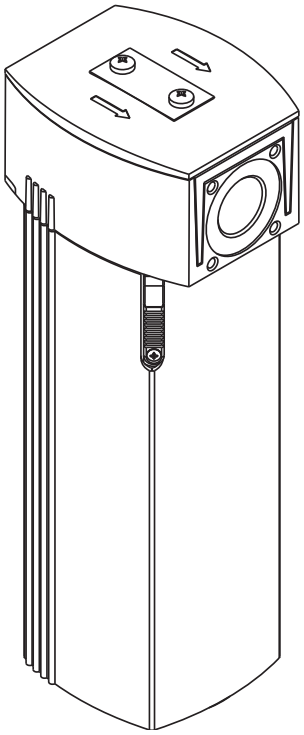
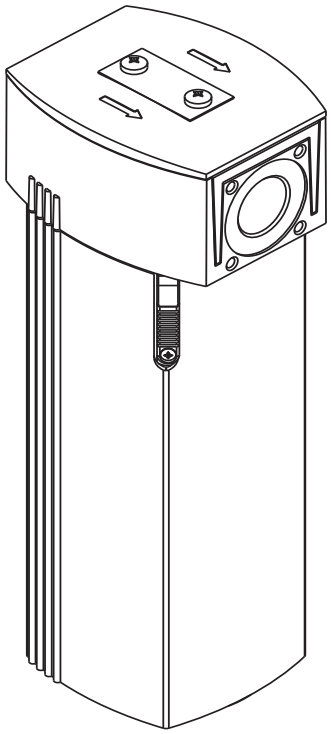
EN-US





Original installation and operating manual

CLEARPOINT®

Coalescing filter
Activated carbon filter
Dust filter

- S040
- S045
- S050
- S055
- S075
- S100
- M010
- M012
- M015
- M018
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- M027
- M030
- M032

08-504

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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
BEKO TECHNOLOGIES GmbH Im Taubental 7 | 41468 Neuss Phone: +49 2131 988-1000 info@beko-technologies.com www.beko-technologies.com	**BEKO** TECHNOLOGIES GmbH Im Taubental 7 | 41468 Neuss Phone: +49 2131 988-1000 service-eu@beko-technologies.com www.beko-technologies.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
16 December 2024	00	00	Technical and editorial changes	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 **CLEARPOINT®**.

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

- **BEKOMAT® 31 / 32 / 33**
- **CLEARPOINT®** differential pressure gauge
- **CLEARPOINT®** Oil test indicator
- **CLEARPOINT®** Instruction leaflet on filter replacement

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:

CLEARPOINT® 3eco coalescing filters are used to filter liquid and solid components from gas mixtures in pressurized systems.

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

CLEARPOINT® dust filters are used to separate particles 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.
- Combine the product and the accessories only with the recommended manufacturer products and components indicated in this 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, disassembly 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.

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
	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.
- 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.

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 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

CLEARPOINT® 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.

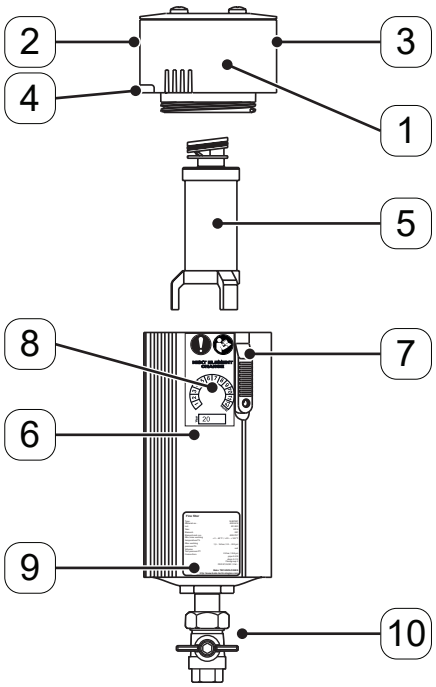
The condensate collected during filtration can be drained manually or automatically from the filter.

CLEARPOINT® 3eco coalescing filters are used to filter liquid and solid components from gas mixtures in pressurized systems.

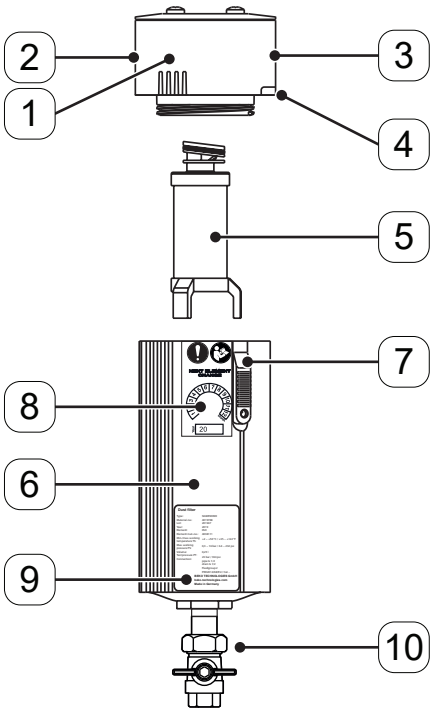
CLEARPOINT® activated carbon filters are used to separate oil vapors and odorants from gas mixtures in pressurized systems. The residual oil content in the corresponding gas mixture can be measured over an extended period of time (t > hundred hours) with an oil test indicator.

CLEARPOINT® dust filters are used to separate particles in pressurized systems.

3.2 Product overview



Coalescing filter
Activated carbon filter



Dust filter

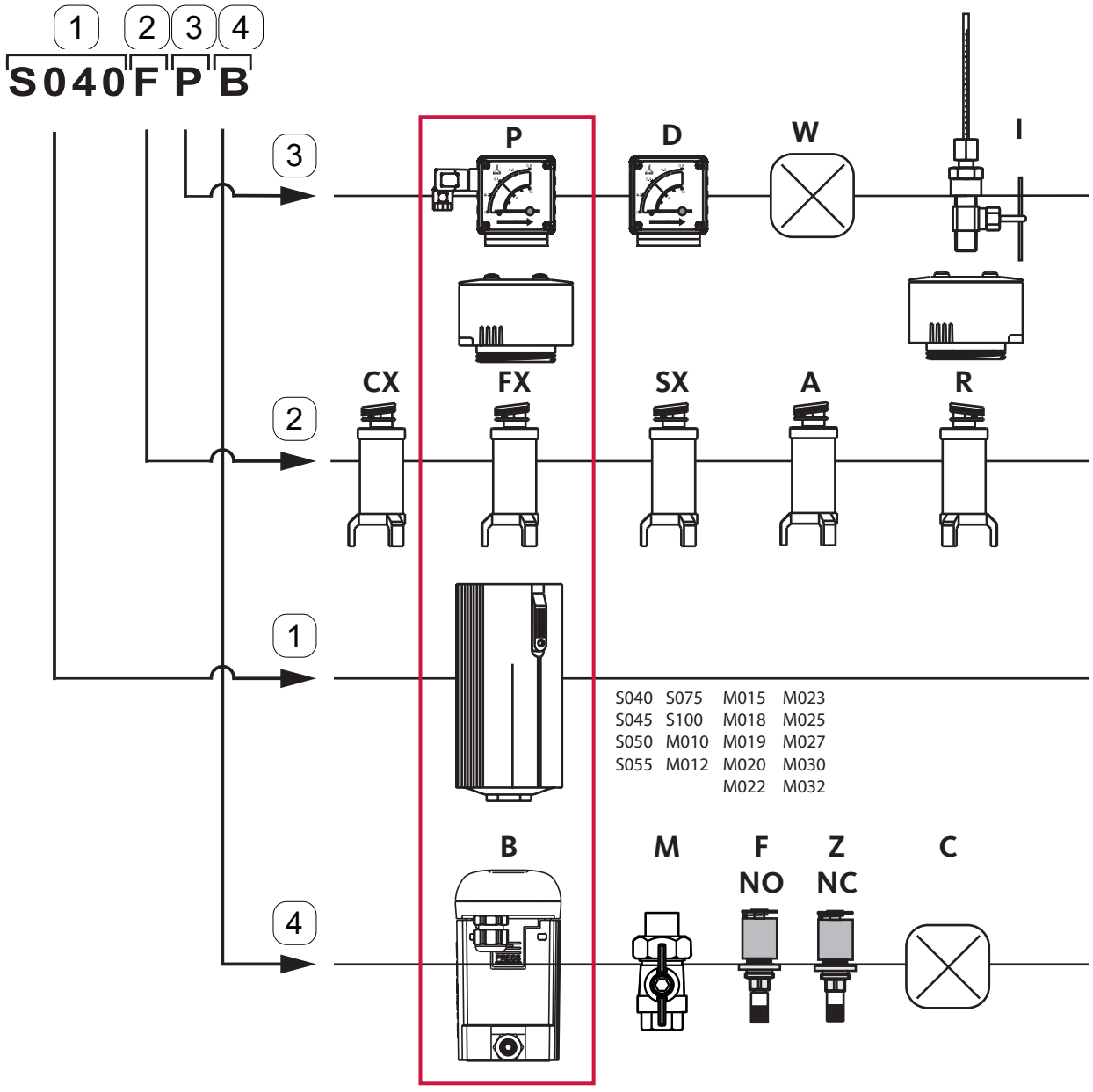
Position no.	Description / explanation
[1]	Filter head
[2]	Inlet on the filter head
[3]	Outlet on filter head
[4]	Direction indicator
[5]	Filter element
[6]	Filter housing
[7]	Safety slide with locking screw
[8]	Maintenance sticker for filter element replacement
[9]	Type plate
[10]	Manual drain

3.3 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] = Size: Filter housing
[2] = Filter elements
[3] = Top attachments
[4] = Bottom attachments

The following section explains the product designation using "**S040FPB**" as an example:



Top attachments		
Position no.	**Abbreviation**	**Description / explanation**
[3]	P	Differential pressure gauge with dry contact
	D	Differential pressure gauge without dry contact
	W	No display device
	I	Oil test indicator

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**
[2]	CX*2	Coarse filter	2 ... 5	≤ 5	[4: - :4]
	FX*2	Fine filter	0.5 ... 1	≤ 0.05	[2: - :2]
	SX*2	Superfine filter	0.1 ... 0.3	≤ 0.005	[1: - :2]
	A	Activated carbon filter	--	≤ 0.003	[- : - :1]

Filter housing			
Position no.	**Model series**	**Size**	**Volume l (gal)**
[1]	S	040	0.25 (0.07)
	S	045	0.25 (0.07)
	S	050	0.31 (0.08)
	S	055	0.42 (0.11)
	S	075	0.87 (0.23)
	S	100	0.87 (0.23)
	M	010	1.12 (0.3)
	M	012	1.26 (0.33)
	M	015	2.52 (0.67)
	M	018	2.97 (0.78)
	M	019	3.4 (0.9)
	M	020	3.4 (0.9)
	M	022	4.23 (1.12)
	M	023	5.24 (1.38)
	M	025	13.88 (3.67)
	M	027	16.49 (4.36)
	M	030	19.51 (5.15)
	M	032	23.24 (614)

*1 Validation in conformity with ISO 12500-1: inlet concentration: approx. 10 mg/m³ for SX, FX; 30 mg/m³ for CX

*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.

Bottom attachments		
Position no.	**Abbreviation**	**Description / explanation**
[4]	B	**BEKOMAT® 31 / 32 / 33**
	M	Manual drain
	F	Float drain, open when not pressurized (NO - normally open)
	Z	Float drain, closed when not pressurized (NC - normally closed)
	C	Without condensate drain

3.4 Function description

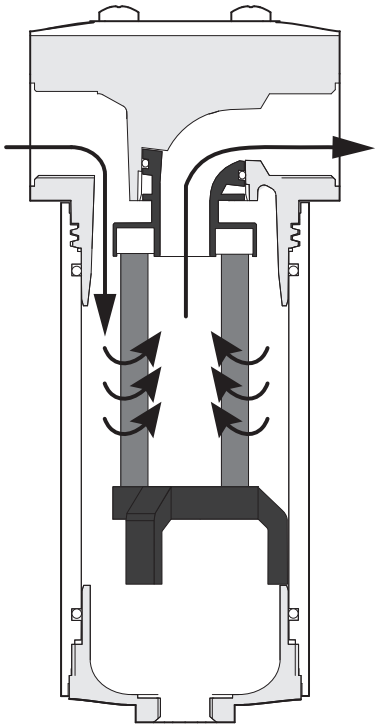
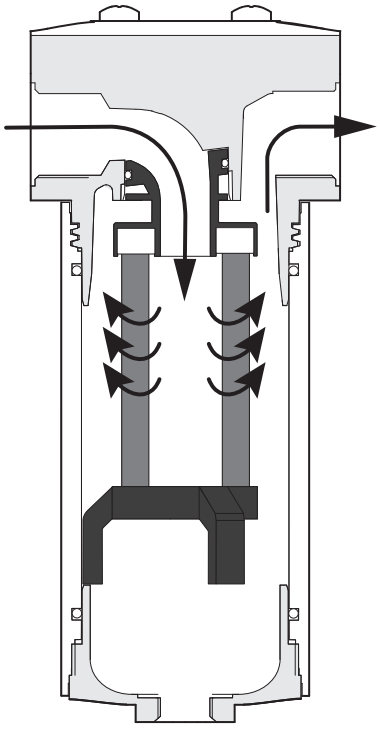
Figure	Description / explanation
	**Dust filter** The direction of flow for the filter element in **CLEARPOINT®** dust filters is from the outside to the inside. The fluid enters filter housing and flows from outside through the filter element and into the filter element. The particles are separated 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.

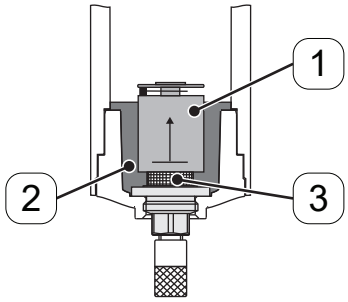
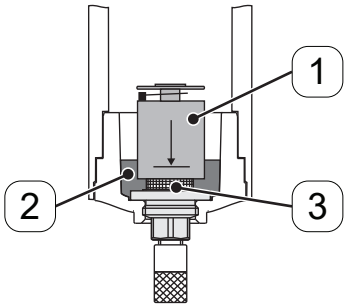
Figure	Description / explanation
	**Coalescing filter** The direction of flow for the filter element in **CLEARPOINT® 3eco** coalescing filters is from the inside to the outside. The fluid enters the inside of the filter element and from there flows through the element and into the filter housing. The 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. **Activated carbon filter** The direction of flow for the filter element in **CLEARPOINT®** 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.

3.4.1 Draining condensate through the float drain

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.

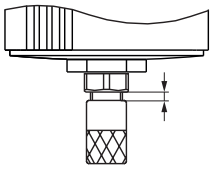
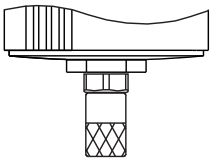
There are two different float drains used to discharge condensate:

- Open when not pressurized [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 remains in the container.

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
	

3.4.2 Automatic condensate discharge

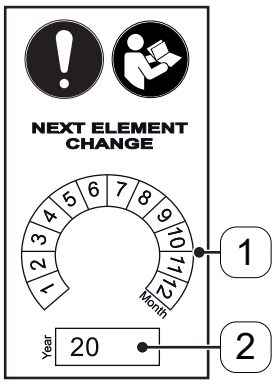
A **BEKOMAT®** can be installed on the condensate drain in order to be able to discharge condensate in a level-controlled manner.

For more information, please refer to the installation and operating manual for the **BEKOMAT®**; see "1.3 Additional valid documents" on page 6.

3.5 Product designation

3.5.1 Maintenance sticker for filter element replacement

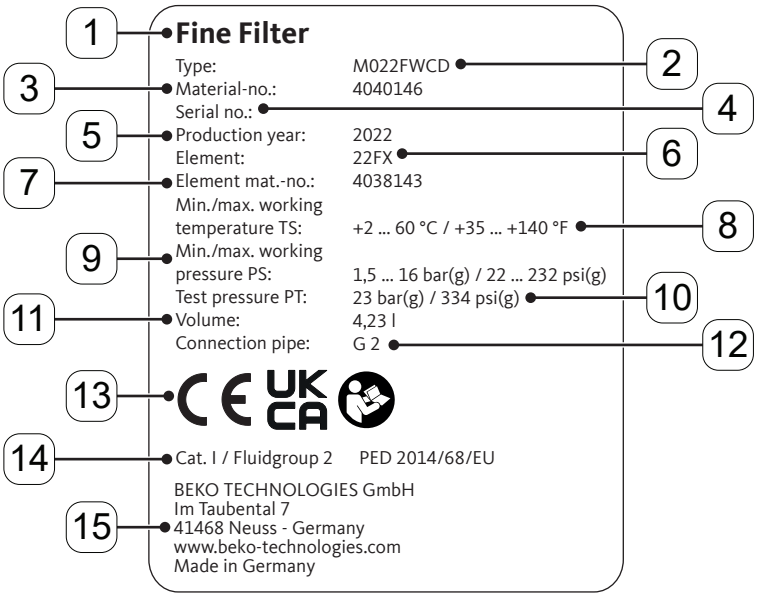
The next upcoming filter element replacement date is marked on this sticker. To this end, mark the relevant month **[1]** and enter the corresponding **[2]** year with a permanent marker.
A maintenance sticker is included with every filter element.



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

3.5.2 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.

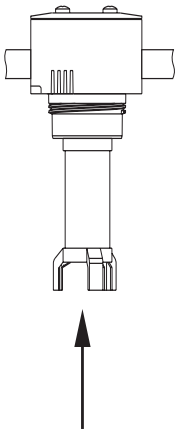
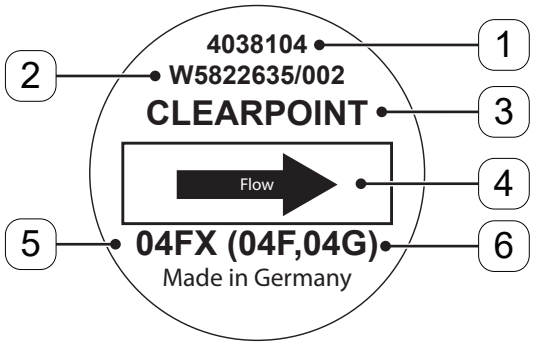
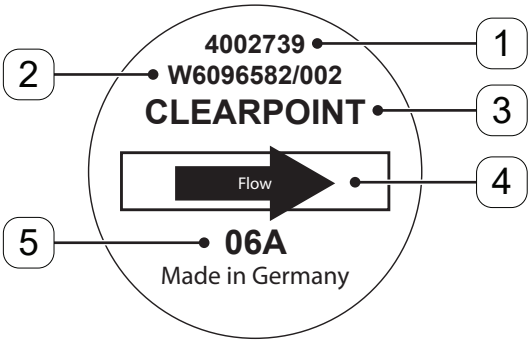
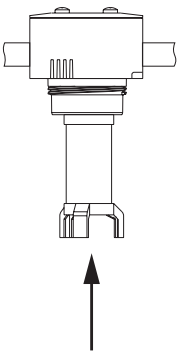
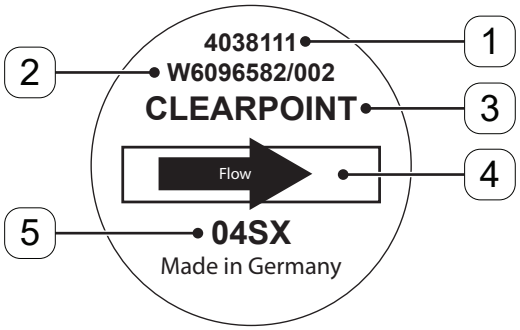


Example Coalescing filter type plate

Position no.	Description / explanation
[1]	Filter description
[2]	Product designation
[3]	Material number
[4]	Serial number
[5]	Production year
[6]	Filter element description
[7]	Material number of filter element
[8]	Min. / max. working temperature range
[9]	Maximum operating pressure range
[10]	Test pressure
[11]	Filter housing volume
[12]	Inlet and outlet threaded connections
[13]	Conformity markings
[14]	Fluid group and category according to Pressure Equipment Directive 2014/68/EU
[15]	Manufacturer's address

3.5.3 Filter element sticker

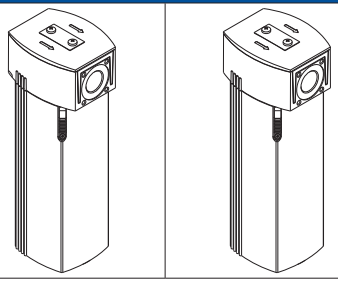
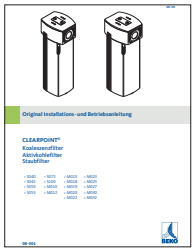
Different filter elements are available for different applications and degrees of filtration.
The filter element can be identified by a sticker on its base.

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

Position no.	Description / explanation
[1]	Material number
[2]	Lot number
[3]	Product group
[4]	Indicates the direction of flow for the filter element (flow)
[5]	The filter element's designation (e.g., 04FX: filter size 04, superfine filter) • Filter element size (e.g., 04, 06) • Filter element type (e.g., coarse filter – CV; fine filter – FX; superfine filter – SX; activated carbon filter – A)
[6]	Previous model filter element designation in parentheses (e.g., 04F, 04G)

3.6 Scope of delivery

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

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

4. Technical data

4.1 Operating parameters

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

CLEARPOINT®		S040	S045	S050	S055	S075	S100	M010	M012	M015
Threaded connection		3/8 1/2*1	1/2	1/2	1/2	3/4 1*1	1	1	1	1 1/2 2*1
Volumetric flow rate, energy-optimized, m³/h (ft³/min)*2		35 (21)	35 (21)	65 (38)	100 (59)	150 (88)	150 (88)	200 (118)	250 (147)	320 (188)
Differential pressure mbar (psi), saturated	C	~50 (~ 0.73)								
	F	80 (1.16)	80 (1.16)	115 (1.67)	150 (2.18)	185 (2.68)	185 (2.68)	120 (1.74)	165 (2.39)	80 (1.16)
	S	100 (1.45)	100 (1.45)	125 (1.81)	170 (2.47)	120 (1.74)	120 (1.74)	135 (1.96)	180 (2.61)	100 (1.45)
Volumetric flow rate, performance-oriented, m³/h (ft³/min)*2		46 (27)	46 (27)	85 (50)	130 (77)	195 (115)	195 (115)	260 (153)	325 (191)	415 (244)
Differential pressure mbar (psi), saturated	C	~ 70 (1.02)								
	F	105 (1.52)	105 (1.52)	160 (2.32)	230 (3.34)	150 (2.18)	150 (2.18)	180 (2.61)	230 (3.34)	110 (1.60)
	S	125 (1.81)	125 (1.81)	170 (2.47)	255 (3.70)	175 (2.54)	175 (2.54)	200 (2.90)	260 (3.77)	130 (1.89)
Category according to PED 2014/68/EU		-	-	-	-	-	-	-	-	-
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 Optionally available

*2 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

CLEARPOINT®		M018	M019	M020	M022	M023	M025	M027	M030	M032
Threaded connection		1 1/2 2*1	1 1/2 2*2	2	2	2	2 1/2 3*1	2 1/2 3*1	3	3
Volumetric flow rate, energy-optimized, m³/h (ft³/min)*2		420 (247)	600 (353)	600 (353)	780 (459)	1020 (600)	1300 (765)	1620 (954)	1940 (1142)	2400 (1412)
Differential pressure mbar (psi), saturated	C	~50 (~ 0.73)								
	F	90 (1.31)	120 (1.74)	120 (1.74)	150 (2.18)	200 (2.90)	100 (1.45)	115 (1.67)	120 (1.74)	145 (2.10)
	S	110 (1.60)	140 (2.03)	140 (2.03)	170 (2.47)	210 (3.05)	125 (1.81)	130 (1.89)	140 (2.03)	165 (2.39)
Volumetric flow rate, performance-oriented, m³/h (ft³/min)*2		545 (321)	780 (459)	780 (459)	1015 (597)	1325 (780)	1690 (995)	2100 (1236)	2520 (1483)	3120 (1836)
Differential pressure mbar (psi), saturated	C	~ 70 (1.02)								
	F	125 (1.81)	180 (2.61)	180 (2.61)	210 (3.05)	290 (4.21)	140 (2.03)	155 (2.25)	180 (2.61)	220 (3.19)
	S	150 (2.18)	210 (3.05)	210 (3.05)	250 (3.63)	320 (4.64)	170 (2.47)	185 (2.68)	210 (3.05)	250 (3.63)
Category according to PED 2014/68/EU		-	-	I	I	I	II	II	II	II
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)		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 Optionally available

*2 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

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

4.3 Performance data

4.3.1 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

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 when there is a differential pressure ≥ 0.4 bar(g) (5.8 psi(g)) or after one year of use at the latest.

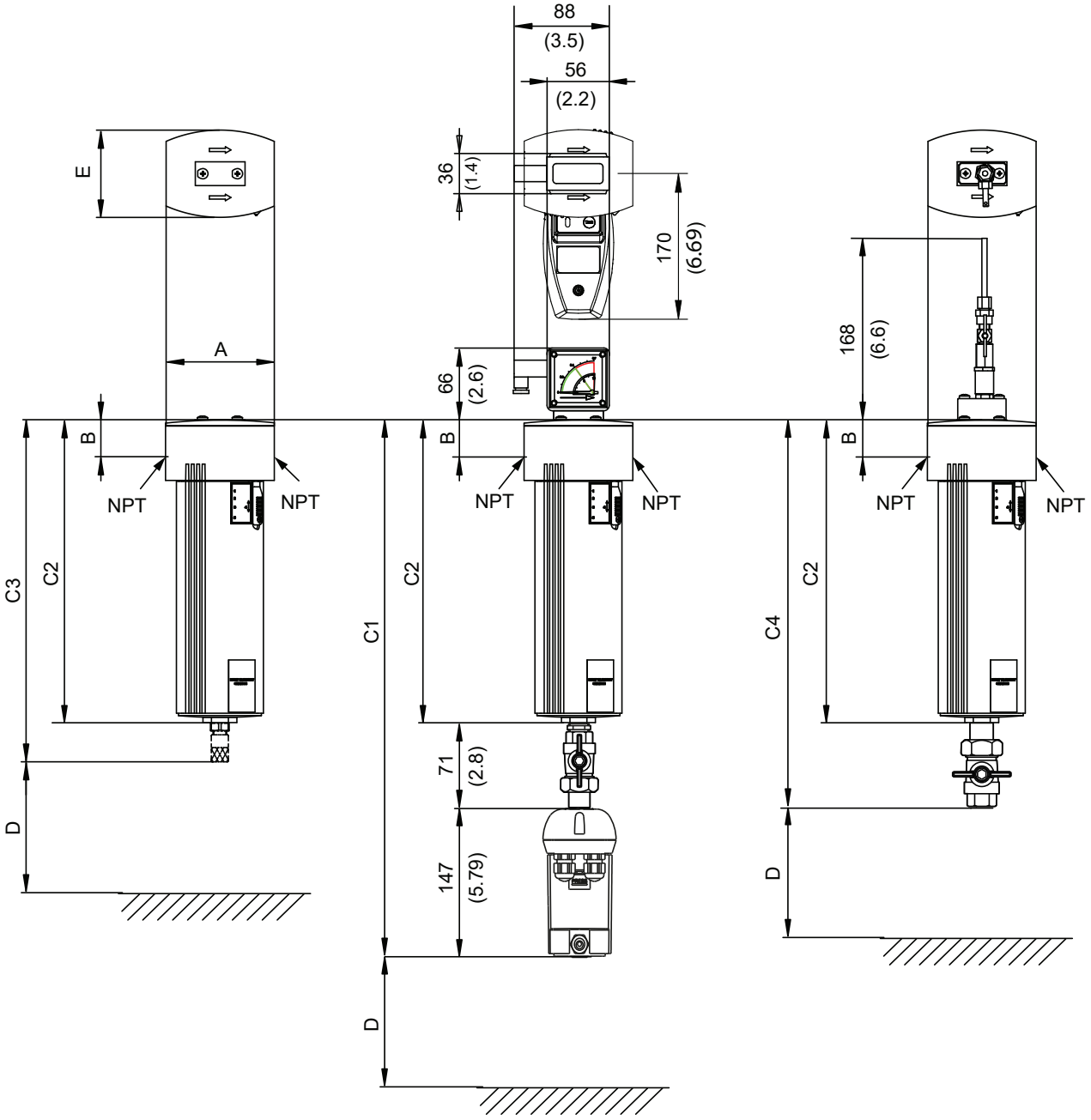
4.3.2 Filter elements for activated carbon filters

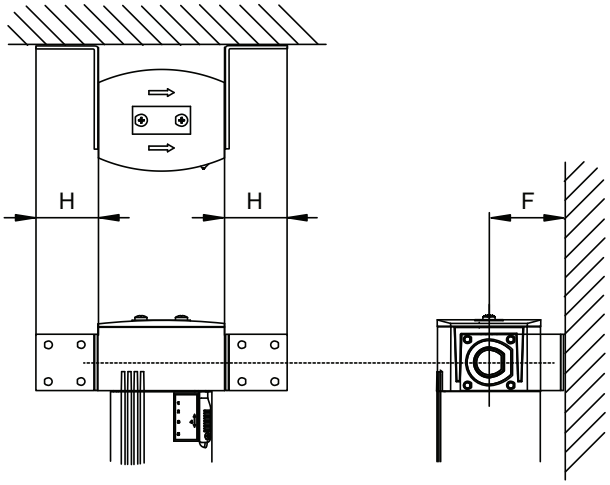
The filter elements for activated carbon filters have been validated based on ISO 12500-2 with measuring equipment that conforms to the standard and a load of 10 mg/m³.

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.

Service life for the filter element in activated carbon filters		
Parameters Reference conditions	**Activated carbon filter**	**Filter element service life**
Differential pressure	≥ 0.4 bar / 5.8 psi	Replace the filter element when there is a differential pressure ≥ 0.4 bar(g) (5.8 psi(g)) or after six months of use at the latest.
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. • 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 %	

4.4 Dimensions





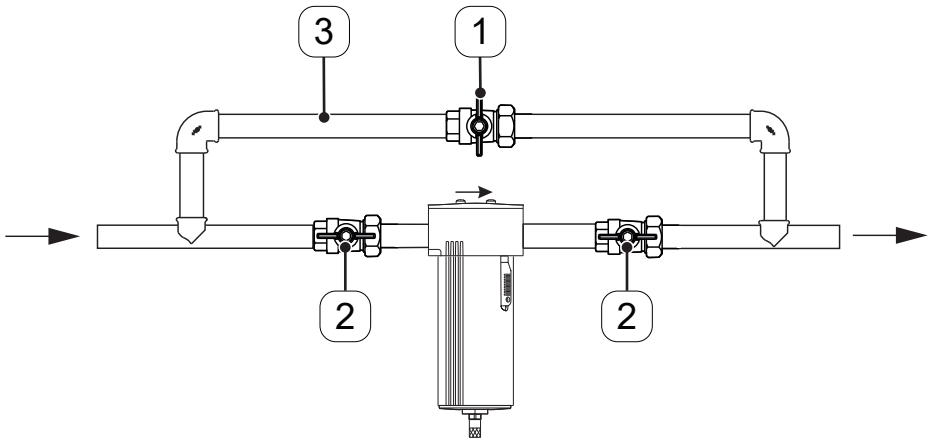
mm
(in)

Filter (Size)	A	B	C	D	E	F	H	Filter element
	mm (in)							
S040	75 (2.95)	28 (1.10)	182 (7.17)	150 (5.91)	61 (2.40)	64.5 (2.54)	39.5 (1.56)	04
S045	75 (2.95)	28 (1.10)	182 (7.17)	150 (5.91)	61 (2.40)	64.5 (2.54)	39.5 (1.56)	04
S050	75 (2.95)	28 (1.10)	212 (8.35)	150 (5.91)	61 (2.40)	64.5 (2.54)	39.5 (1.56)	05
S055	75 (2.95)	28 (1.10)	267 (10.51)	150 (5.91)	61 (2.40)	64.5 (2.54)	39.5 (1.56)	06
S075	100 (3.94)	33 (1.29)	282 (11.10)	150 (5.91)	81 (3.18)	63 (2.48)	45 (1.77)	06
S100	100 (3.94)	33 (1.29)	282 (11.10)	150 (5.91)	81 (3.18)	63 (2.48)	45 (1.77)	06
M010	100 (3.94)	33 (1.29)	352 (13.86)	150 (5.91)	81 (3.18)	63 (2.48)	45 (1.77)	10
M012	100 (3.94)	33 (1.29)	387 (15.24)	150 (5.91)	81 (3.18)	63 (2.48)	45 (1.77)	12
M015	146 (5.75)	47 (1.85)	363 (14.29)	200 (7.87)	119 (4.68)	78.5 (3.09)	60 (2.36)	15
M018	146 (5.75)	47 (1.85)	416 (16.39)	200 (7.87)	119 (4.68)	78.5 (3.09)	60 (2.36)	18
M019	146 (5.75)	47 (1.85)	466 (18.35)	200 (7.87)	119 (4.68)	78.5 (3.09)	60 (2.36)	20
M020	146 (5.75)	47 (1.85)	466 (18.35)	200 (7.87)	119 (4.68)	78.5 (3.09)	60 (2.36)	20
M022	146 (5.75)	47 (1.85)	563 (22.17)	200 (5.91)	119 (4.68)	78.5 (3.09)	60 (2.36)	22
M023	146 (5.75)	47 (1.85)	681 (26.81)	200 (7.87)	119 (4.68)	78.5 (3.09)	60 (2.36)	23
M025	260 (10.24)	77 (3.03)	670 (26.38)	300 (11.81)	201 (7.91)	130 (5.12)	120 (4.72)	25
M027	260 (10.24)	77 (3.03)	774 (30.47)	300 (11.81)	201 (7.91)	130 (5.12)	120 (4.72)	27
M030	260 (10.24)	77 (3.03)	894 (35.20)	300 (11.81)	201 (7.91)	130 (5.12)	120 (4.72)	30
M032	260 (10.24)	77 (3.03)	1042 (41.02)	300 (11.81)	201 (7.91)	130 (5.12)	120 (4.72)	32

Accessories	I	J
BEKOMAT® 31 connection set	135 (5.32)	186 (7.32)
BEKOMAT® 32 connection set	150 (5.91)	188 (7.4)
BEKOMAT® 33 connection set	170 (6.69)	218 (8.58)

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.
- In order to be able to carry out maintenance work, install a manual shutoff valve both at the **CLEARPOINT®** inlet and outlet.
- In order to ensure that the general system can continue to be supplied with fluid even during maintenance and servicing work, the manufacturer 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.
- Pipelines must be able to support the additional weight of the filter.
  Install any additional necessary fasteners or mounts.



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. • 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 impact-proof using suitable material.
- Handle packaging, the product and accessories carefully.

5.3 Storage

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

6. Installation

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

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.

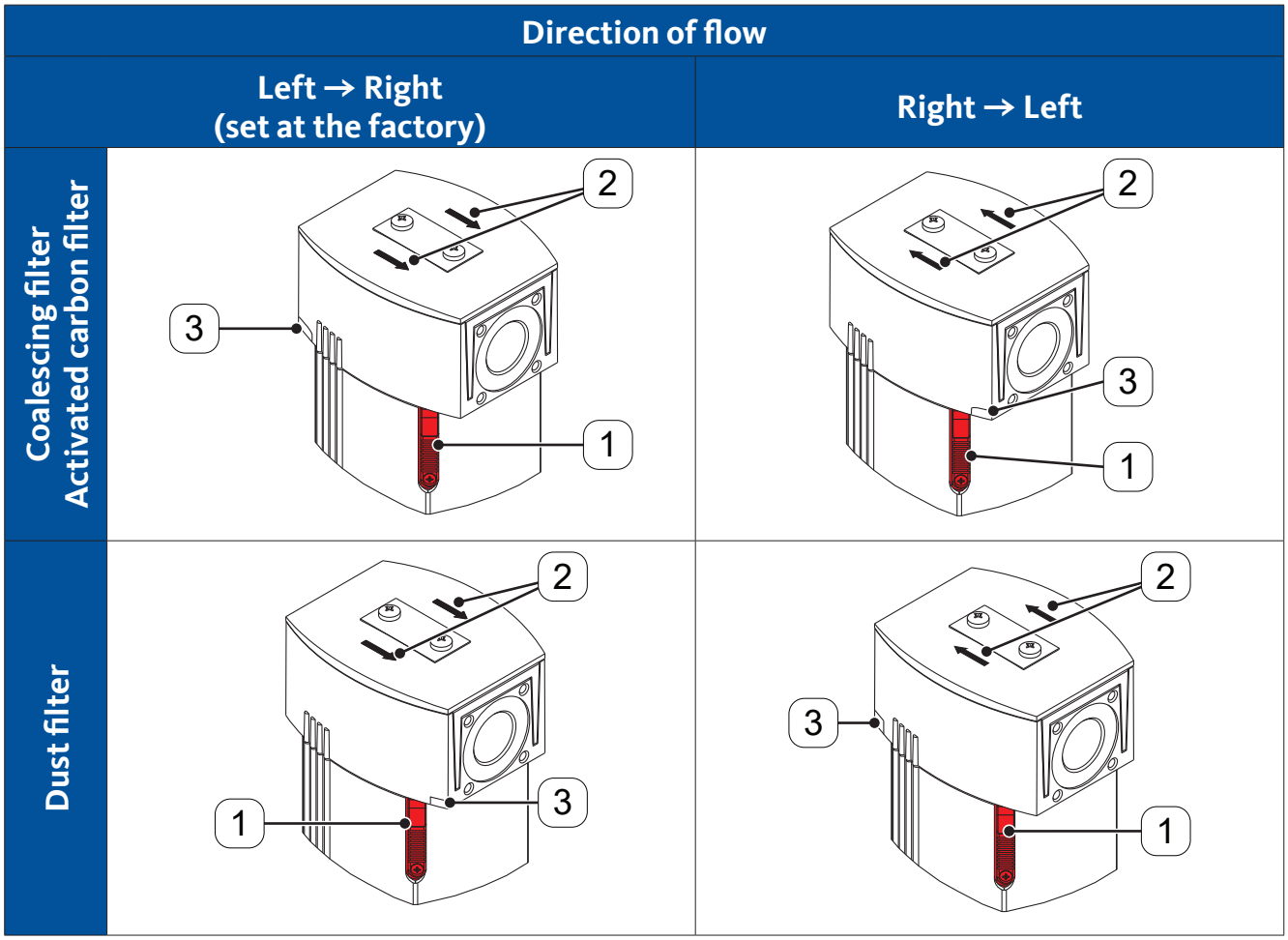
NOTICE	Mechanical damage
	Connecting more than 3 filters will overload the wall bracket and can result in deformation of the wall bracket and connected components.
	• Use a wall bracket for mounting a maximum of three connected **CLEARPOINT®** filters.

6.2 Preparatory work

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.	Pipes must be free from contamination and corrosion. ➝ Check the pipe threads for damage. ➝ Immediately replace faulty pipes.
4.	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.

6.3 Positioning the filter



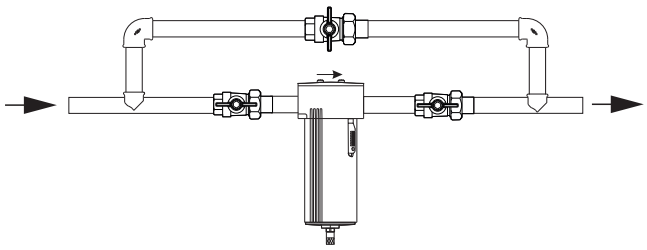
Align the direction of flow with the pipe's direction of flow and position the filter accordingly in the pipe:

- 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

6.4 Installation work

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.

6.5 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.

6.6 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 there are any leaks, fix them and then seal the corresponding thread again. → If you hear a whistling sound, 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

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)

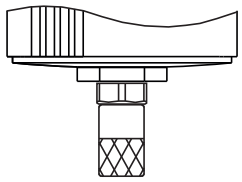
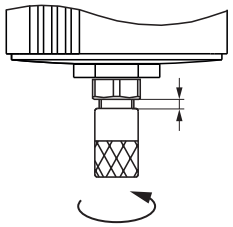
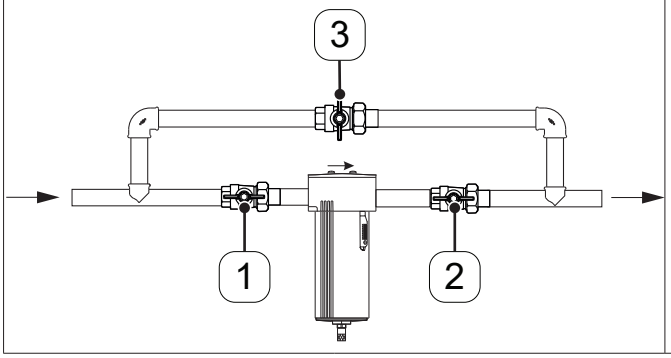
7.1 Warning notices

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

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 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. 4. Close the shutoff valve for the bypass valve **[3]**, if any.

8. Maintenance

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

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	For details, see section “4.3 Performance data” on page 30.
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

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

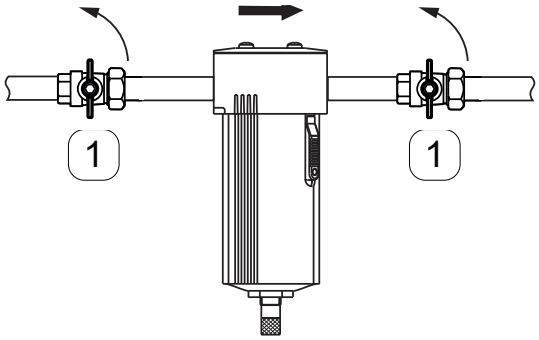
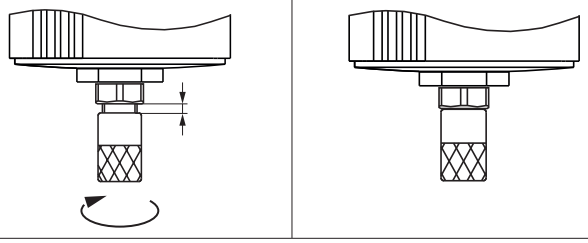
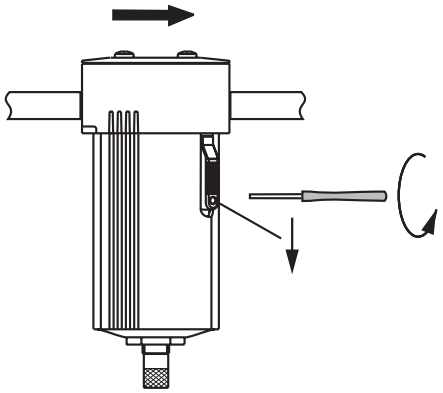
Prerequisites		
Tools	**Material**	**Protective equipment**
• No tools required.	• Mild cleaning agent • Cotton cloth or disposable cloth	

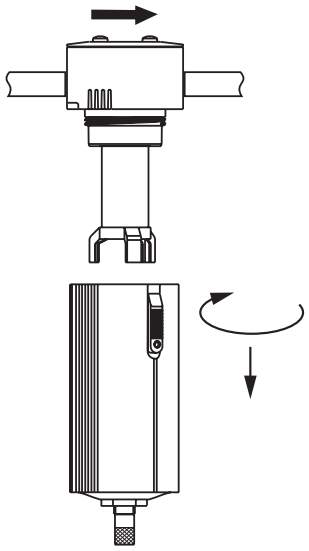
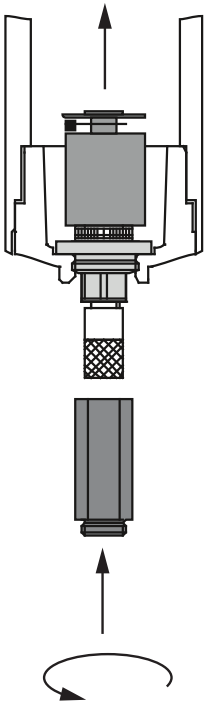
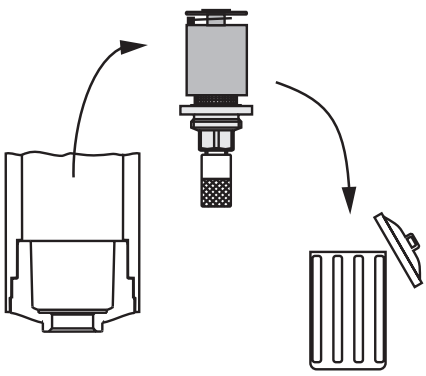
Cleaning work	
1.	Spray cleaning agent onto an unused cotton cloth or disposable cloth until it is damp (not wet).
2.	Rub over the entire component
3.	Finally, dry the component with a clean cloth or let it air-dry.

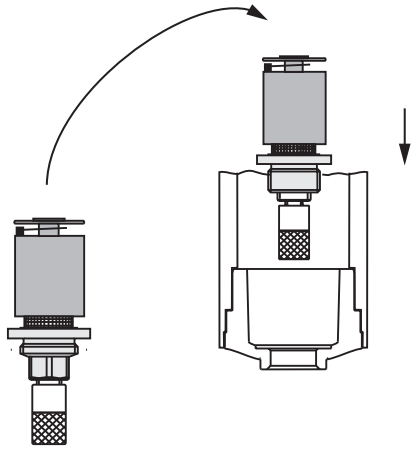
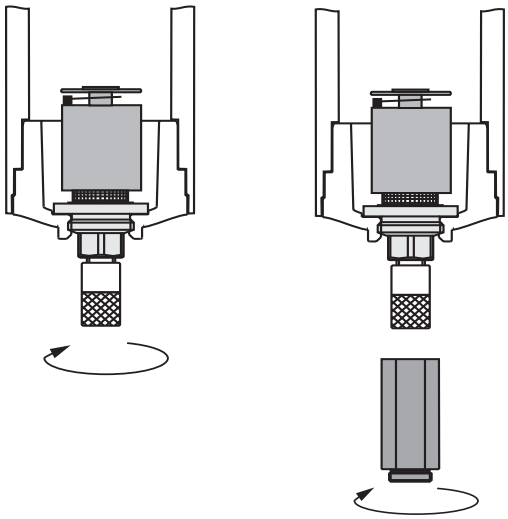
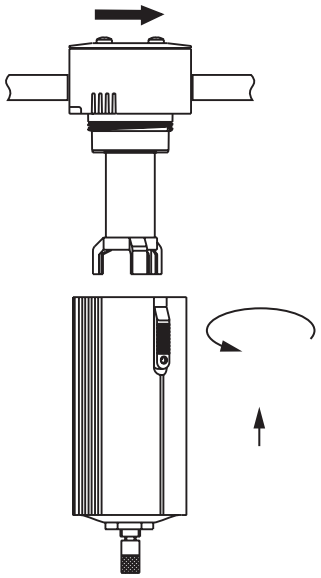
8.3.2 Replacing the float drain

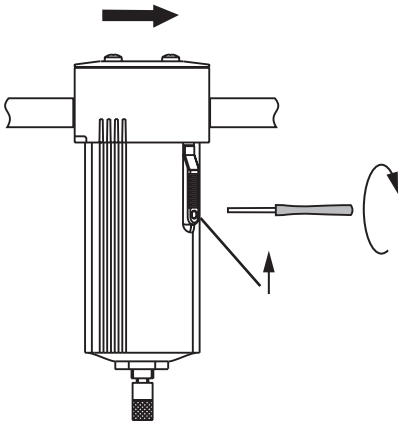
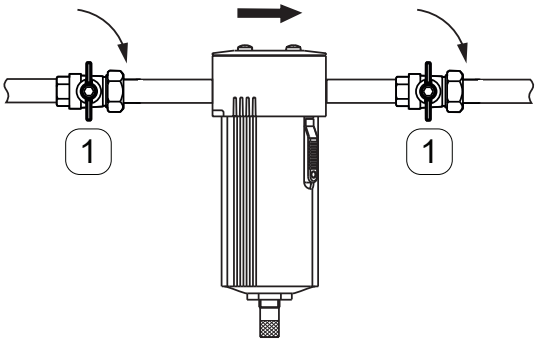
Prerequisites		
Tools	**Material**	**Protective equipment**
• Screwdriver – PZ Pozidriv head	• New float drain with included adapter (width across flats [AF] of 13 mm)	

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

Replacing the float drain	
Figure	**Description / explanation**
	1. Close the shut-off valves **[1]** upstream and downstream of the filter or relevant system section.
Automatic drainage / **Mechanically open** 	2. Relieve the pressure in the filter. → Turn the knurled-head screw on the float drain from **AUTOMATIC DRAINAGE** to **MECHANICALLY OPEN**. To do this, screw the knurled-head screw in all the way counterclockwise.
	3. Loosen the locking screw on the safety slide. 4. Slide the safety slide down.

Replacing the float drain	
Figure	**Description / explanation**
	5. Unscrew the filter housing. 6. Remove the filter housing downwards.
	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 57.

Replacing the float drain	
Figure	**Description / explanation**
	10. Insert the new float drain into the filter housing.
	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.

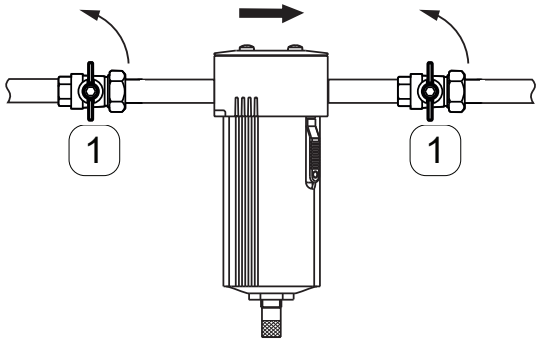
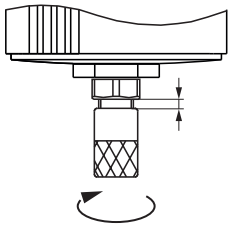
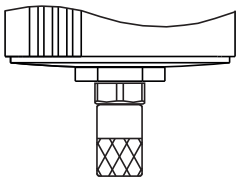
Replacing the float drain	
Figure	**Description / explanation**
	14. Slide the safety slide up. 15. Tighten the locking screw on the safety slide.
Mechanically open / **Automatic drainage**	16. Turn the knurled-head screw on the float drain from **MECHANICALLY OPEN** to **AUTOMATIC DRAINAGE**. → Unscrew the knurled-head screw clockwise until there is a visible gap above it.
	17. Slowly open the shut-off valves **[1]** upstream and downstream of the filter or relevant system section.

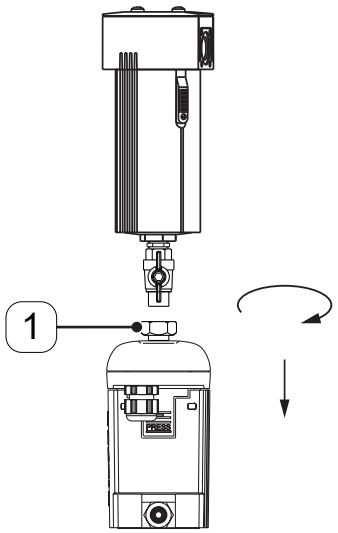
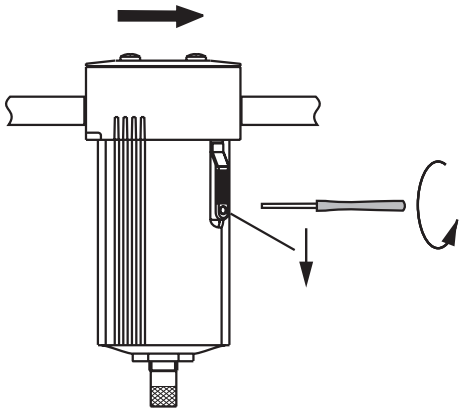
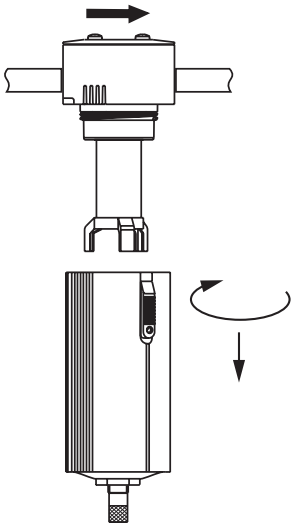
Concluding work	
1.	Slowly close the shutoff valve for the bypass valve, if any.
2.	During pressurization, check all system connections for leaks and tighten them as necessary.
3.	Slowly pressurize the system.

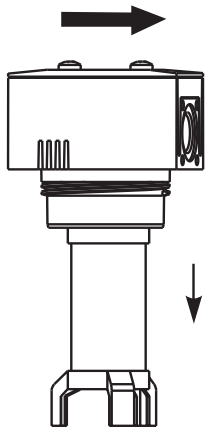
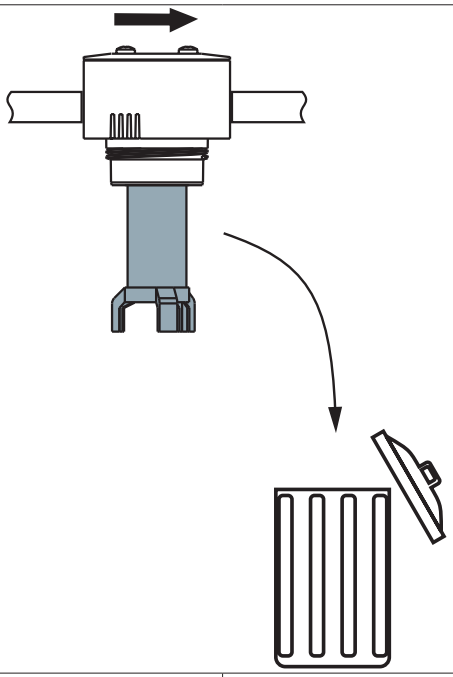
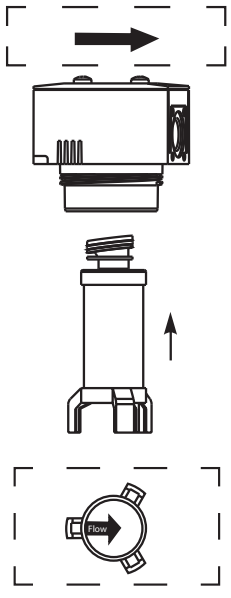
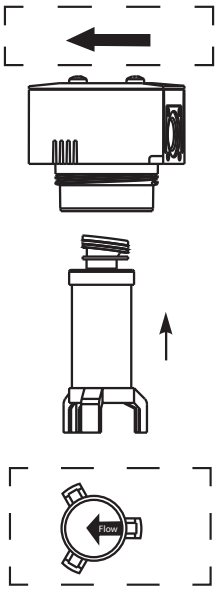
8.3.3 Replacing the filter element

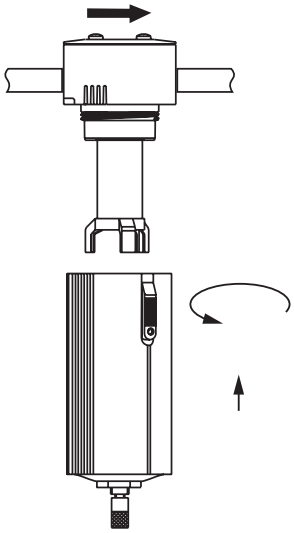
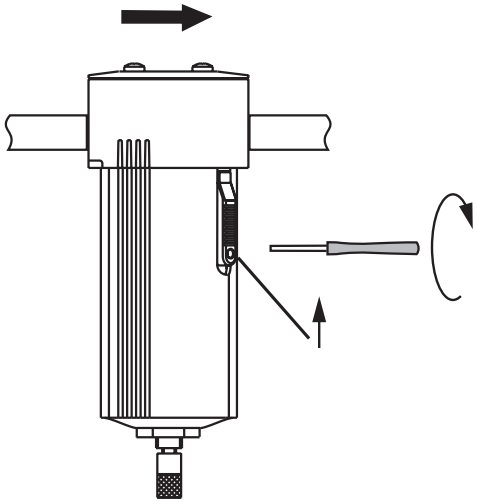
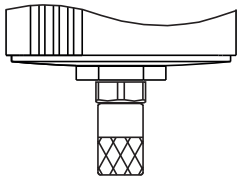
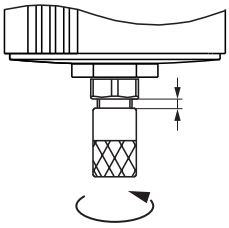
Prerequisites		
Tools	**Material**	**Protective equipment**
• Screwdriver – PZ1 Pozidriv head	• New filter element	

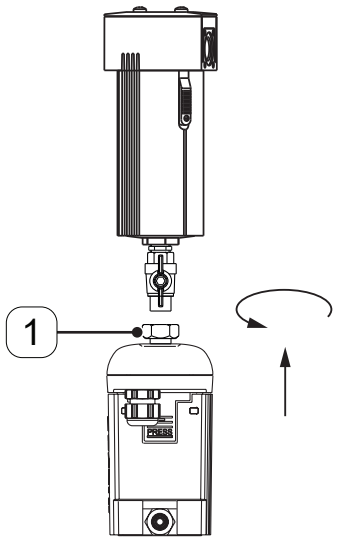
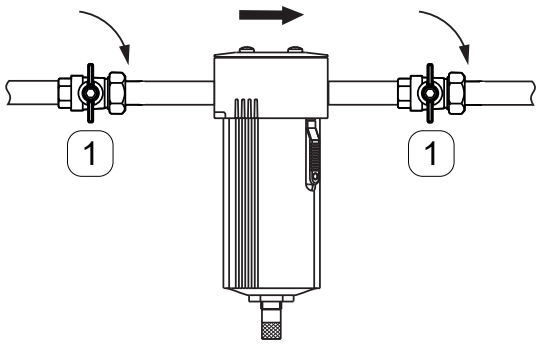
Preparatory work	
1.	Open the shutoff valve for the bypass valve, if any.

Replacing the filter element	
Figure	**Description / explanation**
	1. Close the shut-off valves **[1]** upstream and downstream of the filter or relevant system section.
Automatic drainage / **Mechanically open**  	2. Relieve the pressure in the filter. • If using a float drain: → Turn the knurled-head screw on the float drain from **AUTOMATIC DRAINAGE** to **MECHANICALLY OPEN**. To do this, screw the knurled-head screw in all the way counterclockwise. • When using a **BEKOMAT®**: → Briefly press the **TEST** button multiple times. • If using a manual drain: → Carefully open the manual drain.

Replacing the filter element	
Figure	**Description / explanation**
	When using a **BEKOMAT®** or a manual drain: 3. Loosen the union nut **[1]**. 4. Pull the **BEKOMAT®** or the manual drain downwards.
	5. Loosen the locking screw on the safety slide. 6. Slide the safety slide down.
	7. Unscrew the filter housing. 8. Remove the filter housing downwards.

Replacing the filter element	
Figure	**Description / explanation**
	9. Pull the used filter element down and out of the filter head.
	10. Dispose of the filter element properly and in accordance with all applicable regional regulations. → For more information, see “11. Disposal” on page 57.
 Activated carbon filter Coalescing filter	11. 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.
 Dust filter	

<table>
<tr><th colspan="3">Replacing the filter element</th></tr>
<tr><th>Figure</th><th colspan="2">Description / explanation</th></tr>
<tr><td>  </td><td colspan="2">12. Screw the filter housing onto the filter head.
→ Ensure that the safety slide points forward.</td></tr>
<tr><td>  </td><td colspan="2">13. Slide the safety slide up.
14. Tighten the locking screw on the safety slide.</td></tr>
<tr><th>Mechanically open</th><th>Automatic drain</th><td rowspan="2">15. Turn the knurled-head screw on the float drain from MECHANICALLY OPEN to AUTOMATIC DRAINAGE.
→ Unscrew the knurled-head screw clockwise until there is a visible gap above it.</td></tr>
<tr><td>  </td><td>  </td></tr>
</table>

Replacing the filter element	
Figure	**Description / explanation**
	When using a **BEKOMAT®** or a manual drain: 16. Tighten the union nut **[1]** (max. 10 Nm). 17. Connect the **BEKOMAT®** or the manual drain.
	18. 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.
2.	During pressurization, check all system connections for leaks and tighten them as necessary.
3.	Slowly pressurize the system.

8.3.4 Visual inspection

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

9. Removal from service

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

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 Removal from service

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

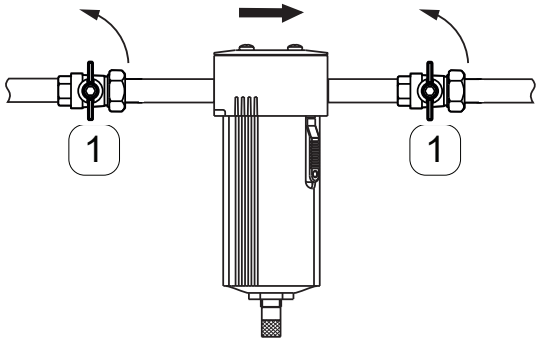
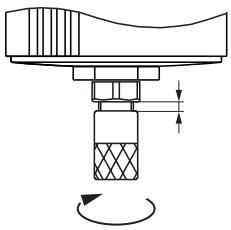
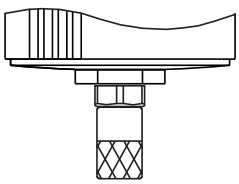
Figure	Description / explanation
	1. Close the shut-off valves **[1]** upstream and downstream of the filter or relevant system section.

Figure		Description / explanation
Automatic drainage	**Mechanically open**	
		2. Relieve the pressure in the filter. • If using a float drain: ➞ Turn the knurled-head screw on the float drain from **AUTOMATIC DRAINAGE** to **MECHANICALLY OPEN**. To do this, screw the knurled-head screw in all the way counterclockwise. • When using a **BEKOMAT®**: ➞ Briefly press the **TEST** button multiple times. • If using a manual drain: ➞ Carefully open the manual drain.

10. Disassembly

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

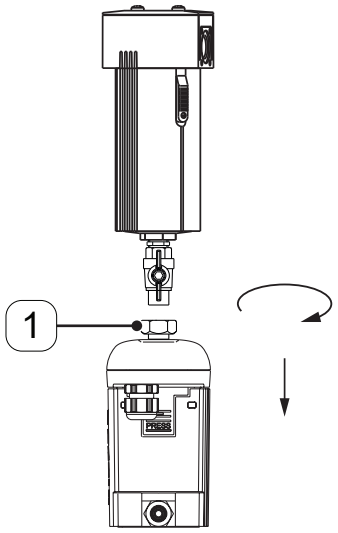
10.1 Warning notices

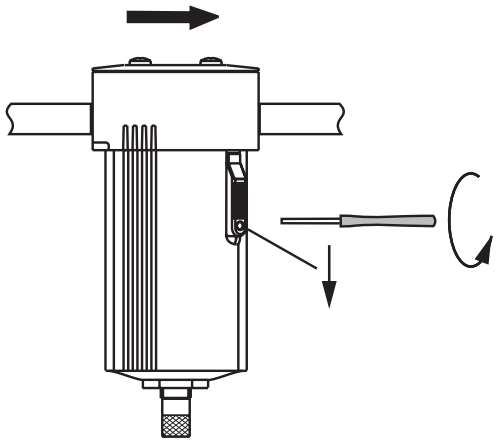
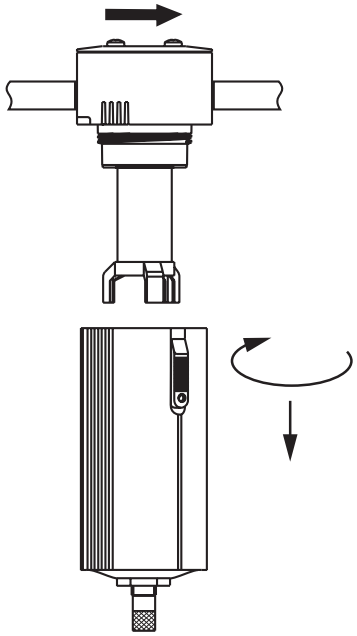
DANGER	Sudden escape of pressurized fluids
	There is a danger of death or serious personal injury resulting from contact with fast or suddenly escaping fluids or through bursting system parts.
	• Before starting work, depressurize the pressurized system and secure it against unintentional pressurization.

10.2 Disassembly work

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

Preparatory work	
1.	The product must have been fully removed from service and must be depressurized.

Disassembly	
Figure	**Description / explanation**
	When using a **BEKOMAT®** or a manual drain: 1. Loosen the union nut **[1]**. 2. Pull the **BEKOMAT®** or the manual drain downwards.

Disassembly	
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. 7. Remove the filter element. 8. Remove the filter head from the pipe and seal off the ends of the pipe appropriately. 9. 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

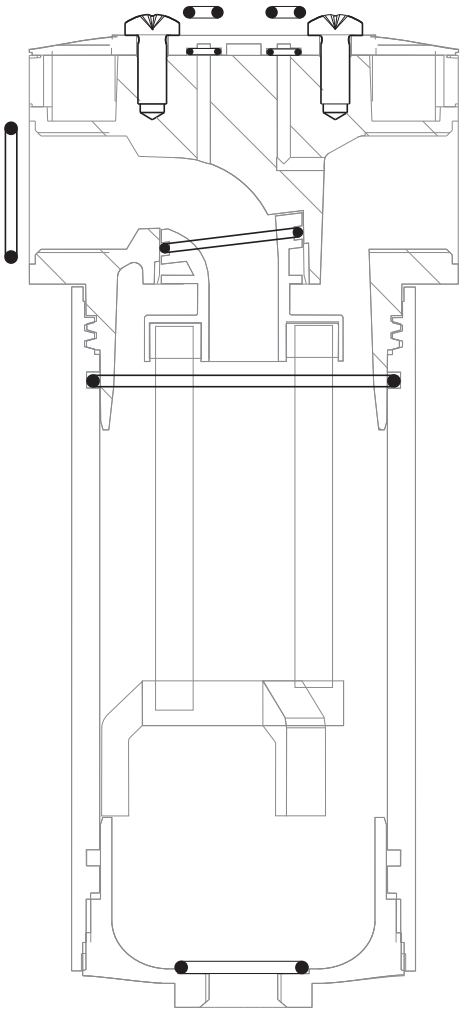
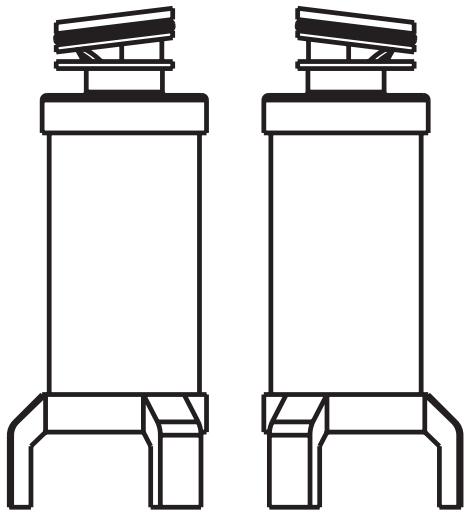
NOTICE	Improper disposal
	Improper disposal of parts, components, operating and auxiliary materials as well as cleaning media can cause environmental damage.
	• Dispose of all components, parts, operating and auxiliary materials as well as cleaning agents professionally and in accordance with all locally applicable legal requirements and regulations. • In case of doubt, consult regional disposal companies before disposal.

11.2 Disposal of components

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 S040, S045, S050, S055	4026562
	O-ring set for S075, S100, M010, M012	4026563
	O-ring set for M015, M018, M019, M020, M022, M023	4026564
	O-ring set for M025, M027, M030, M032	4026565
	Filter element	see type plate

12.2 Accessories

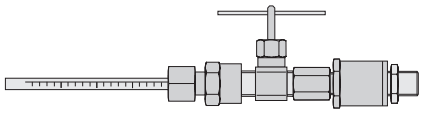
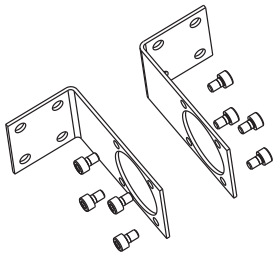
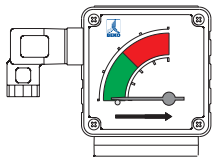
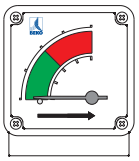
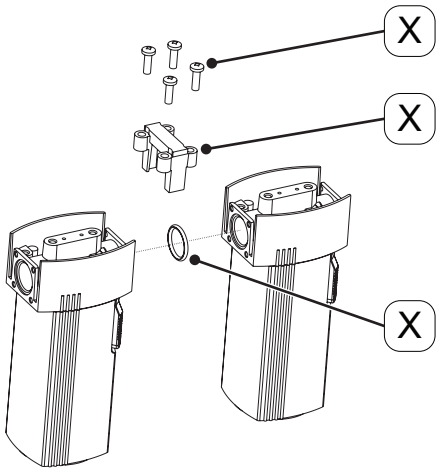
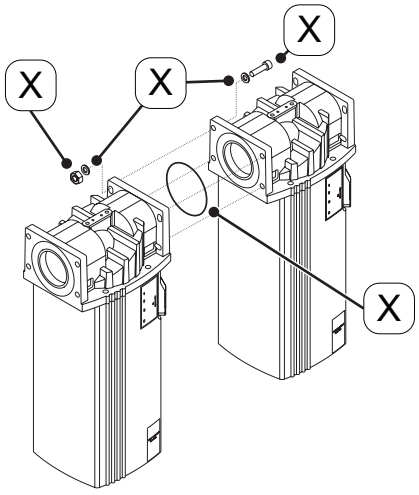
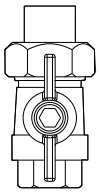
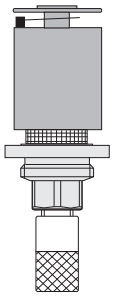
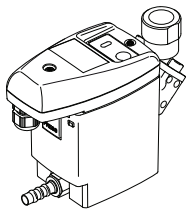
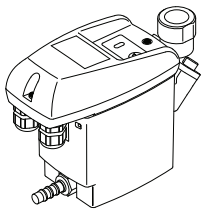
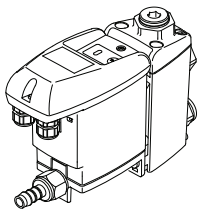
Figure	Description / explanation	Part No.
	Oil test indicator for activated carbon filters	4005900
	Wall bracket for S040, S045, S050, S055	4003328
	Wall bracket for S075, S100, M010, M012	4003329
	Wall bracket for M015, M018, M019, M020, M022, M023	4003330
	Wall bracket for M025, M027, M030, M032	4003331
	Differential pressure gauge with dry contact	4001481
	Differential pressure gauge without dry contact	4001491
	Connection set **[X]** for S040, S045, S050, S055	403332
	Connection set **[X]** for S075, S100, M010, M012	403333
	Connection set **[X]** for M015, M018, M019, M020, M022, M023	403334
	Connection set **[X]** for M025, M027, M030, M032	403335

Figure	Description / explanation	Part No.
	Manual drain	2000039
	Float drain (open when not pressurized)	4025536
	Float drain (closed when not pressurized)	4025537
	**BEKOMAT® 31**	4025098
	**BEKOMAT® 32**	4025088
	**BEKOMAT® 33**	4025091

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 **BEKOMAT®** 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

14. Appendices

14.1 Manufacturer declaration

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Im Taubental 7
41468 Neuss

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Tel: +49 2131 988-0
ww.beko-technologies.com

Herstellererklärung

Wir erklären hiermit, dass die nachfolgend bezeichneten Produkte, in den von uns gelieferten Ausführungen gemäß Druckgeräterichtlinie 2014/68/EU Artikel 4 Absatz 3 in Übereinstimmung mit der geltenden guten Ingenieurpraxis ausgelegt und hergestellt werden.

Produktbezeichnung:	Behälter für Gewindefilter
Typbezeichnung:	CLEARPOINT®
Baugröße:	S040, S045, S050, S055, S075, S100, M010, M012, M015, M018
Max. Betriebsdruck:	16 bar (ü)
Beschreibung der Druckgeräte:	Druckgeräte für Fluide der Gruppe 2

Druckgeräte nach Artikel 4 Absatz 3 der Druckgeräterichtlinie 2014/68/EU dürfen nicht die in Artikel 19 genannte CE-Kennzeichnung tragen.

Die Behälter wurden einer hydraulischen Druckprüfung mit 23 bar (ü), und einer Dichtheitsprüfung mit dem Medium Druckluft, bei 7,0 bar (ü) unterzogen. Bei den durchgeführten Prüfungen zeigten sich keine Mängel.

Neuss, 26.02.2020

BEKO TECHNOLOGIES GMBH

i.V. Christian Riedel
Leiter Qualitätsmanagement International

manu_decl_CP_S040-M018_FL2_Kat.0_de_02_2020

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Manufacturer declaration

We hereby declare that the following products have been designed and manufactured in the versions delivered by us according to Pressure Directive 2014/68/EU, article 4 paragraph 3 and in accordance with good general engineering practice.

Product designation:	Container for threaded filter
Type designation:	CLEARPOINT®
Size:	S040, S045, S050, S055, S075, S100, M010, M012, M015, M018
Max. Operating Pressure:	16 bar(g)
Description of pressure equipment:	Pressure equipment for group 2 fluids

Pressure equipment according to article 4 paragraph 3 of Pressure Directive 2014/68/EU may not bear the CE mark indicated in article 19.

Containers are subject to a hydraulic pressure test at 23 bar(g) and a leak test using compressed air as the medium at 7.0 bar(g). No defects were found during the completed tests.

Neuss, 2/26/2020

BEKO TECHNOLOGIES GMBH

i.V. Christian Riedel
Manager Quality Management

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