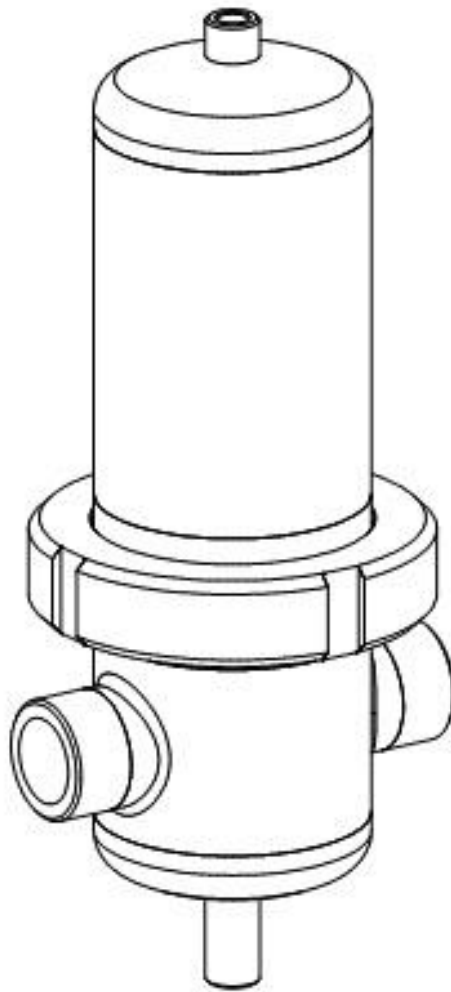




Installation and operating manual

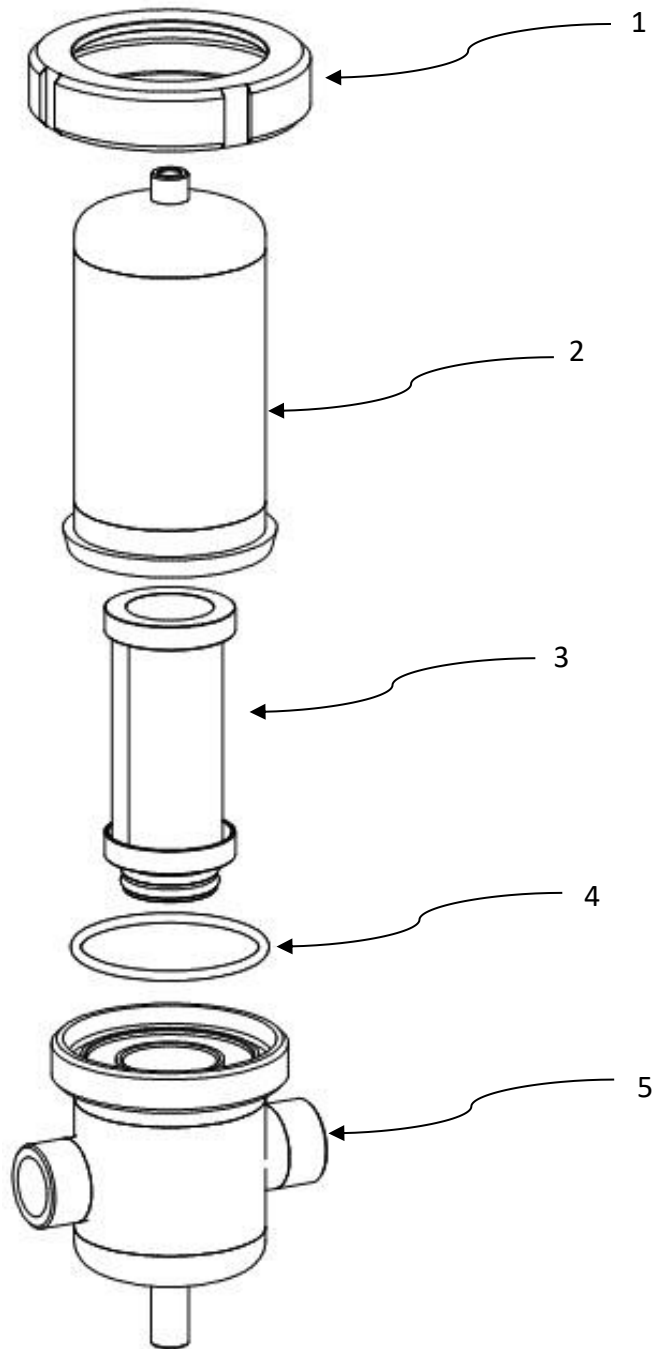
SPF



Please read the following instructions carefully before installing filter into service. Trouble-free and safe operating of the filter can only be guaranteed if recommendations and conditions stated in this manual are respected.



Components



Part	
1	Clamp
2	Filter bowl
3	Filter element
4	Filter housing sealing
5	Filter head

Technical data

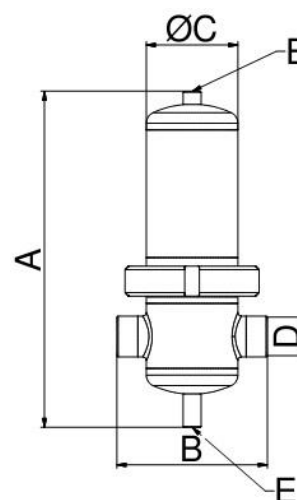
SIZES

FILTER HOUSING	IPE SIZE- [inch]	FILTER ELEMENT	OPERATING PRESSURE	FLOW CAPACITY		DIMENSIONS [mm]				VOLUME [l]	WEIGHT [kg]
				[Nm ³ /h]	[scfm]	A	B	C	E		
SPF 005	1/4"	0310	14	75	44	225	120	76,1	1/8"	0,71	1,9
SPF 007	3/8"	0410	14	105	62	251	120	76,1	1/8"	0,8	2,0
SPF 010	1/2"	0420	14	150	88	258	121	76,1	1/8"	0,84	2,1
SPF 018	3/4"	0520	14	225	132	282	121	76,1	1/8"	0,93	2,3
SPF 030	1"	0525	14	315	185	299	136	88,9	1/8"	1,4	3,1
SPF 047	1 1/4"	0725	14	420	247	359	155	88,9	1/8"	1,74	3,4
SPF 070	1 1/2"	0730	14	600	353	395	180	114,3	1/4"	3,4	4,7
SPF 094	2"	1030	14	900	530	464	180	114,3	1/4"	4,1	5,3
SPF 150	2"	1530	14	1260	742	592	180	114,3	1/4"	5,3	6,0
SPF 175	2 1/2"	2030	14	1680	989	743	226	139,7	1/4"	10,2	11,4
SPF 200	3"	3030	14	2400	1.413	995	226	139,7	1/4"	14	12
SPF 240	3"	3050	14	3600	2.119	1029	256	168,3	1/4"	21	18

Flow capacity at 7 bar(g), 20°C

Standard is BSP pipe connection, other pipe connection on request

Operating temperature	-20 - 150 °C	-4 - 302 °F
Short duration (15min) temp limit	Up to 200 °C*	Up to 392 °F
Operating pressure (SPF 005- SPF175)	0 - 14 bar(a)	0 - 203 psi



MATERIALS

Housing material	Stainless steel (quality 1.4404; on request 1.4301)
Sealing	EPDM (Optional FKM or SILICONE)
Housing finishes	Polished down to grade Ra0,8 (externally)
Lubricant	(Optional Shell cassida grease RLS 2)

CORRECTION FACTORS

To calculate the correct capacity of a given filter based on actual operating conditions, multiply the nominal flow capacity by the appropriate correction factor(s).

$$\text{CORRECTED CAPACITY} = \text{NOMINAL FLOW CAPACITY} \times C_{OP}$$

OPERATING PRESSURE

[bar]	2	3	4	5	6	7	8	9	10
[psi]	29	44	58	72	87	100	115	130	145
C _{OP}	0,38	0,5	0,63	0,75	0,88	1	1,13	1,25	1,38

PRESSURE EQUIPMENT DIRECTIVE PED 2014/68/EU

(Fluid group 2)

SPF 005 - SPF 094	Article 4.3
SPF 150 - SPF 200	Category 1, Module H
SPF 240	Category 2, Module H

PRESSURE EQUIPMENT DIRECTIVE PED 2014/68/EU

(Fluid group 1)⁽⁵⁾

SPF 005 - SPF 047	Article 4.3
SPF 070 – SPF 094	Category 1, Module H
SPF 150 – SPF 200	Category 2, Module H
SPF 240	Category 3, Module H

⁽⁵⁾ Fluid group must be specified in the order, if not standard fluid group 2 is selected.

There is Technical datasheet available. For additional technical specification, contact manufacturer.

Safety instructions



This notice must be complied with in order to avoid damage to or destruction of the filter or its equipment.



MANDATORY: Instructions must be read by persons operating with the filters!

The instruction manual supplied and all other applicable instructions, regulations must be read and understood by operating personnel before using the filters.



MANDATORY: Protectors for eyes must be worn!

Protectors for eyes must be worn when working with the filters.



WARNING: Operating with high pressure!

Depressurize the filter before carrying out any work on the filter.

The relevant safety at work and accident prevention regulations, plus operating instructions, shall apply for operating the filter.

The filter has been constructed in accordance with the generally recognized rules of engineering. It complies with the requirements of directive 2014/68/EU concerning pressure equipment.

Ensure that installation complies with local laws for operation and routine testing of pressure equipment at the place of installation.

The operator/user of the filter should make himself familiar with the function, installation and start-up of the unit. All the safety information is always intended to ensure your personal safety.

- Do not exceed max. operating pressure or operating temperature range (see data label).
- The permissible working temperatures and pressures for ad-on parts and filter elements are given under Technical data for those ad-ons. The maximum temperature and pressure for the assembled system is the lowest of any individual part.
- It is necessary to ensure that the unit is equipped with the corresponding safety and test devices to prevent the permissible operating parameters from being exceeded.
- The filter has been designed for a primarily static pressure. Rapid changes of pressure are not allowed.
- Ensure that the filter is not subject to vibrations that could cause fatigue fractures.
- A filter is not to be subjected to mechanical stresses.
- The medium used may not have any corrosive components that could attack the materials of the filter in a way that is not permitted. Do not use the filter in hazardous areas with potentially explosive atmospheres.
- All installation and maintenance work on the filter may only be carried out by trained and experienced specialists.
- It is forbidden to carry out any kind of work on the filter and piping, including welding and constructional changes, etc.
- A pressure gauge, which shows the operational pressure, must be installed in the unit, respectively in the pipeline.
- Depressurize the system before carrying out the installation work. The unit must be installed vertically in the piping.
- Ensure that filter is installed without any stresses.
- Use original spare parts only.
- Use the device for appropriate purpose only.
- There shouldn't be any tension between filter and installation. Filter shouldn't be subject to any stress, vibration or other influence that could cause damage to the unit.



Appropriate use



SPF filter housings are intended for applications in the process industry, where the risk for corrosion of compressed air system components is very high. This appliance must be used only for the purpose for which it was specifically designed. All other uses are to be considered incorrect.

Specifically:

- filter is not intended for human breathing without proper additional equipment.
- filter can be used for "GROUPE 2" fluids (PED 2014/68/EU).
- filter can be used for "GROUPE 1" fluids (PED 2014/68/EU).
- the fluid group must be specified in the order, if not standard fluid group 2 is selected.

The information on the product label must be observed. Non-observance of the data given there is regarded as improper use.

Warning: internal corrosion can seriously reduce the safety of installation: check it during changing the cartridge.

The maintenance should be at intervals specified in the maintenance section below.

The manufacturer will under no circumstances be responsible for any damage resulting from improper, incorrect or unreasonable use.

Use genuine spare parts only. Any damage or malfunction caused by the use of unguine parts is not covered by Warranty or Product Liability.

The filter and filter elements must be stored indoors in a dry place. Store them in original packing until they are used.

Installation

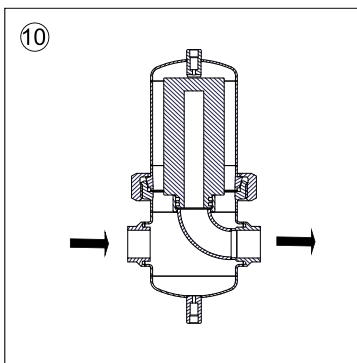
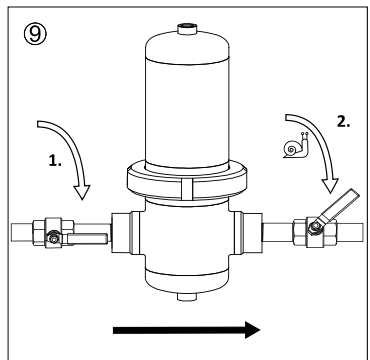
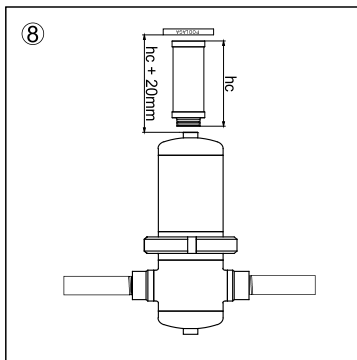
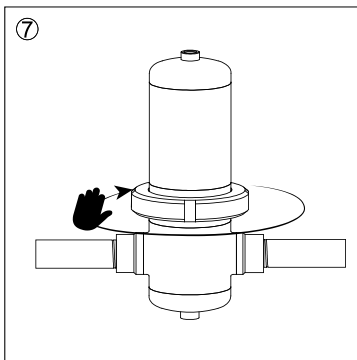
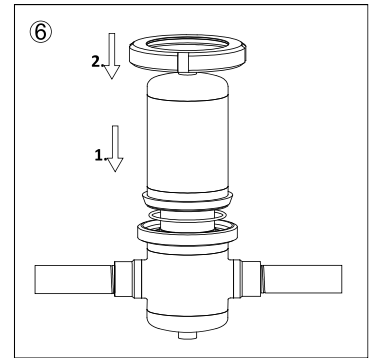
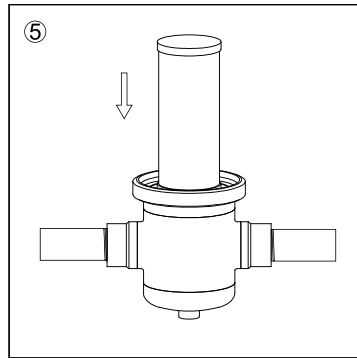
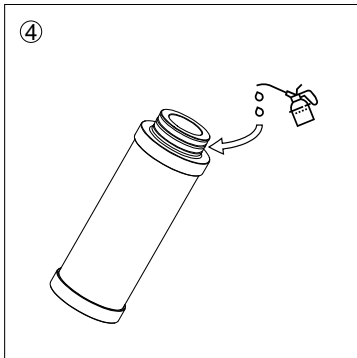
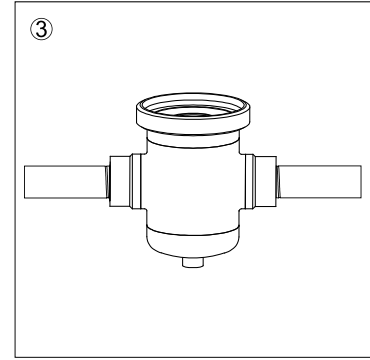
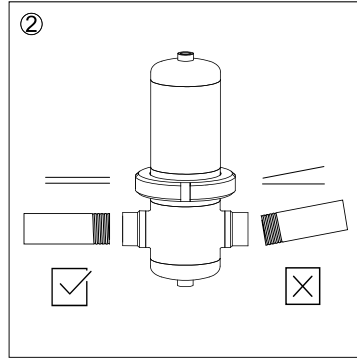
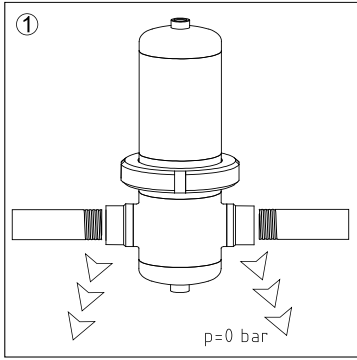
Operations should be performed only by qualified personnel. Never operate with installation under pressure. The user is responsible for ensuring that the filter never operates at a pressure exceeding the nominal values. Eventual over-pressure could be dangerous and hazardous to the operator and the equipment.



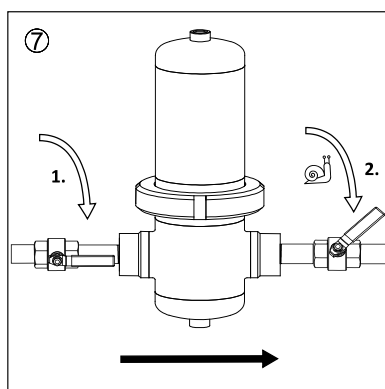
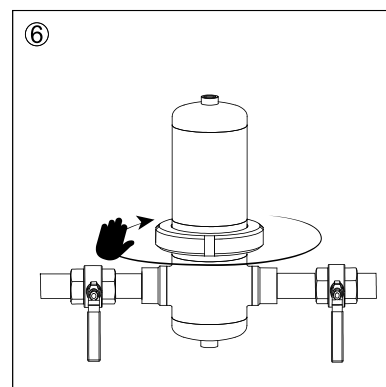
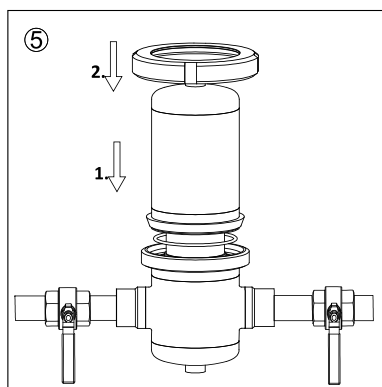
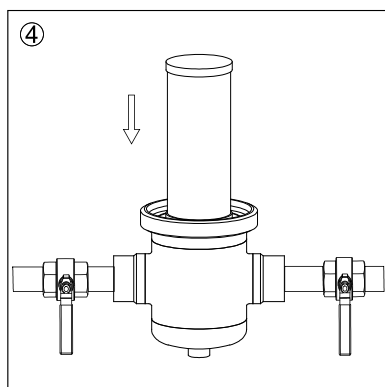
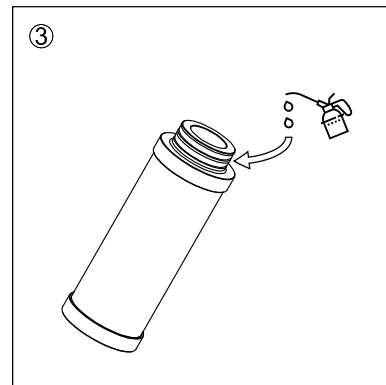
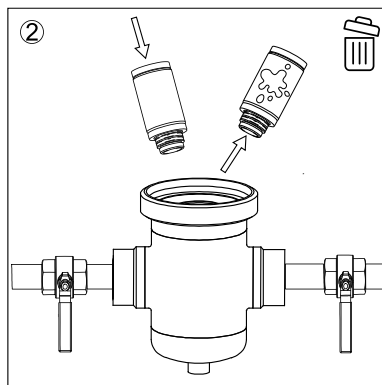
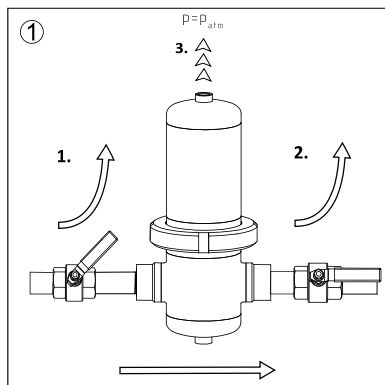
Danger due to the release of a critical gas!

The release of a critical (Fluid group 1) gas from the network can constitute a considerable risk for man and environment.





Changing the filter element



Maintenance



HAZARD due to a sudden release of pressure!

Never remove any parts of the filter, for as long as the filter is still pressurized!
Depressurize the filter before carrying out any work on the filter.



DANGER due to the release of a critical gas!

The release of a critical (Fluid group 1) gas from the network can constitute a considerable risk for man and environment. Therefore heed the following before working on filters for critical gases:

- flush the pipe section in question with inert gas
- have the notes on hazardous substances for the used gas ready
- take appropriate protection measures



WARNING due to the hot touch surfaces!

The gaseous fluid flowing through the filter could have a temperature up to 200°C/392°F. **Do not touch hot surfaces!** Wear safety gloves if applicable.

Filter elements are subject to wear. In order to maintain system efficiency, optimal performance and best air quality, these rules of proper maintenance should be followed:

- Replace filter elements, as stated in the filter element product data-sheet.
- SPFN, SPFi, filter element can be cleaned with ultrasonic bath or with back flushing. Intervals of cleaning depend on application. If necessary replace filter element with new one.
- If installed, regularly check the pressure drop indicator to ensure that the filter element is not saturated, and pressure drop is within acceptable limits.
- If installed, ensure a trouble-free operation of the condensate drain. Check at least once a week if condensate drain operates regularly.
- Never use unsuitable tools to open and close the filter housing.
- The housing O-ring can be damaged during the filter element change. To prevent air leakage and malfunction replace housing O-ring if necessary. For replacement contact manufacturer.
- Damaged components are to be replaced by new ones. If a marked degree of damage is found, the entire filter is to be replaced.
- The filter has been designed for a life of 10 years in a normal operating environment. After 10 years, periodical checks of filter integrity are strongly recommended for safe operation.
- Carry out a check for leaks once the maintenance work has been finished.

Disposing of filter elements:

The filter element or cartridge might be contaminated by the filtered substances. Heed the notes on hazardous substances for the filtered gas and appropriate disposal regulations when disposing.



Warranty exclusion

Any use apart from the intended use mentioned above is considered to be not intended. The manufacturer/supplier can assume no liability for damage resulting from this type of usage. The user alone bears the risk of this.

The guarantee shall be void if:

- The operating instructions were not followed with respect to initial commissioning and maintenance.
- The unit was not operated properly and appropriately.
- The unit was operated when it was clearly defective.
- If unauthorized or unqualified persons work with or on the filter.
- When operating without safety equipment or with incorrect or non-functional safety equipment.
- Non-original spare parts or replacement parts were used.
- The unit was not operated within the permissible technical parameters.
- Unauthorised constructional changes were made to the unit or if parts of the unit that may not be opened were dismantled.
- The filter and filter elements did not be store indoors and in a dry place.
- If part of the filter was removed, when the filter was still pressurized!
Depressurize the filter before carrying out any work on the filter

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