Installation and operation instructions

EN-US

ProPure

- SPTF25
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08-565

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1. Information on documentation

This documentation contains all the necessary steps for use of the product and the accessories.

1.1 Contact

Manufacturer	Service and tools
SULLIVAN PALATEK AIR COMPRESSORS 1201 West US Highway 20 Michigan City, Indiana 46360 Phone: 219.874.2497 Fax: 219.809.0203 info@palatek.com www.sullivan-palatek.com	SULLIVAN PALATEK AIR COMPRESSORS 1201 West US Highway 20 Michigan City, Indiana 46360 Phone: 219.874.2497 Fax: 219.809.0203 info@palatek.com www.sullivan-palatek.com

Information	Country specific manufacturer representation
	You can contact the country-specific manufacturer's representative via the address listed in the address section on the rear cover or by using the contact form on the manufacturer's website.

1.2 Information regarding installation and operating manual

INFORMATION	Copyright protection
	The contents of the installation and operating manual in the form of text, figures, illustrations, photographs, technical drawings, diagrams and other representations are protected by the copyright of the manufacturer. The distribution as well as the duplication of this document, the exploitation and the communication of its contents are prohibited unless expressly authorized.

Publication date	Revision	Version	Reason for change	Scope of change
22/08/24	00	00	New document	New document

The installation and operating manual, hereinafter referred to as the manual, must always be kept close to the product and be in a permanently legible condition.

The manual must be handed over along with the product if it is sold or passed on.

Notice	Observe the manual
	This manual contains all the basic information required for safe operation of the product and must be read before any actions are performed. Otherwise personal and material hazards as well as malfunction and device failure are possible.

1.3 Additional valid documents

This manual describes all steps required to install and operate the **ProPure**.

More detailed information about the installation and operation of the accessories is contained in the following installation and operating manuals:

- **ZL Drain 31**
- **ZL Drain 32 V**

2. Safety

2.1 Use

2.1.1 Intended use

The various intended uses for the coalescing filters, activated carbon filters, and dust filters, which are hereby also referred to as the “filter” or “product,” are described below:

ProPure coalescing filters and accessories
ProPure coalescing filters are used to filter liquid and solid components from gas mixtures in pressurized systems.

ProPure activated carbon filters and accessories
ProPure activated carbon filters are used to separate oil vapors and odorants from gas mixtures in pressurized systems.

ProPure dust filters and accessories
ProPure dust filters are used to separate solid particles from gas mixtures in pressurized systems.

Any use of this system other than the use described in this manual is hereby deemed to be non-intended and can cause a hazard for the safety of people and the environment.
The following must be noted for intended use:

- Read and follow the manual.
- Only use the product and accessories within the operating parameters indicated in the technical data and the agreed delivery conditions.
- Only operate the product and accessories with media which are free of caustic, aggressive, corrosive, toxic, flammable, oxidizing and inorganic components.
- In cases of doubt an analysis must be carried out.
- Only use the product and accessories in areas which are free of toxic and corrosive chemicals and gases.
- Only use the product and accessories in a pipeline system designed to handle the technical data indicated, with appropriate connections, pipe diameters and installation space.
- Only use the product and accessories outside potentially explosive atmospheres.
- Only use the product and accessories outside of areas exposed to direct sunlight and heat sources.
- Only combine the product and accessories with the Sullivan Palatek products and components specified and recommended in the manual.
- Adhere to the prescribed maintenance schedule.

Applies exclusively to activated carbon filters and dust filters:

- Use the product and the accessories exclusively with pre-dried fluids. Use preliminary filtration and water separation systems.

Before using the product and the accessories, the operating company must make sure that all conditions and prerequisites for intended use are given.

The product and the accessories have been exclusively designed for stationary use in a commercial or industrial area. All of the assembly, installation, operation, maintenance, uninstallation and disposal work described may only be performed by qualified skilled technical personnel.

2.1.2 Reasonably foreseeable misuse

Reasonably foreseeable misuse is deemed to have occurred if the product or the accessories are used in any other way than that described in the section “Intended use”. Reasonably foreseeable inappropriate use includes the use of the product or the accessories in a manner not intended by the manufacturer or supplier but which may result from foreseeable human behavior.

Reasonably foreseeable inappropriate use includes:

- The execution of any kind of modification, in particular constructive and process-technology related interventions.
- The suspension, bridging or non-application of existing or recommended safety equipment.

This list is not exhaustive as not all possible inappropriate use can be foreseen in advance. If the operating company is aware of any inappropriate use of the product or accessories which are not listed here, the manufacturer must be informed immediately.

2.2 Responsibility of the operating company

The responsible operating company must ensure the following to prevent accidents, incidents and adverse effects on the environment:

- Before all actions, check to ensure that the manual available does in fact belong to the product.
- The product and the accessories are used, serviced and repaired in accordance with the intended use.
- The product and accessories are only used with the recommended and fully operable safety equipment.
- All assembly, installation and maintenance work is carried out by qualified skilled technical personnel only.
- Personnel have the necessary personal protective equipment available and also use this equipment.
- Suitable technical safety measures are taken to ensure that the permissible operating parameters are observed.
- Keep all safety symbols and the type plate on the product and accessories in a legible state. Replace damaged and illegible markings immediately.

2.3 Target group and personnel

This manual addresses the personnel listed below who are involved with work on the product or the accessories.

INFORMATION	Personnel requirements
	• Minors are strictly prohibited from working with and on the product and its accessories. • The personnel may not execute any actions on the product or the accessories when they are under the influence of drugs, medications, alcohol or other substances that may impair their consciousness.

Operating personnel

Operating personnel are persons who are able to operate the product and the accessories safely on the basis of knowledge of the manual and instruction in the use of the product and accessories. Operating personnel can recognize possible malfunctions and dangerous situations independently and arrange for corresponding measures.

Skilled technical personnel - Transport and storage

Skilled technical personnel - transport and storage are people who, due to their training, professional experience and qualifications, have all the necessary skills to safely execute all actions in connection with the transport and storage of the product, to instruct, to recognize possible dangerous situations independently and to execute measures to avoid danger.
The skills required include, in particular, experience operating hoists, forklifts and lifting equipment and familiarity with locally applicable laws, standards and guidelines relating to transport and storage.

Skilled technical personnel specialized in pressure equipment and systems

Skilled technical personnel specializing in pressure equipment and systems consists of people who, as a result of their training, professional experience and qualifications, have all the necessary capabilities to safely carry out and order all activities related to pressurized fluids and systems, to independently identify potentially hazardous situations, and to implement appropriate measures to avert any danger.
The skills required include, in particular, experience using measuring equipment and control equipment, as well as familiarity with locally applicable laws, standards and regulations for pressurized systems.

Skilled technical personnel - Trained electricians

"Skilled technical personnel - Trained electricians" refers to personnel whose basic and advanced training, professional experience, and qualifications have provided them with all the skills necessary to safely complete any work involving electricity, identify potential hazards independently, and take measures to prevent those hazards.
These skills include, in particular, experience handling electrical equipment, measuring equipment, control equipment, and regulation equipment, as well as familiarity with all regionally applicable regulations, standards, and directives for electrical and electronic equipment.

Qualified service technicians

Qualified service technicians are persons who have the skills and qualifications as defined in all the aforementioned definitions concerning skilled technical personnel. Qualified service technicians must be verifiably trained and authorized for all work on the product.

2.4 Explanation of the safety symbols used

The symbols used below indicate safety-relevant and important information which must be adhered to when handling the product and to ensure safe and optimum operation.

Symbol	Description / explanation
	General hazard symbol (danger, warning, caution)
	Pressurized system
	Read and follow the installation and operating manual
	General instruction symbol
	Use protection class FFP3 respiratory protection (particle filtering half mask)
	Wear safety footwear
	Use protective gloves (cut-proof and liquid-resistant)
	Wear hearing protection
	Wear safety goggles with side shields
	General information

2.5 Safety instructions and warning notices

This section provides an overview of all the important safety aspects for personal protection as well as for the safe and problem-free operation of the product and accessories.

The following sections list the dangers posed by this product and the accessories even with intended use. To minimize the risk of personal injury and property damage and to avoid dangerous situations, observe the safety instructions listed and adhere to the warning notices in the other sections of this manual.

Basic warning notices and the necessary qualifications of skilled technical personnel are always listed at the beginning of the section in the “Warning notices” section.

Warning notices related to specific actions are printed directly before potentially hazardous procedures or sequences of actions.

As well as causing personal injury, failure to observe safety instructions and warning notices may result in malfunctions, disruption to operations, and property damage.

2.5.1 Basic safety instructions

- Before starting work, refer to the technical documentation for the entire system and observe the overall operating instructions.
- Carry out a risk assessment before starting work on site (last minute risk assessment).
- Use suitable personal protective equipment for all work.
- Set up a safety area around the working area during all installation, maintenance and repair work.
- Use existing system-specific protection procedures (e.g., LOTO procedure) to safely de-energize and isolate the system or system sections.

2.5.2 Safe operation

The following actions may result in serious injury or death:

- Commissioning and operation of the product and accessories outside the permissible limit values and operating parameters
- Unauthorized interference and unauthorized modifications of the product and accessories

To guarantee the safe operation of the product and accessories, observe the following:

- Observe the limits and operating parameters specified on the type plate and in the manual.
- Check whether the permissible operating parameters have been changed or restricted by the use of accessories.
- Observe the installation conditions and the ambient conditions.
- Adhere to the maintenance intervals.

2.5.3 Sudden escape of pressurized fluids

The following situations may result in serious injury or death:

- Contact with fast or suddenly escaping fluids
- Bursting system components
- Whipping of pressurized hoses and pipes

For the safe handling of pressurized systems, observe the following:

- Observe the following safety rules during all work:
  1. Shut down the system or system section.
  2. Secure the system or system section against restarting.
  3. Reduce the pressure in the system or all system sections to the ambient pressure.
     e.g. by slowly releasing the pressure in a controlled manner via relief valves
  4. Lock out and tag out the system or system section so that it cannot be pressurized again.
- Check the pressurized system or system section for safety, contamination and possible damage.
- Before pressurization, check all system connections for leak tightness and tighten if necessary.
- Make absolutely sure to charge the system or system section with pressure slowly.
- Avoid pressure blows and high differential pressures.
- Compensate any vibrations occurring in the pipe network by using vibration dampers.

2.5.4 Transport and storage

Improper transportation and improper storage may result in personal injury or property damage.

In order to ensure safety during the transport and storage of the product and accessories, observe the following:

- Use personal protective equipment for all work with packaging material.
- Handle packaging, the product and accessories carefully.
- Transport and handle the product and accessories according to the markings on the packaging.
- Use only proper transportation, lifting and lashing equipment that is in proper working order.
- Use only transportation, lifting and lashing equipment that are rated for the total weight of the product.
- Always adhere to the permissible transport and storage parameters.
- Store the product and accessories only outside of areas exposed to direct sunlight and heat sources.

2.5.5 Installation

Improper physical or electrical installation of the product and accessories may result in personal injury and property damage as well as impair operation.

For safe physical and electrical installation, observe the following:

- Install the product, the accessories, and all parts and materials used so that they are not subject to mechanical tension.
- Check all plug-type connections for a correct fit.
- Avoid a stumbling hazard by routing cables and hoses accordingly.
- Avoid mechanical stress on the cables.
- Fix and fasten hoses in such a way that they cannot flap around.
- Install the inlet and drain lines as fixed pipes.

2.5.6 Maintenance

Improper performance of maintenance and repair work can result in serious injury or death.

For safe maintenance and repairs, observe the following:

- Before starting work, depressurize the pressurized product and accessories and secure them against unintentional pressurization.
- Before starting work, isolate the product and accessories from the power source and secure them against being switched back on again unintentionally.
- Only use materials approved for the respective application.
- Use only suitable tools that are in proper working order.
- Only use cleaned pipes and hoses that are free of dirt and corrosion.
- Never use abrasive or aggressive cleaning agents or solvents which could damage the outer coating (e.g. markings, type plate, corrosion protection, etc.).
- Never clean the device with hard or pointed implements.
- Use only the specified materials and media for cleaning.
- Observe statutory, local and in-house hygiene regulations.
- Pay attention to order and cleanliness during maintenance and repair work. Prevent contamination from entering the opened product or accessories. Store disassembled components and accessories directly in a safe place.
- After completing maintenance and repair work, remove all tools and cleaning agents used, as well as all parts that are no longer needed, from the work area.
- Only dispose of the product and accessories when cleaned and freed of any residue.
- Dispose of all components, parts, operating and auxiliary materials as well as cleaning agents professionally and in accordance with all locally applicable legal requirements and regulations.
- Dispose of electrical and electronic components through a specialized disposal company or return them to the manufacturer.

2.5.7 Handling hazardous substances

Contact with condensate containing substances which endanger health and the environment can pose a health hazard, causing irritation and/or damage to the eyes, skin and mucous membranes. In addition, polluted condensate must be prevented from entering the sewerage system, waters or the ground.

For the safe handling of polluted condensate, observe the following:

- Use suitable protective equipment when handling condensate.
- Collect and dispose of any leaking or spilled condensate in accordance with locally applicable legal requirements and regulations.

2.5.8 Work on electronic components

Electrostatic discharge (ESD) can cause damage to electronic components and result in malfunctions, operational disruptions, and property damage.

- Take proper measures to prevent electrostatic discharge (e.g., grounding, equipotential bonding, anti-static mats, etc.).

2.5.9 Use of spare parts, accessories or materials

The use of incorrect spare parts, accessories or materials, as well as auxiliary and operating materials, may result in death or serious injury. Malfunction and device failure as well as material damage can occur.

- Only use undamaged original parts, auxiliary and operating materials which are specified by the manufacturer to complete all work.
- Only use the materials approved for the respective application and suitable tools in proper working order.
- Only use cleaned pipes that are free of dirt and corrosion.
- Only use electric components and materials that comply with locally applicable legal requirements and regulations (standards, directives, etc.) for electrical safety.

2.6 Warning notices

Warning notices warn against dangers when handling the product and accessories.
Failure to observe warning notices may result in personal injury, damage to property, and impairment to operations.

Structural set up:

SIGNAL WORD	Type and source of danger
 Symbol	Possible consequences if the danger is ignored • Measures to prevent the danger

Signal words:

DANGER	**Imminent hazard** Consequences of non-compliance: Death or serious personal injury
WARNING	**Imminent hazard** Consequences of non-compliance: Death or serious personal injury are possible
CAUTION	**Potential hazard** Consequences of non-compliance: Personal injury is possible
NOTICE	**Possible damage to property** Consequences of non-compliance: Damage to property, malfunction and device failure are possible. No hazard to people or endangerment of safe operation.

3. Product information

Properly designing the system with preliminary filtration and drying will prevent the adsorption of other particles and liquid components on the filter material, ensuring that the corresponding filter element will be able to optimally fulfill its intended use.

3.1 Product description

ProPure filters **are used for the filtration applications listed below.** Filter elements with different filtration stages can be used depending on the requirements to achieve the desired compressed air class according to ISO 8573-1.

The condensate collected during filtration can be drained manually or automatically from the filter.

3.1.1 Product description for coalescing filters

ProPure coalescing filters are used to filter liquid and solid components from gas mixtures in pressurized systems.

3.1.2 Product description for activated carbon filters

ProPure activated carbon filters are used to separate oil vapors and odorants from gas mixtures in pressurized systems. The residual oil content in the corresponding gas mixture can be measured over an extended period of time (t > hundred hours) with an oil test indicator.

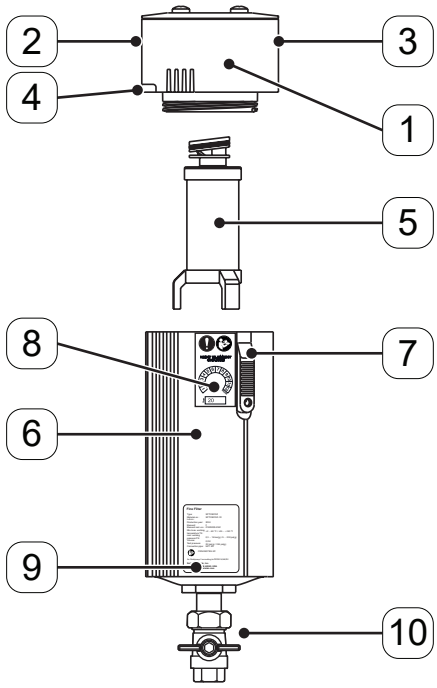
3.1.3 Product description for dust filters

ProPure dust filters are used to separate particles in pressurized systems.

3.2 Product diagram for coalescing filters and activated carbon filters

The filter consists of the following components:

Example:



Position no.	Description / explanation
[1]	Filter head
[2]	Inlet on the filter head
[3]	Outlet on filter head
[4]	Direction indicator*
[5]	Filter element
[6]	Filter housing
[7]	Safety slide with locking screw
[8]	Maintenance sticker for filter element replacement
[9]	Type plate
[10]	Manual drain

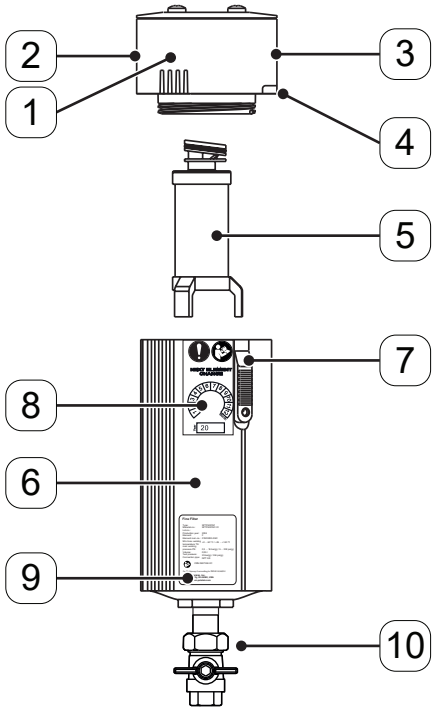
* Seen from the operator side, the position of the direction indicator relative to the safety slide indicates the direction of flow.

The direction of flow is also indicated by the direction of the arrow marker on the filter head
(please refer to section “6.3 Positioning the filter” on page 38).

3.3 Product diagram for dust filters

The filter consists of the following components:

Example:



Position no.	Description / explanation
[1]	Filter head
[2]	Outlet on filter head
[3]	Inlet on the filter head
[4]	Direction indicator*
[5]	Filter element
[6]	Filter housing
[7]	Safety slide with locking screw
[8]	Maintenance sticker for filter element replacement
[9]	Type plate
[10]	Manual drain

* Seen from the operator side, the position of the direction indicator relative to the safety slide indicates the direction of flow.

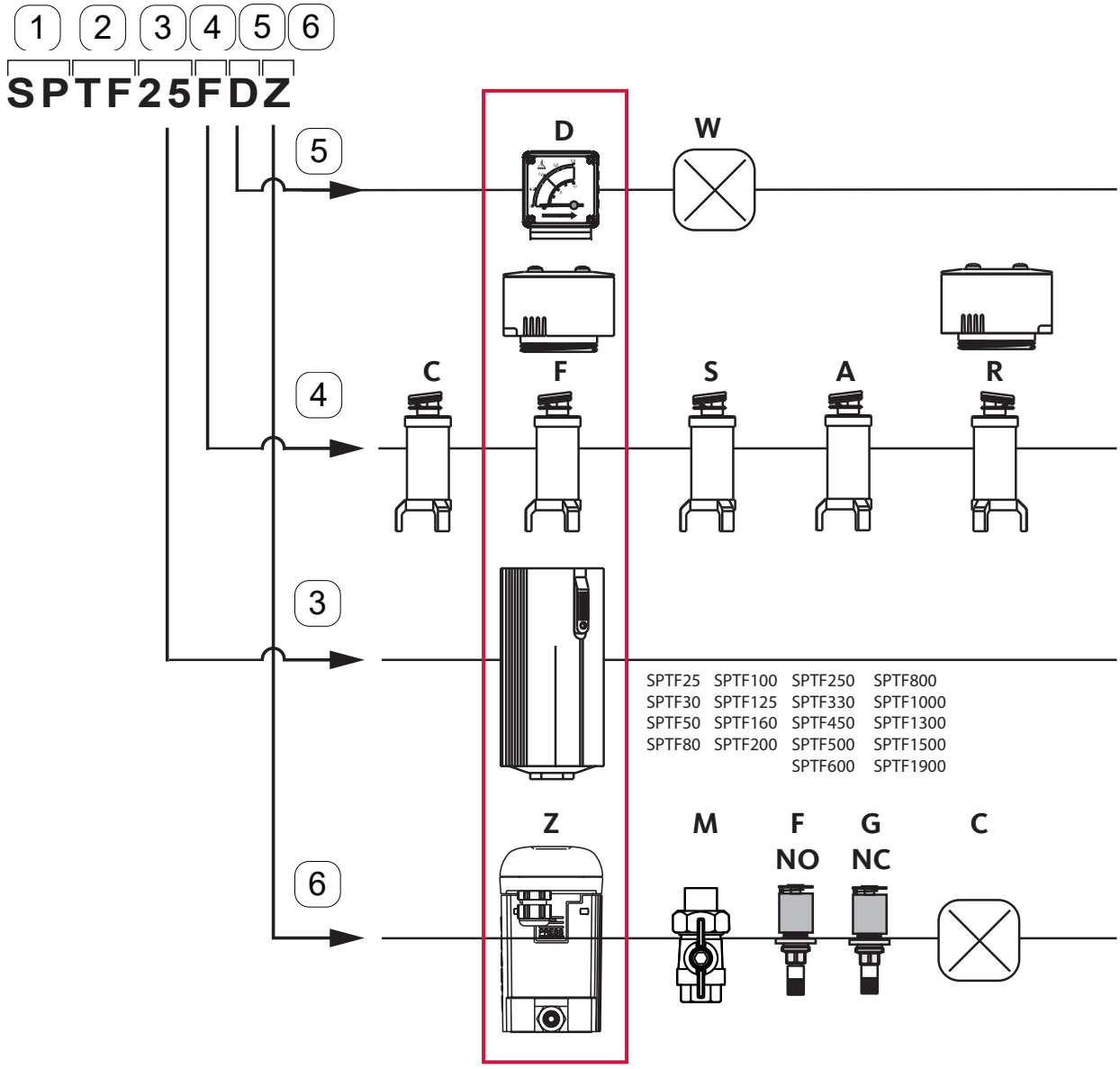
The direction of flow is also indicated by the direction of the arrow marker on the filter head
(please refer to section “6.3 Positioning the filter” on page 38).

3.4 Product identification

The product designation is found as an abbreviation on the type plate and consists of numbers and letters. Each abbreviation stands for a filter component and is subdivided into the following categories:

[1] = Prefix
[2] = Model
[3] = Size: Filter housing
[4] = Filter elements
[5] = Top attachments
[6] = Bottom attachments

The following section explains the product designation using "**SPTF25FDZ**" as an example:



Top attachments		
Position no.	**Abbreviation**	**Description / explanation**
[5]	D	Differential pressure gauge
	W	No display device

Filter elements					
Position no.	**Abbreviation**	**Description / explanation**	**99.9% solid particle separation rate [µm]**	**Residual oil content [mg/m³]*1**	**Compressed air class in accordance with ISO 8573 - 1**
[4]	C*2	Coarse filter	2 ... 5	≤ 5	[4: - :4]
	F*2	Fine filter	0.5 ... 1	≤ 0.05	[2: - :2]
	S*2	Superfine filter	0.1 ... 0.3	≤ 0.005	[1: - :2]
	A	Activated carbon filter	--	≤ 0.003	[- : - :1]

*1 Validation in conformity with ISO 12500-1: inlet concentration: approx. 10 mg/m³ for S, F; 30 mg/m³ for C

*2 The abbreviations used for dust filters with an identical filtration efficiency are RC for coarse filters, RF for fine filters, and RS for superfine filters.

Filter housing		
Position no.	**Size**	**Volume l (gal)**
[3]	SPTF25	0.25 (0.07)
	SPTF30	0.25 (0.07)
	SPTF50	0.31 (0.08)
	SPTF80	0.42 (0.11)
	SPTF100	0.87 (0.23)
	SPTF125	0.87 (0.23)
	SPTF160	1.12 (0.3)
	SPTF200	1.26 (0.33)
	SPTF250	2.52 (0.67)
	SPTF330	2.97 (0.78)
	SPTF450	3.4 (0.9)
	SPTF500	3.4 (0.9)
	SPTF600	4.23 (1.12)
	SPTF800	5.24 (1.38)
	SPTF1000	13.88 (3.67)
	SPTF1300	16.49 (4.36)
	SPTF1500	19.51 (5.15)
	SPTF1900	23.24 (614)

Bottom attachments		
Position no.	**Abbreviation**	**Description / explanation**
[6]	Z	**ZL Drain 31 / 32 V**
	M	Manual drain
	F	Float drain, open when not pressurized (NO - normally open)
	G	Float drain, closed when not pressurized (NC - normally closed)
	C	Without condensate drain

3.5 Function description

3.5.1 How the coalescing filters work

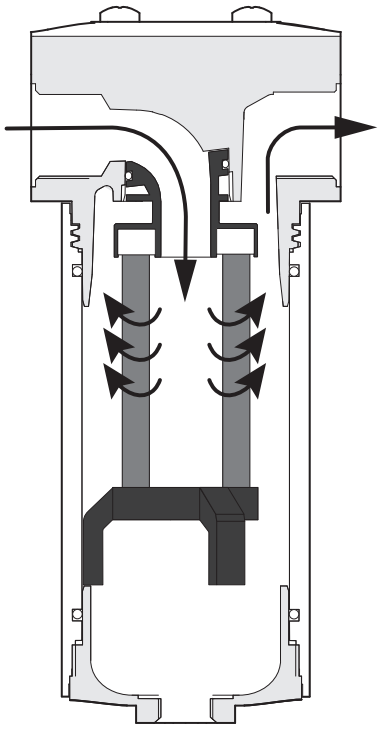
The direction of flow for the filter element in **ProPure** coalescing filters is from the inside to the outside. The fluid enters the inside of the filter element and from there flows through the element and into the filter housing. The corresponding solid materials, as well as oil and water aerosols, are separated by the filter material during this process. Meanwhile, gravity makes the liquid components move downwards through the exterior drainage layer and drip down so that they are collected below at the bottom of the filter housing. The condensate is then manually or automatically drained from the housing base. Over time, particles are deposited in the filter material. This causes the filter element's flow resistance to increase, with the pressure differential in the system increasing as well as a result.

3.5.2 How the activated carbon filters work

The direction of flow for the filter element in **ProPure** activated carbon filters is from the inside to the outside. The fluid enters the inside of the filter element and from there flows through the element and into the filter housing. The corresponding oil vapors and odorants are separated by the activated carbon in the filter material.
In order to ensure efficiency, it is necessary to make sure that particles and aerosols are removed previously with preliminary filtration and that the fluid has been dried before going through the activated carbon filter. The filter material's void volume only has a limited capacity for absorbing particles.

Liquid components will reduce the void volume and accordingly reduce the particle absorption capacity and shorten the filter's service life, which is why the incoming fluid should be pre-dried.

The filter's service life will depend on the fluid's impurity load, since the filter material can only absorb a limited amount of hydrocarbons.



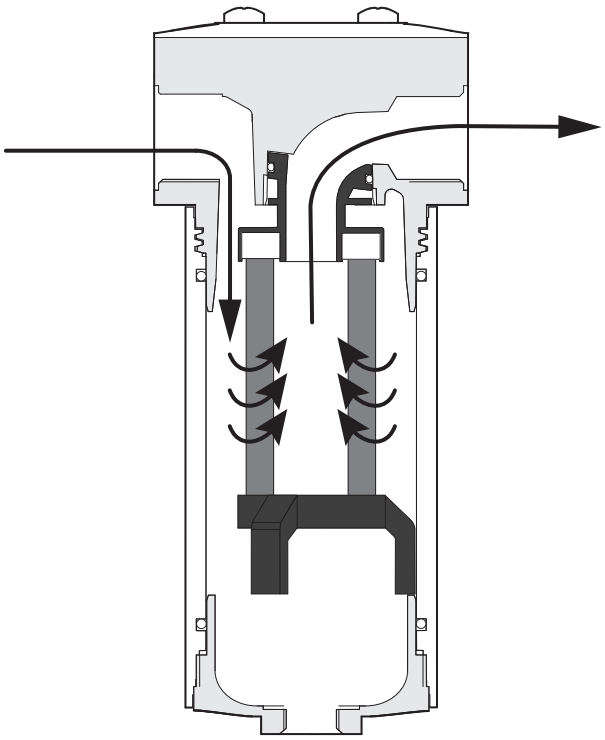
Schematic flow diagram for the coalescing filters and activated carbon filters

3.5.3 How the dust filters work

The direction of flow for the filter element in **ProPure** dust filters is from the outside to the inside. The fluid enters filter housing and flows from outside through the filter element and into the filter element.
The particles are separated by the nonwoven filter material.

After being pre-dried, the incoming fluid will be free of liquid components, so that the filter material will be able to absorb the particles. Without pre-drying, the filter material will be saturated with the liquid components themselves and will not be able to absorb particles.

The filter's service life will depend on the number and size of particles in the fluid. The filter material's void volume only has a limited capacity for absorbing particles.



Schematic flow diagram for the dust filters

3.5.4 Determining the filter service life

3.5.4.1 For coalescing filters and dust filters

When it comes to coalescing filters and dust filters, the filter elements' service life can be determined based on the differential pressure between the filter's inlet and outlet. This differential pressure will increase as the filter material becomes clogged with impurities.
The differential pressure can be measured with a differential pressure gauge ("12.2 Top attachment accessories" on page 60).
For more information on the differential pressure gauge, please refer to the installation and operating manual for the **ProPure** differential pressure gauge "1.3 Additional valid documents" on page 6.

3.5.4.2 For activated carbon filters

Determining the hydrocarbon load with the oil test indicator

The fluid's hydrocarbon load can be determined with an oil test indicator installed on the filter head.

The hydrocarbons in the fluid will result in the test tube showing a red color that advances from bottom to top.

The activated carbon filter's service life will depend on the fluid's hydrocarbon load and the amount of activated carbon in the filter element, and can be determined with the oil test indicator.

For more information on the oil test indicator, please refer to the installation and operating manual for the **ProPure** oil test indicator "1.3 Additional valid documents" on page 6.

3.5.5 Draining condensate through the float drain

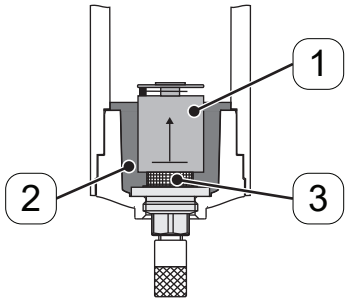
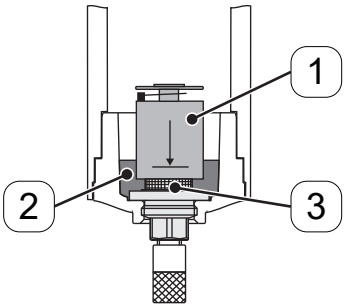
INFORMATION	Various product combinations
	The top attachments and the condensate discharge depend on the product combination and may vary.

For further information on possible product combinations see "3.4 Product identification" on page 18.

INFORMATION	Float drain factory configuration
	Both versions of the float drain come with the "automatic discharge" configuration from the factory. The knurled-head screw is screwed downwards all the way.

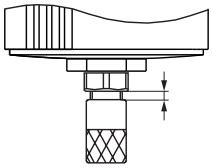
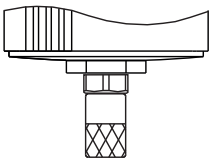
There are two different float drains used to discharge condensate:

- Open when depressurized [NO]: The float drain will open at an operating pressure ≤ 0.5 bar(g) (7.25 psi(g)).
- Closed when not pressurized [NC]: The float drain will be closed at an operating pressure of 0 bar(g) (0 psi(g)).

Float drain opens	Float drain closes
	

The float drains are mechanical automatic condensate drains with a functional mechanism that is triggered by the buoyancy of a float body **[1]**. When the condensate **[2]** in the container rises above a certain level, the buoyancy of the float body **[1]** opens the outlet channel **[3]** for the condensate. The float closes again when the condensate **[2]** drops below a certain level. A small amount of condensate will remain in the container. For more information on the float drain, please refer to “1.3 Additional valid documents” on page 6 as well.

To relieve the pressure in the filter for maintenance work, the float drain can be brought to the “mechanically open” position. To do so, turn the knurled-head screw upwards (counterclockwise) all the way so that there is no visible gap above the knurled-head screw anymore.

Automatic drain	Mechanically open
	

3.5.5.1 Automatic condensate discharge

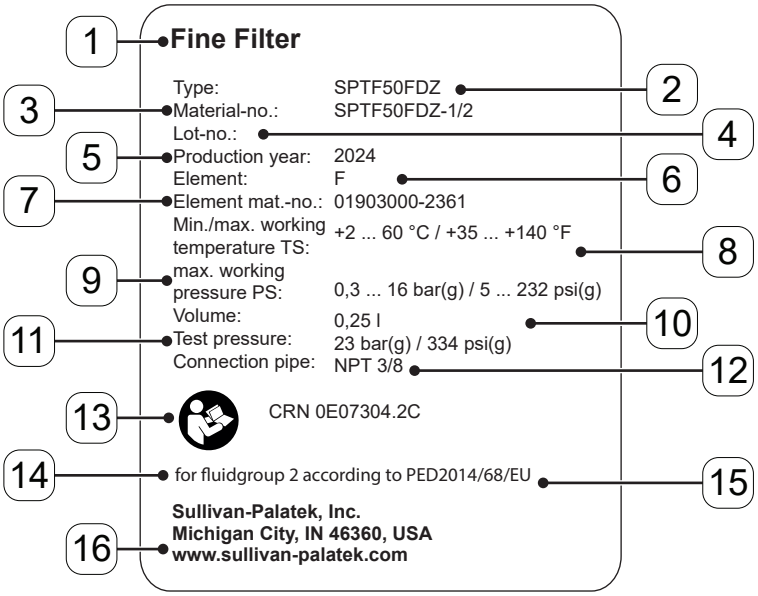
A **ZL Drain** can be installed on the condensate drain in order to be able to discharge condensate in a level-controlled manner.

For more information, please refer to the installation and operating manual for the **ZL Drain**; see “1.3 Additional valid documents” on page 6.

3.6 Product designation

3.6.1 Type plate

The type plate is located on the housing, and provides identification and operating parameters for the filter.
Please have this information ready when contacting the manufacturer or supplier so that it is possible to quickly identify your product.
For more information on the symbols used, please refer to ““2.4 Explanation of the safety symbols used” on page 10.”

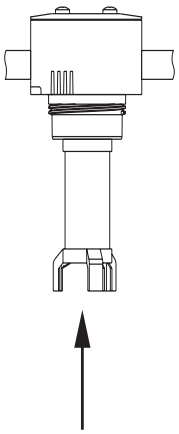
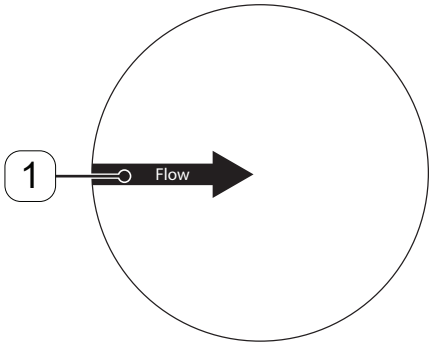
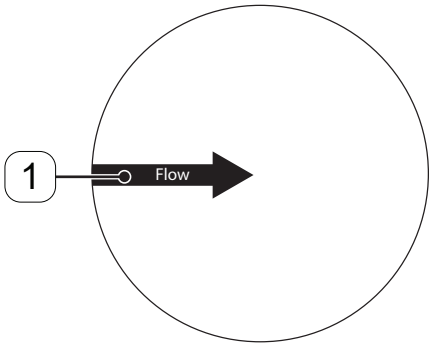
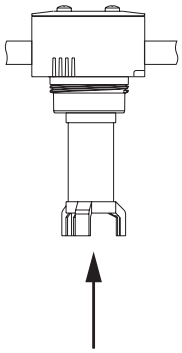
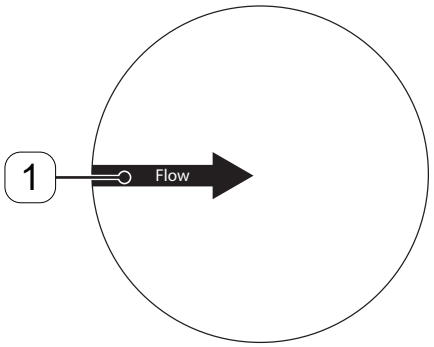


Example
Coalescing filter type plate

Position no.	Information on the type plate	Description / explanation
[1]	Fine filter / Activated carbon / Dust filter	**Sull**ivan Palatek filter designation
[2]	Type	Product designation
[3]	Material-no.	Material number
[4]	Lot-no.	Lot
[5]	Production year	Production year
[6]	Element	Filter element description
[7]	Element mat-no.	Material number of filter element
[8]	Min./Max. working temperature TS	Min. / max. working temperature range
[9]	Max. working pressure PS	Maximum operating pressure range
[10]	Test pressure PT	Test pressure
[11]	Volume	Filter housing volume
[12]	Connection pipe G2	Inlet and outlet threaded connections
[13]	Pictogram	“Read the installation and operating manual” instruction symbol
[14]	Fluid group 2	Fluid group according to Pressure Equipment Directive 2014/68/EU
[15]	PED2014/68/EU / Cat. -	Category according to Pressure Equipment Directive 2014/68/EU
[16]	Manufacturer contact information Address and website	Manufacturer’s address

3.6.2 Filter element sticker

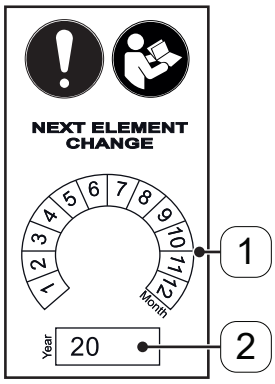
Different filter elements are available for different applications and degrees of filtration.
The filter element can be identified by a sticker on its base.

		View of filter element bottom
Coalescing filter		
Activated carbon filter		
Dust filter		

Position no.	Description / explanation
[1]	Indicates the direction of flow for the filter element (flow)

3.6.3 Maintenance sticker for filter element replacement

The next upcoming filter element replacement date is marked on this sticker. To this end, mark the relevant month **[1]** and enter the corresponding **[2]** year with a permanent marker.
A maintenance sticker is included with every filter element.



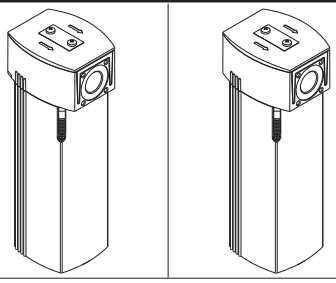
Position no.	Description / explanation
[1]	Month for next filter element replacement
[2]	Year for next filter element replacement

3.7 Scope of delivery

The following table shows the scope of delivery for the filters.

INFORMATION	**Various product combinations**
	The top attachments and the condensate discharge depend on the product combination and may vary.

For further information on product combinations see section “3.4 Product identification” on page 18.

Figure	Description / explanation
	Filter (coalescing filter, activated carbon filter, or dust filter)
	Original installation and operating manual

4. Technical data

4.1 Operating parameters

ProPure	SPTF 25	SPTF 30	SPTF 50	SPTF 80	SPTF 100	SPTF 125	SPTF 160	SPTF 200	SPTF 250
Threaded connection, in	3/8 1/2*2	1/2	1/2	1/2	3/4 1*2	1	1	1	1 1/2 2*2
Volumetric flow rate, energy-optimized, m³/h (ft³/min)*1 *3	35 (21)	35 (21)	65 (38)	100 (59)	150 (88)	150 (88)	200 (118)	250 (147)	320 (188)
Volumetric flow rate, performance-oriented, m³/h (ft³/min)*1 *3	46 (27)	46 (27)	85 (50)	130 (77)	195 (115)	195 (115)	260 (153)	325 (191)	415 (244)
Category according to PED 2014/68/EU	-	-	-	-	-	-	-	-	-
Min. / max. operating pressure*3	0.3 ... 16 bar(g) 4.4 ... 232 psi(g)								
Min. / max. operating temperature*3	+2 ... +60 °C +35 ... +140 °F								
Load test in accordance with DIN EN 13445-3	10,000 load cycles - 1 load cycle corresponds to a pressure fluctuation of ≥ 3.2 bar (46.41 psi) at 16 bar(g) (232 psi(g))								
Medium	Fluid group 2 in accordance with PED 2014/68/EU, free from aggressive and corrosive components								
Weight kg (lbs)	0.75 (1.65)	0.75 (1.65)	0.85 (1.87)	1.2 (2.65)	1.7 (3.75)	1.7 (3.75)	2.1 (4.63)	2.2 (4.85)	4.1 (9.04)
Volume l (gal)	0.25 (0.07)	0.25 (0.07)	0.31 (0.08)	0.42 (0.11)	0.87 (0.23)	0.87 (0.23)	1.12 (0.3)	1.26 (0.33)	2.52 (0.67)

*1 Volumetric flow rate with 7 bar(g) (102 psi(g)) based on +20 °C (+68 °F) and 1 bar(a) (14.5 psi(a)); reference values in conformity with DIN 7183

*2 Optionally available

*3 Check for any operating condition restrictions resulting from the use of accessories prior to using these accessories.

ProPure	SPTF 330	SPTF 450	SPTF 500	SPTF 600	SPTF 800	SPTF 1000	SPTF 1300	SPTF 1500	SPTF 1900
Threaded connection, in	1 1/2 2*2	1 1/2 2*2	2	2	2	2 1/2 3*2	2 1/2 3*2	3	3
Volumetric flow rate, energy-optimized, m³/h (ft³/min)*1 *3	420 (247)	600 (353)	600 (353)	780 (459)	1020 (600)	1300 (765)	1620 (954)	1940 (1142)	2400 (1412)
Volumetric flow rate, performance-oriented, m³/h (ft³/min)*1 *3	545 (321)	780 (459)	780 (459)	1015 (597)	1325 (780)	1690 (995)	2100 (1236)	2520 (1483)	3120 (1836)
Category according to PED 2014/68/EU	-	-	I	I	I	II	II	II	II
Min. / max. operating pressure*3	0.3 ... 16 bar(g) 4.4 ... 232 psi(g)								
Min. / max. operating temperature*3	+2 ... +60 °C +35 ... +140 °F								
Load test in accordance with DIN EN 13445-3	10,000 Load cycles - 1 load cycle corresponds to a pressure fluctuation of ≥ 3.2 bar (46.41 psi) at 16 bar(g) (232 psi(g))								
Medium	Fluids from fluid group 2 in accordance with PED 2014/68/EU, free from aggressive and corrosive components								
Weight kg (lbs)	4.5 (9.92)	5.1 (11.24)	5.1 (11.24)	6.1 (13.45)	7.1 (15.65)	19.9 (43.87)	22.6 (49.82)	25.9 (57.1)	29.9 (65.92)
Volume l (gal)	2.97 (0.78)	3.40 (0.9)	3.40 (0.9)	4.23 (1.12)	5.24 (1.4)	13.9 (3.67)	16.5 (4.36)	19.5 (5.15)	23.2 (6.13)

*1 Volumetric flow rate with 7 bar(g) (102 psi(g)) based on +20 °C and 1 bar(a) (14.5 psi(a)); reference values in conformity with DIN 7183

*2 Optionally available

*3 Check for any operating condition restrictions resulting from the use of accessories prior to using these accessories.

4.1.1 Operating condition restrictions resulting from accessories

Operating parameters and operating conditions due to the use of specific accessories:

Product code abbreviation	Accessories	Min. / max. operating pressure	Min. / max. operating temperature
F	Float drain AM10-NO	1.5 .... 16 21.8 ... 232 psi(g)	-
G	Float drain AM10-NC	0.3 ... 16 bar(g) 4.4 ... 232 psi(g)	-
C	Without drain	1.5 .... 16 21.8 ... 232 psi(g)	-
M	With manual drain	0.3 ... 16 bar(g) 4.4 ... 232 psi(g)	-
	Condensate outlet with blind plug	0.3 ... 16 bar(g) 4.4 ... 232 psi(g)	-
Z	With **ZL Drain**	0.8 ... 16 11.6 ... 232 psi(g)	-
D	With differential pressure gauge	-	+2 ... +50 °C +35 ... +122 °F
W	Without differential pressure gauge	-	+2 ... +60 °C +35 ... +140 °F

4.2 Materials

Component	Material
Filter head, filter housing	Aluminum, coated
Housing lid	Polyamide
Housing base	Aluminum, coated
M5 screws	Steel, galvanized
Safety slide	Zinc
O-rings	Standard: NBR | Oil-free: FKM
Float drain	Stainless steel | Plastic | Brass | NBR
Manual drain	Brass, nickel-plated
Wall bracket	Steel, galvanized
Sticker	PVC and polyacrylate
Filter elements	Plastics, stainless steel, and borosilicate fibers
ZL Drain	see installation and operating manual **ZL Drain**
Differential pressure gauge	See differential pressure gauge installation and operating manual
Oil test indicator	See oil test indicator installation and operating manual

4.2.1 Performance data

4.2.1.1 Filter elements for coalescing filters and dust filters

The performance data for the filter elements is based on a validation in conformity with ISO 12500-1 and ISO 12500-3.

Type	Description / explanation	Solid particles [µm]	Aerosol content [mg/m³]	
			Inlet	Outlet
C	Coarse filter	Separation rate 99.9 % for particles 2.0 ... 5.0	30	5
F	Fine filter	Separation rate 99.9 % for particles 0.5 ... 1.0	10	0.05
S	Superfine filter	Separation rate 99.99 % for particles 0.1 ... 0.3	10	0.005

4.2.2 Filter elements for activated carbon filters

The filter elements for activated carbon filters have been validated based on ISO 12500-2 with measuring equipment that conforms to the standard but with a load of 10 mg/m³.

Based on empirical data, a class 1 residual oil content in conformity with ISO 8573-1 can be achieved at the outlet if the fluid previously undergoes filtration and drying.

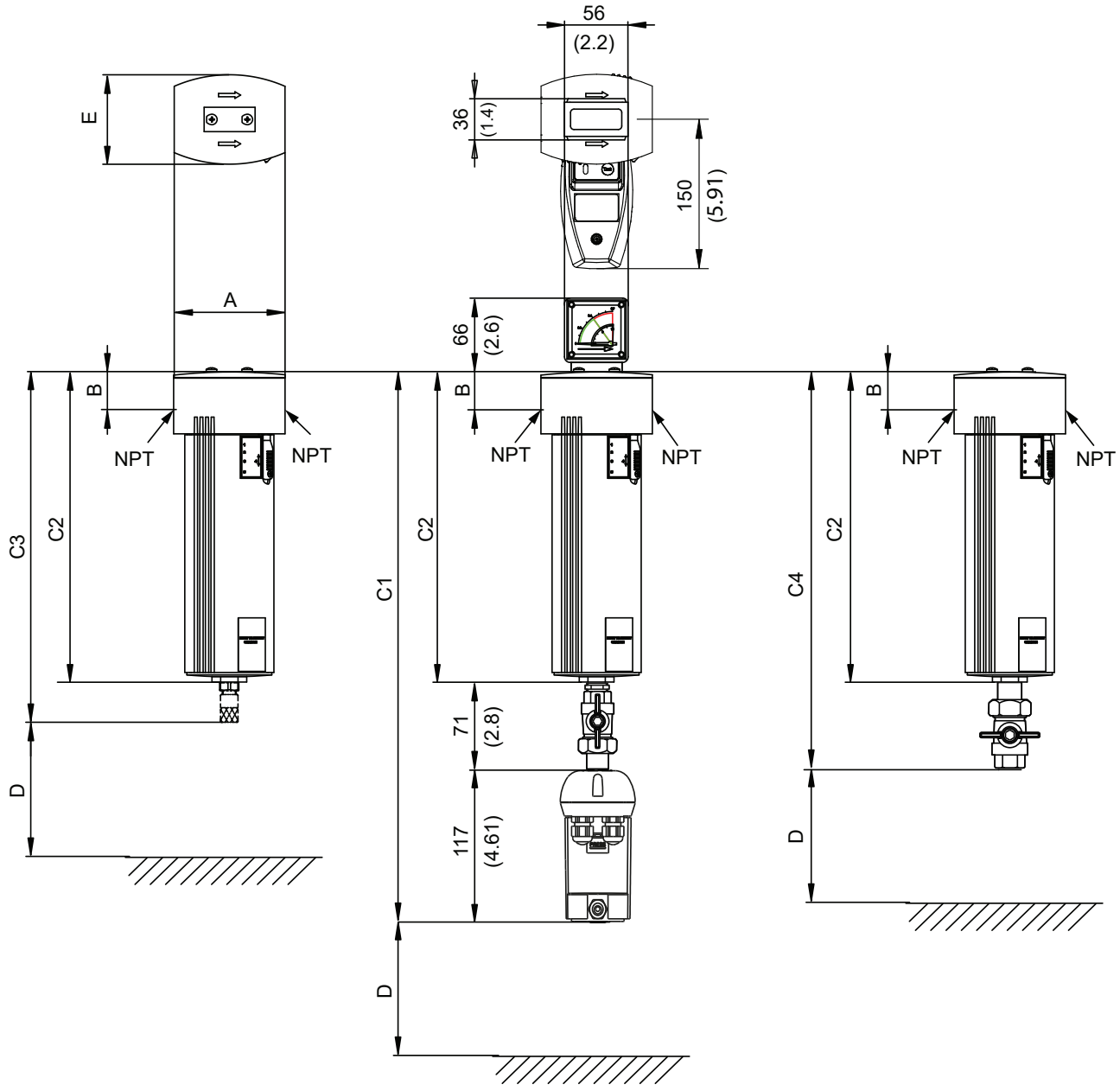
4.2.3 Filter element service lives

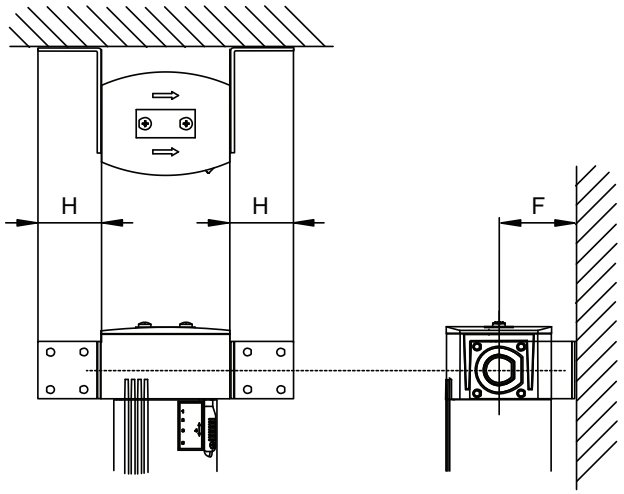
Service life for the filter element in coalescing filters and dust filters			
Parameters	**Coalescing filter**	**Dust filter**	**Filter element service life**
Differential pressure	≥ 0.4 bar (5.8 psi)		Replace the filter element, at the latest, when there is a differential pressure ≥ 0.4 bar(g) (5.8 psi(g)) or after one year of use, whichever comes first.

Service life for the filter element in activated carbon filters		
Parameters Reference conditions[1]	**Activated carbon filter**	**Filter element service life**
Differential pressure	≥ 0.4 bar / 5.8 psi	Replace the filter element, at the latest, when there is a differential pressure ≥ 0.4 bar(g) (5.8 psi(g)) or after six months of use, whichever comes first.
Percentage of activated carbon in the filter element that is still capable of absorption	< 15%*	A service life of approx. 2,000 operating hours can be achieved under the reference conditions listed in the first column *1. • Please note that the hydrocarbons in the fluid will not be absorbed 100% by the activated carbon: The absorption capacity for hydrocarbons depends not only on the properties of the activated carbon (raw materials, grain size, pore size, etc.), but also, and above all, on the molecular structure and polarity of the gas fractions being absorbed.
Compressed air temperature	+20 °C (+68 °F)*	
Actual hydrocarbon content	0.01 mg/m³*	
Degree of drying for compressed air (relative humidity)	max. 30 %*	

*1 The parameters that are used as reference conditions are indicated with an asterisk (*).

4.3 Dimensions





mm
(in)

4.4 Connection and setup dimensions

Filter (Size)	A	B	C1	C2	C3	C4	D	E	F	H	Filter element
	mm (in)										
SPTF 25	75 (2.95)	28 (1.10)	370 (14.57)	182 (7.17)	208 (8.19)	253 (9.96)	150 (5.91)	61 (2.40)	64.5 (2.54)	39.5 (1.56)	06-18
SPTF 30	75 (2.95)	28 (1.10)	370 (14.57)	182 (7.17)	208 (8.19)	253 (9.96)	150 (5.91)	61 (2.40)	64.5 (2.54)	39.5 (1.56)	06-18
SPTF 50	75 (2.95)	28 (1.10)	400 (15.75))	212 (8.35)	238 (9.37)	283 (11.14)	150 (5.91)	61 (2.40)	64.5 (2.54)	39.5 (1.56)	06-21
SPTF 80	75 (2.95)	28 (1.10)	455 (17.91)	267 (10.51)	293 (11.54)	338 (13.31)	150 (5.91)	61 (2.40)	64.5 (2.54)	39.5 (1.56)	06-27
SPTF 100	100 (3.94)	33 (1.29)	470 (18.5)	282 (11.10)	308 (12.13)	353 (13.90)	150 (5.91)	81 (3.18)	63 (2.48)	45 (1.77)	08-28
SPTF 125	100 (3.94)	33 (1.29)	470 (18.5)	282 (11.10)	308 (12.13)	353 (13.90)	150 (5.91)	81 (3.18)	63 (2.48)	45 (1.77)	08-28
SPTF 160	100 (3.94)	33 (1.29)	540 (21.26)	352 (13.86)	378 (14.88)	423 (16.65)	150 (5.91)	81 (3.18)	63 (2.48)	45 (1.77)	08-35
SPTF 200	100 (3.94)	33 (1.29)	575 (22.64)	387 (15.24)	413 (16.26)	458 (18.03)	150 (5.91)	81 (3.18)	63 (2.48)	45 (1.77)	08-39
SPTF 250	146 (5.75)	47 (1.85)	551 (21.69)	363 (14.29)	382 (15.03)	434 (17.09)	200 (7.87)	119 (4.68)	78.5 (3.09)	60 (2.36)	12-36
SPTF 330	146 (5.75)	47 (1.85)	604 (23.78)	416 (16.39)	435 (17.12)	487 (19.17)	200 (7.87)	119 (4.68)	78.5 (3.09)	60 (2.36)	12-41
SPTF 450	146 (5.75)	47 (1.85)	654 (25.75)	466 (18.35)	485 (19.09)	537 (21.14)	200 (7.87)	119 (4.68)	78.5 (3.09)	60 (2.36)	12-46
SPTF 500	146 (5.75)	47 (1.85)	654 (25.75)	466 (18.35)	485 (19.09)	537 (21.14)	200 (7.87)	119 (4.68)	78.5 (3.09)	60 (2.36)	12-46
SPTF 600	146 (5.75)	47 (1.85)	751 (29.57)	563 (22.17)	582 (22.91)	634 (24.96)	200 (5.91)	119 (4.68)	78.5 (3.09)	60 (2.36)	12-56
SPTF 800	146 (5.75)	47 (1.85)	869 (34.21)	681 (26.81)	700 (27.55)	752 (29.61)	200 (7.87)	119 (4.68)	78.5 (3.09)	60 (2.36)	12-68
SPTF 1000	260 (10.24)	77 (3.03)	858 (33.78)	670 (26.38)	684 (26.92)	741 (29.17)	300 (11.81)	201 (7.91)	130 (5.12)	120 (4.72)	20-067
SPTF 1300	260 (10.24)	77 (3.03)	962 (37.87)	774 (30.47)	788 (31.02)	845 (33.27)	300 (11.81)	201 (7.91)	130 (5.12)	120 (4.72)	20-077
SPTF 1500	260 (10.24)	77 (3.03)	1082 (42.60)	894 (35.20)	908 (35.74)	965 (37.99)	300 (11.81)	201 (7.91)	130 (5.12)	120 (4.72)	20-089
SPTF 1900	260 (10.24)	77 (3.03)	1230 (48.43)	1042 (41.02)	1056 (41.57)	1113 (43.82)	300 (11.81)	201 (7.91)	130 (5.12)	120 (4.72)	20-104

4.4.1 Connections

Filter Size	SPTF 25	SPTF 30	SPTF 50	SPTF 80	SPTF 100	SPTF 125	SPTF 160	SPTF 200	SPTF 250
G / NPT (in) connection	3/8 1/2*	1/2	1/2	1/2	3/4	1	1	1	1 1/2

Filter Size	SPTF 330	SPTF 450	SPTF 500	SPTF 600	SPTF 800	SPTF 1000	SPTF 1300	SPTF 1500	SPTF 1900
G / NPT (in) connection	1 1/2	1 1/2	2	2	2	2 1/2 3*	2 1/2 3*	3	3

* Optionally available

4.5 Installation conditions

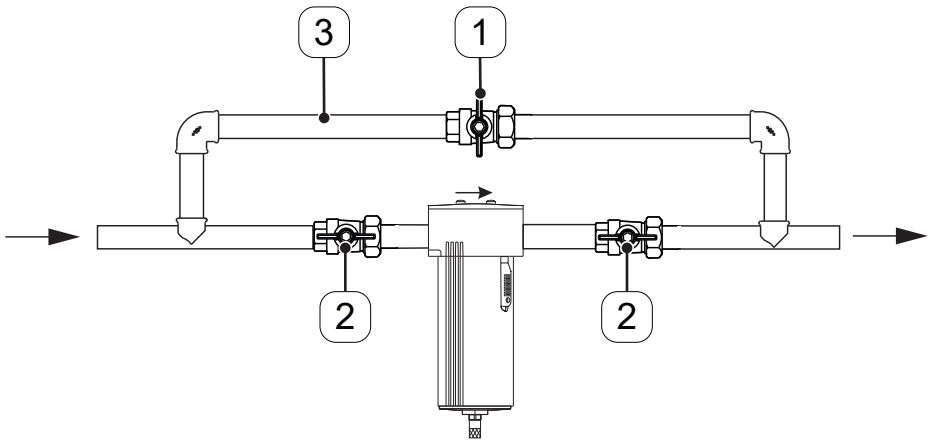
- The set-up location must be inside of a building used for industrial purposes.
- Set up the product at an adequate distance from potential sources of vibration and pulsation (e.g., machines).
- The setup location must ensure that there is sufficient clearance for working with and on the product (e.g., installation, maintenance, retrofitting accessories).
- Install the product in a clean and dry area that is not exposed to direct sunlight, frost, heat sources, and/or potential sources of fire.
- Set up the product outside of traffic routes, and attach collision protection to the product.

4.5.1 Configuring the system at the place of installation

In order to be able to carry out maintenance work, install a manual shutoff valve both at the **ProPure** inlet and outlet.

In order to ensure that the general system can continue to be supplied with fluid even during maintenance and servicing work, **Sulli**van Palatek recommends installing a bypass line **[3]** with a fluid treatment unit and shutoff valves **[1, 2]**, as well as a condensate drain line that can be disconnected from the manual drain.

If you have any questions regarding system design and/or optimization, please contact **Sulli**van Palatek Service (please refer to section “1.1 Contact” on page 5).



5. Transport and storage

Personnel
Skilled technical personnel - transport and storage (see section “2.3 Target group and personnel” on page 9)

5.1 Warning notices

CAUTION	Improper transportation or storage
	Improper transportation or storage may result in personal injury.
	• Use personal protective equipment for all work with packaging material. • Handle packaging, the product and accessories carefully. • Use only proper transportation, lifting and lashing equipment that is in proper working order. • Use only transportation, lifting and lashing equipment that are rated for the total weight of the product. • Always adhere to the permissible transport and storage parameters.

NOTICE	Handling packaging materials
	Improper disposal of packaging materials can cause environmental damage.
	• Dispose of the packaging material in accordance with the applicable legal requirements and regulations of the country and place of use.

5.2 Transport

- Transport and handle the product and accessories according to the markings on the packaging.
- Pack all parts with suitable materials in a shock-resistant manner.

5.3 Storage

- Store the product and accessories only outside of areas exposed to direct sunlight and heat sources.

6. Installation

6.1 Warning notices

DANGER	**Sudden escape of pressurized fluids**
	There is a danger of death or serious personal injury resulting from contact with fast or suddenly escaping fluids or through bursting system parts.
	• Before starting work, depressurize the pressurized system and secure it against unintentional pressurization. • Assemble all pipes and hoses free of mechanical stress.

NOTICE	**Mechanical damage**
	Connecting more than 3 filters will overload the wall bracket and can result in deformation of the wall bracket and connected components.
	• Use a wall bracket for mounting a maximum of three connected **ProPure** filters.

6.2 Installation work

Personnel
Skilled technical personnel - pressure equipment and systems (see section “2.3 Target group and personnel” on page 9)

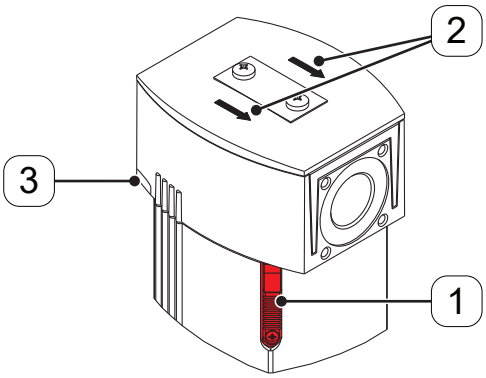
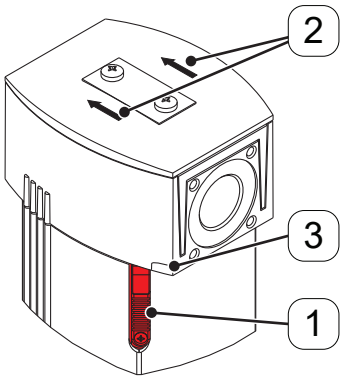
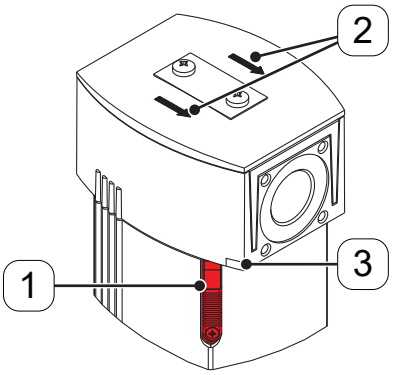
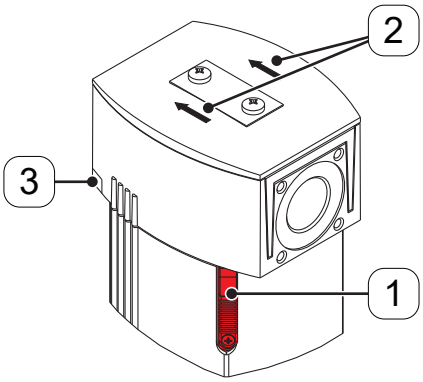
To carry out installation work, the following requirements must be met and the preparatory work completed.

Prerequisites		
Tools	**Material**	**Protective equipment**
• Screwdriver – PZ1 Pozidriv head	• Additional installation and operating manuals for accessories used • Sealing material such as Teflon tape (EN 837-2) • Leak detector spray	

Preparatory work	
1.	Remove the plugs from the following threads: • Inlet and outlet on the filter head • Condensate drain on the filter base
2.	Depressurize the pipeline system or relevant pipe section.
3.	Observe the filter dimensions and clear the required space for installation. ➞ See “4.5 Installation conditions” on page 34.
4.	Pipelines must be able to support the additional weight of the filter. Install any additional necessary fasteners or mounts.
5.	Pipes must be free from contamination and corrosion. ➞ Check the pipe threads for damage. ➞ Immediately replace faulty pipes.
6.	The pipes must be free from mechanical stresses and vibrations. Compensate for vibrations by using vibration dampers.
7.	Only use fittings suitable for this pressure range and temperature range. ➞ The pipeline threads must match those on the filter head.
8.	Design the condensate drain in such a way that no fluid or condensate can escape into the area around the filter. Convey the drained condensate into a legally compliant treatment system (e.g., **SP**remier Pure Oil Water Separator).

6.3 Positioning the filter

INFORMATION	Filter alignment and direction of flow
	The positioning of the direction indicator and the position of the safety slide are crucial when it comes to the actual flow rate. Install the cover with the arrow marking on the filter accordingly so that it will indicate the direction of flow on the filter in a way that is visible from the operator side.

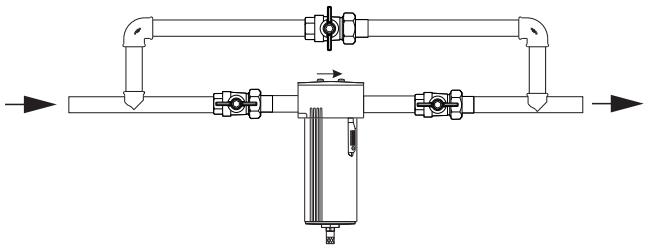
Direction of flow		
	Left → Right (set at the factory)	Right → Left
Coalescing filter Activated carbon filter		
Dust filter		

Align the direction of flow with the pipe's direction of flow and position the filter accordingly in the pipe:

- The filter head and the filter housing have a double-start trapezoidal thread.
- The direction of flow through the filter can be aligned with the pipeline's direction of flow by turning the filter head 180°.
- The direction of flow is indicated with arrows **[2]** and a raised marking **[3]** on the housing head.
- In addition, make sure to position the safety slide **[1]** in such a way that it is accessible from the operator side (front side).

The direction indicator indicates the fluid inlet when looking at the filter from the operator's point of view, as described below.

Filter type	Direction of flow	Position of direction indicator	Position of safety slide
Coalescing filter	From left to right	left	right
Activated carbon filter		left	right
Dust filter		right	right
Coalescing filter	From right to left	right	right
Activated carbon filter		right	right
Dust filter		left	right

Figure	Description / explanation
	1. Apply the sealing material, such as Teflon tape (EN 837-2) to the pipe ends. 2. Screw the pipe thread into the filter inlet until the connection is solid and tight. 3. Screw the pipe thread into the filter outlet until the connection is solid and tight. → For information on the bypass line, please refer to section "4.5.1 Configuring the system at the place of installation" on page 34.

Concluding work	
1.	Carry out a leak test with a leak detector spray everywhere along the system. → If there are any leaks, fix them and then seal the corresponding thread again.

6.4 Installing accessories

The steps for installing the various accessories are described in the corresponding applicable documents; please refer to "1.3 Additional valid documents" on page 6.

6.5 Concluding work

Concluding work	
1.	The filter housing must be correctly screwed into the filter head.
2.	The safety slide must have been slid all the way up.
3.	The locking screw must have been tightened.
4.	Carry out a leak test after finishing all installation work. → If you hear a whistling sound when pressurizing the system, this means that the safety slide is not closed correctly. Slide the safety slide all the way up and tighten the locking screw.

7. Commissioning

7.1 Warning notices

DANGER	**Sudden escape of pressurized fluids**
	There is a danger of death or serious personal injury resulting from contact with fast or suddenly escaping fluids or through bursting system parts.
	• Before pressurization, check all system connections for leak tightness and tighten if necessary. • Slowly pressurize the system.

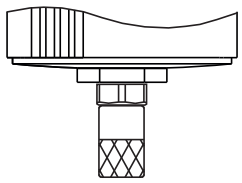
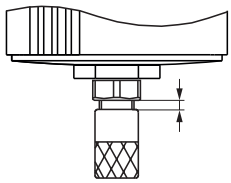
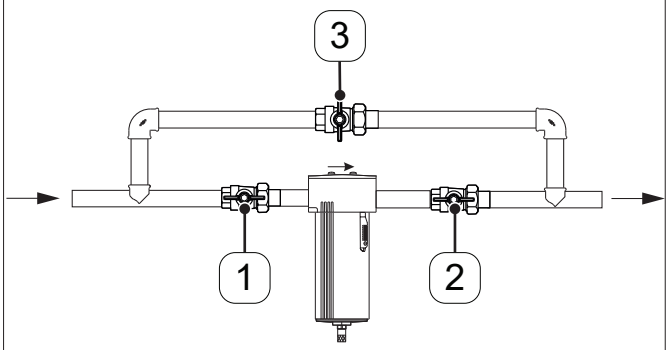
7.2 Commissioning work

Personnel
Skilled technical personnel specializing in pressure equipment and systems and trained electricians (please refer to section “2.3 Target group and personnel” on page 9)

The following requirements must be met and the preparation work completed before commissioning can be carried out.

Prerequisites		
Tools	**Material**	**Protective equipment**
• No tools required.	• No material necessary.	• No protective equipment required.

Preparatory work	
1.	The filter must be fully installed.

Commissioning work		
Figure		**Description / explanation**
Mechanically open	**Automatic drain**	
		1. Turn the knurled-head screw on the float drain counterclockwise from **MECHANICALLY OPEN** to **AUTOMATIC DRAINAGE** ➝ Unscrew the knurled-head screw clockwise until there is a visible gap above it.
		2. Slowly open the shut-off valve **[1]** on the inlet side. 3. Slowly open the shut-off valve **[2]** on the outlet side.

Concluding work	
1.	Close the shutoff valve for the bypass valve **[3]**, if any.

8. Maintenance

8.1 Warning notices

DANGER	Sudden escape of pressurized fluids
	There is a danger of death or serious personal injury resulting from contact with fast or suddenly escaping fluids or through bursting system parts.
	• Before starting work, depressurize the pressurized system and secure it against unintentional pressurization.

8.2 Maintenance schedule

Maintenance work	Interval
Cleaning work	At regular intervals, depending on contamination
Visual inspection	Weekly
Replacing the float drain	Annually
Replacing the filter element	Annually or when the differential pressure is ≥ 0.4 bar (5.8 psi)
Leak test	At the end of all installation, maintenance, and servicing work on the product
Checking the inside of the filter housing for damage and corrosion	Every time the filter element is replaced

8.3 Maintenance work

Personnel
Qualified service technicians (see section “2.3 Target group and personnel” on page 9)

8.3.1 Cleaning

8.3.1.1 Warning notices

CAUTION	Personal injury caused by the incorrect use of cleaning agents
	Improper use of cleaning agents may result in minor injuries and damage to health.
	• Use personal protective equipment. • Use cleaning agents in accordance with the manufacturer’s instructions.

NOTICE	Observe all local hygiene regulations
	In addition to the cleaning instructions listed, any regionally applicable or company-specific hygiene regulations must be observed.

8.3.1.2 Cleaning work

To carry out cleaning, the following requirements must be met and the preparatory work completed.

Prerequisites		
Tools	**Material**	**Protective equipment**
• No tools required.	• Mild cleaning agent • Cotton cloth or disposable cloth	

To clean the filter, use a damp (but not wet) cotton cloth or disposable wipe and a mild conventional detergent or soap.

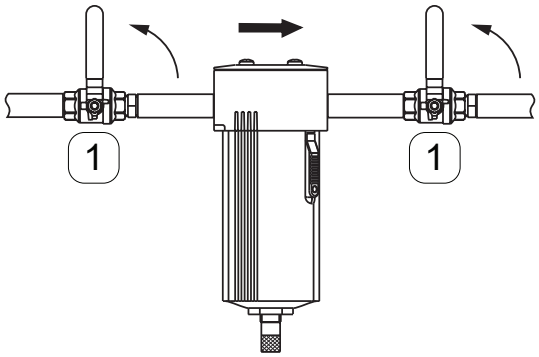
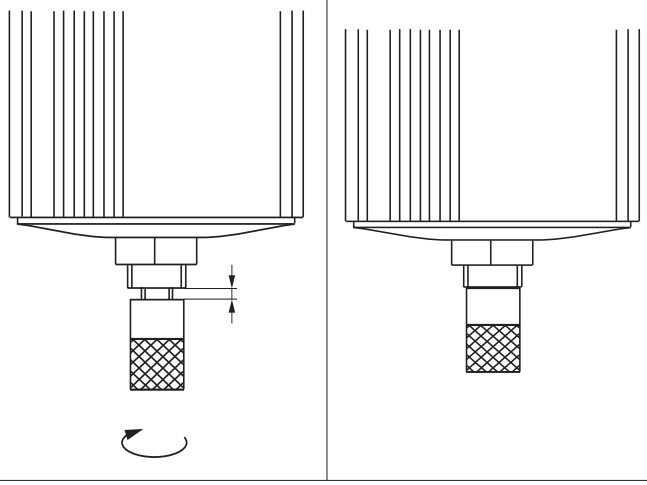
Cleaning work	
1.	Spray the cleaning agent onto a new cotton cloth or disposable wipe.
2.	Rub over the entire component
3.	Finally, dry the component with a clean cloth or let it air-dry.

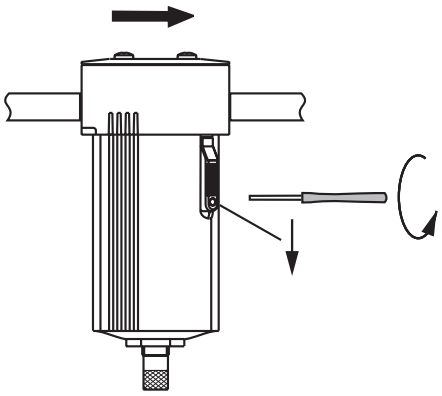
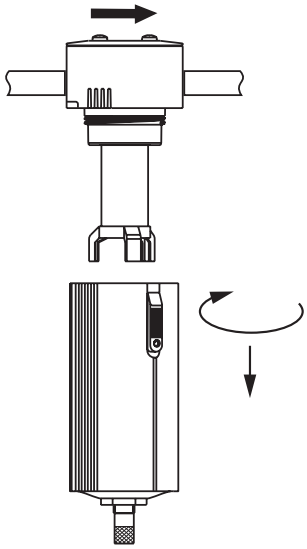
8.3.2 Replacing the float drain

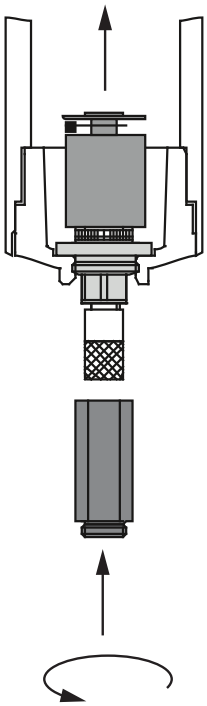
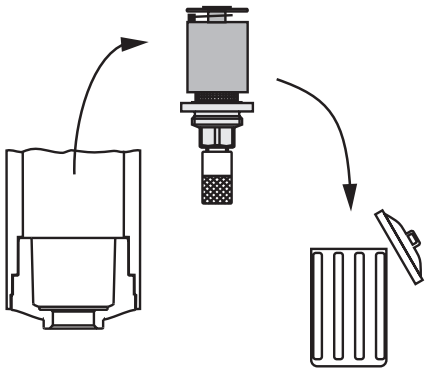
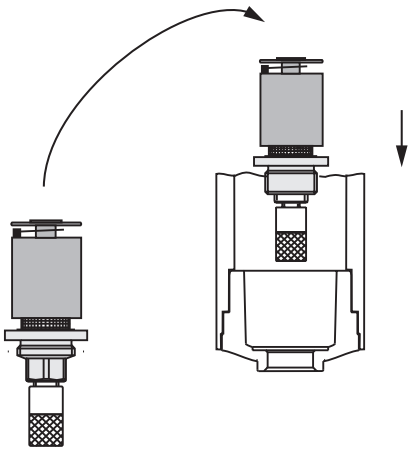
The following requirements must be met and the preparatory work completed before the float drain can be replaced.

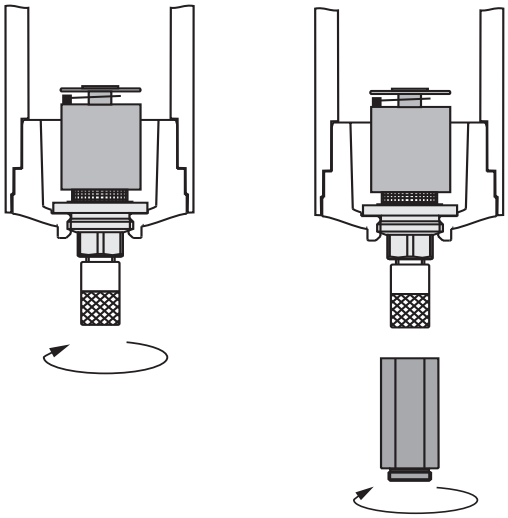
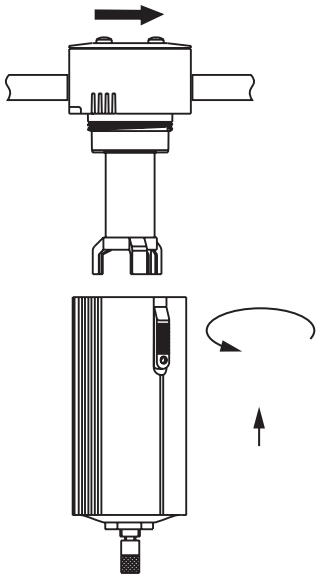
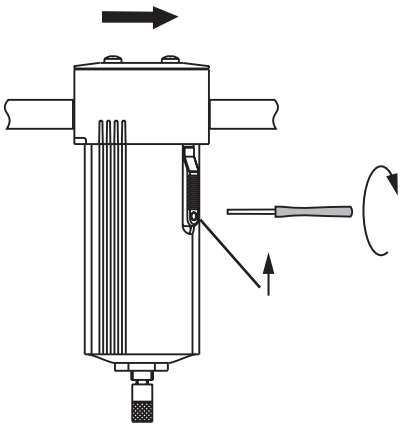
Prerequisites		
Tools	**Material**	**Protective equipment**
• Screwdriver – PZ1 Pozidriv head	• New float drain with included adapter (AF 13)	

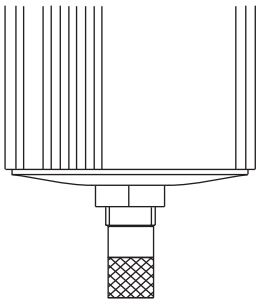
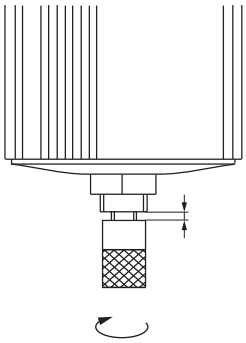
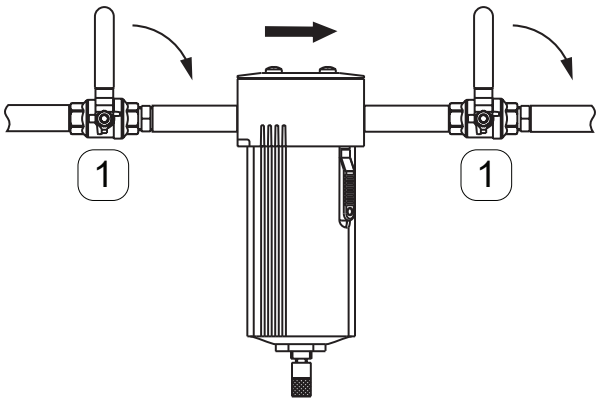
Preparatory work	
1.	Open the shutoff valve for the bypass valve, if any.

Replacing the float drain	
Figure	**Description / explanation**
	Depressurize the filter and lock and tag out the system so that it cannot be pressurized by accident. 1. Close the shut-off valves **[1]** upstream and downstream of the filter or relevant system section.
Automatic drainage / **Mechanically open** 	If using a float drain: 2. Turn the knurled-head screw on the float drain clockwise from **AUTOMATIC DRAINAGE** to **MECHANICALLY OPEN**. → Screw the knurled-head screw in all the way. When using the **ZL Drain**: Briefly press the **TEST** button multiple times: → This will relieve the pressure in the filter. → The remaining condensate in the filter will be drained.

Replacing the float drain	
Figure	**Description / explanation**
	3. Loosen the locking screw on the safety slide. 4. Slide the safety slide down.
	5. Unscrew the filter housing. 6. Remove the filter housing downwards.

Replacing the float drain	
Figure	**Description / explanation**
	7. Unscrew the float drain with the adapter counterclockwise. 8. Pull the float drain up and out of the filter housing.
	9. Properly dispose of the float drain in accordance with all locally applicable legal requirements and regulations. → For more information, see “11. Disposal” on page 58.
	10. Insert the new float drain into the filter housing.

Replacing the float drain	
Figure	**Description / explanation**
	11. Screw the float drain into the filter housing clockwise by hand. 12. Screw the float drain together with the adapter.
	13. Screw the filter housing back onto the filter head. → Position the safety slide in such a way that it will be accessible from the operator side after installation.
	14. Slide the safety slide up. 15. Tighten the locking screw on the safety slide.

Replacing the float drain		
Figure		**Description / explanation**
Mechanically open	**Automatic drainage**	
		16. Turn the knurled-head screw on the float drain counterclockwise from **MECHANICALLY OPEN** to **AUTOMATIC DRAINAGE**. → Unscrew the knurled-head screw all the way.
		17. Slowly open the shut-off valves **[1]** upstream and downstream of the filter or relevant system section.

Concluding work	
1.	Slowly close the shutoff valve for the bypass valve, if any.

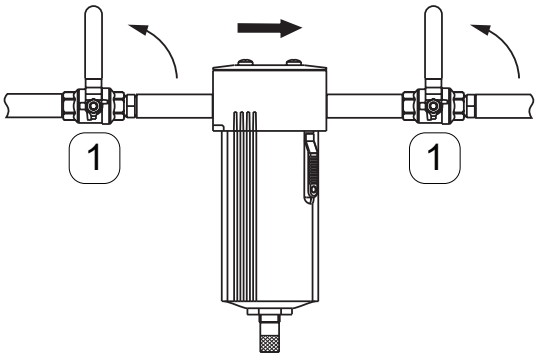
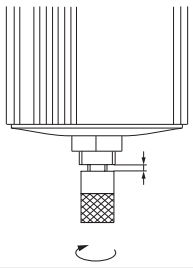
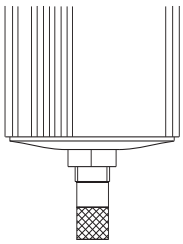
8.3.3 Replacing the filter element

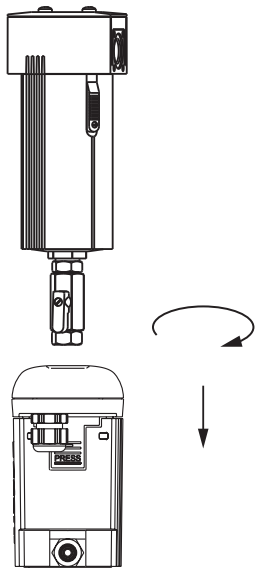
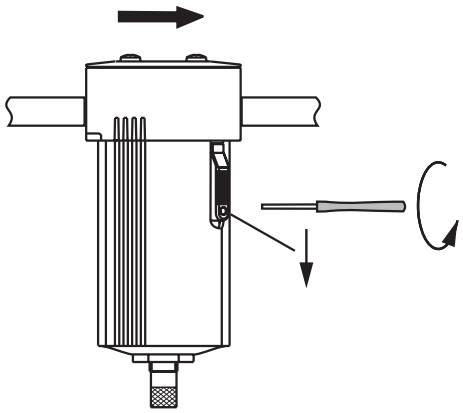
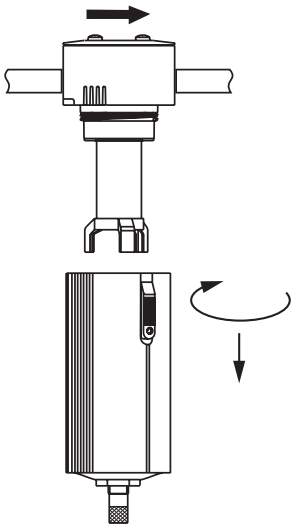
The parameters and reference conditions on which the filter elements' service life depends are listed in section "4. Technical data" on page 27.

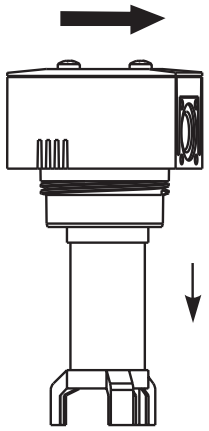
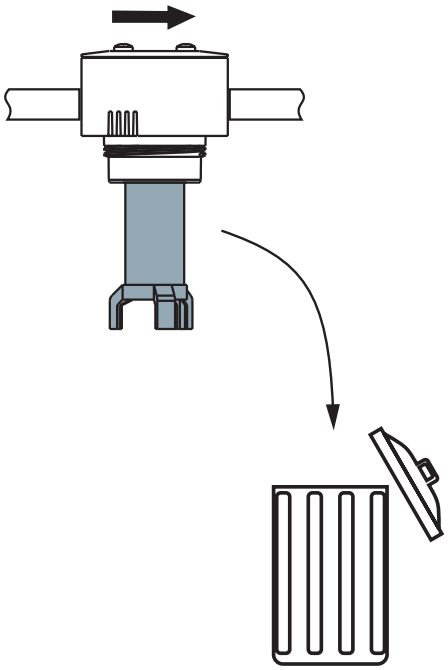
With all filters, the system design (e.g., the preliminary filtration or pre-drying used) and the impurity load in the operating fluid will affect the service life of the corresponding filter element. The following requirements must be met and the preparatory work completed before the filter element can be replaced.

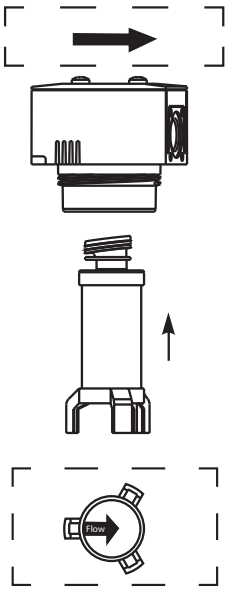
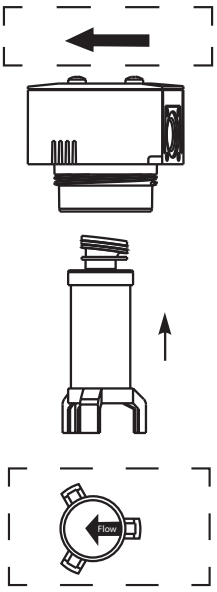
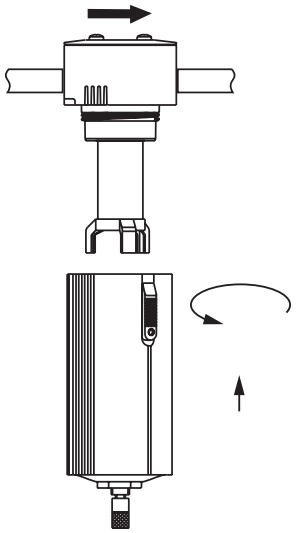
Prerequisites		
Tools	**Material**	**Protective equipment**
• Screwdriver – PZ1 Pozidriv head	• New filter element	

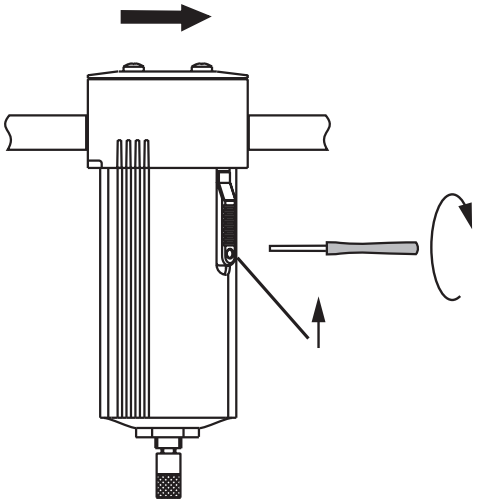
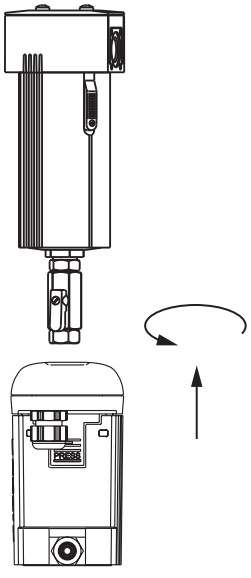
Preparatory work	
1.	Open the shutoff valve for the bypass valve, if any.

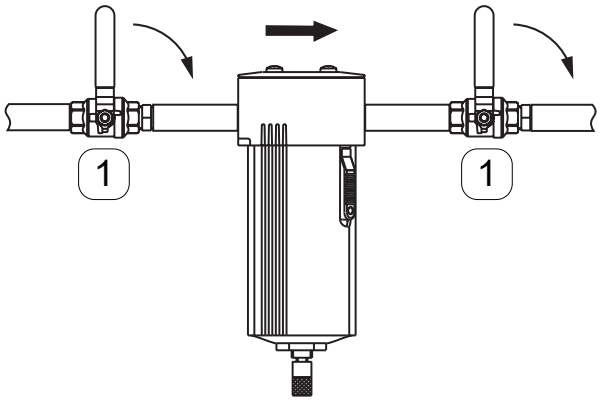
Filter replacement for coalescing filters, activated carbon filters, and dust filters	
Figure	**Description / explanation**
	Depressurize the filter and lock and tag out the system so that it cannot be pressurized by accident. 1. Close the shut-off valves **[1]** upstream and downstream of the filter or relevant system section.
Automatic drainage / **Mechanically open**	If using a float drain: 2. Turn the knurled-head screw on the float drain clockwise from **AUTOMATIC DRAINAGE** to **MECHANICALLY OPEN**. → Screw the knurled-head screw in all the way. When using the **ZL Drain**: Briefly press the **TEST** button multiple times: → This will relieve the pressure in the filter. → The remaining condensate in the filter will be drained.
 	

Filter replacement for coalescing filters, activated carbon filters, and dust filters	
Figure	**Description / explanation**
	When using the **ZL Drain**: 3. Separate the **ZL Drain** from the filter. → For further information, see installation and operating manual for the **ZL Drain** "1.3 Additional valid documents" on page 6.
	4. Loosen the locking screw on the safety slide. 5. Slide the safety slide down.
	6. Unscrew the filter housing. 7. Remove the filter housing downwards.

Filter replacement for coalescing filters, activated carbon filters, and dust filters	
Figure	**Description / explanation**
	8. Pull the used filter element down and out of the filter head.
	9. Dispose of the filter element properly and in accordance with all applicable regional regulations. → For more information, see “11. Disposal” on page 58.

Filter replacement for coalescing filters, activated carbon filters, and dust filters	
Figure	**Description / explanation**
 Activated carbon filter Coalescing filter  Dust filter	10. Insert the new filter element into the filter head. The marking at the bottom of the filter element indicates the element's direction of flow. → In the case of coalescing filters and activated carbon filters, the directions of flow of the pipe and the filter element should match. → In the case of dust filters, the direction of flow of the filter element should oppose the direction of flow of the pipe.
	11. Screw the filter housing onto the filter head. → Ensure that the safety slide points forward.

Filter replacement for coalescing filters, activated carbon filters, and dust filters	
Figure	**Description / explanation**
	12. Slide the safety slide up. 13. Tighten the locking screw on the safety slide.
Mechanically open / **Automatic drain**	14. Turn the knurled-head screw on the float drain counterclockwise from **MECHANICALLY OPEN** to **AUTOMATIC DRAINAGE**. → Unscrew the knurled-head screw all the way.
	When using the **ZL Drain**: 15. Reconnect the **ZL Drain**. → For further information, see installation and operating manual for the **ZL Drain** "1.3 Additional valid documents" on page 6.

Filter replacement for coalescing filters, activated carbon filters, and dust filters	
Figure	**Description / explanation**
	16. Slowly open the shut-off valves **[1]** upstream and downstream of the filter or relevant system section.

Concluding work	
1.	Close the shutoff valve for the bypass valve, if any.

8.3.4 Visual inspection

During the visual inspection of the filter, check all components for mechanical damage and corrosion. Replace damaged components immediately.

8.3.5 Concluding work

- Before pressurization, check all system connections for leak tightness and tighten if necessary.
- Slowly pressurize the system.

9. Taking the product out of operation

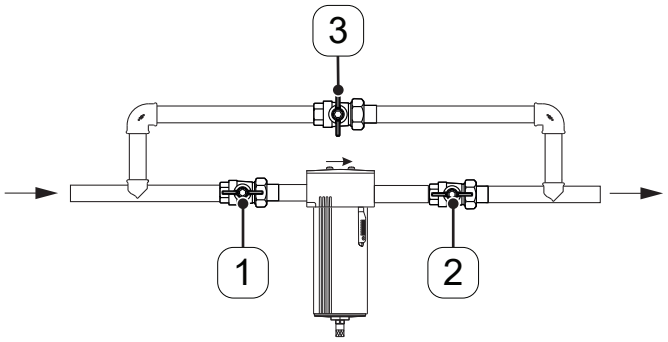
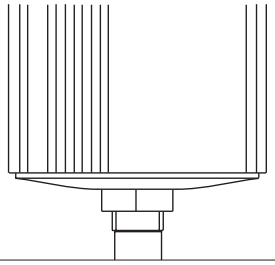
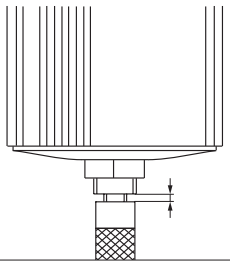
9.1 Warning notices

DANGER	Sudden escape of pressurized fluids
	There is a danger of death or serious personal injury resulting from contact with fast or suddenly escaping fluids or through bursting system parts.
	• Before starting work, depressurize the pressurized system and secure it against unintentional pressurization.

9.2 Taking the product out of operation

Personnel
Qualified service technicians (see section “2.3 Target group and personnel” on page 9)

Preparatory work	
1.	Open the shutoff valve for the bypass valve [3], if any.

Figure	Description / explanation
	Depressurize the filter and lock and tag out the system so that it cannot be pressurized by accident. 1. Close the shut-off valves upstream **[1]** and downstream **[2]** of the filter or relevant system section.
Mechanically open / **Automatic drain**	If using a float drain: 2. Turn the knurled-head screw on the float drain clockwise from **AUTOMATIC DRAINAGE** to **MECHANICALLY OPEN**. → Screw the knurled-head screw in all the way. When using the **ZL Drain**: Briefly press the **TEST** button multiple times: → This will relieve the pressure in the filter. → The remaining condensate in the filter will be drained.
 	

10. Uninstallation

10.1 Warning notices

DANGER	Sudden escape of pressurized fluids
	There is a danger of death or serious personal injury resulting from contact with fast or suddenly escaping fluids or through bursting system parts.
	• Before starting work, depressurize the pressurized system and secure it against unintentional pressurization.

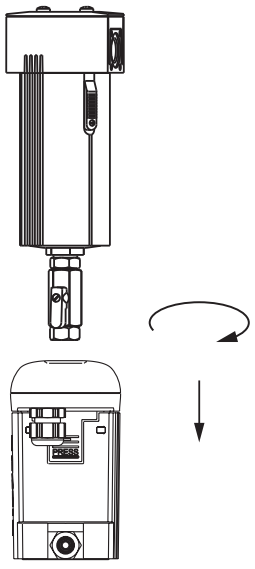
10.2 Uninstallation work

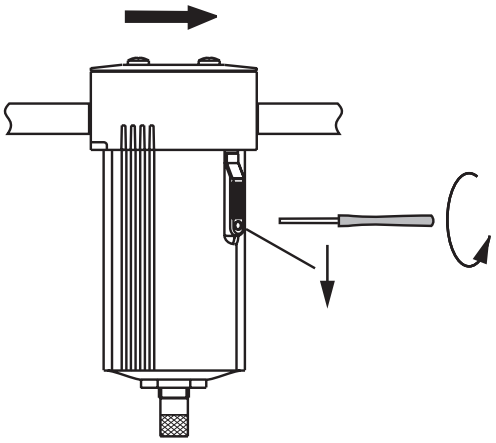
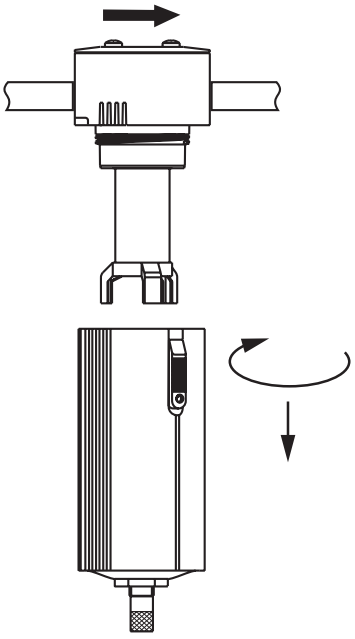
Personnel
Qualified service technicians (see section “2.3 Target group and personnel” on page 9)

The following requirements must be met to carry out disassembly work and preparatory work must be completed.

Prerequisites		
Tools	**Material**	**Protective equipment**
• Screwdriver - Phillips head 2.5 mm size	• No material necessary	

Preparatory work	
1.	Removal from service must be complete. → The system or system section must be removed from service and depressurized.

Disassembly	
Figure	**Description / explanation**
	When using the **ZL Drain**: 1. Separate the **ZL Drain** from the filter. → For further information, see installation and operating manual for the **ZL Drain** “1.3 Additional valid documents” on page 6.

Disassembly	
Figure	**Description / explanation**
	2. Loosen the locking screw on the safety slide. 3. Slide the safety slide down.
	4. Unscrew the filter housing. 5. Remove the filter housing downwards. Remove the filter element: 6. Remove the filter head from the pipe and seal off the ends of the pipe appropriately. 7. Dispose of the components properly.

11. Disposal

At the end of their useful life the product and the accessories must be sent for disposal e.g. by a specialist company. Materials such as glass, plastics and some chemical compounds are mostly recoverable, reusable or recyclable.

11.1 Warning notices

NOTICE	**Improper disposal**
	Improper disposal of parts, components, operating and auxiliary materials as well as cleaning media can cause environmental damage.
	• Dispose of all components, parts, operating and auxiliary materials as well as cleaning agents professionally and in accordance with all locally applicable legal requirements and regulations. • Dispose of electrical and electronic components through a specialist waste disposal company or return to **Sull**ivan Palatek. • In case of doubt, consult regional disposal companies before disposal.

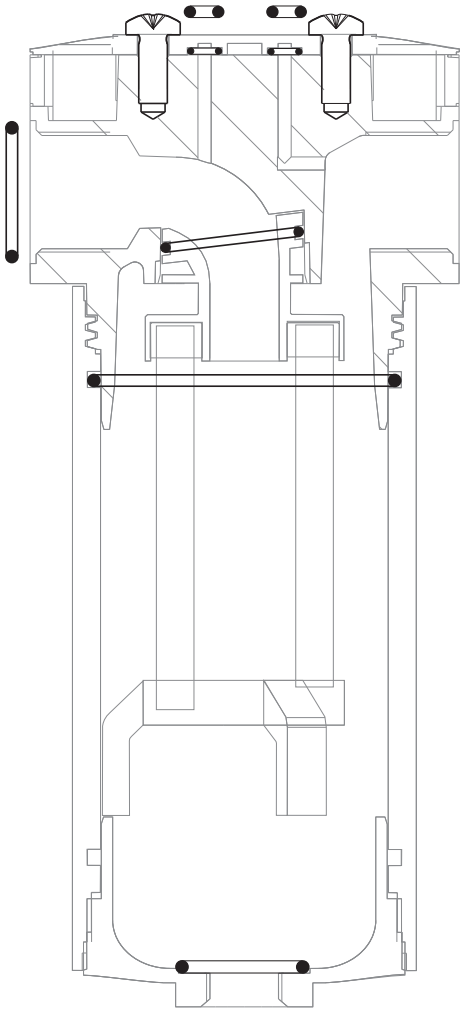
11.2 Disposal of components

Ensure the following prerequisites are met before disposal:

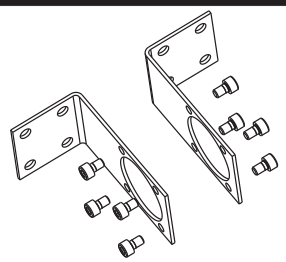
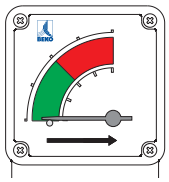
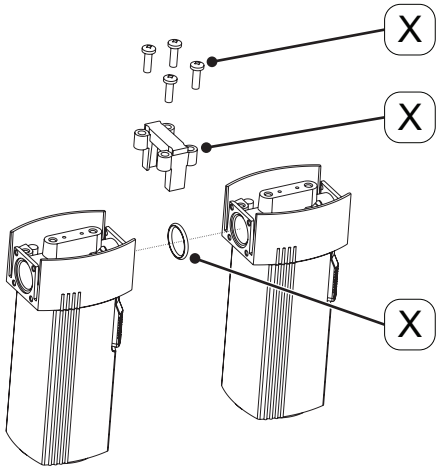
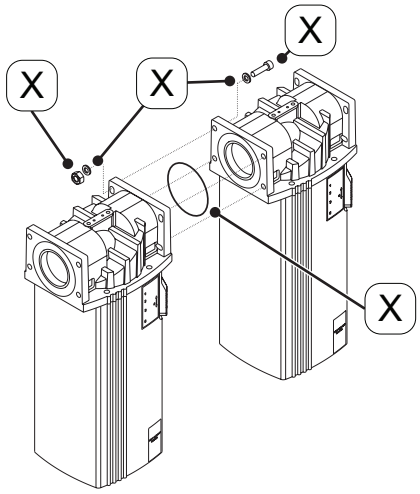
	Prerequisites
1.	The product and the accessories have been taken out of operation and disassembled.
2.	The product and the accessories have been cleaned and any fluid residue has been removed from them.

12. Spare parts and accessories

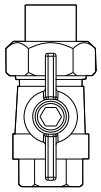
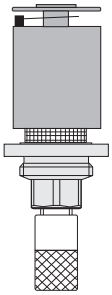
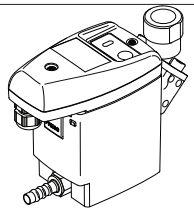
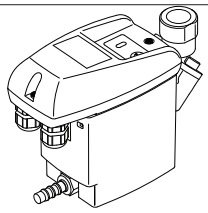
12.1 Spare parts

Figure	Description / explanation	Part No.
	O-ring set for SPTF25, SPTF30, SPTF50, SPTF80	on demand
	O-ring set for SPTF100, SPTF125, SPTF160, SPTF200	on demand
	O-ring set for SPTF250, SPTF330, SPTF450, SPTF500, SPTF600, SPTF800	on demand
	O-ring set for SPTF1000, SPTF1300, SPTF1500, SPTF1900	on demand

12.2 Top attachment accessories

Figure	Description / explanation	Part No.
	Wall bracket for SPTF25, SPTF30, SPTF50, SPTF80	on demand
	Wall bracket for SPTF100, SPTF125, SPTF160, SPTF200	on demand
	Wall bracket for SPTF250, SPTF330, SPTF450, SPTF500, SPTF600, SPTF800	on demand
	Wall bracket for SPTF1000, SPTF1300, SPTF1500, SPTF1900	on demand
	Differential pressure gauge	on demand
	Connection set **[X]** for SPTF25, SPTF30, SPTF50, SPTF80	on demand
	Connection set **[X]** for SPTF100, SPTF125, SPTF160, SPTF200	on demand
	Connection set **[X]** for SPTF250, SPTF330, SPTF450, SPTF500, SPTF600, SPTF800	on demand
	Connection set **[X]** for SPTF1000, SPTF1300, SPTF1500, SPTF1900	on demand

12.3 Bottom attachment accessories

Figure	Description / explanation	Part No.
	Manual drain	on demand
	Float drain (open when not pressurized)	on demand
	Float drain (closed when not pressurized)	on demand
	**ZL Drain 31**	on demand
	**ZL Drain 32 V**	on demand

13. Troubleshooting

Error or fault pattern	Possible causes	Troubleshooting
Inadequate filtration performance	Load too high, intermittent load	• Change operating method • Avoid pressure surges • Comply with the specified operating parameters, in particular during start-up
	Non-functional condensate drain	• Check the condensate drain and replace if necessary
	Incorrect dimensioning	• Replace the current filter with an adequately sized filter
	Filter element installed incorrectly	• Check the direction of flow of the pipe and the filter element
	O-ring was damaged during installation	• Replace the filter element and O-ring with new ones
High pressure differential	Incorrect dimensioning	• Replace the current filter with an adequately sized filter
	High level of contamination	• Shorten the maintenance interval for replacing the filter element • Check whether filtration in stages is required
	Destroyed filter elements	• Check whether changing the operating method or filtration in stages is required
Condensate in downstream components	Condensate drain defective or functional fault	• Replace the float drain or perform maintenance on the **ZL Drain** as required
	Cooling downstream of filtration section	• Drying required before filtration
Leaks	Aging of seals	• Replace seals
	Mechanical damage	• Send in filter for repairs or replace with a new one

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