	5
4.2	Function	5
4.3	Range of application	6
5	Installation	6
5.1	Assembling	6
6	Operation	6
7	Maintenance	7
7.1	Dismantling	7
7.2	Assembly	9
8	Service	10
9	Technical data	11
9.1	Dimensions	11
10	Spare parts	13
10.1	Spare parts packages	13
11	Accessories	13
12	Disposal	13

1 About this manual

1.1 Validity

This operating manual is for customers of Pfeiffer Vacuum. It describes the functioning of the designated product and provides the most important information for safe use of the unit. The description follows applicable EU guidelines. All information provided in this operating manual refers to the current state of the product's development. The documentation remains valid as long as the customer does not make any changes to the product.

Up-to-date operating instructions can also be downloaded from www.pfeiffer-vacuum.com.

1.2 Conventions

Safety instructions

The safety instructions in Pfeiffer Vacuum operating instructions are the result of risk evaluations and hazard analyses and are oriented on international certification standards as specified by UL, CSA, ANSI Z-535, SEMI S1, ISO 3864 and DIN 4844. In this document, the following hazard levels and information are considered:

DANGER	
Imminent danger	Indicates an imminent hazardous situation that will result in death or serious injury.
WARNING	
Possibly imminent danger	Indicates an imminent hazardous situation that can result in death or serious injury.
CAUTION	
Possibly imminent danger	Indicates an imminent hazardous situation that can result in minor or moderate injury.
NOTICE	
Command or note	Command to perform an action or information about properties, the disregarding of which may result in damage to the product.

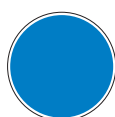
Pictographs



Prohibition of an action to avoid any risk of accidents, the disregarding of which may result in serious accidents



Warning of a displayed source of danger in connection with operation of the unit or equipment



Command to perform an action or task associated with a source of danger, the disregarding of which may result in serious accidents



Important information about the product or this document

Instructions in the text

→ Work instruction: here you have to do something.

Abbreviations

FAK: Adsorption filter

2 Safety

2.1 Safety precautions



Duty to inform

Each person involved in the installation or operation of the unit must read and observe the safety-related parts of these operating instructions.

→ The operator is obligated to make operating personnel aware of dangers originating from the unit or the entire system.

- Before carrying out any work read and observe the operating and safety instructions of the pumping station and the individual components.
- Observe the safety and accident prevention regulations.
- Check regularly that all safety precautions are being complied with.
- When returning the components to us please note the instructions in the Service section.

2.2 Proper use

- Adsorption-Filters are normally fit in the suction line of a vacuum pump.
- In certain cases it is recommended to fit a carbon filter inline (behind) with an oil mist filter in the exhaust line.
- Installation, operating and maintenance regulations must be complied with.
- Other accessories, than those described in this manual, must not be used without the agreement of Pfeiffer Vacuum.

2.3 Improper use

Improper use will cause all claims for liability and warranties to be forfeited. Improper use is defined as usage for purposes deviating from those mentioned above, especially:

- connection to pumps or units which are not suitable for this purpose according to their operating instructions
- connection to units which have exposed voltage-carrying parts
- use of accessories or spare parts, which are not named in this manual

3 Transport and storage

3.1 Storage

On delivery, FAK filters are filled with filling material. The filter material is heavily hygroscopic. They should not be exposed to the atmosphere for an extended period of time, because the large water absorption can lead to longer pumping times.

4 Product description

4.1 Product identification

To correctly identify the product when communicating with Pfeiffer Vacuum, always have the information from the rating plate available.

4.2 Function

Certain processes generate vapours which are detrimental to the working life of rotary vane vacuum pumps and their operating fluid. With their high adsorption rate, filters are also extremely efficient even at low contamination concentration levels in the vapour mixtures. The adsorption filters FAK are filled with activated carbon. A filter insert for the filling material is arranged in a cylindrical housing. The bottom and the removable cover of the filter insert act as a strainer. The filter cover prevents the filling material from falling out if the filter is tilted. Owing to the metallic seal of the filter insert between the cover and the filter housing, pumped media from the vacuum pump (either from the intake side or from the exhaust side) are forced through the filling material.



Fig. 1: FAK 040

4.3 Range of application

Activated carbon filter FAK (adapted for inorganic media)

Activated carbon filters are used where H₂S-, HCN-, Hg-, NH₃- and SO₂- vapours, nitrous gases and vaporous solvents, acids and alkalis are involved.

5 Installation

5.1 Assembling



NOTICE

Danger of contaminating the operating fluid of the rotary vane pump!

Because of vibrations during transport filling abrasion can occur and leak from the strainer at the connecting flange X of the filter FAK.

→ Shake off the abrasion and clean the connection port before installation, if necessary suck off abrasion.

→ Always install FAK 025/040/063/100 vertically to maintain the required through flow direction.

→ Remove the protective caps from the connection flanges.

→ Place filter with flange "X" on the intake side of the rotary vane pump and fasten it with the clamping ring (accessory) or bracket screws (accessory) if clamp flanges are used; take care with the centering ring.

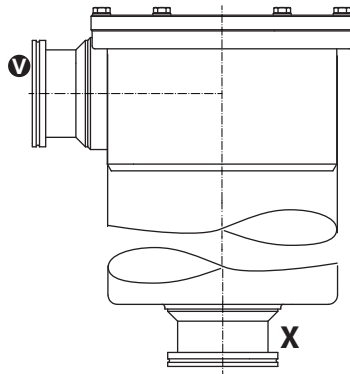


Fig. 2: Permissible installation positions

6 Operation

It is important to check the differential pressure regularly to ensure that the air filters work properly.

→ Note the initial pressure loss of the filter in clean condition.

→ Clean the filter insert when the initial value is exceeded by 25 ... 35 hPa.

→ Check the status and correct position of the filter housing and cover seals.

7 Maintenance



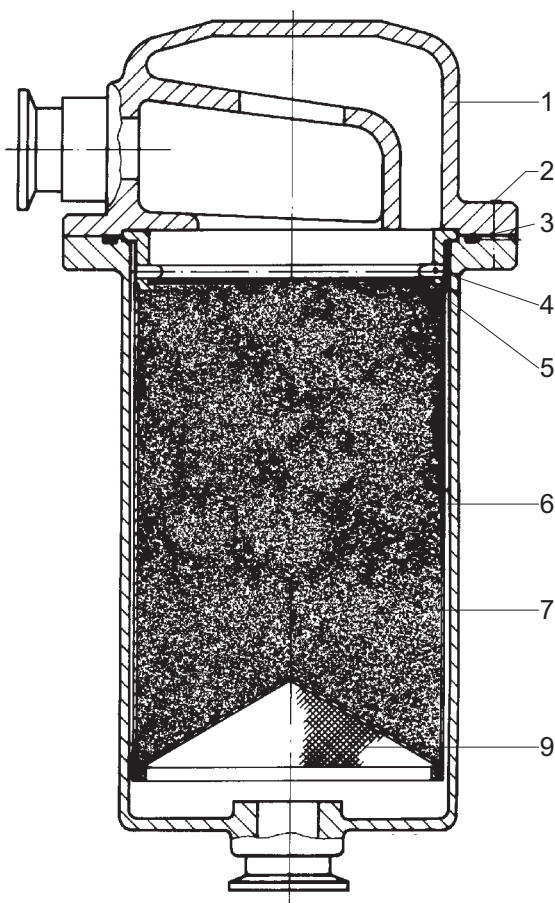
Maintenance: Exchange of the activated carbon!

Filter maintenance means the replacement of the activated carbon. The working life of the activated carbon depends on the process involved. As the level of contamination increases, conductance and effective volume flow rate decrease. In a revision O-rings and strainers should be replaced.

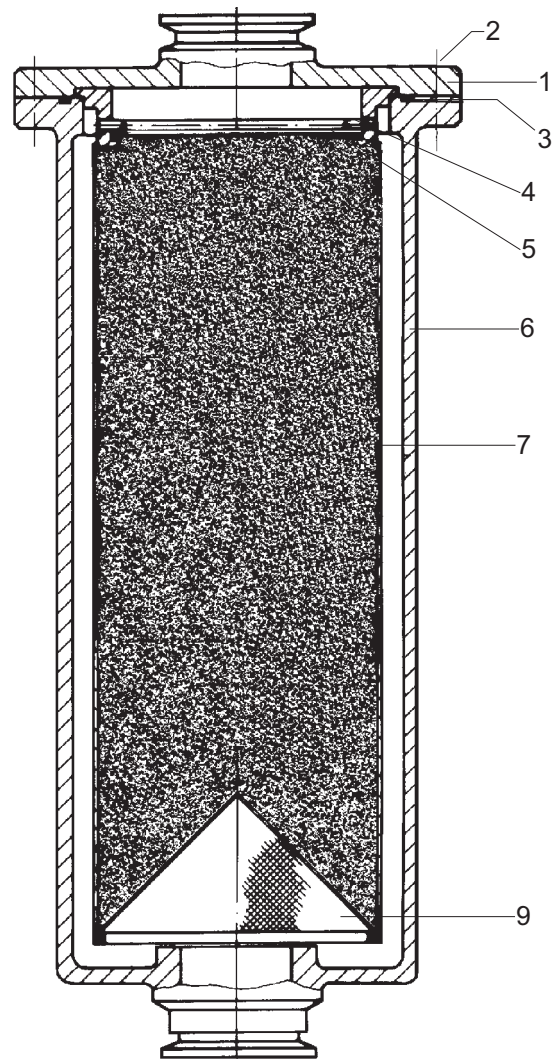
The two filters FAK 025 and FAK 040 must be removed from the piping system for the exchange of the filling material. In contrast, changing the filling material at FAK 063 and FAK 100 can be carried out in an installed condition.

7.1 Dismantling

FAK 025, FAK 040



- 1 Cover
- 2 Screw
- 3 O-ring
- 4 Handle

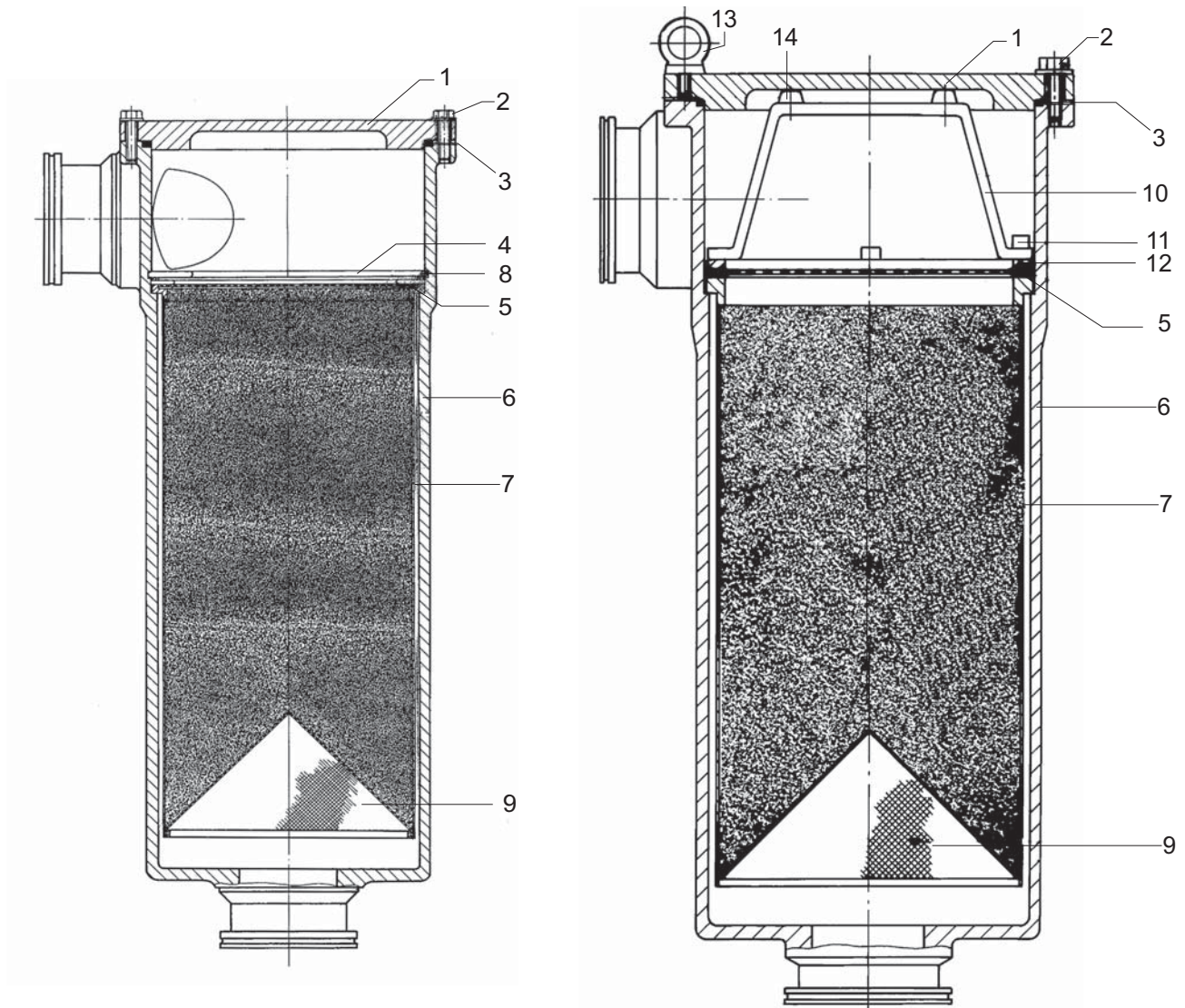


- 5 Filter cover
- 6 Filter housing
- 7 Filter insert
- 9 Strainer

- ➔ Remove screws 2 and take off cover 1; pay attention to O-ring 3.
- ➔ Remove the filter insert 7 from the filter housing 6 using the handle 4.
- ➔ Press handle 4 until it becomes loose on one side and then remove it.
- ➔ Lift off filter cover 5 from filter insert 7.

- ➔ Remove filling material from filter insert 7.
- ➔ Remove strainer 9 from the filter insert 7.
- ➔ Wash all metallic parts with an organic solvent and allow to dry.
- ➔ Fill up with new activated carbon.

FAK 063, FAK 100



- | | |
|---|--------------|
| 1 | Cover |
| 2 | Screw |
| 3 | O-ring |
| 4 | Handle |
| 5 | Filter cover |

- | | |
|----|----------------|
| 6 | Filter housing |
| 7 | Filter insert |
| 8 | Spring washer |
| 9 | Strainer |
| 10 | Retainer |

- | | |
|----|----------|
| 11 | Screw |
| 12 | Ring |
| 13 | Eye bolt |
| 14 | Buffer |

FAK 063 Dismantling the filter and replacing the filling material should be carried out as for the FAK 025 and FAK 040. Carry out the following additional work:

- ➔ Remove spring washer 8.

FAK 100 ➔ Take out filter insert 7 at retainer 10.

- ➔ Unscrew screws 11.

- ➔ Take off ring 12 and filter cover 5 from the filter insert 7.

- ➔ Check buffer 14 and replace if necessary.

7.2 Assembly

Continue assembly by reversing the dismantling sequence, paying particular attention to compliance with the following steps.

- **Assembling** is carried out in reverse order.
- O-Ring 3 vor dem Einlegen in die Nut leicht einölen.

8 Service

Pfeiffer Vacuum offers first-class service!

- Maintenance/repairs on site by Pfeiffer Vacuum field service
- Maintenance/repairs in a nearby service center or service point
- Fast replacement with exchange products in mint condition
- Advice on the most cost-efficient and quickest solution

Detailed information and addresses at: www.pfeiffer-vacuum.com (Service).

Maintenance and repairs in Pfeiffer Vacuum ServiceCenter

The following steps are necessary to ensure a fast, smooth servicing process:

- ➔ Download the forms "Service Request" and "Declaration on Contamination".¹⁾
- ➔ Fill out the "Service Request" form and send it by fax or e-mail to your Pfeiffer Vacuum service address.
- ➔ Include the confirmation on the service request from Pfeiffer Vacuum with your shipment.
- ➔ Fill in the contamination declaration and enclose it in the shipment (required!).
- ➔ Dismantle all accessories.
- ➔ Drain operating fluid/lubricant.
- ➔ Drain cooling medium, if used.
- ➔ Send the pump or unit in its original packaging if possible.

Sending of contaminated pumps or devices

No units will be accepted if they are contaminated with micro-biological, explosive or radioactive substances. "Hazardous substances" are substances and compounds in accordance with the hazardous goods directive (current version). If pumps are contaminated or the declaration on contamination is missing, Pfeiffer Vacuum performs decontamination at the shipper's expense.

- ➔ Neutralise the pump by flushing it with nitrogen or dry air.
- ➔ Close all openings airtight.
- ➔ Seal the pump or unit in suitable protective film.
- ➔ Return the pump/unit only in a suitable and sturdy transport container and send it in while following applicable transport conditions.

Service orders

All service orders are carried out exclusively according to our repair conditions for vacuum units and components.

¹⁾ Forms under www.pfeiffer-vacuum.com

9 Technical data

Parameter	FAK 025	FAK 040
Flange (in)	DN 25 ISO-KF	DN 40 ISO-KF
Flange (out)	DN 25 ISO-KF	DN 40 ISO-KF
Mounting orientation	Vertical	Vertical
Filling quantity	1 l	2 l
For pumping speed up to	35 m ³ /h	76 m ³ /h
Weight with contents	4 kg	5.5 kg
Conductance	1 · 10 ⁻² hPa: 2 l/s; 1 hPa: 10 l/s; 100 hPa: 500 l/s	1 · 10 ⁻² hPa: 16 l/s; 1 hPa: 150 l/s; 100 hPa: 1000 l/s

Parameter	FAK 063	FAK 100
Flange (in)	DN 63 ISO-K	DN 100 ISO-K
Flange (out)	DN 63 ISO-K	DN 100 ISO-K
Mounting orientation	Vertical	Vertical
Filling quantity	7.5 l	20 l
For pumping speed up to	135 m ³ /h	500 m ³ /h
Weight with contents	16 kg	40 kg
Conductance	1 · 10 ⁻² hPa: 5 l/s; 1 hPa: 9 l/s; 100 hPa: 400 l/s	1 · 10 ⁻² : 5 l/s; 1 hPa: 6 l/s; 100 hPa: 100 l/s

9.1 Dimensions

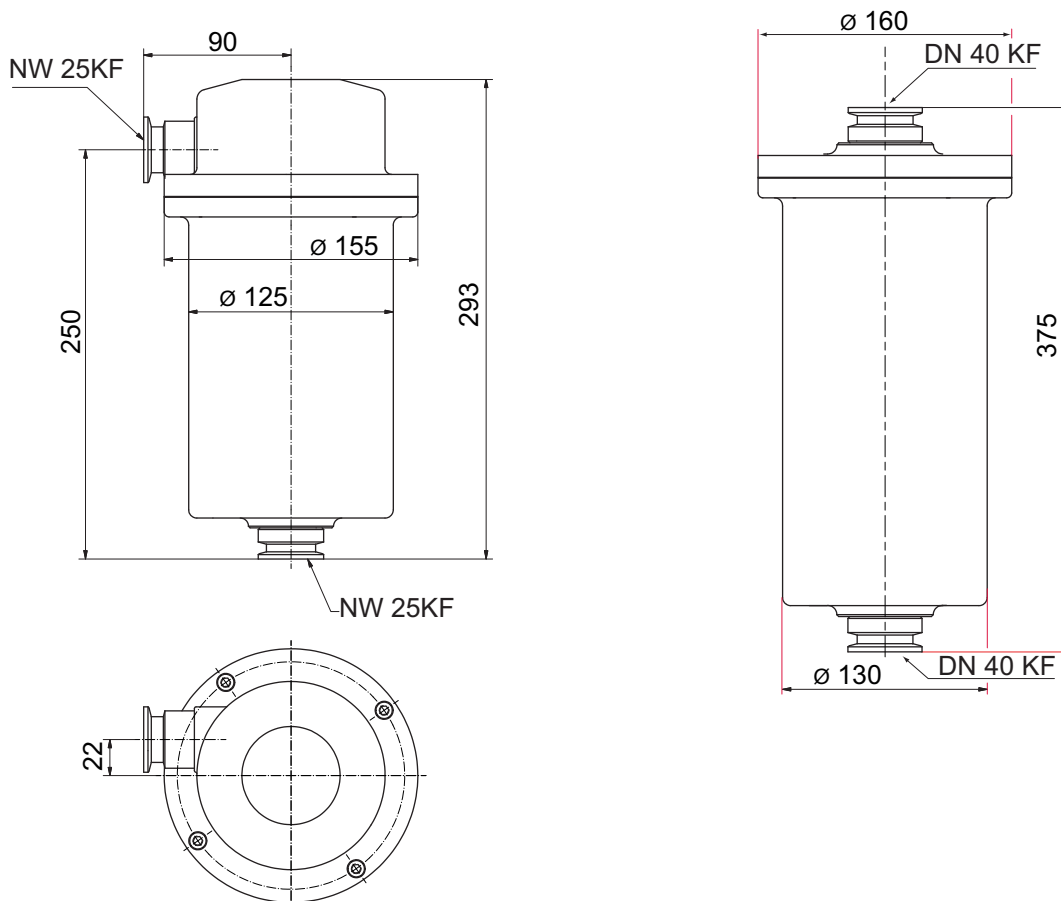


Fig. 3: FAK 025 / FAK 040

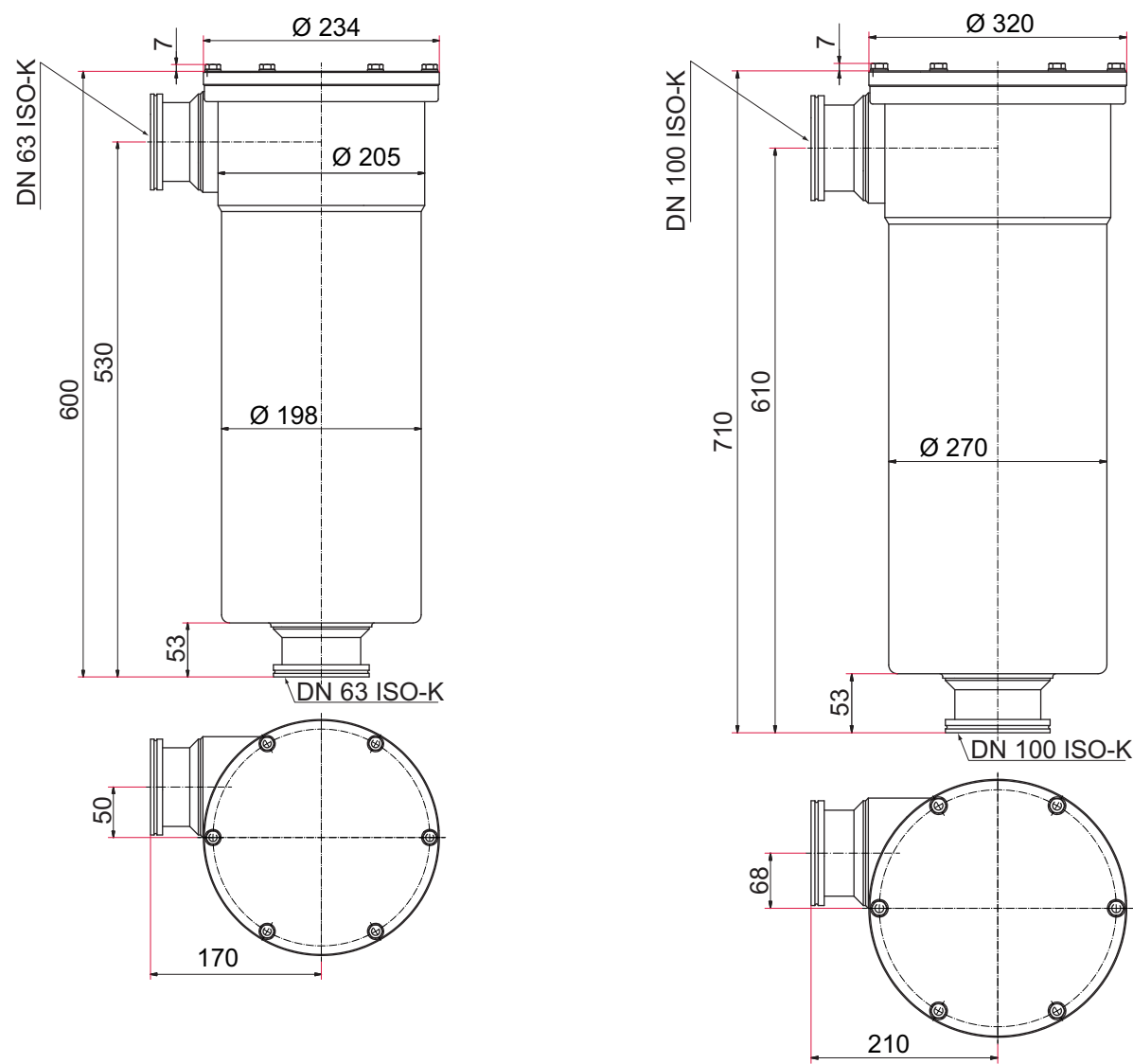


Fig. 4: FAK 063 / FAK 100

10 Spare parts

The spare parts packages listed here are only applicable for standard models.

Please state all information on the rating plate when ordering spare parts. Other spare parts than those described in this manual must not be used without the agreement of Pfeiffer Vacuum.

10.1 Spare parts packages

Spare parts package	SAS	Article no.	Consisting of
Overhaul kit	FAK 025	PK E27 009 -T	3, 5, 9, 25
	FAK 040	PK E27 010 -T	3, 5, 9, 40
	FAK 063	PK E27 011 -T	3, 5, 9, 63
	FAK 100	PK E27 012 -T	3, 5, 9, 14, 100

11 Accessories

Designation	Menge	Quantity
Activated carbon	5 l	PK 001 190 -T
	20 l	PK 001 191 -T
	50 l	PK 001 192 -T

12 Disposal

Products or parts thereof (mechanical and electrical components, operating fluids, etc.) may cause environmental burden.

→ Safely dispose of the materials according to the locally applicable regulations.

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